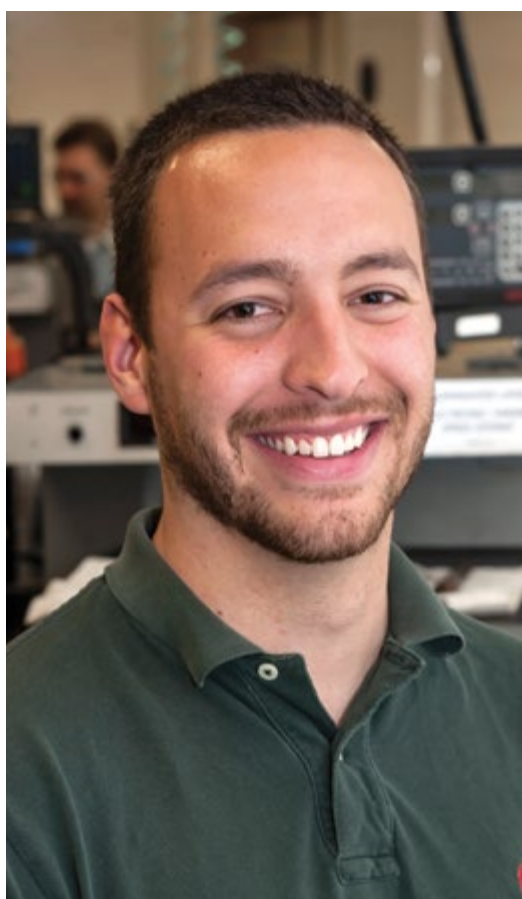
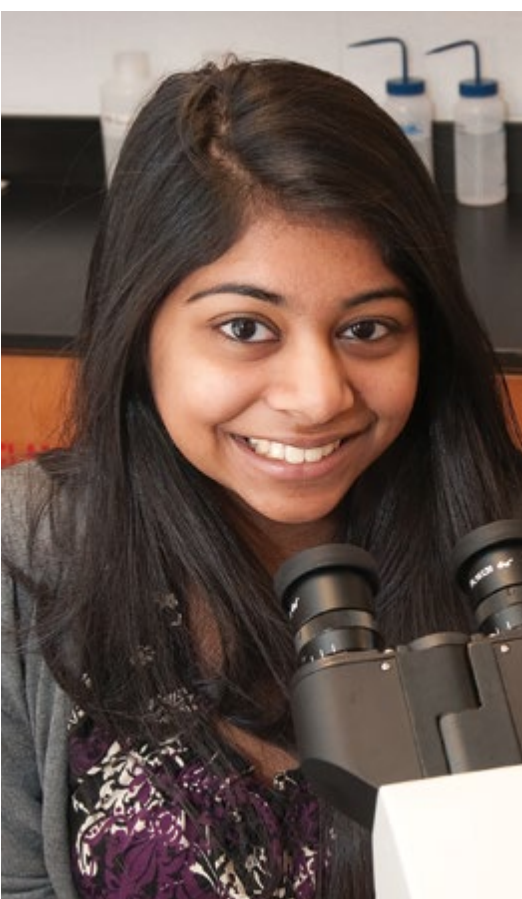




## 2019-2020 Academic Catalog



Welcome to Central Virginia Community College (CVCC)! Whether you are seeking an affordable start toward a bachelor's degree or the technical skills to advance your career, CVCC stands ready to help you achieve your goals and enrich your life. I invite you to explore this catalog to learn more about the many ways in which CVCC can meet your needs. We have a program of study for everyone: college-transfer curricula that guarantee admission to four-year institutions, career and technical education programs that prepare you for immediate employment, and Fast Forward training that leads to industry-recognized credentials and professional certifications. Best of all, you can pursue your studies at a time that suits you at a variety of locations – at our main campus in Lynchburg or at one of our off-site centers in Amherst, Appomattox, and Bedford. Because we match our mission to your needs, you can take classes during the day, at night, or even online.

Listed below are just a few of the many programs and services we offer to help you succeed:

- Multiple associate's degree programs that allow you to seamlessly transfer to over 30 Virginia colleges and universities through guaranteed admission agreements. CVCC graduates who take advantage of these agreements will save thousands of dollars while working toward a bachelor's degree.
- A variety of associate's degrees, career certificates, and short-term training programs that provide you with credentials for entry or further advancement in the workplace. Our career and technical education programs provide cutting-edge training for regional employment needs.
- An extensive program of professional and personal enrichment activities. From our Summer Career Academies for middle and high school students to a wide variety of continuing education classes we have a program for everyone.
- A comprehensive array of support services to help you reach your goals. Financial aid, academic and career counseling, free tutoring, and college success skills are just a few of the services we provide to support you every step of the way.

What may not be apparent is the most distinctive feature of CVCC: a community of caring faculty, staff, and administrators who dedicate themselves to helping every student succeed. For that reason, I invite you to call or visit us to learn more about our outstanding academic programs and student services. We can even help you identify financial aid and scholarship opportunities that place a college degree within your reach. Once you visit us, you will soon discover that you are surrounded by supportive people who care about your education, who share your aspirations, and who claim your dreams as their own. We are CVCC. We are here for you.

We are ***WHERE YOUR FUTURE BEGINS!***

Sincerely,



John S. Capps  
President

*Central Virginia Community College provides its website, catalog, handbooks, and any other printed materials or electronic media for your general guidance. The college does not guarantee that the information contained within them, including, but not limited to, the contents of any page that resides under the DNS registrations of [www.CentralVirginia.edu](http://www.CentralVirginia.edu) is up-to-date, complete and accurate, and individuals assume any risks associated with relying upon such information without checking other credible sources, such as a student's academic advisor. In addition, a student's or prospective student's reliance upon information contained within these sources, or individual program catalogs or handbooks, when making academic decisions does not constitute, and should not be construed as, a contract with the college. Further, the college reserves the right to make changes to any provision or requirement within these sources, as well as changes to any curriculum or program, whether during a student's enrollment or otherwise. Links or references to other materials and websites provided in the above-referenced sources are also for information purposes only and do not constitute the college's endorsement of products or services referenced.*

# 2019-2020 Academic Catalog



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**[www.CentralVirginia.edu](http://www.CentralVirginia.edu)**

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AA/EE O/ADA/VA RELAY 711

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Adnan Bokhari

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Coordinator of Amherst Center . . . . . Ms. Adrienne Allen

Coordinator of Appomattox Center . . . . . Vacant

Coordinator of Bedford Center . . . . . Mr. Patrick Gatti

Director of Library Services . . . . . Mr. Michael Fein

## *Board of The CVCC Educational Foundation, Inc.*

Central Virginia Community College Educational Foundation, Inc. was established in 1981 and is a non-profit, tax-exempt 501(c)(3) organization founded to foster and promote the growth, progress and general welfare of Central Virginia Community College by raising funds, increasing visibility, and building community partnerships. The Educational Foundation supports the goals and mission of CVCC by providing funding assistance for student scholarships, for instructional equipment purchases, and for projects that allow the faculty and staff to create initiatives aimed toward improving student success and the advancement of the college. The foundation is governed by a volunteer Board of Directors comprised of community and business leaders from the localities served by the College. The current foundation officers and board members are:

J. Fredrick Armstrong, President

Vivian S. Brown, Vice President

John S. Capps, Secretary (ex officio)

Lewis A. Bryant, III, Treasurer (ex officio)

Amy A. Gallagher

Gregory A. Graham

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Karen S. Simonton

Georgeann V. Snead

Marjette G. Upshur

John Watts, Jr.

Cathy Woody

Christopher Bryant, Exec. Director

## *Alumni & Friends Association*

The Central Virginia Community College Alumni Association was founded in 1999 and its mission is to afford opportunities for CVCC Alumni to serve and be served by the college, and to strengthen the bonds of the alumni through interaction with and among other alumni.

CVCC's almost 17,000 alumni are the most valuable resource the college has within the Central Virginia community. Alumni are lifelong supporters of the college through advocating for CVCC with high school students, businesses, and legislators; donating personal wealth; volunteering time and professional expertise to current students and other alumni; and supporting fundraising events that sustain the Alumni Scholarship Program, offered for the children of CVCC Alumni.

Governed by an elected board of alumni, the CVCC Alumni & Friends Association seeks to also give back to alumni. Through membership in the Alumni & Friends Association, alumni are afforded opportunities to gather at Alumni affairs, receive discounts from local businesses that support the Alumni & Friends Association mission, and take part in new opportunities that will be strictly for Alumni & Friends Association members.

Each year, a CVCC Outstanding Alumnus is chosen from among those nominated for the honor to serve as the key speaker for the annual Commencement Exercises. In order to participate in this process, go to [www.centralvirginia.edu/alumni](http://www.centralvirginia.edu/alumni) and complete the nomination form. The Alumni & Friends Association continues in its support of CVCC as the college changes and adapts with the times and yet maintains its purpose, integrity, and vision. Alumni are welcomed and invited to join the Association as well as update their information at [www.centralvirginia.edu/alumni](http://www.centralvirginia.edu/alumni).

# 2019-2020 Academic Calendar

## Fall Semester 2019

	16 Weeks	1 <sup>st</sup> 8 Weeks	2 <sup>nd</sup> 8 Weeks
Faculty Report Day/Research Day.....	Aug 16	Aug 16	Aug 16
Last Day to Add a Class.....	Aug 18	Aug 18	Oct 14
Classes Begin.....	Aug 19	Aug 19	Oct 15
No Classes ( <i>Labor Day</i> ) .....	Sept 2	Sept 2	n/a
Last Day to Drop ( <i>Receive Tuition Refund</i> ) .....	Sept 6	Aug 27	Oct 24
No Classes - Fall Break ( <i>Faculty Research Days</i> ) ....	Oct 28-29	n/a	Oct 28-29
Last Day to Withdraw ( <i>Without Grade Penalty</i> ) ....	Oct 26	Sept 21	Nov 17
Graduation Application Due .....	Nov 8	Nov 8	Nov 8
No Classes (Thanksgiving) .....	Nov 27- Dec 1	n/a	Nov 27- Dec 1
Classes End.....	Dec 10	Oct 14	Dec 16
Final Exams .....	Dec 11-17	Last Class Meeting	Last Class Meeting
Faculty Research Days .....	Dec 18-20	Dec 18-20	Dec 18-20
Grades Due from Faculty ( <i>by 12 noon</i> ) .....	Dec 19	Oct 16	Dec 19
Grades Available at myCVCC.....	Dec 20	Oct 18	Dec 20
Transcripts Available .....	Dec 20	Oct 18	Dec 20
Faculty Research Day .....	Dec 23	Dec 23	Dec 23

## Spring Semester 2020

	16 Weeks	1 <sup>st</sup> 8 Weeks	2 <sup>nd</sup> 8 Weeks
CVCC Opens .....	Jan 2	Jan 2	Jan 2
Faculty Research Days .....	Jan 2-3	Jan 2-3	Jan 2-3
Faculty Report Day/ Research Day .....	Jan 6	Jan 6	Jan 6
Faculty Research Days .....	Jan 7-10	Jan 7-10	Jan 7-10
Last Day to Add a Class.....	Jan 12	Jan 12	March 15
Classes Begin .....	Jan 13	Jan 13	March 17
College Closed ( <i>Martin Luther King, Jr. Day</i> ) .....	Jan 20	Jan 20	n/a
Last Day to Drop ( <i>Receive Tuition Refund</i> ) .....	Jan 30	Jan 22	March 25
Graduation Application Due .....	March 2	March 2	March 2
Faculty Research Days .....	March 9-13	March 9-13	March 9-13
No Classes ( <i>Spring Break</i> ) .....	March 9-15	March 9-15	n/a
Last Day to Withdraw ( <i>Without Grade Penalty</i> ) ....	March 19	Feb 14	April 18
Classes End.....	May 4	March 16	May 11
Final Exams .....	May 5-11	Last Class Meeting	Last Class Meeting
Faculty Research Days .....	May 12-15	May 12-15	May 12-15
Grades Due from Faculty ( <i>by 12 noon</i> ) .....	May 12	March 17	May 12
Grades Available at myCVCC.....	May 14	March 18	May 14
Commencement Ceremony .....	May 14	May 14	May 14
Transcripts Available .....	May 15	March 19	May 15

## Summer 2020

	10 Weeks	1 <sup>st</sup> 5 Weeks	2 <sup>nd</sup> 5 Weeks
Graduation Application Due ( <i>if participating in Spring ceremony</i> ) .....	March 2	March 2	March 2
Last Day to Add a Class.....	May 17	May 17	June 22
Classes Begin.....	May 18	May 18	June 23
No Classes ( <i>Memorial Day</i> ) .....	May 25	May 25	n/a
Last Day to Drop ( <i>Receive Tuition Refund</i> ) .....	May 28	May 25	June 29
Last Day to Withdraw ( <i>Without Grade Penalty</i> ) ....	June 28	June 7	July 13
College Closed ( <i>Independence Day</i> ) .....	July 3	n/a	July 3
Graduation Application Due .....	July 10	July 10	July 10
Classes End.....	July 27	June 22	July 27
Final Exams .....	Last Class Meeting	Last Class Meeting	Last Class Meeting
Grades Due from Faculty ( <i>by 12 noon</i> ) .....	July 29	June 24	July 29
Grades Available at myCVCC.....	July 30	June 25	July 30
Transcripts Available .....	July 31	June 26	July 31



# General Information

## *The College*

Central Virginia Community College, a two-year institution established as a member of the Virginia Community College System, provides State-supported educational facilities beyond the high school level for the city of Lynchburg and the counties of Amherst, Appomattox, Bedford, and Campbell. The curricula and programs of the College serve more than 243,000 people within this geographical jurisdiction.

With academic excellence its aim in all areas, the College offers various programs to meet the diverse needs of the region it serves. Its two-year college transfer programs in arts and sciences and in certain pre-professional areas lead to associate degrees and offer courses generally acceptable for transfer to four-year institutions. Its occupational and technical programs lead to diplomas, certificates, or associate of applied science degrees and are designed to prepare individuals for certain professions. Its other programs, including developmental work, workforce training for industry, and community service, offer instruction commensurate with the needs of individuals, groups, or the area at large.

The College, in seeking to accomplish its purposes, operates in accordance with the policies established by the State Board for Community Colleges and with the advice and support of a local community college board comprised of representatives of the cities and counties within the school's jurisdiction. Though supported primarily by State funds, the College is partially financed by contributions from area governments, the Federal Government, businesses, individuals, and student tuition.

## *Location*

Consisting of approximately 104 acres with a view of the Blue Ridge Mountains, the Central Virginia Community College campus is located at the intersection of U.S. Route 29 South and the Lynchburg Expressway (Route 501) within the city limits of Lynchburg. The campus is accessible either from U.S. 29 South (Wards Road) or State Route 766 (Wards Ferry Road).

## *Facilities*

The College Building facilities of approximately 195,000 square feet include: general classrooms; various laboratories for computer and technical instruction; art studio and photography studio-labs; occupational shops for welding, electronics, electricity, engineering, heating and air conditioning, and mechatronics; Learning Commons and Library; distance education classrooms; student center; bookstore; counseling center; administrative offices, including Accounting, Admissions and Records, Financial Aid, divisional offices, faculty and staff offices, and the Workforce Solutions training facility. Outdoor facilities include tennis courts and an athletic field located north-west of the campus facing the Lynchburg Expressway. Vehicle parking on campus is available for students, visitors, faculty, and staff members.

## *CVCC Off-Site Centers*

Central Virginia Community College has three off-site centers located throughout the region. These centers are located in Amherst; 200 Richmond Highway in the Mt. View Shopping Center, Appomattox; 136 Carver Lane in the Carver-Price Educational Center, and Bedford; 1635 Venture Boulevard in the Bedford Center for Business. Each center offers a variety of traditional and distance education courses in modern facilities.

## *History*

The 1966 Session of Virginia's General Assembly enacted legislation establishing a Statewide system of comprehensive Community Colleges to be located in regions serving every Virginian. The State Department of Technical Education, under the direction of Dr. Dana B. Hamel, was reorganized to form the State Department of Community Colleges. Dr. Hamel became the first Director to serve the Commonwealth in the new department.

Early in 1965, a local committee was formed to investigate the needs and feasibility of a community college for the Central Virginia region; and in July, 1966, the State Board for Community Colleges selected Central Virginia as a community college location to serve the cities of Lynchburg and Bedford and the counties of Amherst, Appomattox, Bedford and Campbell.

A committee of local business, civic, political, and industrial leaders, and a professional site selection consultants team inspected and investigated more than 20 possible sites for the College before the selection was made. The site selected,

where Central Virginia Community College presently stands, was approved by the State and Local Boards because of its geographic center to the service area's population and accessibility to all major highways in the area.

In October 1966, Dr. S. A. Burnette was named President of the College. He immediately set up an office in the Lynchburg area and began establishing the new College. The first meeting of the newly appointed Local Advisory Board was held on March 14, 1967, and the name, Central Virginia Community College, was selected. On July 1, 1967, Central Virginia Community College assumed responsibilities for the freshman and sophomore college transfer programs previously offered by the Lynchburg Branch of the University of Virginia's School of General Studies. The College operated in temporary quarters during the school year of 1967-68 located in the 721 Court Street Building, the Krise Building, and the Lynchburg Fine Arts Center.

The site on U.S. Route 29 South, with the Appomattox (Administration) Building and the Amherst (Academic Instruction) Hall, became available for students and staff for occupancy in August 1968. Dedication ceremonies were held on November 1, 1968. The College was accredited by the Southern Association of Colleges and Schools in 1969, then reaffirmed in 1973, 1984, 1994, 2004, and again in 2014.

In January of 1972, Dr. M. Douglas Reed was named the second president of Central Virginia Community College. On January 1, 1974, Dr. Donald E. Puyear became the third president of Central Virginia Community College. Construction of additional College facilities was completed in 1975 with an addition to Amherst Hall, and the construction of the Bedford (Learning Commons) and the Campbell (Engineering Technology) Halls. On January 1, 1984, Dr. Johnnie E. Merritt became the fourth president of Central Virginia Community College. In 1988, the College participated in the establishment of the Region 2000 Program, which is intended to promote commercial and industrial development in the geographic/demographic region. The College established its Quality First Program in 1989 to offer to area businesses and industries. In July 1990, Central Virginia Community College formalized its economic development efforts by establishing a new Center for Business, Industry, and Government. On January 1, 1992, Dr. Belle S. Wheelan became the fifth president of Central Virginia Community College. In July 1992, a General Obligation Bond was approved and issued by the State Legislature. The Bond Issue provided \$3,500,000 to CVCC for the construction of a new building, Johnnie E. Merritt Hall. In 1995, CVCC reached its capital campaign goal of \$1.5 million. Johnnie E. Merritt Hall was opened in Fall 1997 with the Center for Workforce Solutions on the first floor, and the Humanities and Social Science Division Office and several classrooms and laboratories on the second floor. On January 11, 1999, Dr. Darrel Staat became the sixth president of Central Virginia Community College.

In June 2001, the CVCC Altavista Center began operations in the former Lane Company building. In August 2004, the AREVA (Framatome) Technology Center opened offering 35,000 square feet of laboratories and classrooms for machine tool, HVAC, and electronics. In January 2005, the CVCC Bedford Center opened in the Bedford Center for Business. During February 2005, the Grief Welding Laboratory was dedicated. The CVCC Appomattox Center opened in June 2007, located at the Carver-Price Education Center in the town of Appomattox. During July 2007, the James River Building was completed and serves as the new home for the Department of Facilities Management. In 2009, the college opened the CVCC Amherst Center located at Mt. View Plaza in the town of Amherst.

In 2011, the Seven Hills Hospitality and Culinary Center was dedicated and a new fitness center opened in Amherst Hall. In March 2011, Dr. John S. Capps began serving as CVCC's seventh president.

## *Mission of VCCS*

We give everyone the opportunity to learn and develop the right skills so lives and communities are strengthened.

## *Mission of Central Virginia Community College*

Central Virginia Community College is an accessible, comprehensive, public, two-year higher education institution that is dedicated to:

1. Providing open, flexible, affordable, quality learning opportunities for personal growth and the acquisition of knowledge and skills necessary for productive and meaningful life,
2. Providing general education, transfer, applied science, certificate, and diploma programs,
3. Determining and addressing the training needs of business, industry, and government to benefit the service area,
4. Supporting workforce and economic development through participation in regional organizations and training for new and/or expanding businesses,
5. Providing support services for education, training, technology infrastructures, and workforce development.

## Statement of Values

The shared values concerning teaching and learning at Central Virginia Community College listed below are among the beliefs which guide the institution in the development of its mission, goals, philosophy, and operational procedures. Each value is followed by a series of supporting statements illustrating College support:

1. The College values learning and provides occupational education which prepares the graduate to work at levels expected by the community; provides academic programs which prepare our students to succeed in upper division learning; provides educational opportunities for personal development; allocates resources for teaching and learning; employs qualified persons to facilitate learning; encourages the free interchange of ideas; provides and encourages life-long learning; and encourages active participation in educational opportunities.
2. The College values access to educational opportunities and promotes its educational services; advocates keeping educational expenses affordable for our citizens; provides active recruitment and retention programs for students; provides equal opportunity in education and employment; structures the admission process to encourage enrollment; provides developmental courses when needed to qualify for entrance into programs; and encourages the development of programs with secondary and post-secondary institutions.
3. The College values diversity and provides comprehensive educational programs; promotes understanding of cultural diversity; respects individuals from a variety of cultural backgrounds; teaches students about the cultural, economic, political and social environments in which they live; respects and responds to students' different learning styles; respects and accepts different teaching styles; and recognizes the importance of prior learning and experiences.
4. The College values excellence in performance and establishes criteria of performance; expects students, faculty, and staff to meet defined criteria; assesses performance; recognizes outstanding performance; encourages persons to serve as positive role models; promotes initiative, innovation and accountability; promotes professional development of faculty and staff; encourages persons to be aware of relevant current research; and assesses programs' effectiveness.
5. The College values a supportive environment and establishes a safe, attractive, and functional environment; provides assistance in meeting standards; promotes positive attitudes conducive to teaching and learning; provides advisement and counseling to support the needs of students; provides a variety of scholarships and financial aid programs; sponsors student organizations and extracurricular activities; and encourages a caring attitude among students, faculty, and staff.
6. The College values democratic decision making and establishes and maintains a governance structure for shared decision making; expects ethical decision making; stresses honesty and integrity; establishes and maintains an effective communication structure; communicates accurately and promptly; and invites ideas and suggestions from all citizens of our service area.
7. The College values community service and cooperates with other educational organizations; sponsors activities which enrich the community; plans educational programs with business, industry, and government; assesses the community's learning needs; addresses the educational needs of the community; responds to the changing needs of the community; and anticipates the future needs of the community.

## Accreditation

Central Virginia Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate degrees, diplomas, and certificates. Contact the Southern Association of Colleges and School Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Central Virginia Community College.

The College is a member of the College Entrance Examination Board and the College Scholarship Service. The College is also a member of the American Association of Community Colleges.

The Radiologic Technology program is accredited by the **Joint Review Committee on Education in Radiologic Technology (JRCERT)**, 20 N. Wacker Drive, Suite 2850, Chicago, Illinois 60606-3182. The Respiratory Therapy Technology program is accredited by the **Commission on Accreditation for Respiratory Care (CoARC)**, 1248 Harwood Road, Bedford, TX 76021-4244. The Emergency Medical Services program is accredited by the **Virginia Office of Emergency Medical Services**, James Madison Building, Suite UB-55, 109 Governor Street, Richmond, VA 23219.

# Admissions and Tuition Information

*It is the policy of the College to promote and maintain educational opportunities without regard to race, color, sex, ethnicity, religion, gender, age (except when age is a bona fide occupational qualification), disability, national origin, or other non-merit factors. This institution prohibits sexual harassment including sexual violence.*

## ***Prior to Admission***

### ***Academic Advising/Counseling Services***

Students are encouraged to meet with an Academic Counselor prior to enrollment to discuss educational interests, available program plans, degree requirements, and the enrollment process.

High School transcripts and SAT scores may be required for admittance into restricted program plans and/or for general academic advisement.

### ***Placement Testing***

Central Virginia Community College offers several approved placement strategies that provide consistent and reliable results for students enrolling in associate degree, diploma, and certificate programs and in courses that require a reading, writing, or math prerequisite. Students enrolling only in career studies certificate programs may be waived from placement testing, unless a course in the program requires a reading, writing, or math prerequisite. Assessment will be offered through placement testing and other approved measures. VCCS policies, guidelines, and procedures shall be followed when assessing students. Prior to taking the test, the student must complete an application for admission. There is no charge for placement tests and they are given on a walk-in basis. Placement tests are administered in the Library located on the lower level of the Bedford Learning Resource Center on the main campus, Monday - Thursday 8 a.m. - 5 p.m. and Friday 8 a.m. - 3 p.m. The test is also administered at our off-site centers. Please contact the center of your choice for their hours of testing. Students should meet with an Academic Counselor after testing to determine proper course placement.

Students with sufficient SAT, ACT, CLEP, or AP scores in English or math may not be required to take the full placement test. The placement test is not required of students who transfer both English and math credits from another accredited college. Transfer students who wish to receive credit for courses taken at another college must send the official transcripts from the previous college(s) to the Office of Admissions and Records for evaluation. If the student attended another community college within the Virginia Community College System, an official transcript is not required as we can access these records. A student who has successfully completed two years of a foreign language in high school may also test for placement into the second year of foreign language in our Testing Center located on the second floor of the Bedford Learning Resource Center, Room 3205.

Dual enrolled high school students who enroll in programs or courses must meet the admissions criteria specified in VCCS Policy 6.0.1.1 and any applicable course prerequisites.

### ***Multiple Measures for Placement***

In determining students' readiness for college-level English and math courses, CVCC will use the following means and measures:

1. Any student who has earned an associate degree or higher or who has earned a C or better in college-level courses in math and/or English at a regionally accredited institution will be exempt from placement testing provided they meet the prerequisites for the respective courses in their chosen program of study.
2. Any student who has successfully completed developmental courses at CVCC will be exempt from placement testing in those areas.
3. Any student who has successfully completed developmental courses at a non-VCCS institution will have their coursework evaluated for placement.
4. A student may submit a high school/home school transcript or an approved test score for placement evaluation. Placement will be based on the following tables. Seniors who have not yet graduated may submit a transcript as of the completion of the first semester of the senior year to determine readiness for placement into college-level courses for the purpose of early admission.
5. Any student who is not placed by the above criteria will take the Virginia Placement Test. Students have the option to take the Virginia Placement Test in order to improve their placement standing after other measures are considered. Such placement test scores will not be used to place a student in a lower English or math course than indicated by other criteria, unless the student desires a lower placement.

**Measures for Math Placement**

Math placement will be determined using one of the following measures:

<b>Math Placement Measures #</b>	<b>HSGPA or Score Range</b>	<b>Placement</b>
HSGPA and Algebra II and One Algebra Intensive Course*	3.0 or higher 2.7 – 2.9	MTE 1-9 Satisfied MTE 1-9 Co-Requisite Eligible
*Algebra Intensive Courses above Algebra II: Trigonometry, Math Analysis, Pre-Calculus, Calculus, Algebra III.		
HSGPA and Algebra II	3.0 or higher 2.7 – 2.9	MTE 1-5 Satisfied MTE 1-5 Co-Requisite Eligible
HSGPA and Algebra I	3.0 or higher	MTE 1-3 Satisfied
SAT – Math	530 or above 510 – 520 range	MTE 1-9 Satisfied MTE 1-5 Satisfied
ACT – Subject Area Test Math	22 or above 19 – 21 range	MTE 1-9 Satisfied MTE 1-5 Satisfied
GED – Math	165 or above 155 – 164 range	MTE 1-5 Satisfied MTE 1-3 Satisfied

# = Students may complete the VPT – Calculus for placement into Pre-Calculus II, Calculus, and 200-level Statistics. Placement directly into Pre-Calculus II, Calculus, and 200-level Statistics based on HSGPA and highest level courses taken will be at the discretion of each college.

High school GPA (HSGPA) is valid for five (5) years after the date of high school graduation. SAT, ACT, and GED Test scores are valid for five (5) years after the date of the test. Virginia Placement Test - Math scores are valid for five (5) years after the date of the test. Previously taken developmental courses will be valid for five (5) years after term taken.

Students who take the Virginia Placement Test - Math and who do not enroll in developmental math are allowed to take one (1) retest within twelve (12) months. Students who attempt a developmental mathematics course will be ineligible for a retest. Exceptions to this retest policy may be made on a case-by-case basis in accordance with established college procedures.

**Measures for English Placement**

English placement will be determined using one of the following measures:

<b>English Placement Measures</b>	<b>HSGPA or Score Range</b>	<b>Placement</b>
HSGPA	3.0 or higher 2.7 – 2.9	ENG 111 ENF3/ENG 111
SAT – ERW (Evidence-Based Reading and Writing)	480 or above 460 – 479 range	ENG 111 ENF3/ENG 111
ACT – Subject Area Tests English and Reading	18 or above 15 – 17 range	ENG 111 ENF3/ENG 111
GED – English	165 or above	ENG 111

High school GPA (HSGPA) is valid for five (5) years after the date of high school graduation. SAT, ACT, and GED Test scores are valid for five (5) years after the date of the test. Virginia Placement Test – English scores are valid for five (5) years after the date of the test. Previously taken developmental courses will be valid for five (5) years after term taken.

Students who take the Virginia Placement Test – English and who do not enroll in developmental English are allowed to take one (1) retest within twelve (12) months. Students who attempt a developmental English course will be ineligible for a retest. Exceptions to this retest policy may be made on a case-by-case basis in accordance with established college procedures.

**Placement Testing Across Colleges**

Students who intend to enroll in courses at one VCCS institution may take the Virginia Placement Test at other VCCS institutions at no cost to the student. In addition, the home institution shall accept the placement test scores from other VCCS institutions in compliance with the timelines outlined in VCCS policy sections 6.4.0.2.2 and 6.4.0.2.3.

**Admission Requirements****General Admission to the College**

Individuals are eligible for admission to the community college if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics. In order to be admitted to the College, students must apply online at: <http://apply.vccs.edu>.

In order to prevent delays at the time of enrollment, please submit applications early and complete all sections thoroughly. Applications are active for one year; students who apply to the College but do not enroll within a year will be discontinued and will need to reapply for admission.

**Readmission**

Former students who have not been enrolled for a period of three years or more and wish to enroll must submit a new *Application for Admission* online at: <http://apply.vccs.edu>.

**General Admission Denials**

In accordance with VCCS policy 6.0.1, the College reserves the right to evaluate and document special cases and to refuse or revoke admission if the College determines that the applicant or student poses a threat, is a potential danger, is significantly disruptive to the College community, or if such refusal or revocation is considered to be in the best interest of the College. The College also reserves the right to refuse admission for applicants that have been expelled or suspended from, or determined to be a threat, potential danger or significantly disruptive, by another college. Students whose admission is revoked after enrollment must be given due process.

This provision applies to individuals who are in applicant status or those who are enrolled for a future semester. In extreme cases, the College has the right to apply these provisions to disenroll currently enrolled students during a given semester (examples are convicted sex offenders and highly dangerous or disruptive students).

Behaviors that present a threat or a potential danger to the College community or other behaviors where it is considered to be in the best interest of the College to refuse admission or revoke enrollment are defined as, but not limited to:

**Threatening Behavior** (including but not limited to):

- a) Physical actions short of actual contact/injury (e.g., moving closer aggressively, waving arms or fists, raising tone of voice or yelling in an aggressive or threatening manner)
- b) Oral or written threats to harm people or their property (e.g., "you'd better watch your back" or "I'll get you"), including the use of any electronic means of communication
- c) Implicit threats (e.g., "you'll be sorry" or "this isn't over yet")

**Violent Behavior** (including but not limited to):

- a) Intentionally acting in a manner that in any way endangers the safety of others
- b) Any physical assault, with or without weapons
- c) Behavior that a reasonable person would interpret as being physically aggressive (e.g., destruction of property, pounding on a desk or door, or throwing objects in a threatening manner)
- d) Specific threats to inflict harm (e.g., a threat to shoot a named individual)
- e) Use of any object to attack or intimidate another person
- f) Interfering with an individual's legal rights of movement or expression

**Intimidating Behavior** (including but not limited to):

- a) Intimidation of any kind that results in an individual's fear for his/her personal safety
- b) Engaging in stalking behavior
- c) Behavior that is reasonably perceived to be frightening, coercing, or inducing distress to any member of the College community

**Disruptive Behavior** (including but not limited to):

- a) Verbally intimidating, threatening, or abusing any person or persons in the College environment



- b) Physically intimidating, threatening, abusing or assaulting others
- c) Disorderly or abusive behavior that interferes with the rights of others or obstructs the teaching or learning environment or business of the College
- d) Making inappropriate and incessant demands for time and attention from College employees or students
- e) Inappropriate use of College facilities or resources
- f) Theft or damage to College property

These procedures may also apply when CVCC has received documentation that the applicant/enrolled student has been expelled, suspended, or banned from another college or determined to be a threat, potential danger, or significantly disruptive at another college.

### ***Procedures for Admission Denials***

Upon notification to the Vice President of Academic and Student Affairs (VPA&SA) or Designee that the applicant/enrolled student has exhibited threatening, violent, intimidating, or disruptive behavior as defined above or that the applicant/enrolled student has been expelled, suspended, or banned from another college or determined to be a threat, potential danger, or significantly disruptive at another college, the VPA&SA or Designee will conduct an investigation to evaluate the circumstances. After the investigation, if the College determines that the applicant is a threat or potential danger to the College community or if such refusal is considered to be in the best interest of the College, the student will be notified as follows:

***Applicant with no enrollment:*** After the investigation, the applicant will receive written notification at the home address listed in the student information system stating that admission to the College has been denied. The notification will state the denial is based on the College's determination that the applicant represents a threat or potential danger to the College or that the refusal of admission is considered to be in the best interest of the College. A service indicator will be placed on the applicant's record which will prevent the applicant from registering for classes.

***Applicant with enrollment:*** An applicant who becomes an enrolled student will receive written notification at the home address listed in the student information system stating that admission to the College is revoked and enrollment for the current or future semester is withdrawn. The notification will state the decision is based on the College's determination that the applicant represents a threat or potential danger to the College and/or their revoked admission and withdrawn enrollment is considered to be in the best interest of the College. The written notification will detail the procedures for due process and will provide the individual with explicit instructions on the appeal process. The College will reserve the class enrollment until the appeal process is complete, but the individual will not be allowed to attend class during the appeal process. The individual is required to initiate the appeal process in writing within ten (10) calendar days of the notification by the College (as indicated by the date of the written notification from the College) in order to receive consideration to remain enrolled. Absent extreme extenuating circumstances, if the enrolled student fails to follow the appeal process within ten (10) calendar days of notification from the College, he/she will forfeit the right to appeal, which will result in the College sending to the student written notification of administrative withdrawal of all current and future classes at the College and revocation of admission for future semesters. The College will make every effort to expedite the hearing timeline. The College will notify the student of its investigation if a hold is placed preventing the student from registering for classes or taking advantage of any other student benefit.

### ***Appeal Process for an Enrolled Student***

1. The enrolled student will receive a letter from the VPA&SA or Designee detailing the denied status of the student, withdrawn enrollment, and appeal procedure within ten (10) calendar days of the College's decision to deny or revoke admission and to withdraw the student from current or future enrollments. The enrolled student will be advised of the right to due process and request for appeal.
2. Upon receipt of a request for appeal from the student within the required ten (10) calendar days of notification, the VPA&SA will convene an Ad Hoc Committee. In addition to the VPA&SA, the committee membership and appointment will be at the discretion of the President of the College. The purpose of the hearing is to provide the student notice of the basis for the College's decision and the right to provide his/her explanation of the facts, as well as for the Ad Hoc Committee to evaluate the facts of the case. If, after the hearing the Committee determines that the applicant or enrolled student represents a threat or potential danger to the College and/or the revoked admission and withdrawn enrollment is considered to be in the best interest of the College, the student's admission to the College will be revoked; the student will be administratively withdrawn from classes and the student will receive a tuition refund. The individual will be denied future admission/enrollment to the College.
3. The Ad Hoc Committee will review the proceedings of the hearing and make a decision by a simple majority vote within fourteen (14) calendar days of receiving the written request for the appeal. The College will make every effort to expedite

the appeal process. The VPA&SA will convene the committee and serve as a member. The VPA&SA will inform the enrolled student by written correspondence of the Committee's decision. The decision of this Committee will be final.

### **Residency Requirements**

#### *(Eligibility for In-State Tuition Rates)*

The College makes an initial determination of a student's eligibility for in-state tuition rates based on the information provided by the applicant on the Application for Virginia Domicile. Eligibility is determined by using State Council of Higher Education guidelines pertaining to Section 23-7.4 of the Code of Virginia.

Generally, in order to be eligible for in-state tuition rates, the student must have been legally domiciled in Virginia for a period of at least one full year prior to the beginning of the planned term of enrollment at the College. Domicile is a technical, legal concept which means more than simple residency in the Commonwealth of Virginia. In order to be considered a Virginia domiciliary, a student must demonstrate through clear and convincing evidence his/her intention of remaining in Virginia indefinitely.

Demonstration of intent is usually accomplished through objective evidence. A student under the age of 24 generally assumes the domicile of the parent(s) or legal guardian(s), unless the student has been legally emancipated or meets criteria for independent student status. Additional information about eligibility may be obtained from the Admissions and Records Office.

**Note to Veterans:** As a veteran-friendly college, and a member institution of the Veteran's Access, Choice, and Affordability Act of 2014, CVCC recognizes that under Section 702, qualifying Veterans and their covered dependents are afforded the opportunity to appreciate in-state tuition rates while attending CVCC. In order to establish eligibility for this benefit, students will need to provide necessary documentation to the Admissions and Records Office before the beginning of the term they are attending. In the event that qualifying documentation is received after the start of the term, the benefit will be made available for the next term.

**Changing Status:** If the student initially enters the College as an out-of-state student and believes subsequently to have achieved Virginia domiciliary status, an Application for Virginia Domicile must be submitted to the Admissions and Records Office. If a determination is made in the student's favor, the student will become eligible for in-state tuition rates for the next semester in which the student enrolls.

**Domicile Appeal:** Any student who disagrees with an initial tuition classification may make a written appeal to the Office of Admissions and Records. The student will be asked to provide supporting domicile documentation to supplement the Application for Virginia Domicile. The Office of Admissions and Records will respond to the appeal within fifteen business days. If the student still disagrees with the tuition classification, the student may file a final written appeal with the Vice President of Academic and Student Affairs, for consideration by the Domicile Appeals Committee. The Domicile Appeals Committee shall consist of two members of the Student Success Committee and the Registrar. No person who serves at one level of this appeals process shall be eligible to serve at any other level of this review. This written appeal must be made within five business days of the student's notification of the first appeal. The Domicile Appeals Committee will review the domicile determination to ensure the decision is in compliance with relevant state legislation and state guidelines. A student who is not satisfied with the outcome of the review by the Domicile Appeals Committee may appeal to the appropriate circuit court. The student must file a petition for review with the court within thirty business days of receipt of the decision by the Domicile Appeals Committee.

*The Guidelines for Determining Domicile and Eligibility for In-State Tuition Rates set forth in Section 23-7.4 of the Code of Virginia will be followed by Central Virginia Community College throughout the domicile appeals process.*

### **Admission to a Specific Plan of Study**

In order to be eligible for Financial Aid, students must be placed in an approved program plan. For a list of eligible Financial Aid programs please consult with an Academic Counselor. Applicants will be placed in the plan of their choice as selected on their Application for Admission. Please note that if a restricted plan is selected, applicants must schedule a meeting with an Academic Counselor to discuss admission qualifications and procedures.

Applicants applying to enter one of the associate degree curricula (Associate in Science, Associate in Arts and Sciences, or Associate in Applied Science) must be a high school graduate or the equivalent, or otherwise be considered eligible by the college.

Students who have not completed high school and who wish to be placed in a specific program will be required to provide verification of GED completion or diploma (and/or) home schooling diploma or transcript with graduation date.

### **Admissions: High School/Home-Schooled Students**

Based on the guidelines developed and approved by the State Department of Education and the Virginia Community College System, CVCC provides opportunities for qualified high school or home-schooled students to enroll in courses at the college.

Although high school and home school students are not normally qualified for general admission, Central Virginia Community College may offer admission to those students who meet additional criteria. Dual enrollment is restricted to high school juniors and seniors and home school students studying at the high school junior or senior levels. Home school students must also provide a copy of a home school agreement approved by the school district or a letter from the local school board or a copy of the letter filed by the parent or legal guardian declaring home school. Documentation of parental permission is required for all dual enrollment students.

Because admitting freshman and sophomores is considered exceptional, the college-ready status of each prospective freshman and sophomore student will be treated on a case-by-case basis. Formal approval by the college president is required for admitting freshman or sophomores.

All students admitted under this section must demonstrate readiness for college by meeting the criteria below.

Students enrolling in a dual enrollment course must meet all course pre-requisites. Colleges shall not enroll public or private high school students or home-schooled students in developmental courses.

### **Admission Criteria for Transfer Courses**

	Virginia Placement Test (VPT)	Compass	Asset	PSAT	SAT	ACT	SOL
English/Writing	ENG 111	76	43	N/A	N/A	18	N/A
Reading	ENG 111	81	42	N/A	N/A	18	N/A
Writing/Reading	ENG 111	N/A	N/A	390	480	N/A	N/A
Mathematics	MTE 1	25	33	500	530	22	Algebra I - Pass

### **Admission Criteria for CTE Courses**

	Virginia Placement Test (VPT)	Compass	Asset	PSAT	SAT	ACT	SOL
English/Writing	ENF 1	32	35	N/A	N/A	18	N/A
Reading	ENF 1	62	35	N/A	N/A	18	N/A
Writing/Reading	ENF 1	N/A	N/A	390	480	N/A	N/A
Mathematics	MTE 1	25	33	500	530	22	Algebra I - Pass

### **Admissions: International Students**

Central Virginia Community College welcomes all eligible international students. F-1 International students interested in admission to CVCC should be aware that filling out an application for admission does not automatically guarantee admission. To receive an I-20, non-immigrant students must fulfill all additional admissions requirements by the specified deadline as listed on the International Student page of the CVCC website.

Please note, CVCC does not offer an English as a Second Language (ESL) program. Students should also be aware that CVCC does not provide health insurance, transportation, or housing facilities for students. Additionally, F-1 International students are not eligible to receive financial aid and are classified as out-of-state students at CVCC.

All international students are encouraged to work closely with both Admissions and Records and Academic Counseling to ensure their student success.

### **Admissions: Senior Citizens**

The Senior Citizens Higher Education Act of 1974, as amended 1976, 1977, 1982, 1988, 1999, 2003, and 2015 (SG)

Subject to SCHEV regulations and any legislative revisions, the Act gives senior citizens certain rights.

- a. "Senior citizen" shall mean any person who, before the beginning of any semester in which such person claims entitlement to senior citizen benefits, (1) has reached sixty years of age, and (2) has had his legal domicile in Virginia for one year.
- b. A senior citizen shall be entitled:
  1. To register for and enroll in courses as a full-time or part-time student for academic credit if such senior citizen had a taxable individual income not exceeding \$23,850 for Virginia income tax purposes for the year preceding the year in which enrollment is sought;
  2. To register for and audit courses offered for academic credit regardless of income level; and
  3. To register for and enroll in courses not offered for academic credit regardless of income level.

Such senior citizen shall pay no tuition or fees for courses offered for academic credit or for courses not offered for academic credit, except fees established for the purpose of paying for course materials, such as laboratory fees, subject to a determination by the institution of its ability to offer the course or courses for which the senior citizen registers. The Council of Higher Education shall establish procedures to ensure that tuition-paying students are accommodated in courses before senior citizens participating in this program are enrolled. However, the state institutions of higher education may make individual exceptions to these procedures when the senior citizen has completed seventy-five percent of the requirements for a degree.

## *Students Transferring from Other Colleges*

Normally, transfer students who are eligible for re-entrance at the last college of attendance are also eligible for admission to CVCC. Students who were suspended or dismissed from their previous college will be required to submit an official transcript before enrollment is granted. Enrollment may be restricted or limited due to the reason for suspension or dismissal.

Students seeking to apply credits taken at another regionally accredited college toward their CVCC associate, diploma, certificate, or career studies certificate program need to send their official transcript to the Office of Admissions and Records for evaluation. For a listing of the regional accrediting agencies please visit the Council for Higher Education Accreditation (CHEA) at <https://www.chea.org/search-institutions>. Credit granted for courses needed towards your program plan does not factor into your CVCC GPA. No credit will be given for developmental coursework or courses with grades lower than "C." No credit will be granted for a grade of "C-" or below.

Credit from non-regionally accredited institutions is generally not awarded. Students may petition for credit by providing the following items to the Office of Admissions and Records for each of the courses he/she wishes to petition: 1) official transcript, 2) course description, 3) course syllabus, and 4) faculty credentials of the instructor who taught the course. After these items are reviewed, the student will be notified if credit can be awarded.

Credit is also granted for military service and schools as recommended by the American Council on Education (ACE) and if the coursework/experience is applicable to the program being pursued. Veterans should send their official military transcripts and/or DD214 to the Office of Admissions and Records for evaluation. Please note that the Department of Veteran Affairs requires veterans receiving benefits to submit all transcripts before the end of their second semester to ensure their benefits are uninterrupted.

Students who have transcripts from foreign institutions are required to submit their educational records to a professional foreign credentials evaluation service to assist in the determination of the acceptability of their credits at CVCC. Therefore, students who attended a foreign college or university must request a course-by-course evaluation from one of the institutions listed at <http://www.naces.org/members.html>.

## *Students Transferring to Other Colleges*

Virginia's Community Colleges provide a gateway to the Commonwealth's four-year colleges and universities. Through system-wide agreements, students who graduate from one of Virginia's 23 community colleges with an approved associate's degree and a minimum grade point average may be eligible for guaranteed admission to more than 20 of Virginia's colleges and universities.

Students planning to transfer to a four-year college or university are responsible for determining the transfer admission policies and requirements of the intended institution. The four-year institution's policies and requirements should guide a student in choosing a course of study and appropriate electives at CVCC.

Central Virginia Community College has two transferrable associate degree programs: the Associate of Arts and Sciences (AA&S) and the Associate of Science (AS). These transfer programs are designed so that students can parallel CVCC

coursework with four-year college requirements. Due to the changing academic requirements of four-year colleges and universities, students are encouraged to have direct contact with the institution to which they plan to transfer.

There are many transfer events that include representatives from four-year institutions held on campus each semester which provide an opportunity for students to speak directly with the college and university and obtain additional information. For up-to-date information on transfer, including information on the top schools to which CVCC students transfer, as well as guaranteed admission please visit the Transfer Information page and for transfer related events please visit the Event Calendar both found at <http://www.centralvirginia.edu>.

## *Tuition and Fees*

### *Credit Tuition*

The State Board for Community Colleges establishes tuition rates for all credit courses; however, tuition rates are subject to change pending General Assembly action. Rates are dependent upon the student's status (ex: in-state, out-of-state, military, etc.). Status is determined by the Admissions and Records Office. Tuition is calculated by multiplying the current eligible rate by the number of credit hours registered. Tuition rates are generally available by July 1st.

### *General and Technology Fees*

The College charges all students a Technology fee and an Activity fee based upon the credit hour load of the student. In addition to the Technology and Activity fees, out-of-state students also pay a Capital fee which is also based upon their credit hour load. Fees are intended to cover costs associated with on-campus parking, lighting, parking lot maintenance, various student activities, and student publications. All fees must be approved by the State Board for Community Colleges.

### *Bills*

At this time, CVCC does not send out billing statements. Account balances are available online anytime by using the myCVCC website or by contacting the Accounting Office at 434-832-7639. It is the student's responsibility to ensure that their account is paid in full. Students will not be permitted to register for classes if there is a balance from a previous semester on the student's account.

### *Payments*

Students are expected to pay tuition in full prior to the beginning of classes unless other arrangements are made. Students are also expected to pay for any damaged or lost college property (such as laboratory or shop equipment, supplies, library books, and materials). Students enrolling at two or more community colleges simultaneously will need to pay tuition at each college separately; if paying online, please verify you are paying charges at the college for which you are intending to pay.

### **Tuition/fee payments can be made by the following methods:**

- At the Accounting Office located in the Amherst Hall, Room 2208 Monday - Friday from 8 a.m. until 5 p.m. The office is open later during various times of the year which are announced on the CVCC website. Payments made in the office will be applied to your account immediately. We currently accept: cash, check, money orders, Visa, MasterCard, and Discover.
- By U.S. mail (check or money order only) to: CVCC Accounting Office, 3506 Wards Rd, Lynchburg, VA 24502. Please include your student ID number with your check as well as an address to send your receipt. Payments sent in this manner could take several days to post depending upon the swiftness of the mail service.
- By telephone by calling 434-832-7639. Only Visa, MasterCard, or Discover can be used for telephone payments. If you are unable to reach a person when you call this number, leave a message stating that you wish to make a payment and include a phone number (do NOT include payment information in the message). Someone will return your call by the end of the business day, and your payment will be applied immediately to your account.
- By After Hours Drop Box located outside of the Accounting Office (check or money orders only). Please include student ID number and return address. Payments made this way will be posted to your student account the next business day.
- Online through Quick Pay accessed through the myCVCC web portal. When you log into your myCVCC account, it is found under "Finances". Through this site you can make a payment to your account by e-check or by credit card. **There is a fee of 2.5% for payments made by credit card.** Note: Turn off your pop-up blockers when visiting this site. Payments made through Quick Pay generally post the next business day.

- By applying for a payment plan managed by a 3rd party vendor. This is also accessed through the myCVCC web portal under “Finances”. A deposit is required upon set-up, and there is a fee charged by a 3rd party vendor for this service. Payment plans can only be established prior to the first day of the class for the main semester. **Payment plans are not available once the regular semester classes begin.** Note: Pop-up blockers will need to be turned off on the computer when visiting this site. Payments made through the payment plan take longer to show on your student account; however, you will not be dropped from your classes nor have services withheld.

Failure to pay tuition or to make satisfactory payment arrangements by the tuition due date will result in the student being dropped from courses with unpaid balances that exceed any posted tuition payment(s). If classes are dropped for non-payment, the student will need to re-enroll in available courses and submit payment at the time of registration. Please refer to the semester’s Academic Calendar for tuition payment due dates.

### ***Refunds***

Refunds are processed after the drop/add period is complete. Students are eligible for refunds if they drop courses prior to the “drop with refund” period as noted in the Academic Calendar, or by having an excess of certain types of Financial Aid. Refunds can take 2-4 weeks to be processed. Refunds are paid by a 3rd party vendor, and the student may choose one of three payment methods:

- Reloadable prepaid Visa card (funds available upon receipt of card),
- Direct Deposit to checking/savings account (funds available 2-3 business days after processing), or
- Paper check (delivered by U.S. mail 7-10 business days after processing)

Students must make their refund method choice prior to refund processing by registering at [\*\*www.cvccchoice.afford.com\*\*](http://www.cvccchoice.afford.com). If no refund method has been selected prior to the processing date, a paper check will be mailed to the student at the address on file with the Admissions and Records Office. It is the student’s responsibility to make sure the mailing address is correct with the Admissions and Records Office.

### ***Year End Tax Forms***

A 1098-T form is a summary of tuition paid during a calendar year, and will be sent to all eligible students from the Virginia Community College Systems Office by January 31st of the following year. This form can be used for tax filing purposes. To qualify for a 1098-T, a student must have been registered for credit courses during the reporting calendar year AND have paid tuition out-of-pocket during that time. Tuition paid by Financial Aid is not included on a 1098-T, nor are payments made for past due tuition from prior years. Forms will be mailed to the student’s address on file with the Admissions and Records Office. Forms can also be obtained online after January 31st by registering for access at [\*\*www.tra.vangent.com\*\*](http://www.tra.vangent.com). Current and any previous year forms can be viewed and printed from this website.

### ***Books and Materials***

Students are expected to obtain their own books, supplies, and consumable materials as needed in their studies. CVCC has partnered with Follett to provide an option to obtain needed items; however, students may purchase their items from any source they choose. Students with financial aid that exceeds their tuition balance may charge books at the college bookstore to their excess financial aid.

### ***More Information***

Additional information on our accounting services can be obtained by visiting the Accounting Office during regular business hours, by calling 434-832-7639, or by email at [\*\*accounting@centralvirginia.edu\*\*](mailto:accounting@centralvirginia.edu).



# Educational Services

## *Student Development*

### **Counseling Services**

As a service to students, the College maintains a staff of Academic Counselors who assist students in making decisions regarding their educational, vocational, and career plans. As a part of this assistance, students have access to career exploration tools through the Virginia Education Wizard, the *Career Services* page under *Student Support* on the college website, and through the College Success Skills (SDV 100) course. Occupational/educational information, as well as financial assistance and employment data, are also available at no cost to CVCC students. Academic Counselors make referrals to appropriate community agencies when a need exists that can be better met by another agency. All academic counseling sessions are confidential, and students may request services from the Academic Counselor of their choice.

### **Recruitment and Retention**

Students in our area high schools and the community are kept informed of the offerings of CVCC through a variety of channels. We offer college tours, participate in high school visits, attend college fairs and community events, as well as host open house events on campus and at the off-site centers. Academic Counselors on the main campus are available Monday through Thursday from 8 a.m. until 6 p.m. and Friday from 8 a.m. until 5 p.m. Off-site Center counselors are available during varying times. Please contact the chosen Center for their hours of operation.

CVCC places the utmost importance on supporting and retaining our entire student population. The primary focus of retention services is to increase each student's chances for academic success leading to the student's academic or career goals. Academic Counselors work collaboratively with the campus community in support of its focus. Programs such as Brainfuse (online tutoring), Navigate early alert system, and various workshops throughout each semester are in place to enhance retention efforts.

### **Faculty Advising**

An academic advising system is an important element in providing individualized attention that many students require. A faculty member may be designated as a student's advisor to provide educational advice in the student's field of specialization. Faculty advisors assist students in planning their academic career at CVCC. Students planning to transfer to four-year colleges are advised by Academic Counselors in the Counseling Department. Faculty advisors will refer students to an Academic Counselor for concerns outside the advisor's expertise. Students assigned to a faculty advisor should consult with them before enrollment and are encouraged to confer with them frequently regarding academic matters. Students who are not assigned a program specific faculty advisor may meet with any Academic Counselor of their choice to assist with academic advising and enrollment planning.

### **Career Services**

CVCC provides advising and career services to promote student success by helping students identify career and educational goals, develop plans to reach those goals, and connect with college and community resources that can help them achieve success. Services are provided for students in both transfer and occupational/technical programs to promote student retention, completion, and successful transition to the workplace or to transfer to a four-year college. These services are available to all students on campus and at the off-site centers.

### **Learning Commons**

The Bedford Hall Learning Commons is an area dedicated to your academic success. The Library, Writing Center, Math Achievement Learning Lab (MALL), Distance Education – online learning, and Student Success Center – tutoring and proctored testing are all located in the Learning Commons.

### **College Success Program**

The college success program acquaints new students with the policies and resources of the College. Orientation to college life begins before enrollment when the student meets with an Academic Counselor to discuss their educational interests, provide placement test and/or multiple measures interpretation, and information on career exploration for the undecided student. The student will also meet with an Academic Counselor to plan their academic program. If the student is interested in a selective admissions allied health program, the Academic Counselor will assist the student through the referral process.

All curricular students placed in at least one developmental education course must take the student success course (SDV 100, 101, 106, or 108) in their first semester of enrollment at the community college. All curricular students, except those in career studies certificate programs, must enroll in SDV 100, 101, 106, or 108 within the first 15 credit hours of enrollment. The requirement may be waived for students who hold an associate degree or bachelor degree from a regionally accredited institution. Other requests for a waiver may be considered on a case-by-case basis.

### **Services for Students with Documented Disabilities**

Consistent with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, (ADA), the VCCS guarantees that no qualified individual shall by reason of disability be denied access to, participation in, or the benefits of college. Each qualified person shall receive appropriate, reasonable accommodations upon request to ensure full and equal access to educational opportunities, programs, and activities.

#### ***Documentation Required by the Virginia Community College System (VCCS)***

In order to provide appropriate, reasonable accommodations to students with disabilities who seek them, colleges should require:

- Documentation from a qualified professional that includes a full clinical description and current functional limitations
- Documentation should also include information about the methodology used to make a diagnosis
- Specific results of the assessments used
- Specific assessment scores based on adult norms
- Having such additional information will assist colleges in engaging in a deliberative and collaborative decision-making process that considers each student's unique situation and experience, but not where requesting such information becomes overly burdensome to a student

#### ***Educational Access***

- Students are responsible for self-identification to Student Accessibility Services (SAS)
- Documentation based on adult norms is required
- An Individual Education Plan (IEP) is not accepted as the main source of documentation
- Academic adjustments may include, but are not limited to:
  - Education auxiliary assistance
  - Assistive technology
  - American Sign Language Interpreters
  - Text materials

#### ***Procedure for Requesting Accommodations***

- The student will apply online by completing the Student Accessibility Services (SAS) Application for Services
- Please refer to the website for Guidelines for SAS Documentation and Services
- The student will schedule an appointment with SAS to review documentation provided and assist in determining appropriate college accommodations
- Early consultation regarding accommodations is essential
- Requests for Fall accommodations begin in February
- Requests for Spring and Summer accommodations begin in October
- Late requests will be honored to the best of our ability but could result in a delay
- Accommodation letters for student-specific accommodations are prepared each semester for the student to give to each of their faculty members/instructors
- If there are concerns related to the process, the student is to contact SAS immediately

#### ***Temporary Disabilities***

Surgeries, hospitalization, and accidents may cause temporary disabilities. SAS works with individual students to find solutions to best suit their academic needs. Student contact is essential in planning or working with an emergency situation.

Students who believe they have been discriminated against based on disability may seek relief through the ADA Grievance Procedure.

Additional information may be found on the College's Student Accessibility Services (SAS) website.

## *Veterans Services*

We proudly support our military students by providing an on-campus Veterans Resource Center (VRC) located in the Amherst Building, Room 2126. The VRC consists of an office area for the Veterans Coordinator and a study area with computers and internet access for student veterans.

The Veterans Coordinator is your link between the college and the Department of Veterans Affairs (DVA), assisting you in applying for educational funding, offering guidance on VA regulations, and certifying your enrollment to the DVA.

For more information go to our web page at: <https://www.centralvirginia.edu/Student-Support/Veterans>.

### **Montgomery GI Bill — Active Duty (Chapter 30)**

The MGIB-AD program provides up to 36 months of education benefits. This benefit may be used for degree and certificate programs. Benefits are payable for 10 years following your release from active duty.

### **Vocational Rehabilitation and Employment Service (Chapter 31)**

VR&E's primary benefit program is vocational rehabilitation services for veterans who have a service connected disability. To receive services a veteran must be found both eligible and entitled.

If you are using VocRehab benefits, you are required to provide Form 28-1905 or a copy of the Certificate of Eligibility as soon as possible. Once the form or COE is provided, no tuition payment is due from the student. Please note, in order to enroll for the next semester, the student is required to pay any remaining tuition balance.

### **Post 9/11 GI Bill (Chapter 33)**

The Post 9/11 GI Bill provides up to 36 months of educational benefits. These benefits may be used for degree and certificate programs. Benefits are payable for 15 years following your release from active duty. The Post 9/11 GI Bill may pay the following: full tuition and fees, a monthly housing allowance, and an annual book stipend.

If you are using Post 9/11 GI Bill benefits, you are required to provide a copy of the Certificate of Eligibility as soon as possible. Once the COE is provided, no tuition payment is due from the student. Please note, in order to enroll for the next semester, the student is required to pay any remaining tuition balance.

### **Survivors' and Dependents' Educational Assistance Program (Chapter 35)**

DEA provides education and training opportunities to eligible spouses and dependents of veterans who are permanently and totally disabled due to a service-related condition, or who died while on active duty or as a result of a service related condition. The program offers up to 36 months of education benefits. These benefits may be used for degree and certificate programs.

### **Montgomery GI Bill — Selected Reserve (Chapter 1606)**

The MGIB-SR program may be available to you if you are a member of the Selected Reserve. The Selected Reserve includes the Army Reserve, Navy Reserve, Air Force Reserve, Marine Corps Reserve, and Coast Guard Reserve, and the Army National Guard and the Air National Guard. This benefit may be used for degree and certificate programs. Eligibility for this program is determined by the Selected Reserve components.

### **Virginia Military Survivors and Dependents Education Program**

VMSDEP provides education benefits to spouses and children of military service members killed, missing in action, taken prisoner, or who served in covered military combat and has been rated by the United States Department of Veterans Affairs as totally and permanently disabled or at least 90 percent permanently disabled as a result of such service. The program may pay for tuition and fees at any state supported college or university. Benefits are available for up to 4 academic years.

### **Dependent Children Tuition Waiver**

The surviving spouse and any child between the ages of 16 and 25 of an individual who was killed in the line of duty while employed or serving as a law-enforcement officer, including as a campus police officer, sworn law-enforcement officer, firefighter, special forest warden, member of a rescue squad, special agent of the Virginia Alcoholic Beverage Control Authority, state correctional, regional or local jail officer, regional jail or jail farm superintendent, sheriff, or deputy sheriff; member of the Virginia National Guard, or member of the Virginia Defense Force, is entitled to a waiver of undergraduate tuition and mandatory fees at any public institution of higher education.

## *Workforce Development*

CVCC's Workforce Development specializes in development, planning, and delivery of educational and technical programs, services, and training. CVCC serves businesses, job seekers, and the community to enhance economic prosperity and quality of life in the Greater Lynchburg Region. CVCC measures success by advancing the region's workforce by delivering cost-effective and innovative workforce solutions. Services include:

### **FastForward Credentialing Programming**

CVCC's FastForward Programming provides intensive and short-term training for individuals striving for a new career, professional development, and responding to area businesses for skilled applicants in high-demand fields. Nationally recognized credentialing programs certify the skills most needed by area employers and to help job seekers launch rewarding careers.

### **Student Development**

CVCC is an active partner in the region's efforts to develop career pathways to meet the future needs of area employers. Programs range from summer academies for area school-age youth to employer-sponsored internships for high school students.

### **Distance Learning**

CVCC offers superior online training in a variety of trending topics for 21st Century skills. Students can explore a variety of topics, gain access to expert instruction, learn on a flexible schedule, and receive continuing education units (CEUs) upon successful completion.

### **Business Services and Customized Training**

CVCC provides customized business and training services to help businesses, schools, and organizations prosper. Workforce professional staff can assess training and development needs; design programs unique to each organization; deliver industry-specific customized learning and training programs; provide coaching, consulting, and facilitation services; and, offer cost-effective competitive rates.

## *Library*

The primary mission of the library is to support the learning needs of the student body by providing access to primary and secondary learning resources in print, audiovisual, and electronic formats; and to give assistance in the development of skills necessary for their effective utilization. Access to resources will include items immediately available on campus, supplied through interlibrary loan or a database, and delivered or transmitted from another location. The library's secondary mission is to assist faculty, staff, and administration with their research needs and, to a lesser extent, to make materials and reference assistance available to members of the surrounding community.

Hours (*when classes are in session*)

Monday – Thursday . . . . . 8:00 a.m. – 7:30 p.m.

Friday . . . . . 8:00 a.m. – 5:00 p.m.

When the College is not in session, hours are posted at the entrance to the library.

### **Conduct in the Library**

The Library is a facility for quiet study, browsing, and reading as well as the site for securing information and learning resources. Please ask for assistance if you do not find what you need. Someone is scheduled at the desk at all times to help you. Please refrain from loud talking or other behavior which would impede others' ability to study. Smoking, tobacco, and cell phone use are not permitted.

### **Ethical Information Access**

Recognizing that expanded access to information in many formats includes the responsibility for its ethical usage, the Library will follow the security procedures adopted by the VCCS and will abide by copyright guidelines in regard to all materials.

### **General Information**

The Library is located on the first floor of Bedford Hall Learning Commons on the main campus. An elevator is available in the lobby to reach classrooms, and the Writing Center, Student Success Center, Distance Education Center, and Math

Achievement Learning Lab. Our Library houses approximately 26,000 volumes and subscribes to approximately 100 periodicals. Other resources of the Library include compact disks and visual material. A local area network provides access to the online catalog, and databases, available through remote online access. The Library also has a collection of popular reading materials and classic/popular movies on DVD. Trained personnel are on duty to assist students. Hours of operation are posted in various locations.

### ***Library Cards***

Students of the College are issued a Library/Student ID card to check out materials from the Library. Students from other colleges and adults from the community may use the Library and may request a card but may check out only a limited number of items. Public school students may use the Library but may not check out materials unless they are dual enrollment students. Students must show their Library/Student ID card to check out Library materials. Replacement cards are \$10.00.

### ***Loan Periods***

- (1) The loan period for books and compact disks is four weeks, and they may be renewed unless someone else has requested them.
- (2) DVDs are loaned out for one week.
- (3) Items may be renewed over the phone if the due date has not passed; if overdue, they must be returned to the Library in order to be renewed.
- (4) Periodicals (magazines, journals, and newspapers) do not circulate.
- (5) Reference books may be used in the Library only.

### ***Lost Books/Damaged Materials***

If an item is not returned within 30 days, an overdue notice will be sent. If not returned within 30 days, it will be assumed to be lost. The Library will bill the person \$50.00 per item. The Office of Admissions and Records, in cooperation with the Library, will not issue a transcript while Library materials are outstanding. Students may not complete the registration process until past Library obligations have been cleared.

When any materials are damaged, the borrower must pay for the cost of repairing them unless they are damaged beyond repair. Then, the borrower must pay for replacing each item, which is \$50.00 per item. Items lost by the borrower must be replaced at \$50.00 per item.

### ***Reserve Materials***

These materials are kept on the Reserve shelves by faculty for the use of their classes, and are circulated for a period of time less than the regular loan period. There are three reserve loan periods:

- (1) Closed: The user must check out the item to be used in the Library only.
- (2) One Day: The user checks out the item any time one day and returns it the next day the Library is open.
- (3) One Week: The user checks out the item for seven days.

### ***Gifts***

The Library is happy to receive gift books which fit within our curriculum guidelines, are current, and in good condition. Donations with restrictions as to usage or housing cannot be accepted and the Library reserves the right to dispose of items as it deems appropriate.

### ***Borrowing Privileges from Area Libraries***

All currently enrolled CVCC students may borrow materials from Lynchburg College and Lynchburg Public Library. If you wish to borrow materials from Lynchburg College, please come to the circulation desk in the CVCC Library and request a borrower's form. Current students who are non-residents of the City of Lynchburg may borrow books from the Lynchburg Public Library without paying a fee if they secure a form at the CVCC circulation desk.

### ***InterLibrary Loan***

Materials not owned by CVCC may be loaned to us by another Library. Forms are available at the desk and on the Library's website to request that a book, magazine article, etc. be secured from another institution that owns it. The Library does have access to materials not available in our facility. Borrowing material through interLibrary loan usually takes from three to ten days.

### ***Placement Testing***

The Library administers placement tests for the College. Students who wish to take placement tests must begin tests by 5:30 p.m. when the Library closes at 7:30 and 2:30 p.m. when the Library closes at 5:00 p.m. Those wishing to take the assessment

tests must have applied for admission to the College and bring a form of photo identification to show to the Library desk attendant.

## ***Distance Education***

The Distance Education Center provides coordination and support for the distance learning courses offered by CVCC. These courses are available for enrollment by all students but are best suited for those students who are self-motivated; comfortable with independent learning and study; or those who are unable to attend regularly scheduled classes. They provide the same content and quality as traditional courses taught on campus while offering students flexibility in their schedules. These Distance Education courses include web-based, hybrid, and synchronous online courses.

The Distance Education Center is located on the second floor of Bedford Hall Learning Commons. Normal hours of operation are Monday – Friday from 8 a.m. – 5 p.m.

### ***Synchronous Online Courses***

Courses are live, real-time courses. Students will be able to attend classes on the main campus or at CVCC's off-campus centers in Amherst, Appomattox, and Bedford. Students can usually attend courses from home or from any location with a broadband connection. Staff on the main campus and off-campus sites will provide support and training for enrolled students. Students will see and hear the instructors and instructional materials and will be able to interact with the instructor and other students in the course. Students are required to purchase a headset with microphone for two-way communication. Since the courses are real-time, the days and times of the courses are fixed.

### ***Hybrid Courses***

Hybrid Courses blend face-to-face instruction with online instruction and activities. Internet access is required since much of the course material, activities, and interaction is accomplished through a management system called Canvas.

### ***Web-based/Internet***

Courses allow students the flexibility of completing their coursework online. Students enrolled in these courses have a Canvas account and student email account provided by the VCCS to access the course materials and communicate with and send assignments to their instructors. Some courses may require attendance for on-campus labs or proctored testing which are noted in the course footnotes on our website.

### ***Faculty and Staff Resources***

The Distance Education Center houses a Faculty & Staff Resource area which provides assistance and hardware/software support to faculty who are developing and teaching distance education courses. Training sessions are offered for faculty and students in new instructional technologies. Additionally, Staff of the Center provide assistance to students having trouble with access to their online course(s) or questions about student email.



# Academic Information

## *Academic Degrees, Diplomas, and Certificates*

The College offers the following approved programs.

1. An **Associate of Arts and Sciences Degree (AA&S)** is awarded to students majoring in specialized programs such as Business Administration, Education, General Studies, Liberal Arts, and Science who plan to transfer to a four-year college or university upon completing the program with CVCC.
2. An **Associate of Science Degree (AS)** is awarded to students majoring in Engineering, who plan to transfer to a four-year college or university upon completing the program with CVCC.
3. An **Associate of Applied Science Degree (AAS)** is awarded to students majoring in one of the occupational-technical programs who intend to obtain employment immediately upon graduation from CVCC.
4. A **Diploma** is awarded to students who complete the Machine Tool or Machine Tool & Quality program who intend to join the workforce upon graduating.
5. A **Certificate** is a one-year program awarded to students who complete one of the approved certificate programs. Students who meet eligibility requirements are automatically awarded the General Education Certificate.
6. A **Career Studies Certificate** is awarded to students who complete one of the approved career studies programs designed as a short-term program for part-time working adults.

### Academic Requirements for Graduation

To be eligible for graduation with a degree, diploma, or certificate from the College, a student must:

1. Be admitted and accepted into the program plan in which they expect to receive a degree, diploma, or certificate;
2. Fulfill all of the course-work and credit-hour requirements of the program plan with at least 25% of the credits acquired at CVCC;
3. Complete and submit an *Application for Graduation* by the due date for the term in which they expect to graduate;
4. Have a minimum grade point average of 2.0 in the program plan;
5. Resolve all financial obligations to the College and return all library and college materials; and
6. Complete CVCC's Graduate Exit Assessment and/or the Program's exit exam.

**Please note that if your requirements are not met you will need to reapply for graduation in the term that your requirements will be met.**

### Graduation Application

To ensure students complete all required courses needed for their program, students should meet with an Academic Counselor prior to the semester in which they apply to graduate to review their degree progress report.

Students expecting to complete the requirements for a degree, diploma, or certificate must apply for each award by completing a Graduation Application. Students must apply to graduate online using their myCVCC account via the Student Information System. Dual-Enrolled students must complete the paper Dual-Enrolled Graduation Application.

### Graduation Exercise

The College has one formal commencement ceremony each May following the spring semester. Fall, Spring, and upcoming Summer graduates are invited to attend. Attendance is encouraged for all graduates.

### Graduation Governing Catalog

The catalog used to determine graduation requirements is the one in effect at the time of the student's initial program placement into the plan from which they are graduating or any subsequent catalog of their choice. In the case where a student discontinues enrollment at the College for four consecutive semesters (excluding summer), graduation requirements will be determined using the catalog in effect during the semester in which the student re-enrolls. The catalog used in certifying graduation requirements shall have been in effect no more than seven years prior to the time of graduation.

### Graduation Honors

Students who have fulfilled the requirements applicable to their programs are eligible for graduation honors. Graduation honors are determined by the student's cumulative grade point average and are not applicable to Career Studies Certificates. Appropriate honors based upon scholastic achievements are recorded on the student's permanent record as follows:

**Cumulative Grade Point Average Honor**

3.20 – 3.49	<i>Cum Laude</i> (with honor)
3.50 – 3.79	<i>Magna Cum Laude</i> (with high honor)
3.80 – 4.00	<i>Summa Cum Laude</i> (with highest honor)

**Graduation Student Assessment**

Prior to graduation, students will be required to complete one or more tests, surveys, or questionnaires designed to assess general education achievement, achievement in selected major areas, and/or other aspects of their education at CVCC. Students will be notified of required assessments in the semester in which they file an application to graduate. Results of these assessments will be kept confidential and will be used for evaluating and improving College programs and services. Individual assessment scores will not affect graduation status.

**Second Degree or Certificate**

In awarding students an additional degree, diploma, certificate, or career studies certificate, CVCC may grant credit for all completed applicable courses which are requirements of the additional degree, diploma, certificate, or career studies certificate. However, the awards must differ from one another by at least 25% of the credits.

**Auditing a Course**

Students desiring to attend a course without taking the examination or receiving credit for the course may do so by registering to audit through the usual registration process and paying the normal tuition. **Audit students may not enroll until the first day of class.** Permission of the associate vice president or another appropriate academic administrator is required to audit a course. Audited courses carry no credit and do not count as part of the student's course load. Students desiring to change status in a course from audit to credit or from credit to audit must do so within the add/drop period for the course. Students who desire to earn credit for a previously audited course must re-enroll in the course for credit and pay normal tuition to earn a grade other than "X." Advanced standing credit should not be awarded for a previously audited course.

**Swapping a Course**

Students may swap into a different section of the same course by the drop period as published in the Academic Calendar. Students must obtain the instructor's signature of approval for the section into which they are wanting to swap. Students may bring an *Enrollment Change Form* with the instructor's signature or an email from the instructor authorizing the swap to the Admissions and Records Office to change sections. The Admissions and Records Office will honor instructor authorizations received within 24 hours.

**Class Attendance**

Students are advised to attend all classes for each course in which they are enrolled. Occasionally, it is unavoidable that a student may miss a class. In this case, the student should notify their instructor(s) prior to the absence, if possible. It is the responsibility of the student to find out what assignments were missed and ask the instructor how to make them up, if make-up is possible.

**Administrative Drops for Non-Attendance**

Per VCCS Policy, Students who do not attend a minimum of one class meeting (or log into a web-based course and complete at least one assignment) prior to the end of the add/drop period must be administratively dropped from the course. Dropped courses will not appear on the student's academic transcript.

**Administrative Withdrawals**

Students missing 20% or more of a class may be administratively withdrawn from the course by their instructor. Students who are withdrawn by the official withdraw date as published in the Academic Calendar will receive a non-penalty grade of "W". After the withdraw date, students who drop a course will receive a penalty grade of "F", except under mitigating circumstances. The mitigating circumstance process is outlined in the Appeal of Grades section of this catalog.

## Classification of Students

All students are classified according to the following categories:

### Curricular Student

A student shall be classified as a curricular student if the following three conditions are satisfied: (1) the student holds a high school diploma, a GED or its equivalent, or is otherwise determined qualified for admission; (2) the required documents for general admission to a curricular program are received by the Office of Admissions and Records; and (3) the student has been admitted to one of the college's curricula.

### Non-Curricular Student

Students who are not formally admitted to one of the regular curricula but who are classified according to the following student goals or conditions are considered non-curricular students

(International students requiring issuance of an I-20 or students receiving Federal or State aid are not eligible for these categories):

- a. Upgrading Employment Skills for Present Job
- b. Developing Skills for New Job
- c. Career Exploration
- d. Personal Satisfaction and General Knowledge
- e. Transient Student (A student who maintains primary enrollment with another postsecondary institution and elects to enroll at CVCC.)
- f. High School Student dual enrollment or dual credit
- g. Auditing a Course

**Full-time Student:** Students enrolled in 12 or more credits during a semester are considered full-time students.

**Part-time Student:** Students enrolled in fewer than 12 credit hours but at least 6 credits during a semester are considered part-time students.

**Freshman:** Students are classified as freshmen until 30 semester credits of study have successfully been completed.

**Sophomore:** Students are classified as sophomores after 30 semester credits of study have successfully been completed.

Transfer credits are included in this total providing they apply toward the requirements of the student's program plan.

## Computer Competency

Central Virginia Community College believes that all students should experience a teaching-learning environment that supports computer and information literacy. The College endorses the principle of computer competency for all students completing an associate degree, diploma, or certificate program containing 45 or more semester hours. Students must demonstrate proficiency and be able to: 1) demonstrate a working knowledge of computing concepts, components, and operations to accomplish educational and career tasks; 2) use appropriate components of an integrated productivity software package involving word processing, spreadsheet, database, presentation, and/or communication applications; 3) access, retrieve, assess, and apply networked information resources; and 4) use telecommunication software.

The computer competency requirement is designated by specific courses within each curriculum. Students have the option of taking the required computer course, completing a challenge exam, or substituting another approved computer course. Transfer credit may also be granted if a similar course was taken at another college.

## Credit by Exam, Previous Completion, or Occupational Experience

An individual's prior experience and knowledge should be recognized in a manner most beneficial to that person. Central Virginia Community College offers its students the opportunity to receive credit by examination, previous completion, or occupational experience in the following ways:

1. **AP (Advanced Placement Test)** – This program allows students to pursue college-level studies while still in secondary schools. College credit is granted for students who take the final exam and obtain scores of 3 or higher.\*
2. **CLEP (College Level Examination)** – These examinations are developed by the Educational Testing Service for general as well as specific content areas. Students who score at or above the minimum level suggested by the American Council on Education (ACE) will receive credit appropriate to that exam.\*

3. **DANTES (Defense Activity for Non-Traditional Educational Support)** – Credit may be granted for successful completion of correspondence courses and subject standardized tests (SST) of the Defense Activity for Non-Traditional Educational Support (DANTES), formerly the United States Armed Forces Institute (USAFI). These subject standardized tests provide service members an opportunity to obtain credit for knowledge and skills acquired through non-traditional educational experience. Credit granted is based on the recommendations of American Council of Education (ACE).\*
4. **Military service** – Credit may be allowed for Armed Service School experiences. Official discharge papers (DD214), Military transcripts or other documentation should be submitted to the Office of Admissions and Records for evaluation. Credit granted is based on the ACE recommendation.\*
5. **International Baccalaureate** – Credit is granted for students earning the International Baccalaureate degree depending upon scores.\*
6. **Local challenge examinations** – Examinations locally prepared and administered for subjects not available in the CLEP program will be utilized for a variety of courses at Central Virginia Community College. Specific course credit will be granted for each local challenge exam successfully completed. For more information, contact the associate vice president who is responsible for courses in the appropriate discipline.
7. **Formal learning experiences** – The student should submit evidence of other formal learning experiences to the instructor or associate vice president who is responsible for courses in the appropriate program/plan for evaluation. These experiences might include police academies and industrial training programs. Credit may be granted as a means of achieving advanced standing for previous non-collegiate education, training, and/or previous occupational experiences as recommended by the American Council of Education (ACE).

\*To receive credit, students should send their official records, test scores, or transcripts to the Office of Admissions and Records for evaluation.

In all of the above areas, neither grades nor grade points are awarded and credit is posted to the student's record as "test credit" or "other credit." Students who plan to transfer to other institutions of higher education are cautioned that not all institutions of higher education accept credits earned in this manner as transfer credit. It is the student's responsibility to determine the acceptability of these credits at the institution to which the student will transfer.

## *Program Plan Changes*

The following policies have been established to clarify questions concerning program plan changes. The levels of program plans are listed below:

- **Associate of Arts and Sciences**
- **Associate of Science**
- **Associate of Applied Science**
- **Diploma**
- **Certificate**
- **Career Studies Certificate**

### *Students in Good Standing*

A student in good standing with a cumulative grade point average of at least 2.0 may request a program plan change by meeting with an Academic Counselor and submitting a Curriculum Change Form to the Office of Admissions and Records. The student should also request that any transcripts from other colleges be re-evaluated when changing their program plan. Previous applicable coursework will apply towards the new program.

### *Students on Academic Warning, Probation, Suspension, or Dismissal*

A student on Academic Warning or Probation may not change to a higher-level program plan but may change to a program plan in the same or lower-level. Previous applicable course work will apply towards the new program. Students on Academic Suspension or Dismissal must first submit a Request for Readmission form available in the Office of Admissions and Records to determine if they are eligible for re-admittance.

## Dean's List/Honor Roll

**Dean's List** Students enrolled full-time who earn a semester grade point average of 3.2 or better are on the Dean's List.

**Honor Roll** Students who have a cumulative grade point average of 3.5 or higher and have completed a minimum of 20 semester hours of credit at the College are on the Honor Roll.

## Final Examinations

All students are expected to take their examinations at the regularly scheduled times. No exceptions shall be made without the permission of the course instructor and the associate vice president.

## Grading System

In order to receive any letter grade, a student must have attended a minimum of one class meeting or the equivalent in the case of a distance learning course. In a distance learning course, initial student attendance is determined by course participation as measured by accessing and using course materials, completion of a class assignment, participation in a course discussion, or other evidence of participation. Students who enroll in a course but do not attend a minimum of one class meeting or the distance learning equivalent by the census date or earlier date as defined and published by the institution must be administratively deleted from the course by the college. Existing college policies regarding tuition refund shall remain in effect.

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.

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

<b>A Excellent</b>	4 grade points per credit
<b>B Good</b>	3 grade points per credit
<b>C Average</b>	2 grade points per credit
<b>D Poor</b>	1 grade point per credit
<b>F Failure</b>	0 grade points per credit
<b>I Incomplete</b>	No grade point credit. The "I" grade is to be used only for verifiable unavoidable reasons that a student is unable to complete a course within the normal course time. To be eligible to receive an "I" grade, the student must (1) have satisfactorily completed more than 60% of the course requirements and attendance and (2) must request the faculty member to assign the "I" grade and indicate why it is warranted. The faculty member has the discretion to decide whether the "I" grade will be awarded. Since the "incomplete" extends enrollment in the course, requirements for satisfactory completion shall be established through consultation between the faculty member and the student. In assigning the "I" grade, the faculty member must complete documentation that (1) states the reason for assigning the grade; (2) specifies the work to be completed and indicates its percentage in relation to the total work of the course; (3) specifies the date by which the work must be completed; and (4) identifies the default (B, C, D, F, P, R, or U) based upon course work already completed. Completion dates may not be set beyond the last day of the subsequent semester (to include summer term) without written approval of the chief academic officer of the campus. The student will be provided a copy of the documentation. Colleges will establish procedures to ensure that all "I" grades that have not been changed by the faculty member through the normal grade change processes are subsequently changed to the default grade assigned by the faculty member. An "I" grade will be changed to a "W" only under documented mitigating circumstances which must be approved by the Chief Academic Officer of the campus.
<b>P Pass</b>	No grade point credit; applies only to non-developmental studies courses.
<b>R Re-enroll</b>	No grade point credit; the "R" grade may be used as a grade option, in developmental and ESL courses only, to indicate satisfactory progress toward meeting course objectives. In order to complete course objectives, students receiving an "R" grade must re-enroll in the course and pay the specified tuition.
<b>S Satisfactory</b>	No grade point credit. Used only for satisfactory completion of developmental studies courses.

- U Unsatisfactory** No grade point credit. Applies to developmental courses and other courses that have College approval for the Pass/Unsatisfactory grading option.
- W Withdrawal** No grade point credit. A grade of "W" is awarded to students who withdraw or are administratively withdrawn from a course by the official last day to withdraw as listed in the Academic Calendar each term. This is a no-penalty grade and does not affect a student's GPA.
- X Audit** No grade point credit. For students desiring to attend a course for general knowledge without taking examinations or receiving credit. The appropriate associate vice president or Designee must approve.

The semester grade point average (GPA) is determined by dividing the total number of grade points earned in courses attempted for the semester by the total number of credits attempted. Developmental courses (numbered 01-09) are not figured into this calculation.

### ***Academic Renewal***

Students who return to the college after a separation of five (5) years or more, may petition for academic renewal. The request must be in writing and submitted to the Admissions and Records Office.

If a student is determined to be eligible for academic renewal, "D" and "F" grades earned prior to reenrollment will be deleted from the cumulative and curriculum grade point average (GPA), subject to the following conditions:

- Prior to petitioning for academic renewal the student must demonstrate a renewed academic interest and effort by earning at least a 2.5 GPA in the first twelve (12) non-developmental semester hours completed after reenrollment
- All grades received at the college will be a part of the student's official transcript.
- Students will receive degree credit only for courses in which grades of "C" or better were earned prior to academic renewal, providing that such courses meet current curriculum requirements.
- Total hours for graduation will be based on all course work taken at the college after readmission, as well as former course work for which a grade of "C" or better was earned, and credits transferred from other colleges or universities.
- The academic renewal policy may be used only once and cannot be revoked once approved.

### ***Developmental Courses - Grading***

A grade of "S" (Satisfactory) shall be assigned for satisfactory completion of each developmental studies course (courses numbered 01-09). "S" grades are not included in grade point average calculations.

Students making satisfactory progress but not completing all of the instructional objectives for a developmental course shall be graded with an "R" (Re-enroll). To complete the course a student must re-enroll.

Students not making satisfactory progress in a developmental course shall be graded "U" (Unsatisfactory), and counselors shall recommend the subsequent sequence of courses for the student.

A student is normally limited to two enrollments in the same credit course. Grades of "R", "U", "W", and "I", count as enrollments. If a student intends to enroll for a third time, documented permission must be given by the appropriate associate vice president.

## ***Appeal of Grades***

A student having factual evidence that a grade, as reported, is in error and who wishes to appeal said grade, should use the provisions of the appeal of grades procedures as set forth herein.

### ***Procedure***

**Step I:** Recognizing that appeal of grades should be raised and settled promptly, an appeal of grades must be raised **within ten business days** following either the event giving rise to the appeal of grades or within ten business days from the time when the student reasonably should have gained knowledge of its occurrence, **but in any case no longer than one year after the grade was posted**. The student shall discuss the appeal of grades with the College employee involved. Every reasonable effort should be made by both parties to resolve the matter at this level. If the student is not satisfied with the disposition of the appeal of grades at Step 1, the student should consult with a Counselor for direction in following the proper appeal of grades procedure. The role of the Counselor shall be to explain the appeal of grades procedure to the student and the importance of the time element.

**Step II:** If the student is not satisfied with the disposition of the appeal of grades at Step 1, the student may within **five business days** of the final decision at Step 1, file a written appeal with the associate vice president having direct supervision of the employee. Within **five business days** of receipt of the written appeal of grades, the associate vice president (or other administrator) will schedule a conference with the student and the employee in an effort to resolve

the appeal of grades. Within **seven business days** after the conference, the associate vice president involved shall prepare a report of the disposition of the matter with copies to the student and the employee.

If the student is not satisfied with the resolution of the appeal of grades by the associate vice president, the appeal shall proceed to the Vice President of Academic and Student Affairs. The appeal process shall proceed from Step I to Step III, as provided below.

**Step III:** If the student is not satisfied with the disposition of the appeal of grades at Step II, the student may file a written appeal to the vice president within **five business days** of receipt by the student of the final decision rendered at Step II. Within **five business days** after receipt of the written report, the vice president shall select an ad hoc committee of four disinterested persons. The vice president shall designate a chair. The committee shall consist of two students and two College employees; **the two students shall be selected by the Student Government** and the two College employees shall be one faculty member and one administrator.

Within **five business days** after the ad hoc committee has been designated by the vice president, the chair of the ad hoc committee shall set a time and place for the hearing and notify the student, the employee being grieved against and the supervisors of this employee. The hearing shall begin within **ten business days** after the ad hoc committee has been designated. Within **five business days** after the hearing is completed, the ad hoc committee shall make its decision by simple majority vote and communicate its findings in writing to the student, the supervisors, and the vice president. Within **ten business days** of the receipt of the findings of the committee, the vice president shall accept or reject the findings of the committee. Should the vice president reject the findings of the committee, the vice president shall do so only on the basis of the requirements of law and shall set forth the rationale for this action in writing. The vice president shall provide a copy of the written decision to the student, the employee being grieved against, the supervisors of this employee, and the chair of the ad hoc committee.

**Step IV:** If the student is not satisfied with the findings of the ad hoc committee and the review by the vice president, within **ten business days** after notification of the decision, the student may request a review by the President. The President can meet with the student and review the facts of the appeal of grades. The decision of the President is final and binding on all parties.

#### *Time Limitations*

- A. **Extension of Time:** It is important to good relationships that appeal of grades be initiated and processed as rapidly as possible. Every effort shall be made by all parties to expedite the process. The time limitations specified for either party may be extended by written mutual agreement.
- B. **Effect of Failure to Appeal Within Time Limit:** If there is no written mutual agreement to extend the time limits set herein, and if a decision at one level is not appealed to the next level of the procedure within the time limit specified, it shall be determined on the basis of the last decision rendered.
- C. **Effect of Failure to Respond Within Time Limit:** Failure at any level of the appeal of grades procedure to initiate communications of the decision to the student within the specified time limits shall permit the lodging of an appeal at the next level of the procedure within the time which would have been allotted had the decision been communicated by the final day.

#### *General Provisions*

- A. **Identification:** All written appeal of grades and appeals shall include the name and position of the aggrieved party and a brief statement of the nature of the appeal of grades and the redress sought by the aggrieved party.
- B. **Avoiding Interruptions:** In pursuing the provisions of this procedure, every effort shall be made to avoid interruptions of classroom activities.
- C. **Informal Discussion:** Nothing contained herein shall be construed as limiting the right of the student to have the appeal of grades informally adjusted.
- D. **Rights of Grievant:** The grievant shall have the right to counsel (own expense), the right to present and cross-examine witnesses, the right to present evidence, the right to examine all documents and demonstrative evidence introduced during the proceedings and the right to a copy of the transcript of the proceedings (own expense).
- E. **Placement of Records:** If the procedures go beyond the informal stage of Step 1, and the decision is in favor of the aggrieved student, a copy of the findings of the case shall be placed in the official personnel file of all employees complained against by the aggrieved student.
- F. **Academic Freedom:** This appeal of grades procedure shall not be used to restrain students or faculty members in their exercise of constitutional rights or academic freedom as set forth in the State of Academic Freedom and Responsibility adopted by the State Board for Community Colleges on January 29, 1969.
- G. **Notification of Findings:** A copy of findings will be given directly to the student when possible. When the student is not available, notification will be by certified mail, return receipt requested.

## Enrollment/Registration

Important dates pertaining to enrollment and tuition deadlines are published in the Academic Calendar for each term and can be viewed at CVCC's website under the Admissions page. Students may enroll using the Student Information System accessed through their MyCVCC account, in person, or by phone by calling the Office of Admissions and Records. Students enrolling for the first time, on academic probation, or students requiring developmental mathematics or English courses should meet with an Academic Advisor or Counselor to assist with planning their course schedule. Many courses require pre-requisites so we encourage students to work with an Advisor to assist with enrollment.

Students should be enrolled and have tuition paid or have financial aid in place prior to the start of the classes. Students should verify their enrollment status by logging into their MyCVCC account and viewing their class schedule under enrollment. Students who enrolled but failed to pay tuition will be dropped from the course and will not be permitted to attend.

### Student Academic Load

The normal academic course load for full-time students is 15 – 17 credits. The minimum full-time load is 12 credits and the normal maximum full-time load is 18 credits – excluding College Success Skills (SDV 100). Students wishing to carry an academic load of more than 18 credits must have the approval of the Vice President of Academic and Student Affairs or Designee. Students placed on academic warning or academic probation may be required to take less than the normal semester course load. No program plan may require more than 18 credits per semester plus SDV 100.

### Enrollment Schedule Changes

Students should follow the established add, drop, and withdrawal deadlines as published in the Academic Calendar each term when making any change in their class schedule. Failure to do so could result in a penalty grade being given.

Students must register for courses by the deadline listed in the Academic Calendar. Classes may only be added after the add/drop deadline with the appropriate approval(s). To add, drop, or withdraw from a course, students may use the Student Information System by logging into their My CVCC account or by submitting an Enrollment Change Form to the Office of Admissions and Records or nearest CVCC off-site center. **It is the student's responsibility to be aware of all deadlines and penalty dates listed in the Academic Calendar.**

1. **Addition of a Course:** The last day to add courses is listed in the Academic Calendar for each term.
2. **Section Changes:** A student may change to another section of the same course before the last day to drop with refund as listed in the Academic Calendar. Students will need to obtain the new instructor's signature on an *Enrollment Change Form* and bring it to the Office of Admissions and Records within 24 hours for processing.
3. **Drop with Refund:** Students are eligible for a refund of the tuition paid if the student drops their course(s) by the drop date listed in the Academic Calendar.
4. **Withdrawal Without Grade Penalty:** A student may withdraw from a course by the withdrawal date listed in the Academic Calendar and receive a "W" (*Withdrawn without penalty*) grade. "W" grades do not affect student's GPA, but may have an impact on Financial Aid eligibility.
5. **Withdrawal with Grade Penalty:** After the withdrawal date has passed, students dropping a course(s) will receive a penalty grade of "F" which will negatively affect one's GPA. Therefore, it is very important that students be aware of all drop and withdrawal deadlines.
6. **Mitigating Circumstance Withdrawals:** Mitigating circumstances must be reasons beyond the control of the student such as illness, death in the family, or accidental injury, but not poor performance in class. To be eligible, students must be making satisfactory progress in the class(es) at the time of withdrawal. Students must consult with an Academic Counselor before submitting the *Mitigating Circumstance Withdrawal Form* to determine if they are eligible. Students must be able to provide supporting documentation to justify the reason for withdrawal. All students will be notified if they are approved for the mitigating withdrawal or not.

### Repetition of Courses

Students will be limited to two (2) enrollments in the same credit course. Requests to enroll in the same course for a third time must be approved by the appropriate associate vice president. Students are limited to 10 credits earned through multiple enrollments in the same course; any exceptions must be approved by the Vice President of Academic and Student Affairs. A grade of withdrawal "W" counts as a time taking a course in this regard. This limitation does not apply to courses identified as general usage courses, such as internships, seminars and supervised studies.



When a course is repeated, only the most recent course, credits, and grade received will be used in computation of total hours completed and the cumulative and semester grade point average (GPA). The prior grade received will show as repeated and will not be factored into a student's GPA. Courses identified as repeats must have the same credit hours. Course attempts which result in a grade of "W", "X", "R", or "U" do not affect the student's GPA.

### ***Repeating Developmental Math Courses***

Students will be limited to two (2) enrollments in the same MTE course. Requests to enroll in the same MTE course for a third time will automatically be processed; however, to complete the process, the student is required to consult with the instructor to complete a Plan for Success. During this time, the student will be required to reflect on the changes that can be made to ensure success during this enrollment. The plan will then be submitted to and reviewed by the Developmental Math Coordinator.

Requests to enroll in the same MTE course for the fourth time will require that the student meet with the Vice President of Academic Affairs and Student Services to work on a long range plan for success that includes at least three (3) tutoring sessions at the Student Success Center during a 4 week hiatus from the MTE course. At the end of the 4 weeks the student visits again with the Vice President of Academic Affairs and Student Services to discuss their progress and if appropriate remediation occurred. At that time a decision on the fourth time enrollment will be determined.

## ***Semester Credits***

A credit is equivalent to one collegiate semester hour. Each semester hour of credit given for a course is based on an academic hour, which is 50 minutes of formalized, structured instructional time in a particular course weekly for 15 weeks. This is a total of 750 minutes of instruction. In addition to this instructional time, there will be a minimum of one hour of scheduled evaluation or examination for each semester hour of credit generated by the course, not to exceed three academic hours (150 minutes). Courses may consist of lectures, out-of-class study, laboratory and shop study, or combinations thereof. Credits may be assigned to the activities as follows:

1. **Lecture** - One academic hour of lecture (including lecture, seminar, discussion, or other similar activities) per week, generally for 15 weeks, plus the evaluation or examination period, equals one collegiate semester-hour credit.
2. **Laboratory** - Two to five academic hours, depending on the discipline, of laboratory, shop, clinical training, supervised work experience, coordinated internship, or other similar activities per week, generally for 15 weeks, plus the evaluation or examination period, equals one collegiate semester-hour credit.
3. **General Usage Courses** - These courses include variable academic hours for one to five credits for general usage courses, such as Coordinated Internship, Cooperative Education, Seminar and Project, and Supervised Study.

## ***Student Information Release***

### ***Notification of Rights Under FERPA for Students Attending***

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. They are:

1. The right to inspect and review the student's education records within 10 business days of the day CVCC receives a request for access. Students should submit their request to The College Registrar or Designee. Request must be in writing that identify the record(s) they wish to inspect. The Registrar or Designee will meet with and provide access for the student to review their records.
2. The right to request the amendment of the student's education records that the student believes are inaccurate or misleading. Students may ask CVCC to amend a record that they believe is inaccurate or misleading. Students should contact the Registrar or Designee to discuss the part of the record they believe is inaccurate. If CVCC decides not to amend the record as requested by the student, CVCC will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
3. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent. One exception which permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person employed by CVCC in an administrative, supervisory, academic or research, or support staff position (*including law enforcement unit personnel and health staff*); a person or company with whom CVCC has contracted (*such as an attorney, auditor, or collection agent*); a person serving on the Board of Visitors; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks. A school official has

a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility. Upon request, CVCC discloses education records without consent to officials of another school in which a student seeks or intends to enroll.

4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by CVCC to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is: The Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue, SW., Washington, DC, 20202-5920.
5. FERPA permits CVCC to disclose certain items from student's records as "Directory Information". This information may be released without consent unless the student, during the first 10 days of the semester, has indicated, in writing to the College Registrar, that he/she does not wish this information released. CVCC identifies directory information as the student's name; participation in any college sports or activities; weight and height of athletic team members; degrees, honors, and awards received; program of study; dates of attendance; grade level (*freshman or sophomore*); the most recent educational agency attended; the number of credit hours enrolled; and photos.
6. According to FERPA, CVCC may release information without the student's written consent to the following:
  - a. School officials, as identified by CVCC, determined by CVCC to have a legitimate educational interest,
  - b. Officials of other institutions in which the student seeks to enroll,
  - c. Persons or organizations providing to the student financial aid, or determining financial aid decisions,
  - d. Accrediting organizations carrying out their accrediting functions,
  - e. Parents or legal guardians of a student who have established that student's status as a dependent according to IRS Code of 1986, Section 152, (Parents must provide a copy of their tax return to the CVCC Office of Admissions and Records or a student release form must be on file),
  - f. Persons in compliance with a judicial order or a lawfully issued subpoena,
  - g. Persons in an emergency, if the knowledge of information, in fact, is necessary to protect the health or safety of the student or other persons.

Questions on this policy can be directed to The College Registrar or Designee.

Persons involved in the serving of a warrant, subpoena, or summons at CVCC should be referred to the Office of Admissions and Records. Local, state, and federal officers are requested to serve these legal documents at the student's residence if at all possible.

Many CVCC students are from the cities of Lynchburg and Bedford, the counties of Amherst, Appomattox, Bedford, and Campbell, or peripheral counties. In cases where these police agencies deem it necessary to contact the student at the College, we offer two services which will cause minimal embarrassment to the student and save time for law enforcement officers.

- (a) The Office of Admissions and Records will contact the student and request that the student go to the appropriate police agency to pick up the subpoena or summons.
- (b) The local, state, or federal officers may come to CVCC to serve the warrant, subpoena, or summons. The Vice President of Academic and Student Affairs will contact the student at the end of a class period and request that the student come to the Vice President of Academic and Student Affairs' Office where the warrant, subpoena, or summons will be served. These procedures do not apply to serious offenses or extenuating circumstances.

## ***Student Records Retention Policy***

The academic and counseling records of a student will be maintained either on paper copy or electronically by the College according to the following schedule:

Permanent retention is required only for the academic transcript (student permanent record) which is kept electronically in the College's Student Information System.

Once a student enrolls at CVCC, application forms, high school and college transcripts, residency forms, curriculum placement, course substitutions, and grade change forms are maintained in the student file for a period of three years after the student discontinues enrollment and/or graduates.

Three-year retention from the start of a semester is required for registration; drop/add, and withdrawal forms; faculty grade reports; and change of grade forms.

One-year retention from date of origination is required for transcript request forms, application forms (non-matriculated students), change of student information such as name and/or address changes, and graduation applications and certifications. Students who apply to the College but do not attend within three consecutive semesters are discontinued and any paper records discarded. Students must re-apply to the college once they are discontinued.

## ***Student Status***

The College updates a student's academic standing at the end of each term once grades are posted. Students must log into their MyCVCC account and use the *Student Information System* to check their standing by viewing their grades or viewing an unofficial transcript. Students who are dismissed or suspended will be notified by mail or email at the end of each term. CVCC has Academic Counselors available to assist students to increase their effectiveness in meeting the academic standards of the institution and ultimately graduate. Students are expected to maintain a 2.0 (C) grade point average and to be making satisfactory academic progress toward graduation.

### ***Good Standing***

Students are considered to be in good academic standing if they maintain a minimum grade point average (GPA) of 2.0 per semester, are eligible to re-enroll at the College, and are not on academic suspension or dismissal status. "Good Standing" will appear on the student's record for that term.

### ***Academic Warning***

Students who fail to attain a minimum grade point average of 2.0 for any semester shall have "Academic Warning" printed on the student's permanent records.

### ***Academic Probation***

Students who fail to maintain a cumulative grade point average (GPA) of 1.5 shall be on academic probation until such time as their cumulative GPA is 1.75 or better. The statement "Academic Probation" shall be placed on the students' permanent records and students may 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 or Counselor. Students are placed on probation only after they have attempted twelve (12) semester credit hours.

### ***Academic Suspension***

Students on academic probation who fail to attain a GPA of 1.5 for the next semester in attendance shall be placed on suspension only after they have attempted a total of twenty-four (24) semester hours at the College. Students who are academically suspended may not attend the following spring or fall term after their suspension. The statement "Academic Suspension" shall be placed on the student's permanent record.

### ***Readmission after Academic Suspension***

Suspended students may be readmitted after the end of the suspension period. Suspended students must complete the Request for Readmissions Form available in the Office of Admissions and Records. The College Registrar or Designee will notify students if they are approved or disapproved for readmission. If a student is readmitted, they must meet the following requirements: (1) The student must obtain a 2.0 GPA the semester in which they are reinstated; (2) The student must maintain a 1.75 GPA in each subsequent semester; and (3) The student will remain on probation until their cumulative grade point average is raised to a minimum of 1.75. If these requirements are not met, the student will be academically dismissed from the college, which is normally permanent. Readmitted students may be required to carry less than a normal course load and are required to consult with their Academic Advisor or Counselor.

### ***Academic Dismissal***

Students who fail to obtain a 2.0 grade point average for the semester of reinstatement to the College when on academic suspension shall be academically dismissed. The statement "Academic Dismissal" shall be placed on the student's permanent records. Academic Dismissal is normally permanent.

### ***Readmission after Academic Dismissal***

Academic dismissal is normally permanent unless, with good cause, the student reapplies and is accepted under special consideration for readmission. After 12 months following the dismissal, the student may submit a written request for readmission using the *Request for Readmission Form* to the Vice President of Academic and Student Affairs. The student who is readmitted must obtain a 2.0 grade point average the semester reinstated and maintain a 1.75 GPA in each subsequent semester.

## *Transcripts*

Students may request that copies of their transcripts be forwarded to other educational institutions, employers, or any persons designated by the student. Students may authorize the release of their transcript the following ways:

1. Log into the *Student Information System* using their **MyCVCC** account. Using Self Service, choose *Request Official Transcript*. Include the address where the transcript should be sent and press Submit;
2. Complete a *Transcript Request Form*, available in the Office of Admissions & Records, Amherst Hall, Room 2204;
3. Send a letter to the CVCC Office of Admissions and Records, 3506 Wards Rd., Lynchburg, VA 24502. Include your name, date of birth, student ID# if known, the address where your transcript should be sent and your daytime telephone number and signature; or,
4. Fax a written request to the CVCC Office of Admissions and Records at fax (434) 832-7793 and include the same information listed in (3) above.
5. Requests for transcripts cannot be made by phone.

There is no fee for transcripts. Generally transcript requests will be processed within five working days. Due to limitations on access to student information under the Family Educational Rights and Privacy Act of 1974 (FERPA), telephone and third party requests for transcripts cannot be honored. The College does not release a transcript unless tuition, fees, and other obligations due the College have been paid or satisfied.

# Curricula of Study

The academic program for degree curricula has three instructional cores: the general core, specifying credits for each course area identified; the specialized and degree related core, specifying total core credits required; and college electives also specifying total credits required. Each community college develops its own certificate and diploma curricula as planned programs developed with the assistance of a local curriculum advisory committee for specific occupations.

## Academic Divisions

The academic organizational structure of the College is divided into two academic divisions:

Arts and Sciences

Technology, Trades, and Workforce Development

## General Education Goals and Student Learning Outcomes

The associate degree programs within the Virginia's Community College System support a collegiate experience that meets the general education requirements of the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and the State Council of Higher Education for Virginia (SCHEV). CVCC degree graduates will demonstrate competency in the following general education areas:

**Civic Engagement** is the ability to contribute to the civic life and well-being of local, national, and global communities as both a social responsibility and a life-long learning process. Degree graduates will demonstrate the knowledge and civic values necessary to become informed and contributing participants in a democratic society.

- Recognize appropriate workplace and classroom habits, demeanor, and behavior. Identify the qualities of an ethical decision.
- Collaborate with others on a task to achieve a common goal. Cultivate skills to communicate effectively and professionally.
- Set goals, and implement a plan for personal, professional, and/or academic achievement.

**Critical Thinking** is the ability to use information, ideas and arguments from relevant perspectives to make sense of complex issues and solve problems. Degree graduates will locate, evaluate, interpret, and combine information to reach well-reasoned conclusions or solutions.

- Distinguish between quantitative and qualitative analysis. Identify numerical information presented in relevant equations, graphs, diagrams, tables, and words.
- Interpret quantitative information to draw relevant conclusions. Evaluate numerical information for usefulness, accuracy, and significance.
- Calculate and convey information into relevant equations, graphs, diagrams, tables, and words.

**Professional Readiness** is the ability to work well with others and display situationally and culturally appropriate demeanor and behavior. Degree graduates will demonstrate skills important for successful transition into the workplace and pursuit of further education.

- Recognize appropriate workplace and classroom habits, demeanor, and behavior. Identify the qualities of an ethical decision.
- Collaborate with others on a task to achieve a common goal. Cultivate skills to communicate effectively and professionally.
- Set goals, and implement a plan for personal, professional, and/or academic achievement.

**Quantitative Literacy** is the ability to perform accurate calculations, interpret quantitative information, apply and analyze relevant numerical data, and use results to support conclusions. Degree graduates will calculate, interpret, and use numerical and quantitative information in a variety of settings.

- Distinguish between quantitative and qualitative analysis. Identify numerical information presented in relevant equations, graphs, diagrams, tables, and words.
- Interpret quantitative information to draw relevant conclusions. Evaluate numerical information for usefulness, accuracy, and significance.
- Calculate and convey information into relevant equations, graphs, diagrams, tables, and words.

**Scientific Literacy** is the ability to apply the scientific method and related concepts and principles to make informed decisions and engage with issues related to the natural, physical, and social world. Degree graduates will recognize and know how to use the scientific method, and to evaluate empirical information.

- Identify the components of scientific inquiry (observation, hypothesis, independent variable, dependent variable, methodology, results, and conclusions) leading to evidence-based knowledge.
- Design an experiment to test a hypothesis.
- Conduct an experiment to test a hypothesis, analyze the results, and communicate the findings.

**Written Communication** is the ability to develop, convey, and exchange ideas in writing, as appropriate to a given context and audience. Degree graduates will express themselves effectively in a variety of written forms.

- Identify key components of sentence and paragraph structure. Discern the purpose and context of a variety of written communications and their intended audience.
- Construct sentences, paragraphs, essays, and documents with clear, concise, and appropriate language according to conventional English usage, grammar, and mechanics.
- Use clear, appropriate, and relevant language to convey or support a main idea or hypothesis with evidence.

## Developmental Courses

Preparatory or refresher courses are offered to help prepare students for academic work in the various program plans of the College. These courses are designed to develop skills and better prepare students with the knowledge necessary to succeed in their academic programs.

College Placement testing will determine whether or not a student requires developmental course work. Any student required to take developmental courses must enroll through an Academic Counselor and will be required to co-enroll in the College Success Skills (SDV 100) course if it has not already been completed. Students must satisfactorily complete developmental courses prior to enrolling in higher level mathematics or English courses. Developmental English courses include ENF 1-3 and developmental mathematics are MTE 1-9 in the catalog and the course schedule.

## State and Regional Specialized Programs

In the Virginia Community College System, certain highly-specialized program plans, though designed to serve all Virginia residents, are only offered in selected locations. These program plans generally reflect geographic, demographic, or economic considerations which preclude extensive offering statewide, and therefore usually are approved for not more than three community colleges to meet state or regional requirements. As changing circumstances warrant and as additional state and regional needs are determined, specialized program plans may be located in other community college regions. A system program guide is available on the VCCS website: <http://www.vccs.edu/>.

## Transfer Information

To help facilitate the transfer process, each state supported college and most Virginia private colleges produce a Virginia Community College System Transfer Guide. These transfer guides can be obtained directly from the college of interest, may be referenced in the CVCC Counseling Department, can be found on CVCC's website by clicking on "**Student Support**" and then "**Transfer Information**", or can be accessed via through the Virginia Education Wizard at [www.vawizard.org](http://www.vawizard.org). CVCC offers many services and programs to assist transfer students. Students are encouraged to seek the assistance of their Academic Advisor or Counselor to select transferable courses and to gain additional information to plan a successful transfer experience.

## Approved Transfer Electives

Programs of study (curricula) designate specific courses that must be taken to satisfy requirements. When elective courses are required as specified in curriculum guides, students may select from the following list of courses. Electives may be completed by selecting any of the following courses. Unless specifically indicated in your curriculum, the following electives will meet the requirements for CVCC associate degrees, certificates, diplomas, and career studies certificates for the category of courses listed. Students may not use the same course to satisfy more than one curriculum requirement.

As requirements of four-year institutions may vary, students in the Associate of Arts and Sciences and the Associate of Science (transfer) programs should consult a CVCC Counselor or Academic Advisor, transfer guides, and prospective four-year colleges and universities to select appropriate courses to meet transfer requirements.

\*Note: Some of these courses have prerequisites.

**COMMUNICATION STUDIES & THEATRE (CST)  
ELECTIVE**

**CST** 100, 110

**HEALTH/PHYSICAL EDUCATION**

**HLT** 100, 110, 116, 121, 141, 143, 230

**PED (ANY ACTIVITY COURSE)**
**HUMANITIES ELECTIVE**

**ART** 100, 101, 102 (*Students may not receive credit for both ART 100 and ART 101 or Art 100 and ART 102*)

**CST** 151, 152

**ENG** 121, 122, 211, 212, 241, 242, 243, 244, 251, 252, 256, 260, 268, 278, 288

**FRE** 201, 202

**HUM** 201, 260

**MUS** 121, 122

**PHI** 100, 111, 220, 265

**PHT** 106, 110

**REL** 200, 210, 230

**SPA** 201, 202

**MATHEMATICS**

**MTH** 151, 152, 157, 163, 164, 173, 174, 240, 271, 272

**SCIENCE WITH LABORATORY**

**BIO** 101, 102, 141, 142, 205, 256

**CHM** 101, 111, 112, 241, 242, 243, 244

**ENV** 121, 122

**GOL** 105, 106, 110, 111, 112

**NAS** 131, 132

**PHY** 201, 202, 241, 242

**SOCIAL SCIENCE ELECTIVE**

**ECO** 120, 201, 202

**GEO** 210

**HIS** 101, 102, 111, 112, 121, 122, 255, 256, 269

**PLS** 211, 212

**PSY** 200, 215, 230

**SOC** 200, 210, 215, 226, 268

**APPROVED ELECTIVE**

When approved electives are required in curricula guides for transfer and other programs, *students may select courses from the Mathematics, Science with Lab, Humanities, and/or Social Science Elective listings above or from the following courses to satisfy the approved elective requirement.*

**ACC** 211, 212

**BIO** 107

**BUS** 221, 222

**CST** 130, 151

**EGR** 115, 126, 135, 136, 140, 245, 246, 248

**FRE** 101, 102

**HIS** 281

**ITE** 119

**MTH** 146, 166, 177, 183, 277, 279, 285

**PHT** 101, 102, 135, 211

**PSY** 116, 205, 235, 255

**SPA** 101, 102

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*\* Restricted plans with admission requirements. Students must meet with an Academic Counselor prior to admittance. Call (434) 832-7800 to schedule an appointment.*



**Administration of Justice****AWARD:** Associate of Applied Science**LENGTH:** 2 Years**PURPOSE:**

The Administration of Justice curriculum is designed to provide a broad educational foundation which will prepare graduates for employment in numerous criminal justice related occupations. For students already working in the criminal justice field, this curriculum will provide preparation for advancement in the profession. Note: The Associate of Applied Science degree does not take the place of attendance at a basic academy which most police, corrections, or security agencies require prior to being employed by that agency. However, the Administration of Justice curriculum will help prepare one academically for successful completion of an agency academy.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Administration of Justice AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Administration of Justice - AAS**

Seq #	Course	Course Title	Credits	Type	Term Offered	Pre-Req
1	ADJ 100	Survey of Criminal Justice	3	Major	F, Sp	
2	ADJ 105	Juvenile Justice System	3	Major	F	
3	ADJ 128	Patrol Administration and Operations	3	Major	F	
4	ITE 115/119	Intro to Computer Apps and Concepts OR Information Literacy	3	Gen Ed	F, Sp, Su	
5	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
6	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
7	ADJ 107	Survey of Criminology	3	Major	Sp	
8	ADJ 133	Ethics and the Criminal Justice Professional	3	Major	Sp	
9	ADJ 140	Introduction to Corrections	3	Major	Sp	
10	ENG 131	Technical Report Writing <sup>1</sup>	3	Gen Ed	F, Sp	
11	HLT/PED	Health of Physical Education	1	Gen Ed	F, Sp, Su	
12		Approved Elective <sup>2</sup>	3	Major/ Gen Ed	F, Sp, Su	
13	ADJ 211	Criminal Law, Evidence and Procedures I	3	Major	F	
14	ADJ 212	Criminal Law, Evidence and Procedures II	3	Major	Sp	
15		Approved Elective <sup>2</sup>	3	Major/Gen Ed	F, Sp, Su	
16	ADJ 236	Principles of Criminal Investigation	3	Major	F	
17	MTH 130	Fundamentals of Reasoning	3	Gen Ed	F, Sp	
18	PSY 215/230	Abnormal Psychology OR Developmental Psychology"	3	Gen Ed	F, Sp	
19		Approved Elective <sup>2</sup>	3	Major/Gen Ed	F, Sp, Su	
20	ADJ 229	Law Enforcement and the Community	3	Major	Sp	
21	ADJ 237	Advanced Criminal Investigation	3	Major	Sp	
22		Approved Elective <sup>2</sup>	3	Major/ Gen Ed	F, Sp, Su	
23		Humanities Elective <sup>3</sup>	3	Gen Ed	F, Sp, Su	
Total Pathway Credits			65			
Total Program Credits			65			

(1) ENG 112 may be substituted for ENG 131.

(2) Students must choose from ADJ, humanities or social science electives. It is strongly recommended students planning to transfer to other programs choose humanities or social science electives. Permission to take ADJ 196 must be given by the Program Director.

(3) See CVCC academic catalog for listing of approved courses.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Administrative Management Technology**

### **Administrative Management Technology - Medical Office Specialization**

### **Administrative Management Technology - Office Accounting Specialization**

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

### **General Clerical**

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### **PURPOSE:**

The Associate of Applied Science degree in Administrative Management Technology is designed to prepare individuals for positions in an office and/or to update skills of office workers. The program provides the knowledge and skills necessary for effective job performance in office administrative positions. This curriculum is designed to prepare individuals for employment as an administrative professional to managers in business and industry. Administrative professionals may also supervise other office personnel. The program includes training in management, accounting, word processing, computer usage, and records management.

The **Medical Office Specialization** curriculum is designed to provide administrative management technology education in the medical field. It is recommended for students interested in a professional career as a medical office assistant in a private medical practice, hospital, or other health care organizations.

The **Office Accounting Specialization** curriculum is designed to provide administrative management technology education in the accounting field. Students seeking an accounting position, payroll knowledge, and/or federal taxation guidelines can benefit from this curriculum. It is recommended for students interested in an entry-level accounting or bookkeeping positions.

### **ADMISSIONS REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **COURSES:**

The Program Pathway for Administrative Management Technology AAS is a tool for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Administrative Management Technology - AAS****General Clerical - CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	AST 101	Keyboarding I	3	Major	F, Sp	
3	AST 107	Editing/Proofreading Skills	3	Major	F	
4	AST 137	Records Management	3	Major	F	
5	ENG 111	English Composition I	3	Gen Ed	F, Sp, Su	
6	BUS 100	Introduction to Business	3	Major	F, Sp, Su	
7	HLT/PED	Health or Physical Education	1	Gen Ed	F, Sp, Su	
8	AST 102	Keyboarding II	3	Major	Sp	AST 101
9	ACC 211	Principles of Accounting I	4	Major	F, Sp, Su	
10	BUS 226 or ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	Keyboarding competence
11		Restricted Elective <sup>1</sup>	3	Major	F, Sp, Su	
12	BUS 121	Business Mathematics	3	Major	F, Sp	
<b>General Clerical Career Studies Certificate Completed</b>						
13	AST 243	Office Administration I	3	Major	F	AST 101
14	AST 141	Word Processing I	3	Major	F	AST 101
15	AST 205	Business Communications	3	Major	F, Sp	
16	MTH 130	Fundamentals of Reasoning <sup>2</sup>	3	Gen Ed	F, Sp	
17	BUS 241	Business Law	3	Major	F, Sp, Su	
18		Social Sciences Elective <sup>3,4</sup>	3	Gen Ed	F, Sp, Su	
19	AST 253	Advanced Desktop Publishing	3	Major	Sp	AST 101
20	BUS 200	Principles of Management	3	Major	F, Sp, Su	
21	ECO 120	Survey of Economics <sup>4</sup>	3	Major	F, Sp, Su	
22		Elective	3	Major	F, Sp, Su	
23		Humanities Elective <sup>3</sup>	3	Gen Ed	F, Sp, Su	
Total Pathway Credits			66			
Total Program Credits			66			

(1) Restricted elective is limited to ACC, AST, BUS, ECO, FIN, HLT, ITD, ITE, ITN, ITP, LGL, or MKT.

(2) MTH 154 or higher may be substituted for MTH 130.

(3) For a list of approved Humanities and Social Science Electives, please see the CVCC academic catalog.

(4) The ECO 120 and social science requirement can be satisfied by taking ECO 201 and ECO 202.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Administrative Management Technology Specialization: Medical Office - AAS****General Clerical - CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	AST 101	Keyboarding I	3	Major	F, Sp	
3	AST 107	Editing/Proofreading Skills	3	Major	F	
4	AST 137	Records Management	3	Major	F	
5	ENG 111	English Composition I	3	Gen Ed	F, Sp, Su	
6	MTH 130	Fundamentals of Reasoning <sup>1</sup>	3	Gen Ed	F, Sp	
7	AST 102	Keyboarding II	3	Major	Sp	AST 101
8	BUS 100	Introduction to Business	3	Major	F, Sp, Su	
9	BUS 121	Business Mathematics	3	Major	F, Sp	
10	HLT 143	Medical Terminology <sup>1</sup>	3	Major	F, Sp	
11		Restrictive Elective <sup>2</sup>	3	Major	F, Sp, Su	
12	BUS 226 or ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	Keyboarding competence
<b>General Clerical Career Studies Certificate Completed</b>						
13	ACC 211	Principles of Accounting I	4	Major	F, Sp, Su	
14	AST 243	Office Administration I	3	Major	F	AST 101
15	AST 141	Word Processing I	3	Major	F	AST 101
16	AST 205	Business Communications	3	Major	F, Sp	
17	BUS 241	Business Law	3	Major	F, Sp	
18		Social Sciences Elective <sup>3,4</sup>	3	Gen Ed	F, Sp, Su	
19		Humanities Elective <sup>4</sup>	3	Gen Ed	F, Sp, Su	
20	AST 253	Advanced Desktop Publishing	3	Major	Sp	AST 101
21	BUS 200	Principles of Management	3	Major	F, Sp, Su	
22	ECO 120	Survey of Economics <sup>3</sup>	3	Major	F, Sp, Su	
23	HLT 230	"Principles of Nutrition and Human Development"	3	Major	F, Sp	
Total Pathway Credits			68			
Total Program Credits			68			

(1) MTH 154 or higher may be substituted for MTH 130.

(2) Restricted elective is limited to ACC, AST, BUS, ECO, FIN, HLT, ITD, ITE, ITN, ITP, LGL, or MKT.

(3) The ECO 120 and social science requirement can be satisfied by taking ECO 201 and ECO 202.

(4) For a list of approved Humanities and Social Science Electives, please see the CVCC academic catalog.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Administrative Management Technology Specialization: Office Accounting- AAS****General Clerical - CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ACC 211	Principles of Accounting I	4	Major	F, Sp, Su	
3	AST 101	Keyboarding I	3	Major	F, Sp	
4	HLT/PED	Health or Physical Education	1	Gen Ed	F, Sp, Su	
5	AST 107	Editing/Proofreading Skills	3	Major	F	
6	AST 137	Records Management	3	Major	F	
7	ENG 111	English Composition I	3	Gen Ed	F, Sp, Su	
8	ACC 212	Principles of Accounting II	4	Major	F, Sp	ACC 211
9	AST 102	Keyboarding II	3	Major	Sp	AST 101
10	BUS 100	Introduction to Business	3	Major	F, Sp, Su	
11	MTH 130	Fundamentals of Reasoning <sup>1</sup>	3	Gen Ed	F, Sp	
12	BUS 226 or ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	Keyboarding competence
<b>General Clerical Career Studies Certificate Completed</b>						
13	ACC 124	Payroll Accounting	3	Major	F	
14	ACC 261	Principles of Federal Taxation I	3	Major	F	
15	AST 141	Word Processing I	3	Major	F	AST 101
16	AST 205	Business Communications	3	Major	F, Sp	
17	AST 243	Office Administration I	3	Major	F	AST 101
18		Social Sciences Elective <sup>2,3</sup>	3	Gen Ed	F, Sp, Su	
19	ACC 215	Computerized Accounting	3	Major	Sp	
20	AST 253	Advanced Desktop Publishing	3	Major	Sp	AST 101
21	BUS 200	Principles of Management	3	Major	F, Sp, Su	
22	ECO 120	Survey of Economics <sup>2</sup>	3	Major	F, Sp, Su	
23		Humanities Elective <sup>3</sup>	3	Gen Ed	F, Sp, Su	
Total Pathway Credits			67			
Total Program Credits			67			

(1) MTH 154 or higher may be substituted for MTH 130.

(2) The ECO 120 and social science requirement can be satisfied by taking ECO 201 and ECO 202.

(3) For a list of approved Humanities and Social Science Electives, please see the CVCC academic catalog.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Advanced Emergency Medical Technician**

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

## **Emergency Medical Technician**

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### **PURPOSE:**

The primary focus of the Advanced Emergency Medical Technician is to provide basic and limited advanced emergency medical care and transportation for critical and emergent patients who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide patient care and transportation. Advanced Emergency Medical Technicians function as part of a comprehensive EMS response, under medical oversight. Advanced Emergency Medical Technicians perform interventions with the basic and advanced equipment typically found on an ambulance. The Advanced Emergency Medical Technician is a link from the scene to the emergency health care system.

Virginia EMS Education Standards for the AEMT is designed to educate the technician in the following areas of pre-hospital care: preparatory skills, airway management and ventilation, patient assessment, trauma, medical, special considerations and assessment based management. A minimum of 48 hours are devoted to clinical rotations in the Emergency Department and in the field.

For Virginia trained AEMT, successful certification at the National Registry AEMT level will automatically lead to a Virginia AEMT certification. National Registry AEMT certified technicians trained outside of Virginia must apply for Virginia certification before being allowed to practice at this level. After receiving Virginia credentials, the AEMT has the option to maintain National Registry AEMT certification without affecting their Virginia certification; however, Virginia certification must be maintained in order to provide patient care at this level

**This program is not eligible for Financial Aid.**

### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics. Students must have current CPR certification approved by the Virginia Office of Emergency Medical Services. Students may not have been convicted of any disqualifying crime as mandated by the Virginia Office of EMS. This program requires extensive walking, stooping, bending, pushing, pulling, climbing stairs, and lifting. Lifting and carrying requirements: at least 125 pounds (56.8 kg); motor coordination is necessary because over uneven terrain, the patient's and EMS provider's well being must not be jeopardized. Further, extensive use of sight, hearing, and speech is required.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **COURSES:**

The Program Pathway for Advanced Emergency Medical Services CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Emergency Medical Technician - CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	EMS 100	CPR for Healthcare Providers <sup>1</sup>	1	Major	F, Sp, Su	N/A
2	EMS 111	Emergency Medical Technician	7	Major	F, Sp, Su	EMS 100
3	EMS 120	EMT Basic Clinical	1	Major	F, Sp, Su	N/A
<b>Emergency Medical Technician Career Studies Certificate Completed – 9 Credits</b>						
4	EMS 150	Advanced Emergency Medical Technician (AEMT)	7	Major	F, Sp	
6	EMS 170	ALS Internship I	1	Major	Sp	
7	EMS 215	Registry Review	1	Major	Sp	
Total Pathway Credits			18			
Total Program Credits			18			

(1) Current professional-level CPR approved by the Virginia Office of EMS may be substituted for EMS 100.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite



## Biotechnology Fundamentals

**AWARD:** Career Studies Certificate

**LENGTH:** 1 year

### PURPOSE:

This curriculum is designed for individuals who seek additional skills to gain employment in the fields of Biotechnology, Health Sciences, or Scientific Research. The curriculum in this program will provide students with exposure to entry and advanced level skills that may lead to employment in fields related to biotechnology, health sciences, and scientific research.

**This curriculum is available to XLR8 STEM Academy students only.**

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Biotechnology Fundamentals CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Biotechnology Fundamentals - CSC

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	HLT 143	Medical Terminology I	3	Major	F	
2	BIO 141	Anatomy and Physiology I	4	Major	F	
3	MTH 261	Applied Calculus I <sup>1</sup>	3	Major	F	MTH 161
4	HLT 190	Coordinated Internship	1	Major	Sp	
5	ETR 167	Logic Circuits and Systems	3	Major	Sp	
6	MTH 162	Precalculus II <sup>1</sup>	3	Major	Sp	MTH 161
7	BIO 142	Anatomy and Physiology II	4	Major	Sp	BIO 141
Total Program Credits			21			

(1) Students with sufficient placement scores may enroll in a higher-level math sequence in lieu of MTH 261-162

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Business Administration**

### **Business Administration - Business IT Specialization**

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

#### **PURPOSE:**

The Associate of Arts and Sciences program in Business Administration is designed to prepare students to transfer to a four year college or university to complete a baccalaureate or equivalent degree program and to provide students with a rigorous course of study, enabling personal and professional growth. Graduates will possess the body of knowledge and competencies essential for career success as entrepreneurs and business professionals.

#### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics. Entry in the Business Administration AAS requires students to have college level skills in reading, writing, and mathematics. Students with deficiencies in English and mathematics will be required to take appropriate developmental courses.

#### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

#### **COURSES:**

The Program Pathway for Business Administration AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Business Administration - AAS****General Education - Certificate**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
3	ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	
4	MTH 161	Precalculus I	3	Gen Ed	F, Sp, Su	
5		Science with Laboratory <sup>1</sup>	4	Gen Ed	F, Sp, Su	
6	ENG 112	College Composition II	3	Gen Ed	F, Sp, Su	Eng 111
7	CST	Speech Elective2	3	Gen Ed	F, Sp, Su	
8		Science with Laboratory <sup>1</sup>	4	Gen Ed	F, Sp, Su	
9	ECO 201	Principles of Macroeconomics	3	Major	F, Sp, Su	
10	MTH 271	Applied Calculus I	3	Major	F, Sp	MTH 163

**General Education Certificate Completed – 30 Credits**

11	HIS 101	History of Western Civilization I <sup>3</sup>	3	Gen Ed	F, Sp, Su	
12	HLT/PED	Health or Physical Education1	1	Gen Ed	F, Sp, Su	
13	ACC 211	Principles of Accounting I	4	Major	F, Sp, Su	
14	BUS 221	Business Statistics I	3	Major	F, Su	MTH 161
15	HIS 102	History of Western Civilization II <sup>3</sup>	3	Gen Ed	F, Sp, Su	
16		Humanities Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
17	HLT/PED	Health or Physical Education <sup>1</sup>	1	Gen Ed	F, Sp, Su	
15		Approved Transfer Elective <sup>1</sup>	3	Major	F, Sp, Su	
17	ACC 212	Principles of Accounting II	4	Major	F, Sp, Su	ACC 211
19	BUS 222	Business Statistics II <sup>4</sup>	3	Major	Sp, Su	BUS 221
20	ECO 202	Principles of Microeconomics	3	Major	F, Sp, Su	

Total Pathway Credits	61
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Total Program Credits	61
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(1) Eligible courses are listed the CVCC academic catalog. Students should consult a counselor or advisor to select appropriate courses/sequences that will satisfy requirements at four-year institutions to which they plan to transfer. For math electives, MTH 103, MTH 104, and MTH 120 cannot be used to fulfill the mathematics requirement.

(2) Students may substitute CST 110 for CST 100. Consult transfer institution to ensure that the substitution is appropriate for intended transfer program.

(3) Students may select any of the following courses to meet this requirement: HIS 101, 102, HIS 111, 112, HIS 121, 122.

(4) BUS 221 is required for all Business Administration students. An elective may be taken in lieu of BUS 222; however, students should consult with their advisor prior to any substitution.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Business Administration - Business IT Specialization - AAS**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
2		Social Science Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
3		Science with Laboratory <sup>1</sup>	4	Gen Ed	F, Sp, Su	
4	MTH 161	Precalculus I	3	Gen Ed	F, Sp, Su	
5	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
6	HLT/PED	Health or Physical Education <sup>1</sup>	1	Gen Ed	F, Sp, Su	
7	ENG 112	College Composition II	3	Gen Ed	F, Sp, Su	ENG 111
8		Science with Laboratory <sup>1</sup>	4	Gen Ed	F, Sp, Su	
9	ECO 201	Principles of Macroeconomics	3	Gen Ed	F, Sp, Su	
10		Humanities Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
11	HLT/PED	Health or Physical Education <sup>1</sup>	1	Gen Ed	F, Sp, Su	
12	MTH 261	Applied Calculus I	3	Major	F, Sp, Su	MTH 161
13	ITE 120	Principles of Information Systems	3	Major	F, Sp, Su	
14	BUS 221	Business Statistics I	3	Major	F, Su	MTH 161
15	ITE 295	Topics in ITE	3	Major	F, Sp, Su	
16		Computer Elective (ITE 115 or ITE 119)	3	Major	F, Sp, Su	
17	ACC 211	Principles of Accounting I	4	Major	F, Sp, Su	
18	ACC 212	Principles of Accounting II	4	Major	F, Sp, Su	ACC 211
19	BUS 222	Business Statistics II	3	Major	Sp, Su	BUS 221
20	ECO 202	Principles of Microeconomics	3	Major	F, Sp, Su	
21	CST	Speech Elective <sup>1</sup>	3	Major	F, Sp, Su	
Total Pathway Credits			61			
Total Program Credits			61			

(1) Eligible courses are listed the CVCC academic catalog. Students should consult a counselor or advisor to select appropriate courses/ sequences that will satisfy requirements at four-year institutions to which they plan to transfer.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## Business Management

**AWARD:** Career Studies Certificate

**LENGTH:** 1 year

**PURPOSE:**

The career studies certificate in **Business Management** is designed for individuals who are interested in learning the fundamentals of starting and operating a business. Additionally, this program is useful to persons presently employed in a supervisory capacity with a desire to increase their technical skills.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### Business Management - CSC

Seq #	Course	Course Title	Credits	Type	Term Offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	BUS 100	Introduction to Business	3	Major	F, Sp, Su	
3	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
4	AST 205	Business Communications	3	Major	F, Sp	
5	BUS 200	Principles of Management	3	Major	F, Sp, Su	
6	BUS 226 or ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	Keyboarding competence
7	ECO 120	Survey of Economics <sup>1</sup>	3	Major	F, Sp, Su	
8	BUS 204	Project Management	3	Major	F	
9		Social Sciences Elective <sup>2</sup>	3	Gen Ed	F, Sp, Su	
10	BUS 205	Human Resources Management	3	Major	Sp	
Total Program Credits			28			

(1) The ECO 120 and Social Science Elective may be satisfied by taking ECO 201 and ECO 202.

(2) For a list of approved Social Science Electives, please see the CVCC academic catalog.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Communication Design**

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

### **PURPOSE:**

The Associate of Applied Science degree program in Communication Design is to provide the basic skills necessary to begin a career in visual communication. The first year of the program provides a solid foundation in traditional studio arts, and the second year covers the technical skills, media, and business knowledge necessary for employment opportunities. Students will learn the vocabulary of art as well as practical skills involved in the field of communication design. Occupational Possibilities include graphic designer, layout designer, production designer, illustrator, web front end designer, advertising designer, visual merchandiser, or related entry-level positions.

### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **COURSES:**

The Program Pathway for Communication Design AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Communication Design - AAS

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 101	Orientation to Communication Design <sup>1</sup>	Major	F		
2	ART 121	Drawing I	Major	F		
3	ART 131	Fundamentals of Design I	Major	F		
4	ENG 111	College Composition I	Gen Ed	F, Sp, Su		
5	PHT 101	Photography I	Major	F, Sp		
6		Social Science Elective <sup>2</sup>	Gen Ed	F, Sp, Su		
7	ART 122	Drawing II	Major	Sp	ART 121	ENG 111
8	ART 140	Introduction to Graphic Skills	Major	Sp		ART 121
9	ART 180	Intro to Computer Graphics	Major	F, Sp		ART 131
10	ENG 112	College Composition II	Gen Ed	F, Sp, Su	ENG 111	PHT 101
11	PHT 102	Photography II	Major	Sp	PHT 101	
12	MTH 130	Fundamentals of Reasoning <sup>3</sup>	Gen Ed	F, Sp, Su		
13	ART 101	History and Appreciation of Art I	Major	F, Sp		
14	ART 141	Typography I	Major	F		
15	ART 251	Communication Design I	Major	F	ART 131,140	
16	ART 283	Computer Graphics I	Major	F		ART 132
17		Speech Elective <sup>4</sup>	Gen Ed	F, Sp, Su		ART 131,132, 180
18	HLT/PED	Health or Physical Education	Gen Ed	F, Sp, Su		ART 180
19	ART 102	History and Appreciation of Art II	Major	F, Sp		
20	ART 252	Communication Design II	Major	Sp	ART 131, 140	ART 101
21	ART 284	Computer Graphics II	Major	Sp		ART 251, 283
22	ART 287	Resume and Portfolio Preparation <sup>5</sup>	Major	Sp		ART 180
23	PHT 130	Video I	Major	Sp		
24		Business Elective <sup>6</sup>	Major	F, Sp, Su		
Total Program Credits			66			

(1) SDV 100 may be substituted.

(2) PSY 120, 200, or SOC 200 recommended for Social Science elective.

(3) MTH 154 may substitute for MTH 130.

(4) CST 110 recommended for Speech elective.

(5) Recommended for final semester program students. Requires instructor's approval.

(6) Requirement can be satisfied with any BUS or MKT class except BUS 226..

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Computer and Electronic Technology - Computer Networking****AWARD:** Associate of Applied Science**LENGTH:** 2 Years**PURPOSE:**

The electronics industry has created a demand for qualified computer and electronics technicians, especially those with computer and computer-related skills. In order to provide the flexibility required by the large variety of jobs available in the electronics industries, the curriculum offers a solid foundation in mathematics, general electronics, computers, computer networking and communications. The Computer and Electronics Technology curriculum is designed primarily for persons seeking employment in fields of computer networking, digital, and communications electronics immediately upon completion of the program. Students successfully exiting this program may find employment as computer network specialists, digital electronics technicians, broadcast engineers, electronics technicians, design technicians, audio technicians and communications electronics technicians.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Computer and Electronics Technology - Computer Networking is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)



**Computer and Electronic Technology - Computer Networking - AAS**

Seq #	Course	Course Title	Credits	Type	Term Offered	Pre-Req
1	SDV 101	Orientation to Electronics and Mechatronics	1	Gen Ed	F	
2	SAF 130	Industrial Safety - OSHA 10	1	Major	F	
<b>OSHA 10-Hour Card</b>						
3	ITN 154	Network Fundamentals, Router Basics, & Configuration (ICND1) - CISCO	4	Major	F	
4	MTH 131	Technical Mathematics I <sup>1</sup>	3	Gen Ed	F, Sp	
5	ETR 113	DC & AC Fundamentals I	4	Major	F, Sp	
6	ENG 131	Technical Report Writing	3	Gen Ed	F, Sp	
7	DRF 161	Blueprint Reading I	2	Major	Sp	
8	ETR 114	DC & AC Fundamentals II	4	Major	Sp, Su	
9	EGR 127	Introduction to Computer Programming	2	Major	Sp	
10	ITN 155	Switching, Wireless, and WAN Technologies (ICND2) - CISCO	4	Major	Sp	
<b>CompTIA and CCENT Networking Certifications</b>						
11	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
12	ITN 156	Basic Switching and Routing - CISCO	4	Major	F	
13	ETR 141	Electronics I	3	Major	F	
14	ETR 233	Electronics Applications I	1	Major	F	
15	ETR 211	Electronics Diagnostics I	4	Major	F	
16		Social Science Elective	3	Gen Ed	F, Sp, Su	
17	ITN 157	WAN Technologies - CISCO	4	Major	Sp	
<b>CCNA R/S and Security Networking Certifications</b>						
18	ETR 167	Logic Circuits and Systems	3	Major	Sp	
19	ETR 150	Machine Control Using Relay & Programmable Logic	3	Major	Sp	
20	MEC 253	Preventive & Predictive Maintenance	3	Major	Sp	
21	ETR 214	Advanced Circuits & New Devices	2	Major	Sp	
22		Humanities Elective	3	Gen Ed	F, Sp, Su	
<b>Associate Degree Completed – 64 Credits</b>						
Total Program Credits			64			

(1) Students whose placement test scores qualify for placement in MTH 161 may take this higher level course in lieu of MTH 131.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Computer Numerical Control****AWARD:** Career Studies Certificate**LENGTH:** 1 year**PURPOSE:**

This career studies certificate program is designed to provide computer numerical control programming and operational skills for the experienced machinist in industry.

**Courses in this program fulfill requirements for the Machine Tool Diploma Programs. The Computer Numerical Controls Career Studies Certificate program alone is NOT eligible for financial aid. Interested students should consult an academic Counselor for further information.**

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Computer Numerical Control CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Computer Numerical Control - CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	MAC 121	Numerical Control I	3	Major	Su	
2	MAC 122	Numerical Control II	3	Major	F	
3	MAC 123	Numerical Control III	3	Major	Sp	
Total Program Credits			9			

*Term Offered: F – Fall | Sp – Spring | Su – Summer*

*Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite*

## Corrections Officer

**AWARD:** Career Studies Certificate

**LENGTH:** Less than 1 Year

### PURPOSE:

This career studies certificate will allow students to attend the Basic Jailor/Corrections Officer course offered by the Central Virginia Criminal Justice Academy. The program of study will be conducted pursuant to the Virginia Department of Criminal Justice Services Guidelines for Pre-Employment Training. Upon successful completion of the program, students will be eligible to obtain certification as a Jailor/Corrections Officer in the Commonwealth of Virginia.

**This program is not eligible for Financial Aid.**

### ADMISSIONS REQUIREMENTS:

Admission is competitive and is based on grades, interviews, and the student meeting the criteria established for attending the Central Virginia Criminal Justice Academy. Candidates must submit a Certificate of Medical Eligibility, a Certificate of Drug Testing, a fingerprint card, a summary of results of psychological testing, and a summary of results of polygraph examination. All candidates will be required to provide an original birth certificate reflecting U.S. Citizenship, an official transcript reflecting college credit, a high school diploma or GED, and proof of personal medical insurance coverage.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Corrections Officer CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Corrections Officer - CSC

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	ADJ 295	Topics in Correctional Law	5	Major	F, Sp	
2	ADJ 299	Supervised Study	5	Major	F, Sp	
Total Program Credits			10			

*This program is offered in collaboration with the Central Virginia Criminal Justice Academy. It is designed to provide an avenue for Administration of Justice AAS graduates to obtain Virginia Corrections Officer certification. Admission is competitive and based on several criteria..*

*Term Offered: F – Fall | Sp – Spring | Su – Summer*

*Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite*

**Criminal Justice****AWARD:** Career Studies Certificate**LENGTH:** Less than 1 Year**PURPOSE:**

This career studies certificate program will afford professional development opportunities for criminal justice professionals and provide a broad overview of the profession for those individuals seeking employment in the field. All of the courses in this program are acceptable for credit in the Administration of Justice AAS program.

**Courses in this program fulfill requirements for the Administration of Justice AAS degree. The Criminal Justice Career Studies Certificate program alone is NOT eligible for financial aid. Interested students should consult an academic counselor for further information.**

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Criminal Justice CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Criminal Justice - CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	ADJ 100	Survey of Criminal Justice	3	Major	F, Sp	
2	ADJ 105	Juvenile Justice System	3	Major	F	
3	ADJ 107	Survey of Criminology	3	Major	Sp	
4	ADJ 140	Introduction to Corrections	3	Major	Sp	
Total Program Credits			12			

*Term Offered: F – Fall | Sp – Spring | Su – Summer*

*Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite*

## Culinary Arts

**AWARD:** Certificate

**LENGTH:** 1 Year

### PURPOSE:

To develop a foundation of skills that prepares the student for entry-level employment in a food service operation.

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Culinary Arts Certificate is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Culinary Arts - Certificate

Seq #	Course	Course Title	Credits	Type	Term Offered	Pre-Req
1	HRI 106	Principles of Culinary Arts I	3	Major	F	
2	HRI 128	Principles of Baking	3	Major	F	
3	HRI 158	Sanitation and Safety	3	Major	F	
4	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
5	HRI 119	Applied Nutrition for Food Service	3	Major	SP	
6	HRI 218	Fruit, Vegetable, and Starch Preparation	3	Major	SP	
7		Social Science Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
8	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
9	HRI 219	Stock, Soup and Sauce Preparation	3	Major	F, Su	
10	ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	
11	HRI 220	Meat, Seafood and Poultry Preparation	3	Major	Sp	
12	HRI 228	Food Production Operations	3	Major	Sp	
Total Program Credits			34			

(1) For a listing of approved courses, see the CVCC academic catalog.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Culinary Arts and Management**

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

### **PURPOSE:**

The Associate of Applied Science degree program in Culinary Arts and Management will prepare individuals for careers in culinary arts, food service management and related occupations. There is continued industry demand for qualified Chefs and Food Service Managers, with the restaurant industry making up one of the major employers in the College's service region. This program is designed to give individuals technical education in culinary arts and food service management, and will prepare students for immediate employment upon graduation.

### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **COURSES:**

The Program Pathway for Culinary Arts and Management AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Culinary Arts and Management - AAS**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F,Sp,Su	
2	ENG 111	College Composition I	3	Gen Ed	F,Sp,Su	
3	HRI 106	Principles of Culinary Arts I	3	Major	F, Sp	
4	HRI 128	Principles of Baking	3	Major	Sp	
5	HRI 158	Sanitation and Safety	3	Major	F	
6	HRI 195	Culinary Calculations	3	Major	F, Sp	
7	HLT/PED	Health or Physical Education	1	Major	F,Sp,Su	
8	HRI 119	Applied Nutrition for Food Service	3	Major	Sp	
9	HRI 218	Fruit, Vegetable and Starch Preparation	3	Major	Sp	
10	ITE 115/119	Computer Elective	3	Gen Ed	F,Sp,Su	
11		Social Science Elective <sup>2</sup>	3	Gen Ed	F,Sp,Su	
12	HRI 190	Coordinated Internship	3	Major	Sp,Su	
13	HRI 145	Garde Manger	3	Major	F,Su	
14	HRI 219	Stock, Soup, and Sauce Preparation	3	Major	F,Su	
15	HRI 224	Recipe and Menu Management	3	Major	F	
16	HRI 275	Hospitality Law	3	Major	F	
17		Humanities Elective	3	Gen Ed	F,Sp,Su	
18	HRI 140	Fundamentals of Quality for the Hospitality Industry	3	Major	Sp	
19	HRI 207	American Regional Cuisine	3	Major	Sp	
20	ENG 112	College Composition II	3	Gen Ed	F,Sp,Su	ENG 111
21	HRI 220	Meat, Seafood and Poultry Preparation	3	Major	Sp	
22	HRI 228	Food Production Operations	3	Major	Sp	
23	HRI 251	Food and Beverage Cost Control I	3	Major	Sp	
Total Program Credits			65			
Total Pathway Credits			65			

For a list of approved Social Science Electives, please see the CVCC academic catalog.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## Cyber Security

**AWARD:** Career Studies Certificate

**LENGTH:** Less than 1 Year

### PURPOSE:

This career studies certificate is designed as an enhanced competency module to provide expertise in security to networking specialists. This curriculum will prepare networking specialists for employment as network security specialists or Internet security specialists. This career studies certificate also helps prepare students for the CompTIA Security+ and the CISSP (Certified Information Systems Security Professional) certification exams.

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics. In addition to the admission requirements established by the College, entry into this program requires students to have prior work experience or academic preparation in the area of Information Technology or Networking. The courses in this program require students to have college-level skills in reading, writing, and mathematics. Students with deficiencies in English or Mathematics will be required to take appropriate developmental courses. Students should schedule an appointment with a Counselor to discuss these admission requirements.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Cyber Security CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Cyber Security - CSC

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	ITN 260	Network Security Basics	3	Major	F	
2	ITN 261	Network Attacks, Computer Crime and Hacking	3	Major	F	
3	ITN 262	Network Communication, Security and Authentication	4	Major	F	
4	ITN 263	Internet/Intranet Firewalls and E-Commerce Security	4	Major	Sp	
5	ITN 266	Network Security Layers	3	Major	Sp	
6	ITN 267	Legal Topics in Network Security	3	Major	Sp	
Total Program Credits			20			

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite



## Cyber Security Fundamentals

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### PURPOSE:

This program is designed to provide entry-level skills for employment in the field of Cyber Security. It will provide students with strong analytical and problem-solving skills, as well as an overview of network security basics.

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics. A keyboarding skill of 25 words per minute is required, as well as a proficiency in English. Students who do not meet the requirements listed above will be required to correct their deficiencies with developmental studies.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Cyber Security Fundamentals CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Cyber Security Fundamentals - CSC

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	ITE 115	Introduction to Computer Applications and Concepts	3	Major	F, Sp, Su	
2	ITN 101	Introduction to Network Concepts	3	Major	F	
3	ITP 100	Software Design	3	Major	F	
4	ITN 260	Network Security Basics	3	Major	Sp	
5	ITN 261	Network Attacks, Computer Crime and Hacking	3	Major	Sp	
6	ITN 267	Legal Topics in Network Security	3	Major	Sp	

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Total Program Credits 18

*Term Offered: F – Fall | Sp – Spring | Su – Summer*

*Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite*

**Education****AWARD:** Associate of Applied Science**LENGTH:** 2 Years**General Education****AWARD:** Certificate Purpose:**LENGTH:** 1 Year

The emphasis on quality education in Virginia has created a demand for teachers to help provide leadership for schools. The Associate of Arts and Sciences degree in Education is designed for persons who plan to transfer to a four-year college or university to complete a baccalaureate degree program that leads to teacher certification. As requirements of four-year institutions may vary, students should work closely with CVCC counselors and advisors to prepare their community college degree program to meet the requirements at the four-year college or university to which they will transfer. In addition, students should examine transfer guides of prospective colleges and universities and contact appropriate four-year institutions to inquire about the transferability of courses taken at CVCC.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

Students who wish to be licensed to teach in Virginia should consult with their Counselor or advisor regarding appropriate elective choices to match their desired teaching endorsement area(s). While enrolled at the community college, students should prepare for and successfully complete the Praxis I Test -- the initial teacher licensure exam -- before transfer. It is strongly recommended that students visit the Counseling Center for more information on the Praxis I Test and teacher licensure requirements. All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Education AAS is a tool for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Education- AAS****General Education - Certificate**

Seq #	Course	Course Title	Credits	Type	Term Offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
3	ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	
4	MTH	Mathematics <sup>1</sup>	3	Gen Ed	F, Sp, Su	
5		Science with Laboratory <sup>1</sup>	4	Gen Ed	F, Sp, Su	
6	ENG 112	College Composition II	3	Gen Ed	F, Sp, Su	ENG 111
7	CST 100	Public Speaking <sup>2</sup>	3	Gen Ed	F, Sp, Su	
8		Science with Laboratory <sup>1</sup>	4	Gen Ed	F, Sp, Su	
9		Social Science Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
10	MTH	Mathematics <sup>1</sup>	3	Gen Ed	F, Sp, Su	

**General Education Certificate Completed – 30 Credits**

11		Humanities Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
12	ENG 241	Survey of American Literature I <sup>5</sup>	3	Gen Ed	F, Sp, Su	
13	HIS 121	US History I <sup>3</sup>	3	Gen Ed	F, Sp, Su	
14	PLS 211	US Government I	3	Gen Ed	F, Sp, Su	
15	EDU 200	Introduction to Teaching as a Profession	3	Major	F, Sp, Su	
16	ECO 201	Principles in Macroeconomics	3	Gen Ed	F, Sp, Su	
17		Approved Transfer Elective <sup>4</sup>	3	Gen Ed	F, Sp, Su	
18	ENG 241	Survey of America Literature II <sup>5</sup>	3	Gen Ed	F, Sp, Su	
19	HIS 122	US History II <sup>3</sup>	3	Gen Ed	F, Sp, Su	
20	GEO 210	People & Land; Introduction to Cultural Geography <sup>6</sup>	3	Gen Ed	F, Sp, Su	
21	HLT/PED	Health or Physical Education	1	Gen Ed	F, Sp, Su	

Total Pathway Credits 61

Total Program Credits 61

- (1) Eligible transfer course are listed in the CVCC academic catalog. Students should consult a counselor or advisor to select appropriate courses/sequences that will satisfy requirements at four-year institutions to which they plan to transfer. For math electives, MTH 103, MTH 104, and MTH 120 cannot be used to fulfill the mathematics requirement.
- (2) Students may substitute CST 110 for CST 100. Consult transfer institution to ensure that the substitution is appropriate for intended transfer program.
- (3) Students may select any of the following courses to meet this requirement: HIS 101, 102, HIS 111, 112, HIS 121, 122.
- (4) The "Approved Transfer Electives" may be satisfied with any mathematics, natural science, social science, humanities, or foreign language elective. Additional course options may be considered based on the requirements of the transfer institution and intended transfer program.
- (5) A two-semester sequence of ENG 241, 242; ENG 243, 244, or ENG 251, 252 is recommended for transfer to most four-year institutions. Students should consult with a counselor or advisor to determine transfer institution's requirement prior to course selection.
- (6) A Social Science elective can be taken in the place of GEO 210.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Emergency Medical Services - Paramedic**

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

## **Emergency Medical Technician**

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### **Purpose:**

The Emergency Medical Services – Paramedic Program is designed to produce competent entry-level Paramedics who can service the community with advanced life support care via the Emergency Medical Services (EMS) infrastructure. Upon completion of the program, students will be eligible for National Registry testing and certification in Virginia. Employment opportunities for Paramedics are available with Ambulance, Fire and Rescue services, Hospitals, Government Departments, Sales and Humanitarian relief organizations.

### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **COURSES:**

The Program Pathway for Emergency Medical Services - Paramedic AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Emergency Medical Services - Paramedic - AAS****Emergency Medical Technician - CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	EMS 100	CPR for Healthcare Providers <sup>1</sup>	1	Major	F, Sp, Su	
2	EMS 111	Emergency Medical Technician	7	Major	F, Sp, Su	EMS 100
3	EMS 120	Emergency Medical Technician – Basic Clinical	1	Major	F, Sp, Su	
<b>Emergency Medical Technician Career Studies Certificate Completed</b>						
4	BIO 145	Human Anatomy & Physiology <sup>2</sup>	4	Gen Ed	F, Sp, Su	
5	SDV 100	College Success Skills <sup>3</sup>	1	Gen Ed	F, Sp, Su	
6	EMS 121	Preparatory Foundations	2	Major	F	
7	EMS 123	EMS Clinical Preparation	1	Major	F	
8	EMS 125	Basic Pharmacology	1	Major	F	
9	EMS 126	Basic Pharmacology Lab	1	Major	F	
10	EMS 127	Airway, Shock and Resuscitation	1	Major	F	
11	EMS 128	Airway, Shock and Resuscitation Lab	1	Major	F	
12	EMS 135	Emergency Medical Care	2	Major	F	EMS 121, 123, 125, 126, 127, 128
13	EMS 136	Emergency Medical Care Lab	1	Major	F	EMS 121, 123, 125, 126, 127, 128
14	EMS 137	Trauma Care	1	Major	F	EMS 121, 123, 125, 126, 127, 128
15	EMS 138	Trauma Care Lab	1	Major	F	EMS 121, 123, 125, 126, 127, 128
16	EMS 139	Special Populations	1	Major	Sp	EMS 121, 123, 125, 126, 127, 128
17	EMS 140	Special Populations Lab	1	Major	Sp	EMS 121, 123, 125, 126, 127, 128
18	EMS 141	Cardiovascular Care	2	Major	Sp	EMS 121, 123, 125, 126, 127, 128"
19	EMS 142	Cardiovascular Care Lab	1	Major	Sp	EMS 121, 123, 125, 126, 127, 128
20	EMS 175	Paramedic Clinical Experience I	2	Major	Sp	EMS 121, 123, 125, 126, 127, 128
21	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
22	PSY 230	Developmental Psychology <sup>4</sup>	3	Gen Ed	F, Sp, Su	
23	EMS 202	Paramedic Pharmacology	2	Major	F	EMS 125, 126, 135, 136, 137, 138, 140, 141, 142

Continues on next page

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
24	EMS 203	Advanced Patient Care	2	Major	F	EMS 135, 136, 137, 138, 139, 140, 141, 142
25	EMS 204	Advanced Patient Care Lab	2	Major	F	EMS 135, 136, 137, 138, 139, 140, 141, 142"
26	EMS 206	Pathophysiology for Health Professions	3	Major	F	BIO 145 or BIO 141 & 142
27	EMS 247	Paramedic Clinical Experience II	1	Major	F	EMS 135, 136, 137, 138, 139, 140, 141, 142, 175
28	EMS 248	Paramedic Comprehensive Field Experience	2	Major	F	EMS 135, 136, 137, 138, 139, 140, 141, 142, 175
29	EMS 210	EMS Operations	1	Major	Sp	EMS 135, 136, 137, 138, 139, 140, 141, 142
30	EMS 212	Leadership and Professional Development	1	Major	Sp	EMS 135, 136, 137, 138, 139, 140, 141, 142
31	EMS 165	Advanced Cardiac Life Support	1	Major	Sp	
32	EMS 163	Prehospital Trauma Life Support	1	Major	Sp	
33	EMS 167	Emergency Pediatric Care	1	Major	Sp	
34	EMS 164	Advanced Medical Life Support	1	Major	Sp	
35		Paramedic Review	1	Major	Sp	
36		Paramedic Capstone Internship	1	Major	Sp	EMS 202, 203, 204, 206, 247, 248
37		Ethics	1	Gen Ed	F, Sp, Su	
38		General Education Elective <sup>5</sup>	1	Gen Ed	F, Sp, Su	
Total Pathway Credits			66			
Total Program Credits			66			

(1) HLT 105 is an approved substitute.

(2) Taking both BIO 141 and BIO 142 are an approved substitute for BIO 145. Please note that students who complete BIO 141 and BIO 142 are exempt from completing the General Education Elective (3 credits) in the 5th semester (see footnote 5 below). BIO requirement must be completed by end of first year with a grade of "C" or better.

(3) SDV 101 is an approved substitute.

(4) PSY 200, SOC 247, and SOC 268 are approved substitutes for PSY 230.

(5) The general education elective must be a course in one of the general education categories - communication, humanities/fine arts, social/behavioral sciences, or natural sciences/mathematics. Students who complete BIO 141 and BIO 142 in lieu of BIO 145 are exempt from the General Education Elective.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**EMS – Fire Science Specialization****AWARD:** Associate of Applied Science**LENGTH:** 2 Years**Emergency Medical Technician****AWARD:** Career Studies Certificate**LENGTH:** 1 Year**Fire & Emergency Medical Services****AWARD:** Career Studies Certificate**LENGTH:** 1 Year**PURPOSE:**

The fire science option programs are designed to prepare students for employment and certifications in Emergency Medical Technician (EMT), Firefighter I, Firefighter II and other Virginia Department of Fire Programs courses.

This program is offered in collaboration with the Lynchburg Fire Department. Students complete EMS, FST and general education courses at CVCC and one semester at the Lynchburg Fire Department Recruit School. Students are prepared to enter employment or volunteer opportunities with fire and EMS agencies.

Students must meet the requirements of the CVCC EMS programs, the Lynchburg Fire Department, the Virginia Office of Emergency Medical Services, the National Registry of EMTs and the Virginia Department of Fire Programs. Students must be 16 years of age or older to take EMT and VDFP courses; 18 years of age to take Advanced Life Support courses. EMT certification is required before enrolling in any advanced level programs.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Emergency Medical Services - Fire Science Specialization AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

(1) Current professional-level CPR approved by the Virginia Office of EMS may be substituted for EMS 100.

(2) BIO 141 or 145 is strongly recommended. BIO 141 and BIO 142 are recommended if the student is planning to transfer to another medically-related program.

(3) Current Virginia EMT certification required to enroll for AEMT certification eligibility.

(4) See CVCC academic catalog for listing of approved courses.

(5) FST 100 and 196 are offered in collaboration with Lynchburg Fire Department. Scheduled fire schools may vary on dates offered and availability. Students must meet the requirements of the Lynchburg Fire Department to enroll.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**EMS – Fire Science Specialization - AAS****Emergency Medical Technician – CSC****Fire & Emergency Medical Services – CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	EMS 100	CPR for Healthcare Providers <sup>1</sup>	1	Major	F, Sp, Su	
2	EMS 111	Emergency Medical Technician	7	Major	F, Sp, Su	EMS 100
3	EMS 120	EMT Basic Clinical	1	Major	F, Sp, Su	
<b>Emergency Medical Technician Career Studies Certificate Completed</b>						
4	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
5		Science Elective <sup>2</sup>	4	Gen Ed	F, Sp, Su	
6	EMS 151	Introduction to Advanced Life Support <sup>3</sup>	4	Major	F, Sp	
7	EMS 153	Basic ECG Recognition	2	Major	F	
8	EMS 157	ALS -Trauma Care	3	Major	F	
9	EMS 170	ALS Internship I	1	Major	F	
10	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
11	ITE 115/119	Intro to Computer Apps and Concepts OR Information Literacy	3	Gen Ed	F, Sp, Su	
12	EMS 152	Advanced EMT Completion	2	Major	Sp	EMS 151
13	EMS 154	ALS Cardiac Care	2	Major	Sp	EMS 153
14	EMS 159	ALS-Special Populations	3	Major	Sp	EMS 151, 153
15	EMS 172	ALS Clinical Internship II	1	Major	Sp	EMS 170
16	EMS 173	ALS Field Internship II	1	Major	Sp	
17	EMS 215	Registry Review	1	Major	Sp	
18	EMS 211	Operations	2	Major	Su	
19	FST 110	Fire Behavior & Combustion	3	Major	F	
20	FST 112	Hazardous Materials Chemistry	3	Major	F	
21	FST 115	Fire Prevention	3	Major	F	
22		Social Science Elective <sup>4</sup>	3	Gen Ed	F, Sp, Su	
23	EMS 201	EMS Professional Development	3	Major	Sp	
24	EMS 110	Emergency Vehicle Operations Course <sup>5</sup>	1	Major	Sp	
25	FST 100	Principles of Emergency Services <sup>5</sup>	3	Major	Sp	
26	FST 196	On-Site Training <sup>5</sup>	2	Major		
<b>Fire &amp; Emergency Medical Services Career Studies Certificate Completed</b>						
27		Humanities Elective <sup>4</sup>	3	Gen Ed	F, Sp, Su	
Total Pathway Credits			66			
Total Program Credits			66			



## Energy Technology

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### PURPOSE:

This career studies certificate is designed for a student who wishes to obtain the skills necessary to work in the electric and energy industries as an entry-level technician or solar panel installer. The curriculum encompasses subjects that are needed for energy industry technicians including print reading, safety, basic hand and power tools, basic electricity, basic instrumentation, and mathematics. Upon satisfactory completion of the curriculum, the graduate will be awarded a Career Studies Certificate.

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Energy Technology CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Energy Technology - CSC

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Major	F,S,Su	
2	DRF 135	Electrical/Electronics Blueprint Reading	2	Major	F, Sp	
3	ELE 133	Practical Electricity I	3	Major	F	
4	MTH 111	Basic Technical Mathematics	3	Major	F, Sp	
5	SAF 130	Industrial Safety – OSHA 10	1	Major	F	
6	ENE 195	Energy Industry Fundamentals	4	Major	F	
7	ELE 134	Practical Electricity II	3	Major	Sp	
8	ELE 137	National Electric Code	3	Major	Sp	
9	ELE 177	Photovoltaic Energy Systems	4	Major	Sp	
Total Program Credits			24			

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Engineering**

**AWARD:** Associate of Science

**LENGTH:** 2 Years - Transfer

### **PURPOSE:**

This degree program is designed for the student preparing for transfer to a four-year program in Engineering. The student is responsible for determining transferability to the four-year college or university.

### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

In addition to the admission requirements established for the College, entry into the engineering program requires:

- (1) placement into MTH 173 (Calculus with Analytic Geometry) or completion of MTH 166 (Precalculus with Trigonometry)
- (2) satisfactory completion of the following high school units or equivalent as a minimum: 4 years of English, 3 years of mathematics (Algebra I, Algebra II, and Geometry), 1 year of laboratory science and 1 year of social science.

Students with deficiencies will require developmental studies and will not be able to complete the program within a two-year window.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **COURSES:**

The Program Pathway for Engineering AS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Engineering - AS**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
3		Social Science Electives <sup>1</sup>	3	Gen Ed	F, Sp, Su	
4	MTH 263	Calculus with Analytic Geometry I	4	Gen Ed	F, Sp, Su	"MTH 162 or 167"
5	CHM 111	College Chemistry I	4	Gen Ed	F, Su	
6		Humanities Electives <sup>1</sup>	3	Gen Ed	F, Sp, Su	
7	ENG 112	College Composition II	3	Gen Ed	F, Sp, Su	ENG 111
8		Social Science Electives	3	Gen Ed	F, Sp, Su	
9	MTH 264	Calculus with Analytic Geometry II	4	Gen Ed	F, Sp, Su	MTH 263
10	EGR 120	Introduction to Engineering I	2	Major	Sp	
11	EGR 124	Introduction to Engineering II	3	Major	Sp	
12	EGR 126	Computer Programming for Engineers	3	Major	F, Sp, Su	
13	MTH 265	Vector Calculus	4	Gen Ed	F, Sp, Su	MTH 264
14	MTH 266	Linear Algebra	3	Major	F	MTH 264
15	EGR 140	Engineering Mechanics - Statics	3	Major	F	
16		Humanities Electives <sup>1</sup>	3	Gen Ed	F, Sp, Su	
17	PHY 241	General University Physics I	4	Major	F	MTH 263
18	PHY 242	General University Physics II	4	Major	Sp	MTH 264
19	MTH 267	Ordinary Differential Equations	4	Major	F, Sp	MTH 264
20	EGR 245	Engineering Mechanics - Dynamics	3	Major	Sp	
21	EGR 246	Mechanics of Materials	3	Major	Sp	
22	EGR 248	Engineering Thermodynamics	3	Major	Sp	
Total Pathway Credits			69			
Total Program Credits			69			

*Program admission requirement: In addition to meeting the admission requirements established for the College, the student must place into MTH 263 or must have completed MTH 162 or MTH 167.*

*(1) Students who plan to transfer should consult an academic counselor to verify specific program requirements with their intended four-year institution. While an elective course may satisfy a requirement for a Central Virginia Community College program, it may not fulfill a requirement at a four-year institution.*

*Term Offered: F – Fall | Sp – Spring | Su – Summer*

*Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite*

**Engineering Fundamentals****AWARD:** Career Studies Certificate**LENGTH:** 1 Year**PURPOSE:**

This program is designed to introduce students to engineering. It combines content from basic engineering principles, math, and chemistry. In class knowledge is balanced with practical, hands-on training, and an internship. After completion, students are qualified as entry level technicians or may apply earned credits to further programs.

**This curriculum is available to XLR8 STEM Academy students only.**

**ADMISSIONS REQUIREMENTS:**

Dual enrollment is restricted to high school juniors and seniors and home school students studying at the high school junior or senior levels. Home school students must also provide a copy of a home school agreement approved by the school district or a letter from the local school board or a copy of the letter filed by the parent or legal guardian declaring home school. Documentation of parental permission is required for all dual enrollment students.

All students admitted under this section must demonstrate readiness for college by meeting the placement criteria

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Engineering Fundamentals CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Engineering Fundamentals - Career Studies Certificate**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F	
2	MTH 155	Statistical Reasoning	3	Gen Ed	F	
3	EGR 115	Engineering Graphics	2	Major	F	
4	EGR 123	Introduction to Engineering Design	2	Major	F	
5	CHM 111	College Chemistry I	4	Gen Ed	F	
6	EGR 105	Introduction to Problem Solving & Technology	1	Major	Sp	
7	MEC 140	Introduction to Mechatronics	3	Major	Sp	
8	CHM 112	College Chemistry II	4	Major	Sp	
9	MTH 161	Pre-Calculus I 1	3	Major	Sp	
Total Program Credits			23			

(1) Students with sufficient placement scores may enroll in a higher-level math.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## Engineering Technology

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

### PURPOSE:

The purpose of the Associate of Applied Science degree program in Engineering Technology is to prepare students for full-time employment in engineering technical positions immediately upon completion of the program. The Engineering Technology degree is also transferable to colleges or universities that offer a baccalaureate degree in Engineering Technology.

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Engineering Technology AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Engineering Technology - AAS**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	DRF 201	Computer Aided Drafting and Design I	3	Major	F, Sp	
3	MTH 167	PreCalculus with Trigonometry	5	Gen Ed	F, Sp	
4	EGR 100	Engineering Technology Orientation	1	Major	F	
5	EGR 127	Introduction to Computer Programming	2	Major	F, Sp	
6	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
7	EGR 135	Statics for Engineering Technology	3	Major	Sp	
8	CHM 111	College Chemistry I	4	Major	F, Sp, Su	
9	MTH 263	Calculus with Analytic Geometry I	4	Major	F, Sp, Su	"MTH 162 or 167"
10	DRF 241	Parametric Solid Modeling	3	Major	Sp	
11	EGR 136	Strength of Materials for Engineering Technology	3	Major	Su	
12	PHY 201	General College Physics I	4	Major	F, Su	MTH 161
13	CIV 220	Structural Analysis	3	Major	F	
14	ETR 113	AC/DC Fundamentals	4		F	
15	MEC 133	Mechanics III-Dynamics for Engineering Technology	3	Major	F	
16	CIV 240	Fluid Mechanics and Hydraulics	3	Major	F	
17		Humanities Electives <sup>1</sup>	3	Gen Ed	F, Sp, Su	
18	PHY 202	General College Physics II	4	Major	Sp, Su	
19	DRF 161	Blueprint Reading I	2	Major	Sp	
20	ENG 131	Technical Report Writing I <sup>2</sup>	3	Gen Ed	F, Sp	
21	ECO 120	Survey of Economics	3	Gen Ed	F, Sp	
Total Pathway Credits			64			
Total Program Credits			64			

(1) Approved course lists for Humanities and Social Science Electives are below.

Course #17: ART 100/101/102 (students may not receive credit for both ART 100 and 101 or ART 100 and ART 102), CST 151/152, ENG 121/122/211/212/241/242/243/244/251/252/256/260/268/278/288, FRE 201/202, HUM 201/260, MUS 121/122, PHI 100/111/220/265, PHT 106, REL 200/210/230, SPA 201/202.

(2) ENG 112 may be substituted for ENG 131.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## Fire and Emergency Medical Services

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

## Emergency Medical Technician

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### PURPOSE:

This career studies certificate program will allow students interested in pursuing certification through the Department of Fire Programs and the Virginia Office of Emergency Medical Services (EMS) an opportunity to obtain CPR, Emergency Medical Technician, Firefighter I, Firefighter II, and HazMat Awareness certifications. These certifications are required for employment in the Fire and EMS services.

The Fire & EMS Career Studies Certificate program alone is NOT eligible for financial aid. Interested students should consult an academic Counselor for further information.

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Fire and Emergency Medical Services CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Fire and Emergency Medical Services - CSC

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	EMS 100	CPR for Healthcare Providers <sup>1</sup>	1	Major	F, Sp, Su	
2	EMS 111	Emergency Medical Technician	7	Major	F, Sp, Su	EMS 100
3	EMS 120	EMT Basic Clinical	1	Major	F, Sp, Su	
<b>Emergency Medical Technician Career Studies Certificate Completed</b>						
4	FST 100	Principles of Emergency Services <sup>2</sup>	3	Major	F, Sp	
5	FST 196	On-Site Training <sup>2</sup>	2	Major	F, Sp	

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Total Program Credits 14

(1) Current professional level CPR approved by the Virginia Office of EMS may be substituted for EMS 100.

(2) FST 100 and 196 are offered in collaboration with Lynchburg Fire Department. Scheduled fire schools may vary on dates offered and availability. Students must meet the requirements of the Lynchburg Fire Department to enroll.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## Fire Science Technology

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

## Emergency Medical Technician

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

## Fire & Emergency Medical Services

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### PURPOSE:

This program is designed for the student who desires to obtain knowledge of current and future advances in the fire and emergency services field. It will prepare the student to enter the rewarding field of fire protection as a volunteer or career member. It will also prepare fire service personnel for advancement opportunities. These class provide increased knowledge of many fire protection fundamentals that are critical in the development of community volunteer fire and rescue personnel. Students already working in the fire services field may be eligible for credit for prior experience or training. The program will provide an opportunity for students to obtain certification through the Department of Fire Programs..

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Fire Science Technology AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

*(1) Current professional-level CPR approved by the Virginia Office of EMS may be substituted for EMS 100.*

*(2) See CVCC academic catalog for listing of approved courses.*

*(3) FST 100 and 196 are offered in collaboration with Lynchburg Fire Department. Scheduled fire schools may vary on dates offered and availability. Students must meet the requirements of the Lynchburg Fire Department to enroll.*

*Term Offered: F – Fall | Sp – Spring | Su – Summer*

*Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite*



**Fire Science Technology - AAS****Emergency Medical Technician – CSC****Fire and Emergency Medical Services – CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	EMS 100	CPR for Healthcare Providers <sup>1</sup>	1	Major	F, Sp, Su	
2	EMS 111	Emergency Medical Technician	7	Major	F, Sp, Su	EMS 100
3	EMS 120	EMT Basic Clinical	1	Major	F, Sp, Su	
<b>Emergency Medical Technician Career Studies Certificate Completed</b>						
4	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
5	MTH 130	Fundamentals of Reasoning	3	Gen Ed	F, Sp, Su	
6	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
7		Social Science Elective <sup>2</sup>	3	Gen Ed	F, Sp, Su	
8	"ITE 115/119"	"Intro to Computer Apps and Concepts OR Information Literacy"	3	Gen Ed	F, Sp, Su	
9		Humanities Elective <sup>2</sup>	3	Gen Ed	F, Sp, Su	
10	EMS 110	Emergency Vehicle Operations Course	1	Major	Sp	
11	EMS 211	Operations	2	Major	Sp	
12	FST 100	Principles of Emergency Services <sup>3</sup>	3	Major	Sp	
13	FST 110	Fire Behavior & Combustion	3	Major	Sp	
14	FST 112	Hazardous Materials Chemistry	3	Major	Sp	
15	FST 196	On-Site Training <sup>3</sup>	2	Major	Sp	
<b>Fire and Emergency Medical Services Career Studies Certificate Completed</b>						
16	FST 115	Fire Prevention	3	Major	F	
17	FST 121	"Principles of Fire and Emergency Services Safety and Survival"	3	Major	F	
18	FST 210	Legal Aspect of Fire Science	3	Major	F	
19	FST 240	Fire Administration	3	Major	F	
20	FST 205	Fire Protection Hydraulics and Water Supply	3	Major	Sp	
21	FST 215	Fire Protection Systems	3	Major	Sp	
22	FST 220	Building Construction for Fire Protection	3	Major	Sp	
23	FST 235	Firefighting Strategy and Tactics	3	Major	Sp	
24	FST 245	Fire and Risk Analysis	3	Major	Sp	
Total Pathway Credits			66			
Total Program Credits			66			

## **General Studies**

**AWARD:** Associate of Arts & Science

**LENGTH:** 2 Years - Transfer

## **General Education**

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### **PURPOSE:**

The Associate of Arts and Sciences degree in General Studies is the most flexible program for college transfer students and those seeking to enrich their own personal education. It is designed to prepare students to transfer to a four-year college or university to complete a baccalaureate of arts or equivalent program, and to provide students with a rigorous course of study that enables personal and professional growth.

### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **COURSES:**

The Program Pathway for General Studies AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**General Studies - General - AAS****General Education - Certificate**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
3	ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	
4	MTH	Mathematics <sup>2</sup>	3	Gen Ed	F, Sp, Su	
5		Science with Laboratory <sup>2</sup>	4	Gen Ed	F, Sp, Su	
6	ENG 112	College Composition II	3	Gen Ed	F, Sp, Su	ENG 111
7	CST	Communications Elective <sup>5</sup>	3	Gen Ed	F, Sp, Su	
8		Science with Laboratory <sup>2</sup>	4	Gen Ed	F, Sp, Su	
9		Social Science Elective <sup>2</sup>	3	Gen Ed	F, Sp, Su	
10	MTH	Mathematics <sup>2</sup>	3	Gen Ed	F, Sp, Su	

**General Education Certificate Completed – 30 Credits**

11	HLT/PED	Health or Physical Education <sup>2</sup>	1	Gen Ed	F, Sp, Su	
12		Humanities Elective <sup>2</sup>	3	Gen Ed	F, Sp, Su	
13	HIS	History I <sup>1</sup>	3	Gen Ed	F, Sp, Su	
14		Transfer Elective <sup>3</sup>	3	Gen Ed	F, Sp, Su	
15		Transfer Elective <sup>3</sup>	3	Gen Ed	F, Sp, Su	
16	ENG	Literature I <sup>4</sup>	3	Major	F, Sp, Su	ENG 112
17		Transfer Elective <sup>3</sup>	3	Gen Ed	F, Sp, Su	
18	ENG	Literature II <sup>4</sup>	3	Major	F, Sp, Su	ENG 112
19	HIS	History II <sup>1</sup>	3	Gen Ed	F, Sp, Su	
20		Social Science Elective <sup>2</sup>	3	Gen Ed	F, Sp, Su	
21		Humanities Elective <sup>2</sup>	3	Gen Ed	F, Sp, Su	

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 Total Pathway Credits 61

Total Program Credits 61

(1) Students may select any of the following courses to meet this requirement: HIS 101, 102; HIS 111, 112; or HIS 121, 122.

(2) Eligible courses are listed in the CVCC academic catalog. Students should consult a counselor or advisor to select appropriate courses/sequences that will satisfy requirements at four-year institutions to which they plan to transfer. For math electives, MTH 103, MTH 104, and MTH 120 cannot be used to fulfill the mathematics requirement.

(3) The "Transfer Electives" may be satisfied with any mathematics, natural science, social science, humanities, or foreign language elective. Additional course options may be considered based on the requirements of the transfer institution and intended transfer program.

(4) A two-semester sequence of ENG 241, 242; ENG 243, 244; or ENG 251, 252 is recommended for transfer to most four-year institution. Check with your intended transfer institution prior to course selection.

(5) Students may substitute CST 110 for CST 100. Consult transfer institution to ensure that the substitution is appropriate for intended transfer program.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Health Sciences Fundamentals****AWARD:** Career Studies Certificate**LENGTH:** 1 Year**PURPOSE:**

The curriculum in the program is designed to provide students with exposure to entry and advanced level skills that may lead to employment in fields related to health sciences and allied health.

**This curriculum is available to XLR8 STEM Academy students only.**

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Health Sciences Fundamentals Career Studies Certificate is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Health Sciences Fundamentals – Career Studies Certificate**

Seq #	Course	Course Title	Credits	Type	Term Offered	Pre-Req
1	HLT 143	Medical Terminology I	1	Major	F	
2	BIO 141	Anatomy and Physiology I	4	Major	F	
3	MTH 261	Applied Calculus I <sup>1</sup>	3	Major	F	MTH 161
4	HLT 190	Coordinated Internship	1	Major	Sp	
5	PSY 200/ PSY 230	Principles of Psychology or Developmental Psychology	3	Major	Sp	
6	MTH 162	Precalculus II <sup>1</sup>	3	Major	Sp	MTH 161
7	BIO 142	Anatomy and Physiology II	4	Major	Sp	BIO 141
Total Program Credits			21			

(1) Students with sufficient placement scores may enroll in a higher-level math sequence in lieu of MTH 261-162

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## Health Sciences I

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### PURPOSE:

The Health Sciences I Career Studies Certificate is designed for the student who desires to pursue allied health programs at CVCC or other schools of choice including nursing programs. Students transferring to other schools are responsible for verifying transferability of CVCC courses.

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Health Sciences Career Studies Certificate is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

Seq #	Course	Course Title	Credits	Type	Term Offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
3		Social Science Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
4	HLT 230	Principles of Nutrition & Human Development	3	Gen Ed	F, Sp, Su	
5	BIO 141	Human Anatomy & Physiology I	4	Gen Ed	F, Sp, Su	
6	HLT 143	Medical Terminology I	3	Gen Ed	F, Sp, Su	
Total Program Credits			17			

(1) Social Science Electives should be selected based on the student's desired transfer institution. For Centra College of Nursing students should choose PSY, SOC and dually enrolled students will take PLS 211-212. Students pursuing a General Studies AA&S degree should choose a HIS sequence: HIS 101-102, HIS 111-112, HIS 121-122.

Students who plan to transfer should consult an academic counselor to verify specific program requirements with their intended four-year institution. While an elective course may satisfy a requirement for a Central Virginia Community College program, it may not fulfill a requirement at a four-year institution.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Health Sciences II****AWARD:** Career Studies Certificate**LENGTH:** 1 Year**PURPOSE:**

The Health Sciences II Career Studies Certificate is designed for the student who desires to pursue allied health programs at CVCC or other schools of choice including nursing programs. Students transferring to other schools are responsible for verifying transferability of CVCC courses.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Health Sciences Career Studies Certificate is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

Seq #	Course	Course Title	Credits	Type	Term Offered	Pre-Req
1	ENG 112	College Composition II	3	Gen Ed	F, Sp, Su	ENG 111
2		Social Science Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
3	BIO 142	Human Anatomy & Physiology II	4	Gen Ed	F, Sp, Su	BIO 141
4	PSY 230	Developmental Psychology (Social Science Elective)	3	Gen Ed	F, Sp, Su	
Total Program Credits			13			

(1) Social Science Electives should be selected based on the student's desired transfer institution. For Centra College of Nursing students should choose PSY, SOC and dually enrolled students will take PLS 211-212. Students pursuing a General Studies AA&S degree should choose a HIS sequence: HIS 101-102, HIS 111-112, HIS 121-122.

Students who plan to transfer should consult an academic counselor to verify specific program requirements with their intended four-year institution. While an elective course may satisfy a requirement for a Central Virginia Community College program, it may not fulfill a requirement at a four-year institution.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Heating, Ventilation, & Air Conditioning****AWARD:** Career Studies Certificate**LENGTH:** 1 Year**Heating, Ventilation, & Air Conditioning Fundamentals****AWARD:** Career Studies Certificate**LENGTH:** Less than 1 Year**PURPOSE:**

This career studies certificate is offered primarily in the evening and may be completed in a one-year period. The curriculum offers a series of HVAC courses which prepare individuals with entry-level skills. Students interested in the HVAC program are strongly advised to consult with their advisor while planning a program of study and to continue doing so on a regular basis during this program of study.

**Courses in this program fulfill requirements for the Heating, Ventilation, and Air Conditioning CSC degree. The Heating, Ventilation, and Air Conditioning Fundamentals Career Studies Certificate program alone is NOT eligible for financial aid. Interested students should consult an academic Counselor for further information.**

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Heating, Ventilation, and Air Conditioning CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Heating, Ventilation, & Air Conditioning – CSC****Heating, Ventilation, & Air Conditioning Fundamentals – CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	AIR 121	Air Conditioning and Refrigeration 1	3	Major	F	
2	AIR 134	Circuits and Controls I	4	Major	F	
3	AIR 165	Air Conditioning Systems I	4	Major	F, Sp	
4	AIR 154	Heating Systems I	3	Major	F, Sp	
<b>HVAC Fundamentals Career Studies Certificate Completed – 14 Credits</b>						
5	AIR 135	Circuits and Controls II	4	Major	F	
6	AIR 205	Hydronic and Zoning	3	Major	Sp	
7	AIR 155	Heating Systems II	3	Major	Sp	
8	AIR 235	Heat Pumps	3	Major	Sp	
9	AIR 158	Mechanical Codes	2	Major	Su	
Total Pathway Credits			29			
Total Program Credits			29			

*Term Offered: F – Fall | Sp – Spring | Su – Summer*

*Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite*



## Hospitality Management

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### PURPOSE:

To provide a student with the understanding of opportunities in the hospitality industry with an emphasis on managing multiple operations. Once completed, the student can enter into that industry as a trainee and then advance into a higher career position.

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Hospitality Management Career Studies Certificate is a tool for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Hospitality Management - CSC

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	HRI 101	Introduction to Hospitality and Restaurant Organization and Management	3	Major	F	
2	HRI 235	Marketing Hospitality Services	3	Major	F	
3	HRI 275	Hospitality Law	3	Major	F	
4	HRI 140	Fundamentals of Quality for the Hospitality Industry	3	Major	Sp	
5	HRI 241	Supervision in the Hospitality Industry	3	Major	Sp	
6	HRI 242	Training and Development for the Hospitality Industry	3	Major	Sp	
7	HRI 251	Food and Beverage Cost Control I	3	Major	Sp	
8	HRI 231	Principles of Event and Meeting Management	3	Major	Su	
9	HRI 257	Catering Management	3	Major	Su	
Total Program Credits			27			
Total Pathway Credits			27			

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Information Systems Technology**

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

### **PURPOSE:**

This curriculum is designed to prepare students for entry-level positions in the field of Information Technology. Classes in the program will educate students in the various sectors of Information Technology to include software, web design, and programming. The program provides practical IT knowledge for office and technical personnel. Graduates of this program may become software specialists, microcomputer operators, IT management trainees, office support personnel, web site developers, help desk specialists, entry-level programmers, or other IT professionals.

### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **COURSES:**

The Program Pathway for Information Systems Technology AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Information Systems Technology - AAS

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
3	ITD 112	Designing Web Page Graphics	3	Major	F	
4	ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	
5	ITP 100	Software Design	3	Major	F	
6	MTH 130	Fundamentals of Reasoning	3	Major	F, Sp	
7	HLT/PED	Health or Physical Education	1	Gen Ed	F, Sp, Su	
8	ITD 110	Web Page Design I	3	Major	Sp	
9	ITD 136	Database Management Software	3	Major	Sp	
9	ITP 136	C# Programming I	4	Major	Sp	
10		IT Elective <sup>1</sup>	3	Major	Sp	
11		Social Sciences Elective	3	Major	F, Sp, Su	
12	ECO 120	Survey of Economics	3	Major	F, Sp, Su	
13	ENG 131	Technical Report Writing	3	Major	F, Sp	
14	ITD 120	Design Concepts for Mobile Applications	3	Major	F	
16	ITD 210	Web Page Design II	3	Major	F	
17	ITP 120	Java Programming I	4	Major	F	
18		Humanities Elective	3	Gen Ed	F, Sp, Su	
19	ITP 225	Web Scripting Languages	4	Major	Sp	
20		IT Elective <sup>1</sup>	3	Major	F, Sp, Su	
21	ITP 258	Systems Development Project	4	Major	F, Sp, Su	
Total Pathway Credits			63			
Total Program Credits			63			

(1) Course offerings for the IT electives will vary to provide students with the most current trends in information technology.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## Introduction to Hospitality Management

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Semester

### PURPOSE:

This career studies certificate program is designed to provide participants the necessary training and skills for entry-level employment in the Hospitality industry. Participants will have the opportunity to earn certifications from the National Restaurant Association AHLEI certificate program.

**The Introduction to Hospitality Management Career Studies Certificate program alone is NOT eligible for financial aid. Interested students should consult an academic Counselor for further information.**

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Introduction to Hospitality Management Career Studies Certificate is a tool for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Introduction to Hospitality Management - CSC

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	HRI 195	Introduction to Restaurant Certification	3	Major	F, Sp	
2	HRI 195	Introduction to Customer Service	3	Major	F, Sp	
3	HRI 195	Introduction to ServSafe Certification	3	Major	F, Sp	
4	HRI 190	Coordinated Internship in Restaurant and Hospitality Management	3	Major	F, Sp	
Total Program Credits			12			

*Term Offered: F – Fall | Sp – Spring | Su – Summer*

*Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite*

## Law Enforcement

**AWARD:** Career Studies Certificate

**LENGTH:** Less than 1 Year

### PURPOSE:

This career studies certificate will allow students to attend the Central Virginia Criminal Justice Academy. The program of study will be conducted pursuant to the Virginia Department of Criminal Justice Services Guidelines for Pre-Employment Training. Upon successful completion of the program, students will be eligible to obtain certification as a law enforcement officer in the Commonwealth of Virginia.

Students may not be eligible for Financial Aid while enrolled in this program. Please contact the program head for more information.

### ADMISSIONS REQUIREMENTS:

Admission is competitive and is based on grades, interviews, and the student meeting the criteria established for attending the Central Virginia Criminal Justice Academy. Candidates must submit a Certificate of Medical Eligibility, a Certificate of Drug Testing, a fingerprint card, a summary of results of psychological testing, and a summary of results of polygraph examination. All candidates will be required to provide an original birth certificate reflecting U.S. Citizenship, an official transcript reflecting college credit, a high school diploma or GED, and proof of personal medical insurance coverage.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Law Enforcement CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Law Enforcement – CSC

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	ADJ 280	Capstone Project	1	Major	F, Sp	
2	ADJ 290	Coordinated Internship	5	Major	F, Sp	
3	ADJ 295	Topics in Law Enforcement I	3	Major	F, Sp	
4	ADJ 295	Topics in Law Enforcement II	3	Major	F, Sp	
5	ADJ 296	On-Site Training	5	Major	F, Sp	
Total Program Credits			17			

*This program is offered in collaboration with the Central Virginia Criminal Justice Academy. It designed to provide an avenue of Administration of Justice AAS graduates to obtain Virginia Law Enforcement certification. Admission is competitive and based on several criteria.*

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Liberal Arts**

**AWARD:** Associate of Arts and Sciences

**LENGTH:** 2 Years

## **General Education**

**AWARD:** Certificate

**LENGTH:** 1 Year

### **PURPOSE:**

The Associate of Arts and Sciences program in Liberal Arts is designed to prepare students to transfer to a four-year college or university to complete a baccalaureate of arts or equivalent program, with the necessary knowledge of foreign language and culture, and to provide students with a rigorous course of study, enabling personal and professional growth.

### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **COURSES:**

The Program Pathway for Liberal Arts AA&S is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Liberal Arts – AAS****General Education - Certificate**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
3		Foreign Language Beginning I <sup>1</sup>	4	Major	F, Sp, Su	
4		Science with Laboratory <sup>2</sup>	4	Gen Ed	F, Sp, Su	
5	ITE 115/119	Computer Elective	3	Major	F, Sp, Su	
6	MTH	Mathematics	3	Gen Ed	F, Sp, Su	
7	ENG 112	College Composition II	3	Major	F, Sp, Su	ENG 111
8		Foreign Language Beginning II	4	Major	F, Sp, Su	Foreign Language Beginning I
9		Science with Laboratory	4	Gen Ed	F, Sp, Su	
10	MTH	Mathematics	3	Gen Ed	F, Sp, Su	
11		Social Science Elective	3	Gen Ed	F, Sp, Su	
12	CST 100/110	Public Speaking/Introduction to Communication	3	Gen Ed	F, Sp, Su	
<b>General Education Certificate- 38 Credits Completed</b>						
13		Foreign Language Intermediate I	4	Major	F, Sp, Su	Foreign Language Beginning II
14	HIS	History Elective	3	Gen Ed	F, Sp, Su	
15		Health or Physical Education	1	Gen Ed	F, Sp, Su	
16		Social Science Elective	3	Gen Ed	F, Sp, Su	
17		Humanities Elective	3	Gen Ed	F, Sp, Su	
18		Foreign Language Intermediate II	4	Major	F, Sp, Su	Foreign Language Intermediate I
19	HIS	History Elective	3	Major	F, Sp, Su	
20		Health or Physical Education	1	Gen Ed	F, Sp, Su	
Total Pathway Credits			60			
Total Program Credits			60			

(1) Students who have satisfactorily completed two years of a foreign language in high school may test for placement into the second year of foreign language at the College.

(2) Eligible courses are listed on page 49 in the 2016-2018 catalog. Students should consult a counselor or advisor to select appropriate courses/ sequences that will satisfy requirements at four-year institutions to which they plan to transfer. MTH 103, MTH 104, and MTH 120 cannot be used to fulfill the mathematics requirement.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Machine Tool**

**AWARD:** Diploma

**LENGTH:** 2 Years

## **Machine Technology Fundamentals**

**AWARD:** Career Studies Certificate

**LENGTH:** Less than 1 Year

## **Machine Shop**

**AWARD:** Certificate

**LENGTH:** 1 Year

## **Computer Numerical Control**

**AWARD:** Career Studies Certificate

**LENGTH:** Less than 1 Year

Purpose:

Modern manufacturing techniques have created a great demand for highly skilled operators of the machines and tools used in making the many complex parts required by industry. It is the purpose of this curriculum to develop machinists and machinist trainees who are able to skillfully convert the engineer's blueprint into a precision part. The curriculum encompasses such diverse areas as technical mathematics, technical drafting, machine shop theory and practice, numerical control programming, basic metallurgy and is supplemented by general education courses.

## **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

## **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

## **COURSES:**

The Program Pathway for Machine Tool Diploma is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)



**Machine Tool – Diploma****Machine Technology Fundamentals – CSC****Machine Shops – Certificate****Computer Numerical Control – CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	MAC 161	Machine Shop Practices I	3	Major	F, Sp	
3	MAC 162	Machine Shop Practices II	3	Major	F, Sp	
4	MAC 181	Machine Blueprint Reading	3	Major	F	
5	SAF 126	Principles of Industrial Safety	3	Major	F	
6	MTH 111	Basic Technical Mathematics I (1)	3	Gen Ed	F, Sp	
7	MAC 163	Machine Shop Practices III	3	Major	F, Sp	
8	MAC 164	Machine Shop Practices IV	3	Major	F, Sp	
<b>Machine Technology Fundamentals Career Studies Certificate Completed</b>						
9	DRF 128	Geometric Dimensioning & Tolerance	2	Major	Sp	
10	ECO 120	Survey of Economics	3	Gen Ed	F, Sp	
11	ENG 100	Basic Occupational Communication (2)	3	Gen Ed	F, Sp	
12	MAC 116	Machinist Handbook	2	Major	Sp	
13	MAC 121	Numerical Control I	3	Major	Su	
14	MAC 146	Metals/Heat Treatment	2	Major	Sp, Su	
15	MAC 241	Advanced Machinery Procedures I	3	Major	F, Sp, Su	
16	MAC 242	Advanced Machinery Procedures II	3	Major	F, Sp, Su	
<b>Machine Shop Certificate Completed</b>						
17	MAC 122	Numerical Control II	3	Major	F	
18	MAC 123	Numerical Control III	3	Major	Sp	
<b>Computer Numerical Control Career Studies Certificate Completed</b>						
19	MAC 231	Advanced Precision Machining I	3	Major	F, Sp	
20	MAC 232	Advanced Precision Machining II	3	Major	F, Sp	
21	IND 140	Quality Control	2	Major	F, Sp	
22	WEL 120	Introduction to Welding	3	Major	F, Sp	
<b>Total Pathway Credits</b>			<b>60</b>			
<b>Total Program Credits</b>			<b>60</b>			

(1) Students whose placement test scores qualify for placement in MTH 131, 154, or 161 are encouraged to take one of these higher level sequences in lieu of MTH 111.

(2) Students whose placement test scores qualify for placement in ENG 111 are encouraged to take ENG 111 in lieu of ENG 100.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Machine Tool & Quality**

**AWARD:** Diploma

**LENGTH:** 2 Years

## **Machine Technology Fundamentals**

**AWARD:** Career Studies Certificate

**LENGTH:** Less than 1 Year

## **Machine Shop**

**AWARD:** Certificate

**LENGTH:** 1 Year

### **PURPOSE:**

Modern manufacturing techniques have created a great demand for highly skilled quality technicians that verify dimensions of many complex parts made by machines and tools required by industry. It is the purpose of this curriculum to develop quality control inspectors and trainees who are able to skillfully verify that a precision manufactured part meets engineering blueprints and standards.

### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **COURSES:**

The Program Pathway for Machine Tool & Quality Diploma is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Machine Tool & Quality- Diploma****Machine Technology Fundamentals - CSC****Machine Shops - Certificate**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	MAC 161	Machine Shop Practices I	3	Major	F, Sp	
3	MAC 162	Machine Shop Practices II	3	Major	F, Sp	
4	MAC 181	Machine Blueprint Reading	3	Major	F	
5	SAF 126	Principles of Industrial Safety	3	Major	F	
6	MTH 111	Basic Technical Mathematics I1	3	Gen Ed	F, Sp	
7	MAC 163	Machine Shop Practices III	3	Major	F, Sp	
8	MAC 164	Machine Shop Practices IV	3	Major	F, Sp	
<b>Machine Technology Fundamentals Career Studies Certificate Completed</b>						
9	DRF 128	Geometric Dimensioning & Tolerance	2	Major	Sp	
10	ECO 120	Survey of Economics	3	Gen Ed	F, Sp	
11	ENG 100	Basic Occupational Communication (2)	3	Gen Ed	F, Sp	
12	MAC 116	Machinist Handbook	2	Major	Sp	
13	MAC 121	Numerical Control I	3	Major	Su	
14	MAC 146	Metals/Heat Treatment	2	Major	Sp, Su	
15	MAC 241	Advanced Machinery Procedures I	3	Major	F, Sp, Su	
16	MAC 242	Advanced Machinery Procedures II	3	Major	F, Sp, Su	
<b>Machine Shop Certificate Completed</b>						
17	IND 105	Non-Destructive Inspection & Testing	3	Major	F	
18	IND 140	Quality Control	2	Major	F	
19	WEL 120	Introduction to Welding	3	Major	F, Sp	
20	IND 145	Introduction to Metrology	3	Major	Sp	
21	IND 235	Statistical Quality Control	3	Major	Sp	
22	MAC 252	Surface Table Inspection	3	Major	Sp	
<b>Total Pathway Credits</b>			<b>60</b>			
<b>Total Program Credits</b>			<b>60</b>			

(1) Students whose placement test scores qualify for placement in MTH 131, 154, or 161 are encouraged to take one of these higher level sequences in lieu of MTH 111.

(2) Students whose placement test scores qualify for placement in ENG 111 are encouraged to take ENG 111 in lieu of ENG 100

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Management**

**AWARD:** Associate of Applied Science      **LENGTH:** 2 Years

## **Business Management**

**AWARD:** Career Studies Certificate      **LENGTH:** 1 Year

## **Management - Human Resource Specialization**

**AWARD:** Associate of Applied Science      **LENGTH:** 2 Years

## **Management - Marketing Specialization**

**AWARD:** Associate of Applied Science      **LENGTH:** 2 Years

### **PURPOSE:**

The Associate of Applied Science degree in **Management** is designed for persons seeking management positions in business and industry. The program is specifically designed to incorporate an understanding of business and financial operations, as well as management and supervisory roles. Employment opportunities include management trainee, supervisor, real estate sales, banking, finance, retail merchandising, production operations, purchasing agent, sales management, and other related business and industry occupations.

The **Human Resource Specialization** curriculum is designed for persons seeking employment in the functional areas of Human Resources. The program provides specialized training that will be beneficial to both human resource professionals and non-human resource professionals responsible for implementing human resource policies.

The **Marketing Specialization** curriculum is designed for persons seeking employment in merchandising and marketing occupations upon graduation. Employment opportunities include positions in the marketing field such as: manager/trainee, assistant manager, department manager, sales supervisor, customer service representative, display apprentice/trainee, advertising trainee, retail store owner/manager and media buyer.

### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### **COURSES:**

The Program Pathway for Management AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Management – AAS****Business Management – CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	HLT/PED	Health or Physical Education <sup>1</sup>	1	Gen Ed	F, Sp, Su	
3	BUS 100	Introduction to Business	3	Major	F, Sp, Su	
4	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
5	AST 205	Business Communications	3	Major	F	
6	ECO 120	Survey of Economics <sup>2</sup>	3	Major	F, Sp, Su	
7	BUS 204	Project Management	3	Major	F	
8	MTH 130	Fundamentals of Reasoning <sup>3</sup>	3	Gen Ed	F, Sp	
9	BUS 226 or ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	Keyboarding competence
10	BUS 200	Principles of Management	3	Major	F, Sp, Su	
11	BUS 205	Human Resources Management	3	Major	Sp	
12		Social Sciences Elective <sup>2,4</sup>	3	Gen Ed	F, Sp, Su	
<b>Business Management Career Studies Certificate Completed</b>						
13	ACC 211	Principles of Accounting I	4	Major	F, Sp, Su	
14	BUS 121	Business Mathematics	3	Major	F, Sp	
15	BUS 241	Business Law	3	Major	F, Su	
16	MKT 100	Principles of Marketing	3	Major	F, Sp	
17	MKT 275	International Marketing <sup>5</sup>	3	Major	F	
18	ACC 212	Principles of Accounting II	4	Major	F, Sp, Su	ACC 211
19	BUS 156	Introduction to Operating Management	3	Major	Sp	
20		Humanities Elective <sup>4</sup>	3	Gen Ed	F, Sp, Su	
21	FIN 215	Financial Management	3	Major	Sp	
<b>Total Pathway Credits</b>			<b>61</b>			
<b>Total Program Credits</b>			<b>61</b>			

(1) Veterans may be awarded PED credit by providing a copy of their DD214 to the Office of Admissions and Records.

(2) The ECO 120 and Social Science Elective may be satisfied by taking ECO 201 and ECO 202.

(3) MTH 154 or higher may be substituted for MTH 130

(4) For a list of approved Humanities and Social Science Electives, please see the CVCC academic catalog.

(5) MKT 282 may be substituted for MKT 275.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Management – Human Resource Specialization - AAS**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	HLT/PED	Health or Physical Education <sup>1</sup>	1	Gen Ed	F, Sp, Su	
3	BUS 100	Introduction to Business	3	Major	F, Sp, Su	
4	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
5	AST 205	Business Communications	3	Major	F	
6	MKT 100	Principles of Marketing	3	Major	F, Sp, Su	
7	MTH 130	Fundamentals of Reasoning <sup>2</sup>	3	Gen Ed	F, Sp	
8	BUS 205	Human Resources Management	3	Major	Sp	
9	BUS 121	Business Mathematics	3	Major	F, Sp	
10	BUS 200	Principles of Management	3	Major	F, Sp, Su	
11	BUS 226 or ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	Keyboarding competence
12	BUS 241	Business Law	3	Major	F, Su	
13	ACC 211	Principles of Accounting I	4	Major	F, Sp, Su	
14		Social Sciences Elective <sup>3</sup>	3	Gen Ed	F, Sp, Su	
15	BUS 218	Employee Recruitment, Selection and Retention	3	Major	F	
16	BUS 295	Strategic Human Resources	3	Major	F	
17	ECO 120	Survey of Economics <sup>3,4</sup>	3	Major	F, Sp, Su	
18	ACC 212	Principles of Accounting II	4	Major	F, Sp, Su	ACC 211
19		Humanities Elective <sup>3,4</sup>	3	Gen Ed	F, Sp, Su	
20	BUS 214	Compensation Management	3	Major	Sp	
21	BUS 217	Employee Training and Development	3	Major	Sp	
22	FIN 215	Financial Management	3	Major	Sp	
<b>Total Pathway Credits</b>			<b>64</b>			
<b>Total Program Credits</b>			<b>64</b>			

(1) Veterans may be awarded PED credit by providing a copy of their DD214 to the Office of Admissions and Records.

(2) MTH 154 or higher may be substituted for MTH 130.

(3) The ECO 120 and Social Science Elective may be satisfied by taking ECO 201 and ECO 202.

(4) For a list of approved Humanities and Social Science Electives, please see the CVCC academic catalog.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Management - Marketing Specialization - AAS**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	HLT/PED	Health or Physical Education <sup>1</sup>	1	Gen Ed	F, Sp, Su	
3	BUS 100	Introduction to Business	3	Major	F, Sp, Su	
4	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
5	AST 205	Business Communications	3	Major	F	
6	BUS 226 or ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	Keyboarding competence
7	MKT 100	Principles of Marketing	3	Major	F, Sp	
8	MTH 130	Fundamentals of Reasoning <sup>2</sup>	3	Gen Ed	F, Sp	
9	BUS 121	Business Mathematics	3	Major	F, Sp	
10	BUS 200	Principles of Management	3	Major	F, Sp, Su	
11	MKT 110	Principles of Selling	3	Major	Sp	
12		Social Sciences Elective <sup>3,4</sup>	3	Gen Ed	F, Sp, Su	
13	ACC 211	Principles of Accounting I	4	Major	F, Sp, Su	
14	BUS 241	Business Law	3	Major	F, Su	
15	ECO 120	Survey of Economics <sup>3</sup>	3	Major	F, Sp, Su	
16	MKT 275	International Marketing	3	Major	F	
17	MKT 228	Promotion	3	Major	F	
18	ACC 212	Principles of Accounting II	4	Major	F, Sp, Su	ACC 211
19		Humanities Elective <sup>4</sup>	3	Gen Ed	F, Sp, Su	
20	BUS 205	Human Resources Management	3	Major	Sp	
21	FIN 215	Financial Management	3	Major	Sp	
22	MKT 282	Principles of E-Commerce	3	Major	Sp	
<b>Total Pathway Credits</b>			<b>64</b>			
<b>Total Program Credits</b>			<b>64</b>			

(1) Veterans may be awarded PED credit by providing a copy of their DD214 to the Office of Admissions and Records.

(2) MTH 154 or higher may be substituted for MTH 130.

(3) The ECO 120 and Social Science Elective may be satisfied by taking ECO 201 and ECO 202.

(4) For a list of approved Humanities and Social Science Electives, please see the CVCC academic catalog.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Manufacturing Technology****AWARD:** Career Studies Certificate**LENGTH:** 1 Year**PURPOSE:**

This career studies certificate is designed for a student who wishes to obtain the skills necessary to work in an industrial manufacturing environment as an entry-level operator or entry-level industrial maintenance technician. The curriculum encompasses areas relating to electricity, hydraulics and pneumatics, communications, and others.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Manufacturing Technology CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Manufacturing Technology - CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	ELE 140	Basic Electricity and Machinery	4	Major	F, Sp	
2	SAF 130	Industrial Safety-OSHA 10	1	Major	F, Sp	
3	SDV 106	Preparation for Employment	1	Gen Ed	F, Sp	
4	IND 137	Team Concepts and Problem Solving	3	Major	F, Su	
5	IND 195	Manufacturing Specialist	4	Major	Sp, Su	
6	IND 295	Manufacturing Technician	2	Major	Sp, Su	
7	INS 232	System Troubleshooting	3	Major	Sp, Su	
<b>Total Program Credits</b>			<b>18</b>			

*Term Offered: F – Fall | Sp – Spring | Su – Summer*

*Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite*



**Mechatronics****AWARD:** Associate of Applied Science**LENGTH:** 2 Years**Mechatronics****AWARD:** Career Studies Certificate**LENGTH:** 1 Year**PURPOSE:**

This program is designed for the student who desires a career in advanced manufacturing. It combines content from mechanics, electronics, robotics, and computer related subjects. In class knowledge is balanced with practical, hands-on training such as assembly, test, and trouble shooting,. Students earn four industry certifications. Upon completion of this program, the student will be qualified for a wide variety of positions that offer great career potential in the local area.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics. Students with deficiencies in English or Mathematics will be required to take appropriate developmental courses. Students should schedule an appointment with a counselor to discuss these admission requirements.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Mechatronics AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Mechatronics - AAS**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 101	Orientation to Electronics & Mechatronics	1	Gen Ed	F	
2	SAF 130	Industrial Safety - OSHA 10	1	Major	F, Sp	
<b>OSHA 10-Hour Card</b>						
3	IND 195	Manufacturing Specialist	4	Major	F	
<b>Manufacturing Skills Institute - Manufacturing Specialist Certification</b>						
4	IND 295	Manufacturing Technician I	2	Major	F	
<b>Manufacturing Skills Institute - Manufacturing Technician Level 1 Certification</b>						
5	MTH 131	Technical Mathematics I	3	Gen Ed	F, Sp	
6	ETR 113	AC/DC Fundamentals I	4	Major	F, Sp	
7	BLD 105	Shop Practices and Procedures	2	Major	Sp	
8	DRF 161	Blueprint Reading I	2	Major	Sp	
9	ETR 114	AC/DC Fundamentals II	4	Major	Sp, Su	
10	ENG 131	Technical Report Writing I	3	Gen Ed	F, Sp	
11	MEC 140	Introduction to Mechatronics	3	Major	Sp, Su	
<b>Mechatronics Career Studies Certificate Completed – 29 Credits</b>						
12	ELE 141	D.C. and A.C. Machines	4	Major	F	
13	MEC 161	Basic Fluid Mechanics - Hydraulics/Pneumatics	3	Major	F	
14	IND 181	World Class Manufacturing I	3	Major	F	
15	MEC 190	Coordinated Internship	1	Major	F, Sp	
16	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
17		Social Science Elective	3	Gen Ed	F, Sp, Su	
18	ETR 167	Logic Circuits and Systems	3	Major	Sp	
19	MEC 253	Preventative and Predictive Maintenance	3	Major	Sp	
20	ETR 150	Machine Control Using Relay & Programmable Logic	3	Major	F, Sp	
21	DRF 241	Parametric Solid Modeling I-II	3	Major	Sp	
22	EGR 127	Intro to Computer or Visual Basic Programming	2	Major	Sp	
23		Humanities Elective	3	Gen Ed	F, Sp, Su	
<b>Total Program Credits</b>			<b>63</b>			

(1) Students whose placement test scores qualify for placement in MTH 161 may take this higher level course in lieu of MTH 131.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Mechatronics****AWARD:** Career Studies Certificate**LENGTH:** 1 Year**PURPOSE:**

As automation is now prevalent in manufacturing, local industry has a growing need for employees with 21st century technical skills that include a mix of electrical, mechanical, and computer-based engineering, or mechatronics. Through surveys and numerous site visits, local employers have indicated a current gap in areas such as AC/DC electronic fundamentals, engineering graphics, PLC control and troubleshooting, and analytical and mathematical reasoning. With an emphasis on preparing students with both soft skills and the specific manufacturing/mechatronic skills, students in the program can attain the requisite standards and skills to enter the workforce upon completion of the 1-2 year program. Additionally, with the provision of the internship and five nationally recognized industry credentials, students may be better prepared and have greater opportunity for employment.

The purpose of the career studies certificate is to prepare students for full-time employment in the automation manufacturing industry upon completion of the program. This curriculum with an emphasis in hands-on training will prepare students as entry-level skilled technicians incorporating both soft and 21st century technical skills.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics. Students with deficiencies in English or Mathematics will be required to take appropriate developmental courses. Students should schedule an appointment with a Counselor to discuss these admission requirements.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Mechatronics CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Mechatronics - CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 101	Orientation to Electronics & Mechatronics	1	Gen Ed	F	
2	SAF 130	Industrial Safety - OSHA 10	1	Major	F, Sp	
<b>OSHA 10-Hour Card</b>						
3	IND 195	Manufacturing Specialist	4	Major	F	
<b>Manufacturing Skills Institute - Manufacturing Specialist Certification</b>						
4	IND 295	Manufacturing Technician I	2	Major	F	
<b>Manufacturing Skills Institute - Manufacturing Technician Level 1 Certification</b>						
5	MTH 131	Technical Mathematics I1	3	Gen Ed	F, Sp	
6	ETR 113	AC/DC Fundamentals I	4	Major	F, Sp	
7	BLD 105	Shop Practices and Procedures	2	Major	Sp	
8	DRF 161	Blueprint Reading I	2	Major	Sp	
9	ETR 114	AC/DC Fundamentals II	4	Major	Sp, Su	
10	ENG 131	Technical Report Writing I	3	Gen Ed	F, Sp	
11	MEC 140	Introduction to Mechatronics	3	Major	Sp, Su	
<b>Total Program Credits</b>			<b>29</b>			

(1) Students whose placement test scores qualify for placement in MTH 161 may take this higher level course in lieu of MTH 131.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## Mechatronics Fundamentals

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### PURPOSE:

This two-semester career studies certificate was designed to provide students the opportunity to acquire the knowledge and skills necessary for entry-level mechatronics technicians and as a stackable credential. The curriculum offers a variety of courses that relate to engineering, math and physics.

**This program is available to XLR8 STEM Academy students only.**

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Mechatronics Fundamentals CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Mechatronics Fundamentals CSC

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	DRF 161	Blueprint Reading	2	Major	F	
2	SAF 130	Industrial Safety-OSHA 10	1	Major	F	
3	PHY 121	Principles of Physics I	4	Major	F	
4	MTH 261	Applied Calculus I 1	3	Major	F	MTH 161
5	ETR 164	Logic Circuits and Systems	3	Major	Sp	
6	MEC 190	Coordinated Internship	1	Major	Sp	
7	MTH 162	Precalculus II 1	3	Major	Sp	MTH 161
8	PHY 122	Principles of Physics II	4	Major	Sp	
Total Program Credits			21			

(1) Students with sufficient placement scores may enroll in a higher-level math sequence in lieu of MTH 261-162.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Medical Coding****AWARD:** Career Studies Certificate**LENGTH:** 1 Year**PURPOSE:**

The career studies certificate in **Medical Coding** is designed to prepare students who desire a career in health care coding. Upon successful completion of the program, students would be eligible for employment in hospitals, doctor's offices, nursing facilities, or other health care organizations. Training will involve International Classification of Diseases Clinical Modification (ICD), medical coding, insurance billing procedures, and government agencies for reimbursement.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Medical Coding CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Medical Coding - CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	BIO 141	Human Anatomy and Physiology I	4	Major	F, Sp	
2	BUS 226 or ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	Keyboarding competence
3	BIO 142	Human Anatomy and Physiology II	4	Major	F, Sp	
4	HLT 141	Introduction to Medical Terminology	2	Major	F, Sp, Su	
5	HIM 150	Health Records Management	3	Major	F	
6	HIM 253	Health Records Coding	4	Major	F	
7	HIM 195	Healthcare Compliance and Billing	3	Major	Sp	
8	HIM 254	Adv. Coding and Reimbursement <sup>1</sup>	4	Major	Sp	
<b>Total Program Credits</b>			<b>27</b>			

(1) It is strongly recommended students complete BIO 141 and 142 prior to enrolling in HIM 254.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Medical Laboratory Technology**

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

### **PURPOSE:**

The **Medical Laboratory Technology** degree is designed to prepare students for employment, upon graduation and certification, as Medical Laboratory Technicians. Positions are available in hospital laboratories, private laboratories, physicians' office laboratories, health department laboratories, and industrial medical laboratories.

CVCC's program is offered in cooperation with Centra. CVCC awards the AAS degree and Centra maintains accreditation from the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Road, Suite 720, Rosemont, Illinois 60018.

### **ADMISSIONS REQUIREMENTS:**

Individuals must meet with a CVCC academic counselor, submit a program application, and schedule an interview with program faculty. Admission is competitive and limited to 10 students per academic year. Admitted students are required to submit a background check along with health and immunization records. Students are required to complete all first year courses prior to enrolling in MDL courses, earn a grade of "C" or better in all science and mathematics courses, and maintain a GPA of 2.0 or higher. Eligible students must begin MDL courses in the fall semester, attend full-time, and earn a grade of "C" or better in each to continue into the spring semester and graduate. Students are responsible for transportation to clinical sites and purchasing required uniforms.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation. Following graduation, clinical experience will be provided in Centra health care facilities to receive a certificate of completion from Centra and be qualified to take a national certification exam. Neither the AAS degree nor the certificate of completion is contingent upon the student passing any type of external exam.

### **COURSES:**

The Program Pathway for Medical Laboratory Technology AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Medical Laboratory Technology - AAS**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
3		Social Science Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
4	BIO 101	General Biology I <sup>2</sup>	4	Major	F, Sp, Su	
5	CHM 111	College Chemistry I	4	Major	F, Sp, Su	
6	HLT 141	Introduction to Medical Terminology	2	Major	F, Sp	
7		Humanities Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
8	ITE 115/ ITE 119	Introduction to Computer Applications and Concepts OR Information Literacy	3	Gen Ed	F, Sp, Su	
9	MTH 155	Statistical Reasoning <sup>3</sup>	3	Gen Ed	F, Sp, Su	
10	BIO 150	Introductory Microbiology <sup>4</sup>	4	Major	Sp, Su	"BIO 101 or BIO 141"
11	CHM 112	College Chemistry II	4	Major	Sp, Su	CHM 111
12	MDL 110	Urinalysis and Body Fluids	3	Major	F	
13	MDL 125	Clinical Hematology I	3	Major	F	
14	MDL 215	Immunology	2	Major	F	
15	MDL 236	Parasitology and Virology	2	Major	F	
16	MDL 235	Mycology	2	Major	F	
17	MDL 261	Clinical Chemistry and Instrumentation I	4	Major	F	
18	MDL 216	Blood Banking	4	Major	Sp	
19	MDL 225	Clinical Hematology II	4	Major	Sp	
20	MDL 237	Clinical Bacteriology	4	Major	Sp	
21	MDL 262	Clinical Chemistry and Instrumentation II	4	Major	Sp	
22	MDL 281	Clinical Correlations	1	Major	Sp	
<b>Total Pathway Credits</b>			<b>67</b>			
<b>Total Program Credits</b>			<b>67</b>			

(1) Approved course list for Social Science and Humanities Electives are located in the CVCC academic catalog.

(2) BIO 141 may substitute for BIO 101.

(3) MTH 161 may substitute for MTH 155. Students planning to transfer to a four-year institute MLS program are encouraged to take MTH 155.

(4) BIO 205 may substitute for BIO 150.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite



## Nuclear Technology

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

### PURPOSE:

The nuclear industry has created a demand for qualified nuclear service technicians, especially those with basic engineering and computer related skills. The Nuclear Technology curriculum is designed for persons employed in fields of nuclear service. **This curriculum is available to Framatome employees only.** This curriculum is work based and is tailored to the students' work schedules.

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics. **This curriculum is available to Framatome employees only.**

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Nuclear Technology AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Nuclear Technology – AAS**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ENG 111	English Composition I	3	Gen Ed	F, Sp, Su	
3	SAF 126	Principles of Industrial Safety	3	Major	F, Sp, Su	
4	IND 236	Total Quality Concepts	3	Major	Sp	
5	IND 105	Nondestructive Inspection and Testing	3	Major	F	
6	MTH 111	Basic Technical Mathematics	3	Gen Ed	F, Sp, Su	
7	MTH 130	Fundamentals of Reasoning	3	Gen Ed	F, Sp, Su	
8	HLT 100	First Aid and CPR	2	Gen Ed	F, Sp, Su	
9	NUC 107	Tools for the Nuclear Industry	3	Major	Sp	
10	MEC 111	Materials for Industry	3	Major		
11	PSY 205	Personal Conflict and Crisis Management	3	Gen Ed		
12	AST 205	Business Communications	3	Gen Ed		
13	ENG 131	Technical Report Writing	3	Gen Ed	F, Sp, Su	ENG 111
14	MEC 103	Electronic Circuits and Instrumentations	4	Major	Su	
15	MEC 210	Machine Design	3	Major		
16	NUC 102	Introduction to Nuclear Technology	3	Major		
17	ITN 154	Network Fundamentals, Router Basics, and Configuration (ICND1)-Cisco	4	Major	F, Sp	
18		Humanities Elective	3	Gen Ed	F, Sp, Su	
19	ELE 100	Electrical-Electronic Skills and Concepts	4	Major	Su	
20	IND 137	Team Concepts and Problem Solving	3	Major	Sp, Su	
21	ITE 115	Introduction to Computer Applications and Concepts	3	Gen Ed	F, Sp, Su	
22	EGR 127	Introduction to Computer Programming	2	Major		
<b>Total Pathway Credits</b>			<b>67</b>			
<b>Total Program Credits</b>			<b>67</b>			

(1) BIO 141 may substitute for BIO 101.

(2) MTH 161 may substitute for MTH 155. Students planning to transfer to a four-year institute MLS program are encouraged to take MTH 155.

(3) BIO 205 may substitute for BIO 150.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## Pharmacy Technology

**AWARD:** Career Studies Certificate

**LENGTH:** 1 Year

### PURPOSE:

This career studies program is designed to prepare students for work as Pharmacy Technicians. Upon successful completion of the community college program, students must take the Pharmacy Technician Certification Board exam or other exam approved by the Virginia Board of Pharmacy. Employment opportunities for Pharmacy Technicians are available through hospitals, retail pharmacies, mail order pharmacies, and insurance companies.

### ADMISSIONS REQUIREMENTS:

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

### PROGRAM REQUIREMENTS:

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

### COURSES:

The Program Pathway for Pharmacy Technology CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

## Pharmacy Technology - CSC

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	HLT 143	Medical Terminology	3	Major	F	
2	HLT 250	General Pharmacology	3	Major	F	
3	HLT 261	Basic Pharmacy I	3	Major	F	
4	HLT 263	Basic Pharmacy Lab I	1	Major	F	
5	ITE 115/119	Computer Elective	3	Gen Ed	F, Sp, Su	
6	HLT 262	Basic Pharmacy II	3	Major	Sp	
7	HLT 264	Basic Pharmacy Lab II	1	Major	Sp	
8	HLT 190	Coordinated Internship 1	3	Major	Sp	"HLT 143, 250, 261, 263"
9	PSY 120	Human Relations	3	Major	Sp	
Total Program Credits			23			

(1) A background check and/or drug screen may be required by some pharmacies.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Radiologic Technology**

### **Cardiopulmonary Resuscitation (CPR) - Certification**

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

#### **PURPOSE:**

The purpose of the program is to educate motivated individuals in the varied aspects of becoming a qualified medical imaging professional, including such areas as technical skills, patient care considerations, medical knowledge, and appropriate work habits. Upon successful completion of all courses in the Radiologic Technology curriculum, the student is eligible to take the national registry examination administered by the American Registry of Radiologic Technologists. The CVCC program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT\*) which is the only agency recognized by the United States Department of Education for the accreditation of educational programs in radiography, radiation therapy, magnetic resonance, and medical dosimetry.

#### **ADMISSIONS REQUIREMENTS:**

Entrance into the Radiologic Technology program is a multi-step competitive process. Students are accepted into the curriculum only once a year for the fall semester. Students must complete the application process by March 1 prior to the fall semester of desired enrollment. Students desiring entry into the Radiologic Technology program should have good organizational and study skills along with the ability to commit 30-40 hours a week for 6 semesters in order to be successful. Effective communication and critical thinking are essential skills needed for a student to be successful and complete the program.

Prerequisites include: two years of science (biology, chemistry, or physics) and two years of math (algebra I, algebra II, or geometry). Placement into ENG 111 and MTH 120 on CVCC placement test. Deficiencies must be remediated through developmental studies before consideration for admission to the program. Interested students must meet with a Counselor to complete the appropriate referral forms. Referrals to the Radiologic Technology program director must be completed by March 1st.

#### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation. Following graduation, clinical experience will be provided in Centra health care facilities to receive a certificate of completion from Centra and be qualified to take a national certification exam. Neither the AAS degree nor the certificate of completion is contingent upon the student passing any type of external exam.

#### **COURSES:**

The Program Pathway for Radiologic Technology AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Radiologic Technology - AAS**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	RAD 131	Elementary Clinical Procedures I	3	Major	F	
<b>Cardiopulmonary Resuscitation (CPR) Certification</b>						
2	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
3	RAD 132	Elementary Clinical Procedures II	3	Major	Sp	
4	BIO 141	Human Anatomy and Physiology I	4	Gen Ed	F, Sp, Su	
5	RAD 105	Introduction Radiology, Production and Patient Care	2	Major	F	
6	RAD 121	Radiologic Procedures I	4	Major	F	
7	MTH 130	Fundamentals of Reasoning <sup>1</sup>	3	Gen Ed	F, Sp, Su	
8	RAD 111	Radiologic Science I	4	Major	Sp	
9	RAD 221	Radiographic Procedures II	4	Major	Sp	
10	HLT 143	Medical Terminology	3	Major	F, Sp, Su	
11	RAD 190	Coordinated Internship in Radiologic Technology	4	Major	Su	
12	RAD 205	Radiation Protection and Radiology	3	Major	Su	
13	RAD 231	Advanced Clinical Procedures I	5	Major	Fa	
14	RAD 232	Advanced Clinical Procedures II	5	Major	Sp	
15	ENG 111	College Composition I	3	Ged Ed	F, Sp, Su	
16	RAD 112	Radiologic Science II	4	Major	F	
17		Humanities Elective <sup>2</sup>	3	Gen Ed	F, Sp, Su	
18	RAD 240	Radiographic Pathology	3	Major	Sp	
19	RAD 255	Radiographic Equipment	3	Major	Su	
20		Social Science Elective	3	Gen Ed	F, Sp, Su	
21	RAD 215	Correlated Radiographic Theory	2	Major	Su	
22	RAD 290	Coordinated Internship in Radiologic Technology	3	Major	Su	
<b>Registered Radiographer upon successful completion of the National Registry Examination</b>						
Total Program Credits			72			
Total Pathway Credits			72			

(1) A higher mathematics course may be substituted for MTH 130.

(2) For a listing of approved courses, see Humanities Electives located in the CVCC academic catalog.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Respiratory Therapy Technology**

**AWARD:** Associate of Applied Science

**LENGTH:** 2 Years

### **PURPOSE:**

The purpose of this curriculum is to prepare selected students for employment as Respiratory Care Practitioners and for Registry by the National Board for Respiratory Care. Employment opportunities for Respiratory Care Practitioners are available in hospitals, skilled nursing facilities, physician offices, home care, education, cardiopulmonary rehabilitation, and air and ground transport.

### **ADMISSIONS REQUIREMENTS:**

Admission is competitive and based on grades, performance on the College's placement tests, interviews, and demonstrated interest in pursuing a career in an allied health care field. Students should schedule an appointment with a Counselor to discuss general admission to the college and to the respiratory therapy program. Students should complete the Allied Health application process by April 15, prior to the fall semester of desired admission. Late applicants will be considered if there are available positions in the program. Applicants must successfully complete a background check prior to final admission into the program.

### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation. Following graduation, clinical experience will be provided in Centra health care facilities to receive a certificate of completion from Centra and be qualified to take a national certification exam. Neither the AAS degree nor the certificate of completion is contingent upon the student passing any type of external exam.

### **COURSES:**

The Program Pathway for Respiratory Therapy AAS is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Respiratory Therapy Technology - AAS**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	BIO 141	Human Anatomy & Physiology I	4	Gen Ed	F, Sp, Su	
2	BIO 142	Human Anatomy & Physiology II	4	Gen Ed	F, Sp, Su	
3	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
4	RTH 101	Integrated Sciences for Respiratory Care I	3	Major	F	
5	RTH 121	Cardiopulmonary Science I	3	Major	F	
6	RTH 190	Coordinated Internship	3	Major	F	
7	RTH 131	Respiratory Care Theory & Procedures I	4	Major	Sp	
8	RTH 145	Pharmacology for Respiratory Care	2	Major	Sp	
9	RTH 102	Integrated Sciences for Respiratory Care II	3	Major	Sp	
10	RTH 190	Coordinated Internship	3	Major	Sp	
11	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
12	RTH 132	Respiratory Care Theory & Procedures II	4	Major	Su	
13	RTH 217	Pulmonary Rehabilitation, Home Care & Health Promotion	2	Major	Su	
14	RTH 190	Coordinated Internship	2	Major	Su	
15	RTH 222	Cardiopulmonary Science II	3	Major	F	
16	RTH 226	Theory of Neonatal and Pediatric Respiratory Care	2	Major	F	
17	RTH 135	Diagnostic and Therapeutic Procedures I	2	Major	F	
18	RTH 290	Coordinated Internship	3	Major	F	
19	ITE 115	Introduction to Computer Applications and Concepts	3	Gen Ed	F, Sp, Su	
20		Social Science Elective	3	Gen Ed	F, Sp, Su	
21	RTH 223	Cardiopulmonary Science III	2	Major	Sp	
22	RTH 224	Integrated Respiratory Therapy Skills	2	Major	Sp	
23	RTH 236	Critical Care Monitoring	3	Major	Sp	
24	RTH 290	Coordinated Internship	3	Major	Sp	
25	EMS 165	Advanced Cardiac Life Support (ACLS)	1	Major	Sp	
26	EMS 169	Pediatric Advanced Life Support (PALS)	1	Major	Sp	
27		Humanities Elective	3	Gen Ed	Sp	
<b>Registered Respiratory Therapist upon successful completion of the National Board Registry Examination</b>						
			Total Pathway Credits	72		

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Science - General**

### **Science - Life Science Specialization**

### **Science - Physical Science Specialization**

**AWARD:** Associate of Arts and Sciences

**LENGTH:** 2 Years

#### **PURPOSE:**

An Associate of Arts and Sciences in Science will prepare students who plan to major in science for transfer to a four-year school. Potential majors include biology, chemistry, physics, geology, biomedical sciences, environmental science, neuroscience, and many more. Students will complete their general education requirements in addition to completing multiple science lab courses and advanced math courses.

#### **ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

#### **PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

#### **COURSES:**

The Program Pathway for Science AA&S is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)



**Science - General - AA&S**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ITE 115/119	Computer Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
3	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
4		Science with Laboratory <sup>1</sup>	4	Gen Ed	F, Sp, Su	
5	MTH 161	Precalculus I <sup>2</sup>	3	Major	F, Sp, Su	
6	ENG 112	College Composition II	3	Gen Ed	F, Sp, Su	ENG 111
7		Science with Laboratory <sup>1</sup>	4	Gen Ed	F, Sp, Su	
8		Social Science Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
9	MTH 162	Precalculus II <sup>2</sup>	3	Major	F, Sp, Su	MTH 161
<b>General Education Certificate Completed – 30 credits</b>						
10		Humanities Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
11	HIS	History I <sup>1</sup>	3	Gen Ed	F, Sp, Su	
12		Science/Math elective (4 credits) <sup>1</sup>	4	Major	F, Sp, Su	
13	MTH 245/ MTH 261	Statistics I/Applied Calculus I <sup>1</sup>	3	Major	F, Sp, Su	MTH 161
14		Science/Math elective (4 credits) <sup>1</sup>	4	Major	F, Sp, Su	
15	HIS	History II <sup>1</sup>	3	Gen Ed	F, Sp, Su	
16		Humanities Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
17	CST	Communications Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
18		Science/Math elective (4 credits) <sup>1</sup>	4	Major	F, Sp, Su	
19		Science/Math elective (4 credits) <sup>1</sup>	4	Major	F, Sp, Su	
Total Pathway Credits			61			
Total Program Credits			61			

(1) Students who plan to transfer should consult an academic counselor to verify specific program requirements with their intended.

(2) MTH 161 162 may be replaced with MTH 167. If enrolled in MTH 167, students would be expected to enroll in MTH 263 instead of the math elective in course #13 to maintain the same number of credits toward the program.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Science - Life Science Specialization - AA&S**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
3	BIO 101	General Biology I	4	Gen Ed	F, Sp, Su	
4	MTH 161	Precalculus I	3	Major	F, Sp, Su	
5	CHM 111	College Chemistry I	4	Major	F, Sp, Su	
6	ENG 112	College Composition II	3	Gen Ed	F, Sp, Su	ENG 111
7	ITE 115/119	Computer Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
8	BIO 102	General Biology II	4	Gen Ed	F, Sp, Su	BIO 101
9	MTH 162	Precalculus II <sup>2</sup>	3	Major	F, Sp, Su	MTH 161
10	CHM 112	College Chemistry II	4	Major	Sp, Su	CHM 111
11	HIS	History I <sup>1</sup>	3	Gen Ed	F, Sp, Su	
12		Humanities Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
13	MTH 261	Applied Calculus I <sup>3</sup>	3	Major	F, Sp, Su	MTH 161
14		Science Elective <sup>4</sup>	4	Major	F, Sp, Su	
15	HIS	History II <sup>1</sup>	3	Gen Ed	F, Sp, Su	
16		Social Science Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
17	CST	Communications Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
18		Humanities Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
19		Science Elective <sup>4</sup>	4	Major	F, Sp, Su	
Total Program Credits			61			
Total Pathway Credits			61			

(1) Students who plan to transfer should consult an academic counselor to verify specific program requirements with their intended four-year institution. While an elective course may satisfy a requirement for a Central Virginia Community College program, it may not fulfill a requirement at a four-year institution.

(2) MTH 162 may be replaced with MTH 261 or 245 if not planning to take PHY 201 or MTH 263. Check with your transfer institution for specific Math requirements.

(3) MTH 261 may be replaced with MTH 162 or 245. Check with your transfer institution for specific Math requirements.

(4) See list of Science Electives below. Students who have followed the pathway will meet the pre-requisites for these courses. Any other Science electives may have other pre-requisites. Check with transfer institution to ensure you meet their requirements.

First 4 credit Science Electives: BIO 205, 256; CHM 241; ENV 121, 122; GOL 105, 110; MTH 263 (if MTH 162 was taken); NAS 131, 132; PHY 201, PHY 202 (though it is recommended that PHY 201 be taken before PHY 202).

Second 4 credit Science electives: any in the above list, plus CHM 242 (if CHM 241 was taken); MTH 264 (if MTH 263 was taken); PHY 241 (if MTH 263 was taken).

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Science - Physical Science Specialization - AA&S**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	ITE 115/119	Computer Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
3	ENG 111	College Composition I	3	Gen Ed	F, Sp, Su	
4	MTH 167	Precalculus with Trig <sup>1</sup>	5	Major	F, Sp	
5	CHM 111	College Chemistry I	4	Gen Ed	F, Sp, Su	
6	ENG 112	College Composition II	3	Gen Ed	F, Sp, Su	ENG 111
7	CHM 112	College Chemistry II	4	Gen Ed	Sp, Su	CHM 111
8		Humanities Elective <sup>2</sup>	3	Gen Ed	F, Sp, Su	
9	MTH 263	Calculus with Analytic Geometry I	4	Major	F, Sp, Su	MTH 162 or 167
10	CHM 241/ PHY 241	Organic Chemistry I OR University Physics I	4	Major	F	"CHM: CHM 112 PHY: MTH 263"
11	HIS	History I <sup>1</sup>	3	Gen Ed	F, Sp, Su	
12		Humanities Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
13	MTH 264	Calculus with Analytic Geometry II	4	Major	F, Sp, Su	MTH 263
14	CHM 242/ PHY 242	Organic Chemistry II OR University Physics II	4	Major	Sp	"CHM: CHM 241 PHY: MTH 264"
15	HIS	History II <sup>1</sup>	3	Gen Ed	F, Sp, Su	
16		Social Science Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
17	CST	Communications Elective <sup>1</sup>	3	Gen Ed	F, Sp, Su	
18		Math/Science Elective <sup>3</sup>	4	Major	F, Sp, Su	
Total Program Credits			61			
Total Pathway Credits			61			

(1) MTH 167 may be replaced with MTH 161 and 162, but doing so will require MTH 263 to be taken during a summer session or students may not complete the program within 2 years.

(2) Students who plan to transfer should consult an academic counselor to verify specific program requirements with their intended four-year institution. While an elective course may satisfy a requirement for a Central Virginia Community College program, it may not fulfill a requirement at a four-year institution.

(3) See list of Approved Transfer Electives below. Students who have followed the pathway will meet the pre-requisites for these courses. Any other Science electives may have other pre-requisites. Check with transfer institution to ensure you meet their requirements.

4 credit Approved Transfer Electives: BIO 101; CHM 241; ENV 121, 122; GOL 105, 110; MTH 265, 267; NAS 131, 132; PHY 201

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

**Welding****Welding Fundamentals****AWARD:** Career Studies Certificate**LENGTH:** 1 Year**PURPOSE:**

This career studies certificate program is designed to provide entry-level skills as a beginning welder. The welding classes are offered during both the day and evening. The program can be completed in one academic year as a full-time student or in two or three academic years as a part-time student.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

The Program Pathway for Welding CSC is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Welding – CSC and Welding Fundamentals – CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	WEL 120	Intro to Welding	3	Major	F, Sp, Su	
2	WEL 123	Arc Welding I	3	Major	F, Sp	
3	WEL 124	Arc Welding II	3	Major	F, Sp	
4	WEL 160	Gas Metal Arc Welding	3	Major	F	
<b>Welding Fundamentals Career Studies Certificate Completed</b>						
5	DRF 166	Welding Blueprint Reading	2	Major	F, Sp	
6	WEL 141	Welder Qualification I (1)	3	Major	Sp	
7	WEL 175	Semi-Automatic Process (FCAW) (1)	3	Major	Sp	
8	WEL 164	Gas Tungsten Arc Welding (GTAW), Tungsten Inert Gas (TIG)	3	Major	Sp	
9	WEL 145	Welding Metallurgy	3	Major	Sp, Su	
10	MAC 146	Metal/Heat Treatment	2	Major	Sp, Su	
Total Program Credits			28			

(1) Students have the option to earn industry-recognized certifications in this course.

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

## **Welding Technology**

### **Welding**

#### **Welding Fundamentals**

**AWARD:** Certificate

**LENGTH:** 1 Year

**PURPOSE:**

This certificate is designed to provide entry-level skills as a beginning welder. Occupational Objectives: welder, metal fabricator, welding layout or other related positions.

**ADMISSIONS REQUIREMENTS:**

Individuals are eligible for admission to CVCC if they are high school graduates or the equivalent, or if they are eighteen years of age or older and able to benefit academically from study at the community college, as demonstrated by assessment in reading, writing, and mathematics.

**PROGRAM REQUIREMENTS:**

All students expected to complete the requirements for a degree, diploma, or certificate must complete an Application for Graduation.

**COURSES:**

Program Pathway for Welding Technology Certificate is a resource for students that lists the following items:

- The recommended order in which to take the program courses
- Suggested course when more than one option exists
- Which semester each course is typically offered
- If the course has a prerequisite
- Courses that may lead to a certificate (if offered in the program)

**Welding Technology - Certificate****Welding - CSC****Welding Fundamentals- CSC**

Seq #	Course	Course Title	Credits	Type	Term offered	Pre-Req
1	SDV 100	College Success Skills	1	Gen Ed	F, Sp, Su	
2	WEL 120	Intro to Welding	3	Major	F, Sp, Su	
3	WEL 123	Arc Welding I	3	Major	F, Sp	
4	WEL 124	Arc Welding II	3	Major	F, Sp	
5	WEL 160	Gas Metal Arc Welding	3	Major	F	
<b>Welding Fundamentals Career Studies Certificate Completed</b>						
6	DRF 166	Welding Blueprint Reading	2	Major	F, Sp	
7	MTH 111	Basic Technical Mathematics (1)	3	Gen Ed	F, Sp	
8	WEL 141	Welder Qualification I (2)	3	Major	Sp	
9	WEL 175	Semi-Automatic Process (FCAW) (2)	3	Major	Sp	
10	WEL 164	Gas Tungsten Arc Welding (GTAW), Tungsten Inert Gas (TIG)	3	Major	Sp	
11	WEL 145	Welding Metallurgy	3	Major	Sp, Su	
12	ENG 100	Basic Occupational English	3	Gen Ed	F, Sp	
13	MAC 146	Metal/Heat Treatment	2	Major	Sp, Su	
<b>Welding Career Studies Certificate Completed</b>						
14	IND 137	Team Concepts & Problem Solving	3	Major	Su	
15	WEL 126/ 166	Pipe Welding I OR Advanced Gas Tungsten Arc Welding (GTAW), Tungsten Inert Gas (TIG)	3	Major	Su	WEL 164
Total Program Credits			41			

Term Offered: F – Fall | Sp – Spring | Su – Summer

Type of Course: Major – Required for the Program | Gen Ed – General Education | PreReq – Prerequisite

# Course Descriptions

## *Course Numbers*

Courses numbered 01-09 are courses for developmental preparatory studies. The credits earned in these courses are not applicable toward any programs at the College.

Courses numbered 100-199 are freshman-level; courses numbered 200-299 are sophomore-level and all are applicable towards an associate degree, diploma, or certificate program.

## *Course Credits*

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

## *Course Hours*

The number of lecture hours in class each week (*including lecture, seminar, and discussion hours*) and/or the number of laboratory hours in class each week (*including laboratory, shop, supervised practice, and cooperative work experiences*) are indicated for each course in the description. The number of lecture and laboratory hours in class each week is also called "contact hours" because it is time spent under the direct supervision of a faculty member. In addition to the lecture and laboratory hours in class each week, students must also spend time on out-of-class assignments.

## *Course Prerequisites*

If any prerequisites are established for a course, these prerequisites will be identified in the course description. Courses in special sequences (usually identified by a series of Roman numerals separated by a hyphen "-"; e.g. I-II-III) require that courses be taken that order. **Prerequisites must be completed before enrolling in any specified course unless special permission is obtained from the instructor or associate vice president.** When course numbers or Roman numerals are separated by a comma ",", the courses can be taken in any order. When co-requisites are required for a course, the co-requisites must be taken at the same time.

**Please check our website for the most up-to-date course selection**

## General Usage Courses

The following “General Usage Courses” apply to multiple curricula and all prefix sections. The titles and descriptions are generally applicable for such use. However, colleges may elect to substitute different, but essentially equivalent, titles (e.g. *Field Experiences in lieu of Coordinated Internship*) to satisfy the preferences of respective professional fields or disciplines. Similarly, the course description may be restructured for adaptation to appropriate context or to a more specialized application (e.g. *health agencies/facilities or hospitals in lieu of business, industrial and service firms*).

(Insert Appropriate Prefix) **90, 190, 290 Coordinated Internship in** (Insert Appropriate Discipline) (1-5 cr.) Supervises on-the-job training in selected business, industrial or service firms coordinated by the College. Credit/Practice ratio maximum 1:5 hours. May be repeated for credit. Variable hours.

(Insert Appropriate Prefix) **93, 193, 293 Studies in:** (Insert appropriate topic) (1-5 cr.) Covers new content not covered in existing courses in the discipline. Allows instructor to explore content and instructional methods to assess the course’s viability as a permanent offering. Variable hours.

(Insert Appropriate Prefix) **95, 195, 295 Topics in:** (Insert appropriate topic) (1-5 cr.) Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

(Insert Appropriate Prefix) **96, 196, 296 On-site Training in** (Insert appropriate discipline) (1-5 cr.) Specializes in career orientation and training programs without pay in selected businesses and industry, supervised and coordinated by the College. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(Insert Appropriate Prefix) **97, 197, 297 Cooperative Education in** (Insert Appropriate Discipline) (1-5 cr.) Supervises in on-the-job training for pay in approved business, industrial and service firms coordinated by the College’s Cooperative Education Office. Is applicable to all occupational-technical curricula at the discretion of the College. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

(Insert Appropriate Prefix) **98, 198, 298 Seminar and Project in** (Insert Appropriate Discipline) (1-5 cr.) Requires completion of a project or research report related to the student’s occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

(Insert Appropriate Prefix) **99, 199, 299 Supervised Study in** (Insert Appropriate Discipline) (1-5 cr.) Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.



## Courses

### ■ Accounting (ACC)

**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.

**ACC 211 Principles of Accounting I** (4 cr.) Introduces accounting principles with respect to financial reporting. Demonstrates how decision makers use accounting information for reporting purposes. Focuses on the preparation of accounting information and its use of the operation of organizations, as well as methods of analysis and interpretation of accounting information. Lecture 4 hours per week.

**ACC 212 Principles of Accounting II** (4 cr.) Introduces accounting principles with respect to cost and managerial accounting. Focuses on the application of accounting information with respect to product costing, as well as its use within the organization to provide direction and to judge performance. *Prerequisite: ACC 211.* Lecture 4 hours per week.

**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. Lecture 3 hours per week.

**ACC 221 Intermediate Accounting I** (4 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.* Lecture 4 hours per week.

**ACC 222 Intermediate Accounting II** (4 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* Lecture 4 hours per week.

**ACC 231 Cost Accounting I** (4 cr.) Studies cost accounting methods and reporting as applied to job order, process, and standard cost accounting systems. Includes cost control and other topics. *Prerequisite: ACC 212 or equivalent.* Lecture 4 hours per week.

**ACC 241 Auditing I** (3 cr.) Presents techniques of investigating, interpreting, and appraising accounting records and assertions. Studies internal control design and evaluation, evidence gathering techniques and other topics. *Prerequisite: ACC 212.* Lecture 3 hours per week.

**ACC 261 Principles of Federal Taxation I** (3 cr.) Presents the study of federal taxation as it relates to individuals and related entities such as partnerships, corporations, and other tax entities. Includes tax planning, compliance, and reporting. Lecture 3 hours per week.

**ACC 262 Principles of Federal Taxation II** (3 cr.) Presents the study of federal taxation as it relates to partnerships, corporations, and other tax entities. Includes tax planning, compliance, and reporting. Lecture 3 hours per week.

### ■ Administration of Justice (ADJ)

**ADJ 100 Survey of Criminal Justice** (3 cr.) Presents an overview of the United States criminal justice system; introduces the major system components - law enforcement, judiciary, and corrections. Lecture 3 hours per week.

**ADJ 105 The Juvenile Justice System** (3 cr.) Presents the evolution, philosophy, structures and processes of the American juvenile delinquency system; surveys the rights of juveniles, dispositional alternatives, rehabilitation methods and current trends. Lecture 3 hours per week.

**ADJ 107 Survey of Criminology** (3 cr.) Surveys the volume and scope of crime; considers a variety of theories developed to explain the causation of crime and criminality. Lecture 3 hours per week.

**ADJ 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. Lecture 3 hours per week.

**ADJ 133 Ethics and the Criminal Justice Professional** (3 cr.) Examines ethical dilemmas pertaining to the criminal justice system, including those in policing, courts and corrections. Focuses on some of the specific ethical choices that must be made by the criminal justice professional. Lecture 3 hours per week.

- ADJ 140 Introduction to Corrections** (3 cr.) Focuses on societal responses to the offender. Traces the evolution of practices based on philosophies of retribution, deterrence, and rehabilitation. Reviews contemporary correctional activities and their relationships to other aspects of the criminal justice system. Lecture 3 hours per week.
- ADJ 170 Street Gangs and Law Enforcement** (3 cr.) Teaches the philosophy and history of gangs in America through the eyes of law enforcement, courts, corrections and the citizenry. Examines methods by which law enforcement defines the gang problem and intervenes in gang membership. Explores gang globalization; differentiates street gangs and terrorist cells. Lecture 3 hours per week.
- ADJ 171-172 Forensic Science I-II** ( 3 cr.) ( 3 cr.) Introduces students to crime scene technology, procedures for sketching, diagramming and using casting materials. Surveys the concepts of forensic chemistry, fingerprint classification/identification and latent techniques, drug identification, hair and fiber evidence, death investigation techniques, thin-layer chromatographic methods, and arson materials examination. Lecture 3 hours per week.
- ADJ 196 On-Site Training (Internship Education)** (3 cr.) Bridges the gap between theory and practice by allowing students to apply skills learned in the classroom to practical on-the-job learning situations. A minimum of 120 contact hours (approximately 10 hours of voluntary work per week for 15 weeks) with a criminal justice agency is required. Prerequisite: Must meet requirements specified by the ADJ Program Head.
- ADJ 205 Causes of Crime and Delinquency** (3 cr.) Teaches the principal causes, conditions, motives and other influences which tend to encourage young persons or adults to become involved in illegal acts or criminal careers, crime and delinquency rates. Adult and juvenile justice systems will also be compared and studied. Lecture 3 hours per week.
- ADJ 211-212 Criminal Law, Evidence and Procedures I-II** (3 cr.) (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. Prerequisite: ADJ 100. 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. Prerequisite: ADJ 100 or Instructor's permission. Lecture 3 hours per week.
- ADJ 236 Principles of Criminal Investigation** (3 cr.) Surveys the fundamentals of criminal investigation procedures and techniques. Examines crime scene search, collecting, handling and preserving of evidence. Prerequisite: ADJ 100 or Instructor's permission. Lecture 3 hours per week.
- ADJ 237 Advanced Criminal Investigation** (3 cr.) Introduces specialized tools and scientific aids used in criminal investigation. Applies investigative techniques to specific situations and preparation of trial evidence. Prerequisite: ADJ 236 or Instructor's permission. Lecture 3 hours per week.
- ADJ 240 Techniques of Interviewing** (3 cr.) Provides the student with essential skills and techniques necessary to obtain quality information from victims, witnesses, and suspects, regarding criminal activity. Emphasizes locations and settings for interviews, kinesics, proxemics, and paralinguistics of both the interviewer and interviewee. Lecture 3 hours per week.
- ADJ 241 Correctional Law** (3 cr.) Studies the legal rights and obligations of the convict-probationer, inmate, and parolee. Surveys methods of enforcing both rights and obligations and the responsibilities of corrections agencies and personnel under correctional law (constitutional, statutory, and regulatory provisions). Lecture 3 hours per week.
- ADJ 248 Probation, Parole, and Treatment** (3 cr.) Surveys the philosophy, history, organization, personnel and functioning of traditional and innovative probation and parole programs; considers major treatment models for clients. Lecture 3 hours per week.

## ■ Administrative Support Technology (AST)

- 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. 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 Instructor's permission.* Lecture 3 hours per week.

**AST 205 Business Communications** (3 cr.) Teaches techniques of oral and written communications. Emphasizes writing and presenting business-related materials. Lecture 3 hours per week.

**AST 243 Office Administration I** (3 cr.) Develops an understanding of the administrative support role and the skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes the development of critical thinking, problem-solving, and job performance skills in a business office environment. *Prerequisite: AST 102.* Lecture 3 hour per week.

**AST 244 Office Administration II** (3 cr.) Enhances skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes administrative and supervisory role of the office professional. Includes travel and meeting planning, office budgeting and financial procedures, international issues, and career development. Teaches management and the management functions of planning, leading, and controlling. *Prerequisite: AST 243 or equivalent.* 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. *Prerequisites: AST 102 or equivalent, AST 107 and HLT 141.* Lecture 3 hours per week.

**AST 253 Advanced Desktop Publishing I** (3 cr.) Introduces specific desktop publishing software. Teaches document layout and design, fonts, type styles, style sheets, and graphics. *Prerequisite: AST 101 or equivalent and experience in using a word processing package.* Lecture 3 hours per week..

## ■ Air Conditioning and Refrigeration (AIR)

**AIR 121 Air Conditioning and Refrigeration I** (3 cr.) Studies refrigeration theory, characteristics of refrigerants, temperature, and pressure, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, metering devices. Presents charging and evaluation of systems and leak detection, explores servicing the basic system. Explains use and care of oils and additives and troubleshooting of small commercial systems. Lecture 2 hours. Laboratory 2 hours. Totals 4 hours per week.

**AIR 134, 135 Circuits and Controls I, II** (4 cr.) (4 cr.) Presents circuit diagrams for air conditioning units, reading and drawing of circuit diagrams, types of electrical controls. Includes an analysis of air conditioning circuits, components, analysis and characteristics of circuits and controls, testing and servicing. Introduces electricity for air conditioning which includes circuit elements, direct current circuits and motors, single and three-phase circuits and motors, power distribution systems, and protective devices. Studies the electron and its behavior in passive and active circuits and components. Demonstrates electronic components and circuits as applied to air conditioning system. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AIR 154, 155 Heating Systems I, II** (3 cr.) (3 cr.) Introduces types of fuels and their characteristics of combustion; types, components and characteristics of burners, and burner efficiency analyzers. Studies forced air heating systems including troubleshooting, preventive maintenance and servicing. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**AIR 158 Mechanical Codes** (2 cr.) Presents mechanical code requirements for installation, service, and inspection procedures. Uses the BOCA code in preparation for the Journeyman and Master's card. Lecture 2 hours per week.

**AIR 165 Air Conditioning Systems I** (4 cr.) Introduces comfort survey, house construction, load calculations, types of distribution systems, and equipment selection. Introduces designing, layout, installing and adjusting of duct systems, job costs, and bidding of job. Lecture 4 hours per week.

**AIR 205 Hydronics and Zoning** (3 cr.) Presents installation servicing, troubleshooting, and repair of hydronic systems for heating and cooling. Includes hot water and chilled water systems using forced circulation as the transfer medium. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**AIR 235 Heat Pumps** (3 cr.) Studies theory and operation of reverse cycle refrigeration systems as applied to air conditioning, including supplementary heat as applied to heat pump systems including service, installation and maintenance.

*Prerequisites:* AIR 121 Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**AIR 276 Refrigerant Usage EPA Certification**(2 cr.) Prepares HVAC technicians for a refrigerant certification test mandated by the Environmental Protection Agency (EPA). Reviews refrigerant recovery, recycle, and reclamation procedures for service work associated with air conditioning and refrigeration. Examines environmental impact including ozone depletion resulting from refrigeration utilization. *Students should have previous training and/or working knowledge of vapor-compression, common service equipment and procedures in HVAC/R.* Lecture 2 hours. Total 2 hours per week..

## ■ American Sign Language (ASL)

**ASL 101-102 American Sign Language I-II** (3 cr.) (3 cr.) Introduces the fundamentals of American Sign Language (ASL) used by the Deaf Community, including basic vocabulary, syntax, finger spelling, and grammatical non- manual signals. Focuses on communicative competence. Develops gestural skills as a foundation for ASL enhancement. Introduces cultural knowledge and increases understanding of the Deaf Community. Lecture 3 hours per week.

**ASL 201-202 American Sign Language III-IV** (3 cr.) (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. Contact with the Deaf Community is encouraged to enhance linguistic and cultural knowledge. Lecture 3 hours per week.

**ASL 261 American Sign Language V** (3 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. *Prerequisite:* ASL 202. Part I of II. Lecture 3 hours per week.

**ASL 262 American Sign Language VI** (3 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. *Prerequisite:* ASL 261. Part II of II. Lecture 3 hours per week..

## ■ Architecture (ARC)

**ARC 212 Architectural Drafting III** (3 cr.) Provides fundamental knowledge of the principles and techniques of architectural drawings and procedures. Familiarizes students with design processes to provide a better understanding of the relationship between architectural design and structural systems. *Prerequisite:* DRF 201 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ARC 233 Advanced Architectural Drafting III** (3 cr.) Introduces the procedures involved in architectural design and construction document processing. Requires preparation of set of working drawings for a residential design project. *Prerequisite:* ARC 212. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

## ■ Art (ART)

**ART 100 Art Appreciation** (3 cr.) Introduces art from prehistoric times to the present day. Describes architectural styles, sculpture, photography, printmaking, and painting techniques. Note: Students may not receive credit for both Art 100 and Art 101 or Art 100 and Art 102. Lecture 3 hours per week.

**ART 101, 102 History and Appreciation of Art I, II** (3 cr.) (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. Lecture 3 hours per week.

**ART 121-122 Drawing I-II** (3 cr.) (3 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. *Prerequisite for ART 122: ART 121.* Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

- ART 131-132 Fundamentals of Design I-II** (3 cr.) (3 cr.) Explores the concepts of two- and three-dimensional design and color. May include field trips as required. *Prerequisite for ART 132: ART 131, Co-requisite is ART 180.* Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.
- ART 141 Typography** (3 cr.) Studies the history of letterforms and typefaces and examines their uses in contemporary communications media. Emphasizes applications to specific design problems. Includes identification and specification of type and uses current technologies for copy fitting and hands-on typesetting problems. *Prerequisite: ART 132 Fundamentals of Design II.* Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week
- ART 153-154 Ceramics I-II** (3 cr.) (3 cr.) Presents problems in the design and production of functional and non-functional ceramic works. Includes handbuilding the potter's wheel and clays and glazes. *Prerequisite for ART 154: ART 153 or Instructor's permission.* Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.
- ART 180 Introduction to Computer Graphics** (3 cr.) Provides a working introduction to computer-based electronics technology used by visual artists and designers. Presents the basics of operating platforms and standard industry software. Introduces problems in which students can explore creative potential of the new electronic media environment. Includes instruction in basic computing concepts, components, and operations and in the use of integrated software packages. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- ART 241-242 Painting I-II** (3 cr.) (3 cr.) Introduces abstract and representational painting in acrylic and/or oil with emphasis on color composition and value. *Prerequisites: ART 122 or division approval.* Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.
- ART 251-252 Communication Design I-II** (3 cr.) (3 cr.) Studies the principles of visual communications as applied to advertising in newspapers, magazines, direct mail advertising, house organs, etc. Analyzes the influence of contemporary art on design. *Prerequisites: ART 131 and 140.* Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.
- ART 283-284 Computer Graphics I-II** (3 cr.) (3 cr.) Utilizes microcomputers and software used to produce computer graphics for communication. Employs techniques learned to solve studio projects which reinforce instruction and are suitable for portfolio use. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.
- ART 287 Portfolio and Resume' Preparation** (1 cr.) Focuses on portfolio preparation, resume writing, and job interviewing for students. *Recommended for final semester program students. Requires instructor's approval.* Lecture 1 hour per week

## ■ Biology (BIO)

- BIO 100 Basic Human Biology** (3 cr.) Presents basic principles of human anatomy and physiology. Discusses cells, tissues, and selected human systems. Lecture 3 hours per week.
- BIO 101-102 General Biology I-II** (4 cr.) (4 cr.) Explores fundamental characteristics of living matter from the molecular level to the ecological community with emphasis on general biological principles. Introduces the diversity of living organisms, their structure, function and evolution. *Prerequisite for BIO 102: BIO 101* Lecture 3 hours. Recitation and 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 recovery, evolution, biogeochemical cycles, photosynthesis and global warming, geological formations, atmosphere and climate, and ozone depletion and acid deposition. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- BIO 141-142 Human Anatomy and Physiology I-II** (4 cr.) (4 cr.) Integrates anatomy and physiology of cells, tissues, organs, and systems of the human body. Integrates concepts of chemistry, physics, and pathology. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- BIO145 Human Anatomy and Physiology for the Health Sciences** (4 cr.) Introduces human anatomy and physiology primarily to those planning to pursue an AAS degree in nursing. Covers basic chemical concepts, cellular physiology as well as the anatomy and physiology of human organ systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- BIO 150 - Introductory Microbiology** (4 cr.) Studies the general characteristics of microorganisms. Emphasizes their relationships to individual and community health. 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. Recommended for students transferring to four

year colleges/universities. *Prerequisites: One year of college biology and one year of college chemistry or division approval.* Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 256 General Genetics** (4 cr.) Explores the principles of genetics ranging from classical Mendelian inheritance to the most recent advances in the biochemical nature and function of the gene. Includes experimental design and statistical analysis. *Prerequisite BIO 101-102 or equivalent.* Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 276 Freshwater Ecology** (4 cr.) Applies ecosystem concepts to freshwater habitats. Includes laboratory and field work. *Prerequisite: any 2-course combination of BIO 101, BIO 102, ENV 121 and ENV 122, or division approval.* Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

## ■ Building (BLD)

**BLD 149 Carpentry I** (3 cr.) Presents an introduction to carpentry, with an emphasis on residential/light construction. Introduces basic carpentry terminology. Covers identification and proper use of hand and power tools common to the industry, construction materials, construction techniques, safety precautions, working drawings and the team approach to construction. Lecture 3 hours per week.

**BLD 249 Carpentry II** (3 cr.) Presents advanced concepts of carpentry as they relate to residential/light construction, including theoretical and practical applications. Covers advanced framing techniques, finish and trim systems, and calculations commonly required in all phases of light construction. *Prerequisite: BLD 149.* Lecture 3 hours per week.

## ■ Business Management and Administration (BUS)

**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 a 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 121 Business Mathematics I** (3 cr.) Applies mathematical operations to business processes and problems. Reviews operations, equations, percents, sales and property taxes, insurance, checkbook and cash records, wage and payroll computations, depreciation, overhead, inventory turnover and valuation, financial statements, ratio analysis, commercial discounts, markup, and markdown. Lecture 3 hours per week.

**BUS 156 Introduction to Operating Management** (3 cr.) Introduces quantitative methods to control cost. Analyzes cost concepts and behavior from a managerial viewpoint. Applies quantitative tools such as PERT, linear programming, transportation models, and queuing theory. Encourages use of microcomputer. Lecture 3 hours per week.

**BUS 200 Principles of Management** (3 cr.) Teaches management and the management functions of planning, organizing, leading, and controlling. Focuses on application of management principles to realistic situations managers encounter as they attempt to achieve organizational objectives. Lecture 3 hours per week.

**BUS 202 Applied Management Principles** (3 cr.) 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 204 Project Management** (3 cr.) Provides students with knowledge of essential skills and techniques necessary to lead or participate in projects assigned to managerial personnel. Covers time and task scheduling, resource management, problem solving strategies and other areas related to managing a project. Lecture 3 hours per week.

**BUS 205 Human Resource Management** (3 cr.) Introduces employment, selection, and placement of personnel, usage levels and methods, job descriptions, training methods and programs, and employee evaluation systems, compensation and labor relations. Includes procedures for management of human resources and uses case studies and problems to demonstrate implementation of these techniques. Lecture 3 hours per week.

**BUS 214 Compensation Management** (3 cr.) Introduces the various components of employee compensation systems and their role in attracting and retaining good employees. Teaches how to develop and evaluate employee compensation systems that serve the needs of the workforce and the organization. Covers strategic perspectives, internal alignment and consistency, external competitiveness, employee contributions, and compliance. Lecture 3 hours per week.

- BUS 217 Employee Training and Development** (3 cr.) Teaches the fundamentals of human resource development (HRD) theory and practice in the organization. Examines adult learning theory, the concept of the learning organization, the role of training and development in the workplace and adult learning models. Focuses on applications of HRD principles to develop effective training programs for technical skills and management development. Lecture 3 hours per week.
- BUS 218 Employee Recruitment, Selection, and Retention** (3 cr.) Examines the fundamentals of successful recruitment, staffing, and retention. Focuses on job analysis, behavioral interviewing, assessing candidates, background investigations, legislative compliance, equal employment opportunity and Affirmative Action requirements, economic conditions that impact staffing, short-term and long-term strategy and planning, internal and external recruiting, and career planning. 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: Working knowledge of Microsoft Excel. 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 division approval. Lecture 3 hours per week.
- BUS 222 Business Statistics II** (3 cr.) Continues study of inferential statistics and application of statistical techniques and methodology in business. Includes analysis of variance, regression and correlation measurement of business and economic activity through the use of index numbers, trend, cyclical, and seasonal effects and the Chi-Square distribution and other non-parametric techniques. *Prerequisite: BUS 221 or division 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: keyboarding competence. Note: Students may not get credit for BUS 226, ITE 115, and ITE 119.* Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
- BUS 241 Business Law I** (3 cr.) Develops a basic understanding of the US business legal environment. Introduces property and contract law, agency and partnership liability, and government regulatory law. Students will be able to apply these legal principles to landlord/tenant disputes, consumer rights issues, employment relationships, and other business transactions. Lecture 3 hours per week.
- BUS 295 Strategic Human Resources** (3 cr.) Examines how human resources can formulate and implement unified, comprehensive and integrated decisions to attain organizational goals and effectiveness in partnership with top management. Provides an understanding of the business connections between corporate strategy and the human resource functions and covers the role internal and external consultants play in understanding organizations and enhancing organizational performance. Lecture 3 hours per week.

## ■ Chemistry (CHM)

- CHM 101 - General Chemistry I** (4 cr.) 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. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- CHM 111-112 College Chemistry I-II** (4 cr.) (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. Lecture 3 hours. *Prerequisite for CHM 112: CHM 111.* Laboratory 3 hours. Total 6 hours per week.
- CHM 126 College Chemistry for Engineers** (4 cr.) Examines principles and concepts of chemistry with an emphasis on applications useful to engineers. Includes stoichiometry; atomic structure; chemical equations and reactions; chemical bonding and molecular structure, gases, liquids, and solids; materials science; chemical thermodynamics; kinetics; equilibrium; electro-chemistry; and polymers. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
- CHM 241-242 Organic Chemistry I-II** (3 cr.) (3 cr.) Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. *Prerequisite for CHM 241: CHM 112. Prerequisite for CHM 242: CHM 241* Lecture 3 hours per week.

**CHM 243-244 Organic Chemistry Laboratory I-II** (1 cr.) (1 cr.) *Is taken concurrently with CHM 241 and CHM 242.* Laboratory 3 hours per week.

### ■ Childhood Development (CHD)

**CHD 120 Introduction to Early Childhood Education** (3 cr.) Introduces early childhood development through activities and experiences in nursery, pre-kindergarten, kindergarten, and primary programs. Investigates classroom organization and procedures, and use of classroom time and materials, approaches to education for young children, professionalism, and curricular procedures. Lecture 3 hours per week.

**CHD 165 Observation and Participation in Early Childhood/Primary Settings** (3 cr.) Observes and participates in early childhood settings such as child care centers, preschools, 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. *Prerequisite: CHD 120 or CHD 121.* Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

### ■ Civil Engineering Technology (CIV)

**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: MTH 161 or MTH 167, trigonometry, or division approval.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**CIV 220 Structural Analysis** (3 cr.) Focuses on the analysis of statically determinate and indeterminate structures based on principles of statics and strength of materials and geometric conditions. *Prerequisite: EGR 135 and EGR 136.* Lecture 3 hours per week.

**CIV 240 Fluid Mechanics and Hydraulics** (3 cr.) Introduces the principles of fluid flow and development of practical hydraulics resulting from study of fluid statics, flow of real fluid in pipes, multiple pipe lines, liquid flow in open channels, and fluid measurement techniques. *Prerequisite: EGR 135 and 136.* Lecture 3 hours per week.

### ■ Communication Studies and Theatre (CST)

**CST 100 Principles of Public Speaking** (3 cr.) Applies theory and principles of public address with emphasis on preparation and delivery. Lecture 3 hour per week.

**CST 110 Introduction to 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 2-3 hours per week.

**CST 151 Film Appreciation I** (3 cr.) Provides students with a critical understanding of film through the discussion and viewing of motion pictures with emphasis upon the study of film history and the forms and functions of film. Students will develop the skills to analyze shared social, cultural, and historical influences of films and their contexts. Part I of II. *Prerequisite: English 112.* Lecture 3 hours per week.

### ■ Drafting (DRF)

**DRF 128 Geometric Dimensioning and Tolerancing** (2 cr.) Teaches use of a positional tolerance system, its relationship to coordinate tolerance systems, and other aspects of industry standard drafting practices. Lecture 2 hours per week.

**DRF 135 - Electrical/Electronics Blueprint Reading** (2 cr.) Presents an interpretation of basic shop drawings, conventional symbols, terminology, and principles used by the mechanical draftsman. Explains common electrical and electronic symbols, wiring diagrams, schematic drawing, and application of wiring diagrams, schematic drawings, and application of wiring diagrams. Lecture 2 hours per week.

**DRF 166 Welding Blueprint Reading** (2 cr.) Teaches welding nomenclature and applications. Stresses structural steel, design, layout. Explains industrial symbols. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**DRF 201 Computer Aided Drafting and Design I** (3 cr.) Teaches computer aided drafting concepts and equipment designed to develop a general understanding of components of a typical CAD system and its operation. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**DRF 202 Computer Aided Drafting and Design II** (3 cr.) Teaches production drawings and advanced operations in computer aided drafting. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.



**DRF 212 Advanced Technical Drafting II** (3 cr.) Teaches concepts of sheet metal fabrication including radii, fillets and tolerances, electrical and electronics symbols and drawing, and advanced design drafting techniques. *Prerequisite: DRF 201.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**DRF 241 Parametric Solid Modeling I** (3 cr.) Focuses on teaching students the design of parts by parametric solid modeling. Topics covered will include, but not limited to, sketch profiles; geometric and dimensional constraints; 3-D features; model generation by extrusion, revolution and sweep; and the creation of 2-D drawing views that include sections, details and auxiliary. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**DRF 262 Computer-Aided-Civil Design and Hydrology** (3 cr.) Introduces computer-aided-design for civil/ surveying as applied to highway design, site layout, advanced highway design, hydrology tools, watershed analysis, and pipe sizing. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**DRF 280 Design Capstone Project** (3 cr.) Focuses on design projects developed independently and in consultation with the Instructor. Topics covered but not limited to parametric modeling, civil, mechanical piping, architectural applications, structural, electro-mechanical, 3-D solids, exploration of application software and the integration of CAD/CAM. *Prerequisites: DRF 201 and DRF 212.* Lecture 3 hours per week.

## ■ Economics (ECO)

**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 basic microeconomic and macroeconomic concepts. Lecture 3 hours per week.

**ECO 201 Principles of Macroeconomics** (3 cr.) Introduces macroeconomics including the study of Keynesian, classical, monetarist principles and theories, the study of national economic growth, inflation, recession, unemployment, financial markets, money and banking, the role of government spending and taxation, along with international trade and investments. Lecture 3 hours per week.

**ECO 202 Principles 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, elasticities, marginal benefits and costs, profits, and production and distribution. Lecture 3 hours per week.

## ■ Education (EDU)

**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 (recommended: 40 clock hours) in a K-12 school. *Prerequisite: Successful completion of 24 credits of transfer courses.* Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EDU 280 Technology Standards for Teachers** (3 cr.) Provides K-12 classroom teachers with the knowledge and skills needed to fulfill the Commonwealth of Virginia's Technology Standards for Instructional Personnel. Certification is dependent on the supervisor's or employer's approval. *Prerequisite: ITE 115 or BUS 226, or Instructor's permission.* Lecture 3 hours per week.

## ■ Electrical Technology (ELE)

**ELE 100 - Electrical-Electronic Skills & Concepts** (4 cr.) Teaches skills and concepts of safety, hand & power tools, EMF, assembly and disassembly methods, basic electrical devices and instruments. Provides opportunities for hands-on skills. Reviews theoretical concepts related to basic electricity. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ELE 111-112 Home Electric Power I-II** (3 cr.) (3 cr.) Teaches fundamentals of residential power distribution, circuits, enclosures, protective devices, transformers. Studies various charts and tables of the national electrical code. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ELE 113-114 Electricity I-II** (3 cr.) (3 cr.) Teaches principles of electricity covering fundamentals, devices and components in both DC and AC circuits. *Prerequisite: MTH 103 or equivalent placement test scores. ELE 123 must be taken concurrently with ELE 113 and ELE 124 must be taken concurrently with ELE 114.* Lecture 3 hours per week.

**ELE 118 Practical Electricity** (2 cr.) Teaches fundamentals of electricity, terminology and symbols, diagrams, the principles essential to the understanding of general practices, safety and the practical aspects of residential and non-residential

wiring, electrical installation. May require preparation of a report as an out-of-class activity. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**ELE 123-124 Electrical Applications I-II** (1 cr.) (1 cr.) Provides laboratory and shop assignments/jobs as applied to fundamental principles of electricity with emphasis on measurements and evaluation of electrical components, devices and circuits. Laboratory 3 hours per week

**ELE 133 Practical Electricity I** (3 cr.) Teaches the fundamentals of electricity, terminology, symbols, and diagrams. Includes the principles essential to the understanding of general practices, safety and the practical aspects of residential and non-residential wiring and electrical installation, including fundamentals of motors and controls. *Pre/Co-requisite MTH 02 or equivalent. Part I and II.* Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ELE 134 Practical Electricity II** (3 cr.) Teaches the fundamentals of electricity, terminology, symbols, and diagrams. Includes the principles essential to the understanding of general practices, safety and the practical aspects of residential and non-residential wiring and electrical installation, including fundamentals of motors and controls. *Pre/Co-requisite MTH 02 or equivalent. Part II of II* Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ELE 136 National Electrical Code-Commercial** (3 cr.) Provides comprehensive study of the purposes and interpretations of national electrical wiring methods, including state and local regulations. *Prerequisite: MTH 103 or equivalent placement test scores.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ELE 137 National Electrical Code-Industrial** (3 cr.) Provides comprehensive study of the purposes and interpretations of the National Electrical Code that deals primarily with industrial wiring methods, including state and local regulations. May include preparation of a report as an out-of-class activity. *Prerequisite: MTH 103 or equivalent placement test scores.* Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ELE 140 Basic Electricity and Machinery** (4 cr.) Studies direct and alternating current principles, resistors, magnetism, capacitors, protection systems, switches, controls and power distribution for industrial machine shops. Emphasizes test procedures and safety. May require preparation of a report as an out-of-class activity. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**ELE 177 Photovoltaic Energy Systems** (4 cr.) Teaches techniques for conducting site surveys, installing system components, installing inverters and performing system sizing and system maintenance. Introduces different battery configurations, and charge controllers. Introduces safety, system design and layout, National Electric Code, Component Selection, wiring and installation techniques. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ELE 211-212 Electrical Machines I-II** (4 cr.) (4 cr.) Studies the construction, theory of operations and applications of DC and AC machines. *Prerequisites: ELE 114 is a prerequisite for ELE 211.* Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ELE 233-234 Programmable Logic Controller Systems I-II** (3 cr.) (3 cr.) Teaches operating and programming of programmable logic controllers. Covers analog and digital interfacing and communication schemes as they apply to system. *Prerequisite: ETR 156 and ETR 211 or equivalent.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ELE 239 Programmable Controllers** (2 cr.) Deals with installation, programming, interfacing, and concepts of troubleshooting programmable controllers. *Prerequisite: Instructor's permission required to enroll.* Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

## ■ Electronics Technology (ETR)

**ETR 113-114 D.C. and A.C. Fundamentals I-II** (3 cr.) (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. *Co/Prerequisite: MTH 163 or equivalent.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ETR 123-124 Electronic Applications I-II** (1 cr.) (1 cr.) Provides laboratory and shop experience as applied to basic electronic devices, circuits and systems with emphasis on practical measurements. Laboratory 6 hours per week for ETR 123 and 3 hours per week for ETR 124.

**ETR 141-142 Electronics I-II** (3 cr.) (3 cr.) Introduces electronic devices as applied to basic electronic circuits and systems. *Prerequisites: ETR 114 is a prerequisite for ETR 141.* Lecture 3 hours per week.

**ETR 214 Advanced Circuits and New Devices** (2 cr.) Includes lectures and demonstrations on the latest developments in electronics. Lecture 2 hours per week.

**ETR 223-224 Communications I-II** (5 cr.) (5 cr.) Teaches techniques of modern communications consisting of broadcast communications, data communications, and transponder systems. Includes theory and laboratory analysis of audio, radio frequency, microwave and light devices and circuits. *Prerequisite for ETR 223: ETR 142.* Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

**ETR 233-234 Electronics Applications III-IV** (1 cr.) (1 cr.) Provides laboratory and shop experiences related to advanced electronics systems and devices including microcomputers. Laboratory 3 hours per week.

## ■ Emergency Medical Services (EMS)

**EMS 100 CPR for Healthcare Providers** (1 cr.) Provides instruction in Cardiopulmonary Resuscitation that meets current Emergency Cardiac Care (ECC) guidelines for Cardiopulmonary Resuscitation education for Healthcare Providers. Lecture 1 hour per week.

**EMS 110 - Emergency Vehicle Operator's Course (EVOC)** (1 cr.) Prepares the student for certification in the operation of various emergency vehicles. Teaches proper operating procedures in both emergency and non-emergency situations. Lecture 1 hour per week.

**EMS 111 Emergency Medical Technician** (7 cr.) Prepares student for certification as a Virginia and National Registry EMT. Focuses on all aspects of pre-hospital basic life support as defined by the Virginia Office of Emergency Medical Services curriculum for Emergency Medicine Technician. *Prerequisite: EMS 100 or equivalent, Co-requisite: EMS 120.* Lecture 5 hours. Laboratory 4 hours. Total 9 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.* Laboratory 2 hours 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 152 Advanced EMT Completion** (2 cr.) Continues the Virginia Office of Emergency Medical Services Advanced, Intermediate and/or Paramedic curricula. Includes patient assessment, differential diagnosis and management of multiple complaints. Includes, but are not limited to conditions relating to diabetic, neurological, abdominal pain, environmental, behavioral, gynecology, and toxicological disease conditions. Also includes Advanced EMT level cardiac, trauma and special population topics. *Prerequisite: Current EMT Certification and EMS 151.* Lecture 1 hour. Lab 2 hours. Total 3 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. Lecture 2 hours per week.

**EMS 154 ALS Cardiac Care** (2 cr.) Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Includes Advanced Life Support (ALS) airway management, electrical therapy, pharmacology, drug and fluid administration with emphasis on patient assessment, differential diagnosis and management of cardiovascular emergencies. It will incorporate the current American Heart Association (AHA) - ACLS guidelines and curriculum including stroke management. *Pre/Co-requisite: EMS 153.* Lecture 1 hour. Lab 2 hours. Total 3 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** (3 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.* Lecture 2 hour. Laboratory 4 hours. Total 6 hours per week.

**EMS 163 Prehospital Trauma Life Support (PHTLS)** (1 cr.) Prepares for certification as a Prehospital Trauma Life Support provider as defined by the American College of Surgeons. *Prerequisite: EMS 111 or equivalent.* Lecture 1 hour per week.

- EMS 165 Advanced Cardiac Life Support (ACLS)** (1 cr.) Prepares for certification as an Advanced Cardiac Life provider. Follows course as defined by the American Heart Association. *Prerequisites: EMS 100, 153 or equivalent.* Lecture 1 hour per week.
- EMS 169 Pediatric Advanced Life Support (PALS)** (1 cr.) Prepares the student for certification as a pediatric advanced life support provider as defined by the American Heart Association. Covers primary assessment and emergency care of infants and children. Lecture 1 hour 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. Internship 3 hours per week.
- EMS 172 ALS Clinical Internship II** (1 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. Internship* 3 hours per week.
- EMS 173 ALS Field Internship II** (1 cr.) Continues with the second in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Internship 3 hours per week.
- EMS 201 EMS Professional Development** (3 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 3 hours per week.
- EMS 205 Advanced Pathophysiology** (4 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 4 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. Laboratory 2 hours. 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.) Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.
- EMS 215 Registry Review** (1 cr.) Reviews material covered in the intermediate/paramedic program. Prepares the student for National Registry testing. Lecture 1 hour per week.
- EMS 216 Paramedic Review** (1 cr.) Provides the student with intensive review for the practical and written portions of the National Registry Paramedic exam. May be repeated once, for credit. Lecture 1 hour per week.
- EMS 242 ALS Clinical Internship III** (1 cr.) Continues with 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. Internship 3 hours per week.
- EMS 243 ALS Field Internship III** (1 cr.) Continues with the third in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Internship 3 hours per week.
- EMS 244 ALS Clinical Internship IV** (1 cr.) The fourth in a series of clinical experiences providing 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. May be repeated as necessary. Internship 3 hours per week.

**EMS 245 ALS Field Internship IV** (1 cr.) Continues with the fourth in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. May be repeated as necessary. Internship 3 hours per week.

## ■ Energy Technology (ENE)

**ENE 104 Energy Industry Fundamentals** (4 cr.) Provides a broad understanding of the electric and natural gas utility industry and the energy generation, transmission, and distribution infrastructure. Covers business models, regulations, types of energy and their conversion to usable energy such as electric power, how generated power is transmitted and distributed to the point of use, emerging technologies, and the connection to careers in the energy industry. Lecture 4 hours per week.

## ■ Engineering (EGR)

**EGR 100 Engineering Technology Orientation** (1 cr.) Focuses on the roles and responsibilities of the engineering team, professional ethics, problem solving with hand calculator and computer applications. Laboratory 2 hours per week.

**EGR 115 Engineering Graphics** (2 cr.) Applies principles of orthographic projection, and multi-view drawings. Teaches descriptive geometry including relationships of points, lines, planes and solids. Introduces sectioning, dimensioning and computer graphic techniques. Includes instruction in Computer Aided Drafting. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**EGR 120 Introduction to Engineering** (1 cr.) Introduces the engineering profession, professional concepts, ethics, and responsibility. Reviews hand calculators, number systems, and unit conversions. Introduces the personal computer and operating systems. Includes engineering problem solving techniques using computer software. Lecture 1 hour per week.

**EGR 123 Introduction to Engineering Design** (2 cr.) Introduces the fundamental knowledge and experience needed to understand the engineering design process through the basics of electrical, computer, and mechanical systems. Includes the completion of a project in which a specific electromechanical robot kit will be analyzed, assembled, and operated. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**EGR 126 Computer Programming for Engineers** (3 cr.) Introduces computers, their architecture and software. Teaches program development using flowcharts. Solves engineering problems involving programming in languages such as FORTRAN, PASCAL, or C++. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**EGR 127 Introduction to Computer Programming** (2 cr.) Introduces programming in a higher level language such as FORTRAN, BASIC or PASCAL, or C++ on the microcomputer. Uses the operating system, packaged software and peripheral devices. Emphasizes engineering program problem solving. Includes instruction in basic computing concepts, components, and operations and in the use of an integrated software package. Lecture 1 hour. Laboratory 2 hours. Total 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: MATH 166.* 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. *Co/Prerequisite: PHY 241.* Lecture 3 hours per week.

**EGR 190 Coordinated Internship** (1 cr.) Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours.

**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. 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. Lecture 3 hours per week.

**EGR 248 Thermodynamics for Engineering** ( 3 cr.) Studies formulation of the first and second law of thermodynamics. Presents energy conversion, concepts of energy, temperature, entropy, and enthalpy, equations of state of fluids. Covers reversibility and irreversibility in processes, closed and open systems, cyclical processes and problem solving using computers. Lecture 3 hours per week

## ■ English (ENG)

**ENG 100 Basic Occupational Communication** (3 cr.) Develops ability to communicate in occupational situations. Involves writing, reading, speaking, and listening. Builds practical skills such as handling customer complaints, writing various types of letters, and preparing for a job interview. Includes instruction in networked information resources and in the use of telecommunication software. (Intended for certificate and diploma students.) 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 argumentation with at least one researched essay. 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. *Prerequisite: ENG 111.* Lecture 3 hours per week.

**ENG 121-122 Introduction to Journalism I-II** (3 cr.) (3cr.) Introduces students to all news media, especially news gathering and preparation for print. *Prerequisite: ENG 111 OR 112 or division approval.* Lecture 3 hours per week.

**ENG 131 Technical Report Writing I** (3 cr.) Offers a review of organizational skills including paragraph writing and basic forms of technical communications, various forms of business correspondence, and basic procedures for research writing. Includes instruction and practice in oral communication skills. Lecture 3 hours per week.

**ENG 150 Children's Literature** (3 cr.) Surveys the history of children's literature, considers learning theory and developmental factors influencing reading interests, and uses bibliographic tools in selecting books and materials for recreational interests and educational needs of children. Lecture 3 hours per week.

**ENG 211-212 Creative Writing I-II** (3 cr.) (3 cr.) Introduces the student to the fundamentals of writing imaginatively. Students write in forms to be selected from poetry, fiction, drama, and essays. *Prerequisite: ENG 112 or division approval.* Lecture 3 hours per week.

**ENG 241, 242 Survey of American Literature I, II** (3 cr.) (3 cr.) Examines American literary works from colonial times to the present, emphasizing the ideas and characteristics of our national literature. Involves critical reading and writing. *Prerequisite: ENG 112 or division approval.* Lecture 3 hours per week.

**ENG 243, 244 Survey of English Literature I, II** (3 cr.) (3 cr.) Studies major English works from the Anglo-Saxon period to the present, emphasizing ideas and characteristics of the British literary tradition. Involves critical reading and writing. *Prerequisite: ENG 112 or division approval.* Lecture 3 hours per week.

**ENG 251, 252 Survey of World Literature I, II** (3 cr.) (3 cr.) Examines major works of world literature. Involves critical reading and writing. *Prerequisite: ENG 112 or division approval.* Lecture 3 hours per week.

**ENG 256 Literature of Science Fiction** (3 cr.) Examines the literary and social aspects of science fiction, emphasizing development of ideas and techniques through the history of the genre. Involves critical reading and writing. *Prerequisite: ENG 112 or division approval.* Lecture 3 hours per week.

**ENG 260 Fantasy Fiction** (3 cr.) Examines the literary and social aspects of fantasy fiction, emphasizing development of ideas and techniques through the history of the genre. Involves critical reading and writing. *Prerequisite: Placement in English 111 based on VPT scores, or division approval.* Lecture 3 hours per week.

**ENG 295 Other Voices in American Literature** (3 cr.) Studies contemporary American authors (1940s-present) of various ethnic minorities to explore literary contributions from often overlooked contributors. *Prerequisite: Placement in English 111 based on VPT scores, or division approval.* Lecture 3 hours per week.

## ■ English Fundamentals (ENF)

**ENF 1 Preparing for College English I** (8 cr.) Provides integrated reading and writing instruction for students who require extensive preparation to succeed in college-level English courses. Students will place into this course based on placement test scores. Upon successful completion and faculty recommendation, students will move into Preparing for College English III (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation. *Prerequisite: Qualifying placement test score.* Lecture 8 hours per week.

**ENF 2 Preparing for College English II** (4 cr.) Provides integrated reading and writing instruction for students who require intermediate preparation to succeed in college-level English courses. Students will place into this course based on placement test scores. Upon successful completion and faculty recommendation, students will move into Preparing for College Level III (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation. *Prerequisite: Qualifying placement score* Lecture 4 hours per week.

**ENF 3 Preparing for College English III** (2 cr.) Provides integrated reading and writing instruction for students who require minimal preparation for college-level English but still need some preparation to succeed. Students in this course will be co-enrolled in college-level English. Students will place into this course based on placement test score. Credit is not applicable toward graduation. *Prerequisite: Qualifying placement score. Co-Enrollment in a college-level English course.* Lecture 2 hours per week.

## ■ Environmental Science (ENV)

**ENV 121 Environmental Science** (4 cr.) Explores fundamental components and interactions that make up the natural systems of the earth. Introduces the basic science concepts in the disciplines of biological, chemical, and earth sciences that are necessary to understand and address environmental issues. Topics covered include ecosystems and population ecology, environmental ethics and policy, biodiversity, and environmental health. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ENV 122 Environmental Science** (4 cr.) Explores fundamental components and interactions that make up the natural systems of the earth. Introduces the basic science concepts in the disciplines of biological, chemical, and earth sciences that are necessary to understand and address environmental issues. Topics covered include agriculture and nutrition, population dynamics, waste management, energy generation and conservation, meteorology and geology. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

## ■ Financial Services (FIN)

**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.

## ■ Fire Science Technology (FST)

**FST 100 Principles of Emergency Services** (3 cr.) Provides an overview to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization and function to public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics. Lecture 3 hours per week.

**FST 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.

**FST 112 Hazardous Materials Chemistry** (3 cr.) Provides basic fire chemistry relating to the categories of hazardous materials including problems of recognition, reactivity, and health encountered by firefighters. Lecture 3 hours per week.

**FST 115 Fire Prevention** (3 cr.) Provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, 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. Lecture 3 hours per week.

**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 services. Lecture 3 hours per week.

**FST 205 Fire Protection Hydraulics and Water Supply** (3 cr.) Provides 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.

**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.

**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.

**FST 220 Building Construction for Fire Protection** (3 cr.) Provides the components of building construction that relate to fire and life safety. Focuses on firefighter safety. Covers the elements of 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.

**FST 235 Strategy and Tactics** (3 cr.) Provides 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.

**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 first service. Emphasis on fire service leadership from the perspective of the company officer. Lecture 3 hours per week.

**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.

## ■ French (FRE)

**FRE 101-102 Beginning French I-II** (4 cr.) (4 cr.) Introduces understanding, speaking, reading, and writing skills and emphasizes basic French sentence structure. Lecture 4 hours per week.

**FRE 201-202 Intermediate French I-II** (4 cr.) (4 cr.) Continues to develop understanding, speaking, reading, and writing skills. French is used in the classroom. *Prerequisite: FRE 102 or equivalent.* Lecture 4 hours per week.

## ■ Geography (GEO)

**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, races and ethnicity, religion, politics, and economic activities. Introduces the student to types and uses of maps. Lecture 3 hours per week.

## ■ Geology (GOL)

**GOL 105 Physical Geology** (4 cr.) Introduces the composition and structure of the earth and modifying agents and processes. Investigates the formation of minerals and rocks, weathering, erosion, earthquakes, and crustal deformation. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**GOL 110 Earth Science** (4 cr.) Examines the dynamics of the earth and its relation to the solar system. Applies the principles of geology, oceanography, meteorology, and astronomy in a multi-disciplinary science environment. Stresses the effects of geologic processes on the environment. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

## ■ Health (HLT)

**HLT 100 First Aid and Cardiopulmonary Resuscitation** (2 cr.) Focuses on the principles and techniques of safety, first aid, and cardiopulmonary resuscitation. Lecture 2 hours per week.



- HLT 110 Concepts of Personal and Community Health** (3 cr.) Studies the concepts related to the maintenance of health, safety, and the prevention of illness at the personal and community level. Lecture 3 hours per week.
- HLT 116 Introduction to Personal Wellness Concepts** (2 cr.) Introduces students to the dimensions of wellness including the physical, emotional, environmental, spiritual, occupational, and social components. Lecture 2 hours per week.
- HLT 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 141 Introduction to Medical Terminology** (2 cr.) Focuses on medical terminology for students preparing for careers in the health professions. Lecture 2 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 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 261-262 Basic Pharmacy I-II** (3 cr.) (3 cr.) Explores the basics of general pharmacy, reading prescriptions, symbols, packages, pharmacy calculations. Teaches measuring compounds of drugs, dosage forms, drug laws, and drug classifications. Lecture 3 hours per week.
- HLT 263-264 Basic Pharmacy Lab I-II** (1 cr.) (1 cr.) Provides practical experience to supplement instruction in HLT 261-262. *Should be taken concurrently with HLT 261-262, in appropriate curricula, as identified by the college.* Laboratory 3 hours per week.

## ■ Health Information Management (HIM)

- HIM 130 Healthcare Information Systems** (3 cr.) Teaches basic concepts of microcomputer software (to include operating systems, word processing, spreadsheets, and database applications). Focuses on microcomputer applications and information systems in the Healthcare environment. Provides a working introduction to electronic health information systems for allied health, teaching students how the adoption of electronic health records affects them as future healthcare professionals. Lecture 3 hours per week.
- HIM 141 Fundamentals of Health Information Systems I** (3 cr.) Focuses on health data collection, storage, retrieval and reporting systems, with emphasis on the role of the computer in accomplishing these functions. Part I of II. Lecture 3 hours per week.
- HIM 142 Fundamentals of Health Information Systems II** (3 cr.) Continues focus of health data collection, storage, retrieval and reporting systems, with emphasis on the role of the computer in accomplishing these functions. Part II of II. Lecture 3 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 193 PACS Administration I** (3 cr.) This course will introduce basic theories and key components of a Picture Archiving and Communication System (PACS). Instruction will focus on PACS history as well as basic knowledge and principles for implementation. The course will explore topics such as basic theory and principles of PACS administration, networking, communication, and project management within a health care system. In addition, the requirements for the CIIP exam as administered by the American Board of Imaging Informatics will be reviewed. Lecture 3 hours per week.
- HIM 195 Healthcare Compliance and Billing** (3 cr.) Introduces major regulatory and reimbursement systems for all types of healthcare providers. Introduces fundamental elements of a compliance program. Focuses on appropriate documentation, audits, monitoring, and techniques for maintaining compliance with federal and state requirements. Lecture 3 hours per week.

**HIM 230 Information Systems and Technology in Healthcare** (3 cr.) Explores computer technology and system application in health care. Introduces the information systems life cycle. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**HIM 233 Electronic Health Records Management** (3 cr.) Studies new trends in management and processing of health information with emphasis on the electronic health record (EHR). Covers the definition, benefits, standards, functionality, confidentiality and security, and impact of the EHR in the healthcare environment. Explores implementation of the EHR including infrastructure required, project management techniques, information technology systems, workflow processes and redesign in various health care settings. Discusses legal issues created by implementation of the EHR. *Prerequisites: HIM 130 and HIM 230.* Lecture 3 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. *Prerequisite: BIO 141 and 142 or Instructor's permission.* Lecture 4 hours per week.

**HIM 254 Advanced Coding and Reimbursement** (4 cr.) Stresses advanced coding skills through practical exercises using actual medical records. Introduces CPT-4 coding system and guidelines for out-patient/ambulatory surgery coding. Introduce prospective payment system and its integration with ICD-9-CM coding. *Prerequisite: BIO 141 and 142 or Instructor's permission.* Lecture 4 hours per week.

**HIM 293 PACS Administration II** (3 cr.) This course will build on the basic principles presented in HIM 193 while integrating the technical aspects of PACS. This course will focus on topics such as connectivity, image management, data storage, IT interfacing, system management and troubleshooting. Finally the future of PACS and advanced technologies will be discussed. Lecture 3 hours per week.

## ■ History (HIS)

**HIS 101, 102 History of Western Civilization I, II** (3 cr.) (3 cr.) Examines the development of western civilization from ancient times to the present. The first semester ends with the seventeenth century; the second semester continues through modern times. Lecture 3 hours per week.

**HIS 111, 112 History of World Civilization I, II** (3 cr.) (3 cr.) Surveys Asian, African, Latin American, and European civilizations from the ancient period to the present. Lecture 3 hours per week.

**HIS 121, 122 United States History I, II** (3 cr.) (3 cr.) Surveys United States history from its beginning to the present. Lecture 3 hours per week.

**HIS 255 History of Chinese Culture and Institutions** (3 cr.) Examines traditional Chinese social, political, economic, and military institutions. Also examines major literary, artistic and intellectual achievements from pre-historic times to the present. Lecture 3 hours per week.

**HIS 256 History of Japanese Culture and Institutions** (3 cr.) Examines traditional Japanese social, political, economic and military institutions. Also examines major literary, artistic and intellectual achievements from pre-historic times to the present. Lecture 3 hours per week.

**HIS 269 Civil War and Reconstruction** (3 cr.) Studies factors that led to the division between the States. Examines the war, the home fronts, and the era of Reconstruction. Lecture 3 hours per week.

**HIS 281, 282 History of Virginia I, II** (3 cr.) (3 cr.) Examines the cultural, political, and economic history of the Commonwealth from its beginning to the present. Lecture 3 hours per week.

## ■ Hotel-Restaurant-Inst Mgmt (HRI)

**HRI 101 Hotel-Restaurant Organization and Management I** (3 cr.) Introduces the history, opportunities, problems and trends of the hospitality industry. Covers the organization of the various sectors of the hospitality industry including human resources, general business considerations, and management theory. Part I of II. Lecture 3 hours per week

**HRI 106 Principles of Culinary Arts I** (3 cr.) Introduces the fundamental principles of food preparation and basic culinary procedures. Stresses the use of proper culinary procedures combined with food science, proper sanitation, standards of quality for food items that are made, and proper use and care of kitchen equipment. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

- HRI 119 Applied Nutrition for Food Service** (3 cr.) Studies food composition, nutrition science, and application of nutrition principles by the food service professional. Provides the student with a basic understanding of human nutrition and application of nutrition in the service of commercially prepared meals. Lecture 3 hours 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 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. Lecture 2 hours. Laboratory 3 hours. Total 5 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 195 Introduction to Restaurant Certification** (3 cr.) This Text and Certification focuses on topics that relate to customer service. The text and certification is created to teach students the core competencies of the ten pillars of restaurant Management. This course teaches the students information they must know in order to efficiently run a safe and profitable food service operation. It includes essential content plus learning activities, case studies, professional profiles, research topics and other topics that support the course objective. Lecture 3 hours per week
- HRI 195 Introduction to Serve Safe** (3 cr.) This course will cover 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. Students will learn the skills of sanitation and safety and will take a certification to become a serve safe employee. Lecture 3 hours per week
- HRI 190 Coordinated Internship in Restaurant and Hospitality Management** (3 cr.) Supervises on-the-job training in selected business, industrial or service firms coordinated by the instructor. Students will work in a hospitality atmosphere, accumulating hours and gaining practical experience in the areas of but not limited to: dishwashing, food prep, customer service, service and customer support. Credit/Practice Ratio not to exceed 1:5 hours
- HRI 207 American Regional Cuisine** (3 cr.) Studies the distinct regional cooking styles of America and its neighbors. Emphasizes the indigenous ingredients as well as the cultural aspect of each region's cooking style. Includes the preparation of the various regional foods. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- HRI 218 Fruit, Vegetable and Starch Preparation** (3 cr.) Instructs the student in the preparation of fruits, vegetables, grains, cereals, legumes and farinaceous products. Promotes the knowledge/skills necessary to prepare menu items from fruits, vegetables, and their byproducts, and to select appropriate uses as real components. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- HRI 219 Stock, Soup, and Sauce Preparation** (3 cr.) Instructs the student in the preparation of stocks, soups, and sauces. Promotes the knowledge/skills to prepare stocks, soups, and sauces, and to select appropriate uses as meal components. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- HRI 220 Meat, Seafood, and Poultry Preparation** (3 cr.) Provides the study and preparation of meat, poultry, shellfish, fish, and game. Promotes the knowledge/skills required to select appropriate use of these foods as meal components. Lecture 2 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. Lecture 3 hours per week.
- HRI 228 Food Production Operations** (3 cr.) Teaches management principles as applied to a food production setting. Integrates skills areas including planning, organizing, coordinating, checking, insuring, training, establishing standards, assisting and controlling. Promotes the knowledge/ skills required to manage food production operations in a commercial and/or institutional kitchen. Lecture 3 hours per week.

**HRI 231 Principles of Event Planning and Management** (3 cr.) Focuses on the detailed aspects of how to produce, stage, script, and manage special events within the context of achieving organizational goals. Emphasizes the five critical stages in planning and managing special events: research needs and make goal assessments; design events to meet organizational purposes; planning the effective event; coordination and on-site management; and post-event evaluation. Lecture 3 hours 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 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. Part I of II. 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 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 enterprise. Lecture 3 hours per week.

## ■ Humanities (HUM)

**HUM 201 Survey of Western Culture I** (3 cr.) Studies thought, values, and arts of Western culture, integrating major developments in art, architecture, literature, music, and philosophy. Covers the following periods: Ancient and Classical, Early Christian and Byzantine, Medieval, and Early Renaissance. Lecture 3 hours per week.

**HUM 246 Creative Thinking** (3 cr.) Examines and analyzes creative and effective thinking processes with applications in individual and group projects to solve business, scientific, environmental, and other practical problems. Lecture 3 hours per week.

**HUM 260 Survey of Twentieth-Century Culture** (3 cr.) Explores literature, visual arts, philosophy, music, and history of our time from an interdisciplinary perspective. Lecture 3 hours per week.

## ■ Industrial Engineering Technology (IND)

**IND 103 Industrial Methods** (1 cr.) Covers theoretical knowledge necessary for familiarization with common handtools, common power tools, measuring tools and techniques, fastening components and procedures, grinding operations, metal cutting operations, and other miscellaneous tasks. Lecture 1 hour per week.

**IND 105 Nondestructive Inspection (NDI) and Testing** (3 cr.) Studies nondestructive inspection and testing methods as they relate to industry. May include radiographic (RT), ultrasonic (UT), eddy current (ET), magnetic particle (MT), and liquid penetrant (PT) or other methods of testing. Lecture 3 hours per week.

**IND 106 Industrial Engineering Technology** (3 cr.) Introduces basic skills required for a career in industrial engineering technology. Includes basic statistics for engineering technicians, the SI system, graphic analysis, and careers as an industrial engineering technician. Lecture 3 hours per week.

**IND 113 Materials and Processes in Manufacturing I** (2 cr.) Studies materials and processes for the manufacture of products. Investigates the nature of various materials. Examines the manufacturing processes of industry and their effects on materials. Lecture 2 hours per week.

**IND 126 Maintenance Scheduling and Planning** (2 cr.) Studies organization of a maintenance department including planning, schedule, budgets, training, work measurement systems, labor standards, and preventive/ predictive maintenance. Lecture 2 hours per week.

**IND 137 Team Concepts and Problem Solving** (3 cr.) Studies team concepts and problem solving techniques to assist project teams in improving quality and productivity. Provides knowledge of how to work as a team, plan and conduct good meetings, manage logistics and details, gather useful data, communicate the results and implement changes. Lecture 3 hours per week.

**IND 140 Quality Control** (2 cr.) Studies history, structure, and organization of the quality control unit. May include incoming material control, product and process control, and cost control. Lecture 2 hours per week.

**IND 145 Introduction to Metrology** (3 cr.) Studies principles of measurement and calibration control, application of statistics to measurement processes, and standards of measurements in calibration. May include the use of gauges and instruments in modern production and dimensional control concepts. *Prerequisite: IND 140.* Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**IND 160 Introduction to Robotics** (3 cr.) Studies evolution and history of robotics with an emphasis on automated and flexible manufacturing. Presents advantages and limitations of present robot systems. Lecture 3 hours.

**IND 195 Manufacturing Specialist** (4 cr.) Introduces the mathematical, scientific and engineering theories and practices necessary in manufacturing; including algebra, measurement, spatial reasoning, mechanics, fluids, electricity, chemistry, and manufacturing processes and controls. Covers the skills necessary to test for certification for Manufacturing Specialist (MS) from the Virginia Manufacturers Association. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**IND 230 Applied Quality Control** (3 cr.) Studies principles of inspection and quality assurance with emphasis on statistical process control. May include the setting up, maintaining, and interpreting of control charts, and review of basic metrology. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**IND 235 Statistical Quality Control** (3 cr.) Gives overview of the quality control function within industry. May include the organization, cost, and techniques of quality control. Emphasizes essentials and applications of statistics in the quality control function. Lecture 3 hours per week.

**IND 236 Total Quality Concepts** (3 cr.) Discusses the fundamentals of Total Quality. Compares and contrasts the philosophies of the recognized experts on the subject. Discusses cultural change, continuous process improvement, and strategic planning. Introduces team skills and concepts. Emphasizes the systems approach to Total Quality philosophy. Lecture 3 hours per week.

**IND 250 Introduction to Basic computer Integrated Manufacturing** (3 cr.) Presents basic principles used in the design and implementation in a computer integrated manufacturing system. Emphasizes team concept and all aspects of a computer integrated manufacturing system to include the following: Robotics, Conveyor Control, Machining Center Integration Quality Control, Statistical Quality Control, and Computer Integrated Manufacturing (CIM) software. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**IND 295 Manufacturing Technician** (2 cr.) Presents the topics of quality, statistical process control basic concepts, financial literacy and Business Acumen. Covers the skills necessary to test for certification for Manufacturing Technician Level 1 (MT1) from the Virginia Manufacturers Association. *Prerequisite: IND 195 Manufacturing Specialist.* Lecture 2 hours. Total 2 hours per week.

## ■ Information Technology Database (ITD)

**ITD 110 Web Page Design I** (3 cr.) Stresses a working knowledge of web site designs, construction, and management using HTML or XHTML. Course content includes headings, lists, links, images, image maps, tables, forms and frames. *Prerequisite: ITE 115.* Lecture 3 hours per week.

**ITD 112 Designing Web Page Graphics** (3 cr.) Explores the creation of digital graphics for web design. Includes basic design elements such as color and layout will be explored utilizing a computer graphics program(s). Lecture 3 hours per week.

**ITD 120 Design Concepts for Mobile Applications** (3 cr.) Provides skills for designing both Web-based and stand-alone applications for wireless devices. Details discussions of the needs for applications including mobile phones and a range of rich hand-held devices such as PDA's. Emphasizes the importance of usability, accessibility, optimization and performance to create fast-loading business enterprise applications and games. *Prerequisites: ITE 115 and ITD 110 or instructor's approval.* Lecture 3 hours per week.

**ITD 136 Database Management Software** (3 cr.) Covers an introduction to relational database theory and how to administer and query databases using multiple commercial database systems. *Prerequisite: ITE 115 or ITE 119.* Lecture 3 hours per week.

**ITD 210 Web Page Design II** (3 cr.) Incorporates advanced techniques in web site planning, design, usability, accessibility, advanced site management, and maintenance utilizing web editor software(s). *Prerequisite: ITD 110 or instructor's approval.* Lecture 3 hours per week.

## ■ Information Technology Essentials (ITE)

**ITE 115 Introduction to Computer Applications and Concepts** (3 cr.) Covers computer concepts and internet skills, and uses a software suite which includes word processing, spreadsheet, database, and presentation software to demonstrate skills. *Prerequisite: keyboarding skills. Note: Students may not get credit for BUS 226, ITE 115, and ITE 119.* Lecture 3 hours per week.

**ITE 119 Information Literacy** (3 cr.) Presents the information literacy core competencies focusing on the use of information technology skills. Skills and knowledge will be developed in database searching, computer applications, information security and privacy, and intellectual property issues. *Note: Students may not get credit for BUS 226, ITE 115, and ITE 119.* Lecture 3 hours per week.

**ITE 120 Principles of Information Technology** (3 cr.) Provides an overview of the fundamentals of computer information systems. Focuses on the role of computers in business today including hardware, software, analysis, design and implementation of information systems. Includes an introduction to computer ethics, and business and personal security. Exposes students to techniques used in programming and system development. Utilizes a hands-on component for spreadsheets, databases, and web design applications. Lecture 3 hours per week.

**ITE 140 Spreadsheet Software** (3 cr.) Covers the use of spreadsheet software to create spreadsheets with formatted cells and cell ranges, control pages, multiple sheets, charts, and macros. Topics include type and edit text in a cell, enter data on multiple worksheets, work with formulas and functions, create charts, pivot tables, and styles, insert headers and footers, and filter data. This course covers MOS Excel objectives. *Prerequisite: BUS 226 or ITE 115.* Lecture 3 hours per week.

## ■ Information Technology Networking (ITN)

**ITN 101 Introduction to Network Concepts** (3 cr.) Provides instruction in networking media, physical and logical topologies, common networking standards and popular networking protocols. Emphasizes the TCP/IP protocol suite and related IP addressing schemes, including CIDR. Includes selected topics in network implementation, support and LAN/WAN connectivity. Lecture 3 hours per week.

**ITN 154 Network Fundamentals, Router Basics, and Configuration (ICND1) - Cisco** (4 cr.) Provides introduction in the fundamentals of networking environments, the basics of router operations, and basic router configuration. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ITN 155 Switching, Wireless, and WAN Technologies (ICND2) - Cisco** (4 cr.) Provides the skills and knowledge to install, operate, and troubleshoot a small-to-medium sized branch office enterprise network, including configuring several switches and routers, configuring wireless devices, configuring VLANs, connecting to a WAN, and implementing network security. *Prerequisite: ITN 154.* Lecture 2 hours. Laboratory 2 hours.

**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.* 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.* Lecture 4 hours per week.

**ITN 260 Network Security Basics** (3 cr.) Provides instruction in the basics of network security in depth. Includes security objectives, security architecture, security models and security layers; risk management, network security policy, and security training. Includes the give security keys, confidentiality integrity, availability, accountability and auditability. *Prerequisite: ITN 101 or equivalent or permission of the department.* Lecture 4 hours per week.

**ITN 261 Network Attacks, Computer Crime and Hacking** (3 cr.) Encompasses in-depth exploration of various methods for attacking and defending a network. Explores network security concepts from the viewpoint hackers and their attack methodologies. Includes topics about hackers, attacks, Intrusion Detection Systems (IDS) malicious code, computer crime and industrial espionage. *Pre- or Co-requisite: ITN 260.* Lecture 3 hours per week.

**ITN 262 Network Communication, Security and Authentication** (4 cr.) Covers an in-depth exploration of various communication protocols with a concentration on TCP/IP. Explores 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, and the use of various utilities to explore TCP/IP. **Prerequisite:** ITN 260. Lecture 4 hours per week.

**ITN 263 Internet/Intranet Firewalls and E-Commerce Security** (4 cr.) Gives an in-depth exploration of firewall, Web security, and e-commerce security. Explores firewall concepts, types, topology and the firewall's relationship to the TCP/IP protocol. Includes client/server architecture, the Web server, HTML and HTTP in relation to Web Security, and digital certification, D.509, and public key infrastructure (PKI). **Prerequisite:** ITN 260. Lecture 4 hours per week.

**ITN 266 Network Security Layers** (3 cr.) Provides an in-depth exploration of various security layers needed to protect the network. Explores 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 260. Lecture 3 hours per week.

**ITN 267 Legal Topics in Network Security** (3 cr.) Conveys an in-depth exploration of the civil and common law issues that apply to network security. Explores statutes, jurisdictional, and constitutional issues related to computer crimes and privacy. Includes rules of evidence, seizure and evidence handling, court presentation and computer privacy in the digital age. **Co-requisite:** ITN 260 or permission of the department. Lecture 3 hours per week.

## ■ Information Technology Programming (ITP)

**IITP 100 Software Design** (3 cr.) Introduces principles and practices of software development. Includes instruction in critical thinking, problem solving skills, and essential programming logic in structured and object-oriented design using contemporary tools. **Co/Prerequisite:** ITE 115 or ITE 119. Lecture 3 hours per week.

**ITP 120 Java Programming I** (4 cr.) Entails instruction in fundamentals of object-oriented programming using Java. Emphasizes program construction, algorithm development, coding, debugging, and documentation of console and graphical user interface applications. **Prerequisite:** ITP 100 or instructor's approval. Lecture 4 hours per week.

**ITP 136 C# Programming I** (4 cr.) Presents instruction in fundamentals of object-oriented programming and design using C#. Emphasizes program construction, algorithm development, coding, debugging, and documentation of applications within the .NET framework. **Prerequisite:** ITP 100 or instructor's approval. Lecture 4 hours per week.

**ITP 225 Web Scripting Languages** (4 cr.) Introduces students to the principles, systems, and tools used to implement Web applications. Provides students with a comprehensive introduction to the programming tools and skills required to build and maintain interactive Web sites. Students will develop Web applications utilizing client-side and server-side scripting languages along with auxiliary tools needed for complete applications. **Prerequisites:** ITD 110, ITD 136, and ITP 100 or instructor's approval. Lecture 4 hours per week.

**ITP 258 Systems Development Project** (4 cr.) Provides instruction in application of life cycle system development methodologies using a case study which incorporates feasibility study system analysis, system design, program specification, and implementation planning. Course project assignment(s) will have students perform as members of system development teams. **Prerequisites:** ITD 136, ITD 210 and ITP 120 or instructor's approval. Lecture 4 hours per week.

## ■ Instrumentation (INS)

**INS 232 – System Troubleshooting** (3 cr.) Presents system troubleshooting theory and real troubleshooting applications. Uses a hands-on approach to provide troubleshooting experience in multiple areas such as programmable logic controllers (PLC), control automation systems and process control systems. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

## ■ Machine Technology (MAC)

**MAC 116 Machinist Handbook** (2 cr.) Uses the machinist handbook as a ready reference book of tabular data, formulas, designs and processes relating to machine technology. **Prerequisite:** MTH 103 or higher level math. Lecture 2 hours per week.

**MAC 121-122-123 Numerical Control I-II-III** (3 cr.) (3 cr.) (3 cr.) Focuses on numerical control techniques in metal forming and machine processes. Includes theory and practice in lathe and milling machine computer numerical control program writing, setup and operation. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**MAC 146 Metals/Heat Treatment** (2 cr.) Provides approach to metals and their structure. Gives working knowledge of methods of treating ferrous and non-ferrous metals. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

- MAC 161-162 Machine Shop Practices I-II** (3 cr.) (3 cr.) Introduces safety procedures, bench work, hand tools, precision measuring instruments, drill presses, cut-off saws, engine lathes, manual surface grinders, and milling machines. *Prerequisite: MAC 161 is a prerequisite or co-requisite for MAC 162.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- MAC 163-164 Machine Shop Practices III-IV** (3 cr.) (3 cr.) Offers practice in the operation of the drill press, engine lathe, vertical milling machine, horizontal milling machine, and the surface grinder. Introduces practical heat treatment of directly hardenable steels commonly used in machine shops. *Prerequisite: MAC 162.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- MAC 181 Machine Blueprint Reading I** (3 cr.) Introduces reading and interpreting blueprints and working drawings. Applies visualization of objects, sketching, and machine terminology. Lecture 3 hours per week.
- MAC 231-232 Advanced Precision Machining I-II** (3 cr.) (3 cr.) Teaches machining principles and calculations necessary for the precision required by the machinist. Emphasizes advanced lathe and mill work with concentration of fits, finishes, inspection, and quality control. Includes design and construction of specific projects to determine the student's operational knowledge of all equipment. *Prerequisites: MAC 242.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- MAC 241-242 Advanced Machinery Procedures I-II** (3 cr.) (3 cr.) Focuses on machining principles and calculations necessary for the precision required by the machinist. Emphasizes advanced lathe and mill work with concentration on fits, finishes, inspections, and quality control. Teaches design and construction of specific projects to determine the student's operational knowledge of all equipment. *Prerequisites: MAC 164.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- MAC 252 Surface Table Inspection** (3 cr.) Introduces and develops the knowledge and skills needed to perform surface table inspection. Includes the application of inspection tools and gauges commonly found in inspection. Practical hands on inspection. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week
- **Marketing (MKT)**
- MKT 100 Principles of Marketing** (3 cr.) Presents principles, methods and problems involved in the marketing of goods, services and ideas to consumers and organizational buyers. Discusses present-day problems and policies connected with distribution and sale of products, pricing, promotion, and buyer motivation. Examines variations of the marketing mix and market research, plus legal, social, and ethical, and international considerations in marketing. Lecture 3 hours per week.
- MKT 110 Principles of Selling** (3 cr.) Presents a fundamental, skills-based approach to the professional selling of products, services, and ideas. 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 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 budgets, selecting media, and analyzing the effectiveness of the campaign. Lecture 3 hours per week.
- MKT 282 Principles of E-Commerce** (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 284 Social Media Marketing** (3 cr.) Surveys the use of social networks and online communities such as blogs, wikis, virtual events that allow companies to expand their interaction with customers and develop relationships with collaborative communities. Emphasizes the ongoing transformation of the way companies adjust their marketing plans to improve interaction with customers online. Lecture 3 hours per week.



## ■ Mathematics Essentials (MTE) (Developmental/Technology-based)

**CALCULATORS:** Use of calculators will not be allowed in MTE 1 and use may be limited in MTE 2-5.

**MTE 1 Operations with Positive Fractions** (1 cr.) Includes operations and problem solving with proper fractions, improper fractions, and mixed numbers without the use of a calculator. Emphasizes applications and includes U. S. customary units of measure. *Credits not applicable toward graduation. Prerequisite: Qualifying placement score.* Lecture 1 hour per week.

**MTE 2 Operations with Positive Decimals and Percents** (1 cr.) Includes operations and problem solving with positive decimals and percents. Emphasizes applications and includes U. S. customary and metric units of measure. *Use of calculators may be limited. Credit is not applicable toward graduation. Prerequisite(s): MTE 1 or qualifying placement score.* Lecture 1 hour per week.

**MTE 3 Algebra Basics** (1 cr.) Includes basic operations with algebraic expressions and solving simple algebraic equations using signed numbers with emphasis on applications. *Use of calculators may be limited. Credit is not applicable toward graduation. Prerequisite(s): MTE 2 or qualifying placement score.* Lecture 1 hour per week.

**MTE 4 First Degree Equations and Inequalities in One Variable** (1 cr.) Includes solving first degree equations and inequalities containing one variable, and using them to solve application problems. Emphasizes applications and problem solving. *Use of calculators may be limited. Credit is not applicable toward graduation. Prerequisite(s): MTE 3 or qualifying placement score.* Lecture 1 hour per week.

**MTE 5 Linear Equations, Inequalities and Systems of Linear Equations in Two Variables** (1 cr.) Includes finding the equation of a line, graphing linear equations and inequalities in two variables and solving systems of two linear equations. Emphasizes writing and graphing equations using the slope of the line and points on the line, and applications. *Use of calculators may be limited. Credit is not applicable toward graduation. Prerequisite(s): MTE 4 or qualifying placement score.* Lecture 1 hour per week.

**MTE 6 Exponents, Factoring and Polynomial Equations** (1 cr.) The student will learn to perform operations on exponential expressions and polynomials. Students will also learn techniques to factor polynomials and use these techniques to solve polynomial equations. Emphasis should be on learning all the different factoring methods, and solving application problems using polynomial equations. *Credit is not applicable toward graduation. Prerequisite(s): MTE 5 or qualifying placement score.* Lecture 1 hour per week.

**MTE 7 Rational Expressions and Equations** (1 cr.) Includes simplifying rational algebraic expressions, solving rational algebraic equations and solving applications that use rational algebraic equations. *Credit is not applicable toward graduation. Prerequisite(s): MTE 6 or qualifying placement score.* Lecture 1 hour per week.

**MTE 8 Rational Exponents and Radicals** (1 cr.) Includes simplifying radical expressions, using rational exponents, solving radical equations and solving applications using radical equations. *Credit is not applicable toward graduation. Prerequisite(s): MTE 7 or qualifying placement score.* Lecture 1 hour per week.

**MTE 9 Functions, Quadratic Equations and Parabolas** (1 cr.) Includes an introduction to functions in ordered pair, graph, and equation form. Also introduces quadratic functions, their properties and their graphs. *Credit is not applicable toward graduation. Prerequisite(s): MTE 8 or qualifying placement score.* Lecture 1 hour per week.

## ■ Mathematics (MTH)

*General use of calculators may be restricted in certain math courses. Use of calculators with symbolic logic will not be allowed in any math course..*

**MTH 103-104 Applied Technical Mathematics I-II** (3 cr.) (3 cr.) Presents a review of arithmetic, elements of algebra, geometry, and trigonometry. Directs applications to specialty areas. *Prerequisite for MTH 104: A placement recommendation for MTH 103 and one unit of high school mathematics or equivalent.* Lecture 3 hours per week.

**MTH 120 Introduction to Mathematics** (3 cr.) Introduces number systems, logic, basic algebra, and descriptive statistics. *Prerequisites: Competency in Math Essentials MTE 1-3 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE or MTT units or equivalent. One year of Algebra is recommended. (Intended for occupational/technical programs.)* Lecture 3 hours per week.

**MTH 154 - Quantitative Reasoning** (3 cr.) Presents topics in proportional reasoning, modeling, financial literacy and validity studies (logic and set theory). Focuses on the process of taking a real-world situation, identifying the mathematical foundation needed to address the problem, solving the problem and applying what is learned to the original situation. *Prerequisite: Competency in MTE 1-5 as demonstrated through placement or unit completion or equivalent or Corequisite: MCR 4: Learning Support for Quantitative Reasoning* Lecture 3 hours per week.

**MTH 155 - Statistical Reasoning** (3 cr.) Presents elementary statistical methods and concepts including visual data presentation, descriptive statistics, probability, estimation, hypothesis testing, correlation and linear regression. Emphasis is placed on the development of statistical thinking, simulation, and the use of statistical software. *Prerequisite: Competency in MTE 1-5 as demonstrated through placement or unit completion or equivalent or Corequisite: MCR 4: Learning Support for Quantitative Reasoning.* Lecture 3 hours per week.

**MTH 158 - College Algebra** (3 cr.) Covers the structure of complex number systems, polynomials, rational expressions, graphing, systems of equations and inequalities and functions, quadratic and rational equations and inequalities. Lecture 3 hours per week.

**MTH 161 - Precalculus I** (3 cr.) Presents topics in power, polynomial, rational, exponential, and logarithmic functions, and systems of equations and inequalities. *Credit will not be awarded for both MTH 161: Precalculus I and MTH 167: Precalculus with Trigonometry or equivalent. Prerequisite: Competency in MTE 1-9 as demonstrated through placement or unit completion or equivalent or Corequisite: MCR 6: Learning Support for Precalculus I.* Lecture 3 hours per week.

**MTH 162 - Precalculus II** (3 cr.) Presents trigonometry, trigonometric applications including Law of Sines and Cosines and an introduction to conics. *Credit will not be awarded for both MTH 162: Precalculus II and MTH 167: Precalculus with Trigonometry or equivalent. Prerequisite: Completion of MTH 161 with a grade of C or better* Lecture 3 hours per week. .

**MTH 167 - Precalculus with Trigonometry** (5 cr.) Presents topics in power, polynomial, rational, exponential, and logarithmic functions, systems of equations, trigonometry, and trigonometric applications, including Law of Sines and Cosines, and an introduction to conics. *Credit will not be awarded for both MTH 167: Precalculus with Trigonometry and MTH 161/MTH 162: Precalculus I and II or equivalent. Prerequisite: Competency in MTE 1-9 as demonstrated through placement or unit completion or equivalent or Corequisite: MCR 7: Learning Support for Precalculus w/ Trigonometry.* Lecture 5 hours per week.

**MTH 245 - Statistics I** (3 cr.) Presents an overview of statistics, including descriptive statistics, elementary probability, probability distributions, estimation, hypothesis testing, correlation, and linear regression. *Credit will not be awarded for both MTH 155: Statistical Reasoning and MTH 245: Statistics I or equivalent. Prerequisite: Completion of MTH 154 or MTH 161 with a grade of C or better.* Lecture 3 hours per week.

**MTH 246 - Statistics II** (3 cr.) Description: Continues the study of estimation and hypothesis testing with emphasis on advanced regression topics, experimental design, analysis of variance, chi-square tests and non-parametric methods. *Prerequisite: Completion of MTH 245: Statistics I or equivalent with a grade of C or better.* Lecture 3 hours per week.

**MTH 261 - Applied Calculus I** (3 cr.) Introduces limits, continuity, differentiation and integration of algebraic, exponential and logarithmic functions, and techniques of integration with an emphasis on applications in business, social sciences and life sciences. *Prerequisite: Completion of MTH 161 with a grade of C or better.* Lecture 3 hours per week.

**MTH 262 - Applied Calculus II** (3 cr.) Covers techniques of integration, an introduction to differential equations and multivariable calculus, with an emphasis throughout on applications in business, social sciences and life sciences. *Prerequisite: Completion of MTH 261 with a grade of C or better.* Lecture 3 hours per week.

**MTH 263 - Calculus I** (4 cr.) Presents concepts of limits, derivatives, differentiation of various types of functions and use of differentiation rules, application of differentiation, antiderivatives, integrals and applications of integration. *Prerequisite: Completion of MTH 161/162 or 167 with a grade of C or better.* Lecture 4 hours per week.

**MTH 264 - Calculus II** (4 cr.) Continues the study of 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. Features instruction for mathematical, physical and engineering science programs. *Prerequisite: Completion of MTH 263 with a grade of C or better.* Lecture 4 hours per week.

**MTH 265 - Calculus III** (4 cr.) Focuses on extending the concepts of function, limit, continuity, derivative, integral and vector from the plane to the three dimensional space. Covers topics including vector functions, multivariate functions, partial derivatives, multiple integrals and an introduction to vector calculus. Features instruction for mathematical, physical and engineering science programs. *Prerequisite: Completion of MTH 263 or equivalent with a grade of B or better or MTH 264 or equivalent with a grade of C or better.* Lecture 4 hours per week.

**MTH 266 - Linear Algebra** (3 cr.) Covers matrices, vector spaces, determinants, solutions of systems of linear equations, basis and dimension, eigenvalues, and eigenvectors. Features instruction for mathematical, physical and engineering science programs. *Prerequisite: Completion of MTH 263 with a grade of B or better or MTH 264 with a grade of C or better.* Lecture 3 hours per week.

**MTH 267 - Differential Equations** (3 cr.) Introduces ordinary differential equations. Includes first order differential equations, second and higher order ordinary differential equations with applications and numerical methods. *Prerequisite:* *Completion of MTH 264 with a grade of C or better.* Lecture 3 hours per week.

## ■ Mechanical Engineering Technology (MEC)

**MEC 103 Electronic Circuits and Instrumentation** (4 cr.) Designed for non-majors. Covers electronic circuits, devices, instrumentation and basic communications, DC and AC theory, introduction to power supplies, amplifiers, and measurement devices. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**MEC 111 Materials for Industry** (3 cr.) Studies the nature, structure, properties, and typical applications of metallic, polymeric, ceramic, and composite materials. Focuses on applications of materials as well as the behavior of materials subjected to external stresses. Addresses as required the earth's limited material resources, energy efficient materials, dependence on foreign sources of materials, material systems, thermal processing, and electronic-related materials. Lecture 3 hours per week.

**MEC 113 Materials and Processes of Industry** (3 cr.) Studies engineering materials and accompanying industrial manufacturing processes. Investigates nature of materials structure and properties from a design standpoint. Analyzes the effects of various processes on materials, and the processes themselves. Includes machining, casting, forming, molding, hot/cold working, cipless machining, and welding. Addresses quality assurance and inspection procedures. Lecture 3 hours per week.

**MEC 133 Mechanics III - Dynamics for Engineering Tech** (3 cr.) Focuses on rigid body mechanics including Kinetics, Kinematics, and applications to machine elements. *Prerequisite: EGR 135* Lecture 3 hours

**MEC 140 Introduction to Mechatronics** (3 cr.) Presents foundational concepts in mechatronics including analog and digital electronics, sensors, actuators, microprocessors, and microprocessor interfacing to electromechanical systems. Surveys components and measurement equipment used in the design, installation, and repair of mechatronic equipment and circuits. *Prerequisite: division approval.* Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**MEC 210 Machine Design** (3 cr.) Studies the design of machine elements for producing and transmitting power. Includes additional material in statics, strength of materials, dynamics, engineering materials and industrial processes, including lubrication and friction. Emphasizes graphical kinematics of mechanisms, and discusses analytical design of machine components. Requires preparation of weekly laboratory reports. *Prerequisites: EGR 135 and 136 and MEC 133.* Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**MEC 266 Applications of Fluid Mechanics** (3 cr.) Teaches theory of hydraulic and pneumatic circuits including motors, controls, actuators, valves, plumbing, accumulators, reservoirs, pumps, compressors, and filters. *Prerequisite: MTH 103.* Lecture 3 hours per week.

## ■ Medical Laboratory (MDL)

**MDL 110 Urinalysis and Body Fluids** (3 cr.) Studies the gross, chemical, and microscopic techniques used in the clinical laboratory. Emphasizes study of clinical specimens which include the urine, feces, cerebrospinal fluid, blood, and body exudates. Introduces specimen collection and preparation. 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. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**MDL 215 Immunology** (2 cr.) Presents the physiological basis of humoral and cell mediated immunity, including the medical and clinical laboratory application of immunological principles. Lecture 2 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. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

**MDL 225 Clinical Hematology II** (4 cr.) Teaches advanced study of blood to include coagulation, abnormal blood formation, and changes seen in various diseases. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

**MDL 235 Mycology** (2 cr.) Studies pathogenic fungi and environmental contaminants, isolation and identification of commonly encountered genera with emphasis on morphologic criteria. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**MDL 236 Parasitology and Virology** (2 cr.) Teaches identification of the common parasites affecting man. Stresses methods of isolation and identification. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**MDL 237 Clinical Bacteriology** (4 cr.) Teaches handling, isolation, and identification of pathologic bacteria. Emphasizes clinical techniques and associate bacteria with clinical symptoms. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

**MDL 261-262 Clinical Chemistry and Instrumentation I-II** (4 cr.) (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. Includes instruction and practice in oral communication skills. 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. Includes instruction in basic computing concepts, components, and operations and in the use of an integrated software package. Lecture 1 hour.

## ■ Music (MUS)

**MUS 121, 122 Music Appreciation I, II** (3 cr.) (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.

## ■ Natural Science (NAS)

**NAS 131-132 Astronomy I-II** (4 cr.) (4 cr) Studies the major and minor bodies of the solar system, stars and nebulae of the milky way, and extragalactic objects. Examines life and death of stars, origin of the universe, history of astronomy, and instruments and techniques of observation. Lecture 3 hours per week. Recitation and laboratory 3 hours per week. Total 6 hours per week.

## ■ Nuclear Technology (NUC)

**NUC 102 Introduction to Nuclear Technology** (3 cr.) Introduces the concepts and principles of nuclear power plant operations and service. Lecture 3 hours.

**NUC 107 Basic Hand and Power Tools for the Nuclear Industry** (3 cr.) Emphasizes development of the knowledge and skills needed when servicing nuclear reactor components using hand and power tools. Provides hands-on experience through laboratory and field experiences. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

## ■ Philosophy (PHI)

**PHI 100 Introduction to Philosophy** (3 cr.) Presents an introduction to philosophical problems and perspectives with emphasis on systematic questioning of basic assumptions about meaning, knowledge, reality, and values. Lecture 3 hours per week.

**PHI 111 Logic I** (3 cr.) Introduces inductive and deductive reasoning, with an emphasis on common errors and fallacies. Lecture 3 hours per week.

**PHI 220 Ethics** (3 cr.) Provides a systematic study of representative ethical systems. Lecture 3 hours per week.

**PHI 265 Philosophy of Religion** (3 cr.) Examines problems raised by arguments for and against the existence of God and discusses such topics as the nature of God, the nature of religious experience, the problem of evil, religious truth and language, immortality, miracles, spirituality, and the relation between philosophy and theology. Lecture 3 hours per week. 3 credits.

## ■ Photography (PHT)

**PHT 101-102 Photography I-II** (3 cr.) (3 cr.) Teaches principles of photography and fundamental camera techniques. Requires outside shooting and lab work. Begins with the historical ways in which we see western civilization and shows how photography complements Renaissance concepts of space and our relationship to nature. The course will also examine the role of photography in a consumer society including legal issues and moral concerns. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

- PHT 106 Visual Literacy: The Photographic Image** (3 cr.) Emphasizes photographic syntax, how it has evolved and how it relates to reading images. Examines psychological, perceptual and contextual issues relating to photographic images. Open to students of all disciplines. Lecture 3 hours per week.
- PHT 130 Video I** (3 cr.) Introduces the basics of recording and editing video and sound for a variety of intents. Explores time-based media as an art form and means of communication. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
- PHT 135 Electronic Darkroom** (3 cr.) Teaches students to create and manipulate digital photographs. Covers masking, color corrections, and merging of illustrations with photographs. Examines the ethical and property-rights issues which are raised in the manipulation of images. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.
- PHT 201 Advanced Photography** (3 cr.) Provides weekly critiques of students' work. Centers on specific problems found in critiques. Includes working procedures and critical skills in looking at photographs. *Prerequisite: PHT 102 or equivalent* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 206 Large Format Photography** (3 cr.) Discusses 4x5 view camera techniques and controls, and sheet film processing. Demonstrates the image-making advantages of large format photography. *Prerequisite: PHT 102 or equivalent.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 211 Color Photography I** (3 cr.) Introduces theory, materials, and processes of modern color images. Includes additive and subtractive theory, color filtration, and negative and positive printing techniques. *Prerequisite: PHT 102.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 231 Photojournalism I** (3 cr.) Introduces equipment, techniques, skills, and concepts of photojournalism. Teaches photography for features, spot news, and photo essays. Emphasizes editing, captioning, and layout. May require individual projects. *Prerequisite: PHT 102 or equivalent.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 246 Advanced Photographic Printing** (3 cr.) Examines advanced printing techniques and principles of archival processing and presentation. Emphasizes development of individual printing style. Requires a portfolio of high quality prints on subject of choice. *Prerequisite: PHT 102 or equivalent.* Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
- PHT 247 Alternative Photographic Processes** (3 cr.) Explores manipulated imagery including traditional and non-traditional processes such as non-silver and electronic imaging. Uses enlarged film negatives in order to investigate a variety of methods. *Prerequisite: PHT 102 or equivalent.* Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.
- PHT 256 Communicating Through the Photographic Sequence** (3 cr.) Using experiences of sequencing involves the student in creating a picture book composed of images that have been placed in a sequence that has special visual meaning. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

## ■ Physical Education (PED)

- PED 101-102 Fundamentals of Physical Activity I-II** (2 cr.) (2 cr.) Presents principles underlying the components of physical fitness. Utilizes conditioning activities involving cardiovascular strength and endurance, respiratory efficiency, muscular strength, and flexibility. May include fitness assessment, nutrition and weight control information, and concepts of wellness. Lecture 1 hours. Laboratory 2 hours. Total 3 hours per week.
- PED 103 Aerobic Fitness I** (1 cr.) Develops cardiovascular fitness through activities designed to elevate and sustain heart rates appropriate to age and physical condition. Laboratory 2 hours per week.
- PED 107 Exercise and Nutrition** (1 cr.) Provides for the study and application of fitness and wellness and their relationship to a healthy lifestyle. Defines fitness and wellness, evaluates the student's level of fitness and wellness. Students will incorporate physical fitness and wellness into the course and daily living. Laboratory 2 hours per week.
- PED 111-112 Weight Training I-II** (1 cr.) (1 cr.) Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Laboratory 2 hours per week.
- PED 113 Lifetime Activities I** (1 cr.) Presents lifetime sports and activities. Teaches skills and methods of lifetime sports and activities appropriate to the local season and facilities available. Laboratory 2 hours per week.
- PED 116 Lifetime Fitness and Wellness** (1 cr.) Provides a study of fitness and wellness and their relationship to a healthy lifestyle. Defines fitness and wellness, evaluates the student's level of fitness and wellness, and motivates the student to incorporate physical fitness and wellness into daily living. Laboratory 2 hours per week.
- PED 117 Fitness Walking** (1 cr.) Teaches content and skills needed to design, implement, and evaluate an individualized program of walking, based upon fitness level. Laboratory 2 hours per week.

**PED 123-124 Tennis I-II** (1 cr.) (1 cr.) Teaches tennis skills with emphasis on stroke development and strategies for individual and team play. Includes rules, scoring, terminology, and etiquette. Laboratory 2 hours per week.

**PED 126 Archery** (1 cr.) Teaches skills and techniques of target archery. Focuses on use and maintenance of equipment, terminology, and safety. Laboratory 2 hours per week.

**PED 129 Self-Defense** (1 cr.) Examines history, techniques, and movements associated with self-defense. Introduces the skills and methods of self-defense emphasizing mental and physical discipline. Laboratory 2 hours per week.

**PED 135 Bowling I** (1 cr.) Teaches basic bowling skills and techniques, scoring, rules, etiquette, and terminology. Laboratory 2 hours per week.

**PED 141-142 Swimming I-II** (1 cr.) (1 cr.) Introduces skills and methods of swimming strokes. Focuses on safety and physical conditioning. Laboratory 2 hours per week.

**PED 150 Soccer** (1 cr.) Emphasizes soccer skills and techniques, strategies, rules, equipment, and physical conditioning. Laboratory 2 hours per week.

## ■ Physics (PHY)

**PHY 121-122 Principles of Physics I-II** (4 cr.) (4 cr.) Covers fundamental principles of physics. Includes mechanics, thermodynamics, wave phenomena, electricity and magnetism, and selected topics from modern physics. *Prerequisite: 2 units of high school algebra and one unit of high school geometry or equivalent.* Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**PHY 195 Introduction to Physical Science** (4 cr.) Introduces fundamental concepts of physics and chemistry, while developing problem solving skills. Students will develop an understanding of how science is used in manufacturing. Covers mechanics, gravitation, energy, torque, thermodynamics, wave motion, chemical properties and reactions. *Prerequisite: MTH 103 placement or equivalent.* Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**PHY 201-202 General College Physics I-II** (4 cr.) (4 cr.) Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity and magnetism, and selected topics in modern physics. *Prerequisites for PHY 201: - MTH 162 or MTH 167 or equivalent. Prerequisite for PHY 202: MTH 161.* Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**PHY 241-242 University Physics I-II** (4 cr.) (4 cr.) Teaches principles of classical and modern physics. Includes mechanics, wave phenomena, heat, electricity, magnetism, relativity, and nuclear physics. *Prerequisite for PHY 241: MTH 173. Prerequisites for PHY 242: MTH 174 or MTH 274 or division approval.* Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

## ■ Political Science (PLS)

**PLS 211, 212 U.S. Government I, II** (3 cr.) (3 cr.) Teaches structure, operation, and process of national, state, and local governments. Includes in-depth study of the three branches of the government and of public policy. Lecture 3 hours per week.

## ■ Psychology (PSY)

**PSY 120 Human Relations** (3 cr.) Introduces the theory and practice of effective human relations. Increases understanding of self and others and interpersonal skills needed to be a competent and cooperative communicator. Lecture 3 hours per week.

**PSY 200 Principles of Psychology** (3 cr.) Surveys the basic concepts of psychology. Covers the scientific study of behavior, behavioral research methods and analysis, and theoretical interpretations. Includes topics such as physiological mechanisms, sensation/perception, motivation, learning, personality, psychopathology, therapy, and social psychology. Lecture 3 hours per week.

**PSY 215 Abnormal Psychology** (3 cr.) Explores historical views and current perspectives of abnormal behavior. Emphasizes major diagnostic categories and criteria, individual and social factors of maladaptive behavior, and types of therapy. Includes methods of clinical assessment and research strategies. *Prerequisite: PSY 200, 201, or 202.* Lecture 3 hours per week.

**PSY 230 Developmental Psychology** (3 cr.) Studies the development of the individual from conception to death. Follows a life-span perspective on the developmental tasks of the person's physical, cognitive, and psycho-social growth. Lecture 3 hours per week.

**PSY 255 Psychological Aspects of Criminal Behavior** (3 cr.) Studies psychology of criminal behavior. Includes topics such as violent and non-violent crime, sexual offenses, insanity, addiction, white collar crime, and other deviant behaviors. Provides a background for law enforcement occupations. *Prerequisites: PSY 125, 200, 201, 202 or division approval.* Lecture 3 hours per week.

## ■ Radiography (RAD)

**RAD 105 Introduction to Radiology, Protection and Patient Care** (2 cr.) Presents brief history of radiologic profession, code of ethics, conduct for radiologic students, and basic fundamentals of radiation protection. Teaches the care and handling of the sick and injured patient in the Radiology Department. Introduces the use of contrast media necessary in the investigation of the internal organs. Lecture 2 hours per week.

**RAD 111-112 Radiologic Science I-II** (4 cr.) (4 cr.) Teaches concepts of radiation, radiography physics, fundamentals of electromagnetic radiation, electricity and magnetism, and application of these principles to radiography. Focuses on X-ray production, emission, and X-ray interaction with matter. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**RAD 121 Radiographic Procedures I** (4 cr.) Introduces procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the chest, abdomen, extremities, and axial skeleton. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**RAD 131-132 Elementary Clinical Procedures I-II** (3 cr.) (3 cr.) Develops advanced technical skills in fundamental radiographic procedures. Focuses on manipulation of equipment, patient care, osseous studies, skull procedures, and contrast studies. Provides clinical experience in cooperating health agencies. Clinical 15 hours per week.

**RAD 190 Coordinated Internship in Radiologic Technology** (4 cr.) Supervised practice in health agencies coordinated by the college. Variable hours per week.

**RAD 205 Radiation Protection and Radiobiology** (3 cr.) Studies methods and devices used for protection from ionizing radiation. Teaches theories of biological effects, cell and organism sensitivity, and the somatic and genetic effects of ionizing radiation. Presents current radiation protection philosophy for protecting the patient and technologist. Lecture 3 hours per week.

**RAD 215 Correlated Radiographic Theory** (2 cr.) Presents intensive correlation of all major radiologic technology subject areas. Studies interrelationships of biology, physics, principles of exposure, radiologic procedures, patient care, and radiation protection. Lecture 2 hours per week.

**RAD 221 Radiographic Procedures II** (4 cr.) Continues procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the skull, contrast studies of internal organs, and special procedures employed in the more complicated investigation of the human body. *Prerequisite: RAD 121.* Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**RAD 231-232 Advanced Clinical Procedures I-II** (5 cr.) (5 cr.) Reinforces technical skills in fundamental radiographic procedures. Introduces more intricate contrast media procedures. Focuses on technical proficiency, application of radiation, protection, nursing skills, and exposure principles. Teaches advanced technical procedures and principles of imaging modalities, correlating previous radiographic theory, focusing on full responsibility for patients in technical areas, perfecting technical skills, and developing awareness of related areas utilizing ionizing radiation. Provides clinical experience in cooperating health agencies. Clinical 25 hours per week.

**RAD 240 Radiographic Pathology** (3 cr.) Presents a survey of common medical and surgical disorders that affect radiographic image. Discusses conditions related to different systems of the human body. Studies the correlation of these conditions with radiographs. Includes instruction and practice in oral communications skills. Lecture 3 hours per week.

**RAD 243 Clinical Internship in Computed Tomography** (1 cr.) Develops clinical skills in computed tomography imaging procedures. *Prerequisite: ARRT or eligible.* Laboratory 5 hours per week.

**RAD 255 Radiographic Equipment** (3 cr.) Studies principles and operation of general and specialized X-ray equipment. Lecture 3 hours per week.

**RAD 290 Coordinated Internship in Radiologic Technology** (3 cr.) Supervised practice in health agencies coordinated by the college. Variable hours per week.

**RAD 296 Clinical Internship in Magnetic Resonance Imaging** (1 cr.) Develops clinical skills in magnetic resonance imaging procedures. Supervised practice in health agencies coordinated by the college. *Prerequisite: ARRT or eligible.* Variable hours per week.

### ■ Real Estate (REA)

**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.

### ■ Religion (REL)

**REL 200 Survey of the Old Testament** (3 cr.) Surveys books of the Old Testament, with emphasis on prophetic historical books. Examines the historical and geographical setting and place of the Israelites in the ancient Middle East as background to the writings. Lecture 3 hours per week.

**REL 210 Survey of the New Testament** (3 cr.) Surveys books of the New Testament, with special attention upon placing the writings within their historical and geographical setting. Lecture 3 hours per week.

**REL 230 Religions of the World** (3 cr.) Introduces the religions of the world with attention to origin, history, and doctrine. Lecture 3 hours per week. Lecture 3 hours per week.

### ■ Respiratory Therapy (RTH)

**RTH 101 Integrated Sciences for Respiratory Care I** (3 cr.) Integrates the application of mathematics, chemistry, microbiology, physics, and computer technology as these sciences apply to the practice of respiratory care. Includes unit on medical terminology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**RTH 121 Cardiopulmonary Science I** (3 cr.) Focuses on assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary, renal and neuromuscular physiology and pathophysiology. Lecture 3 hours per week.

**RTH 131-132 Respiratory Care Theory and Procedures I-II** (4 cr.) (4 cr.) Presents theory of equipment and procedures used for patients requiring general, acute and critical cardiopulmonary care. 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. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**RTH 145 Pharmacology for Respiratory Care I** (2 cr.) Presents selection criteria for the use of, and detailed information on pharmacologic agents used in pulmonary care. Lecture 2 hour per week.

**RTH 217 Pulmonary Rehabilitation, Home Care and Health Promotion** (2 cr.) Focuses on purpose and implementation of a comprehensive pulmonary rehabilitation program. Explores procedures and approaches used in pulmonary home care. Identifies and discusses major health and wellness programs applied to cardiopulmonary patients. Lecture 2 hours 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. Lecture 3 hours per week.

**RTH 223 Cardiopulmonary Science III** (2 cr.) Continues the exploration of topics discussed in RTH 121 and 222. Lecture 2 hours per week.

**RTH 224 Integrated Respiratory Therapy Skills** (2 cr.) Presents intensive correlation of all major respiratory therapy subject areas reflecting the entry-level and advanced practitioner matrix. Emphasis on assessment, implementation, and modification of therapy to patient response. 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. 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. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

### ■ RV/Motorcycle Maintenance (RVH)

**RVH 130 Motorcycle Rider Safety - Beginner** (1 cr.) Studies principles and basic skills of motorcycle riding with an emphasis on safety. Includes street strategies, protective gear, and selection and care/maintenance of motorcycles. Lecture 1 hour per week.

**RVH 195 Sidecar/Trike** (1 cr.) Studies principles and basic skills of three-wheel motorcycle riding with an emphasis on safety. Includes street strategies, protective gear, and selection and care/maintenance of motorcycles. Lecture 1 hour per week.

### ■ Safety (SAF)

**SAF 126 Principles of Industrial Safety** (3 cr.) Teaches principles and practices of accident prevention, analysis of accident causes, mechanical safeguards, fire prevention, housekeeping, occupational diseases, first aid, safety organization, protection equipment and general safety principles and promotion. Lecture 3 hours per week.

**SAF 130 Industrial Safety – OSHA 10** (1 cr.) Presents an introduction to occupational health and safety and its application in the workplace. Emphasizes safety standards and the Occupational Safety and Health Act (OSHA), its rules and regulations (OSHA 10). Lecture 1 hour per week

### ■ Sociology (SOC)

**SOC 200 Principles of Sociology** (3 cr.) Introduces fundamentals of social life. Presents significant research and theory in areas such as culture, social structure, socialization, deviance, social stratification, and social institutions. Lecture 3 hours per week.

**SOC 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. Lecture 3 hours per week.

**SOC 226 Human Sexuality** (3 cr.) Studies sociological research and theory on sexuality. Includes anatomy and physiology, birth control, sexually transmitted diseases and sexual behavior. Lecture 3 hours per week.

**SOC 266 Race and Ethnicity** (3 cr.) Considers race and ethnicity as social constructs that deeply affect our personal experience and our social institutions. Examines the relationships of racial and ethnic groups with each other and with the larger society, and the ways in which these relationships are constantly changing. Explores the experience of different groups and examines ideas of racial justice and equality. Introduces significant theoretical approaches to the study of race and ethnicity. Lecture 3 hours. Total 3 hours per week.

### ■ Spanish (SPA)

**SPA 101-102 Beginning Spanish I-II** (4 cr.) (4 cr.) Introduces understanding, speaking, reading, and writing skills and emphasizes basic Spanish sentence structure. *Prerequisite for SPA 102: SPA 101* Lecture 4 hours per week.

**SPA 201-202 Intermediate Spanish I-II** (4 cr.) (4 cr.) Continues to develop understanding, speaking, reading, and writing skills. *Prerequisite: SPA 102 or equivalent.* Lecture 4 hours per week.

### ■ Student Development (SDV)

**SDV 100 College Success Skills** (1 cr.) Assists students in transition to colleges. Provides overviews of college policies, procedures, and curricular offerings. Encourages contacts with other students and staff. Assists students toward college success through information regarding effective study habits, career and academic planning, and other college resources available to students. Includes instruction in networked information resources and in the use of telecommunication software. May include English and math placement testing. Strongly recommended for beginning students. Required for graduation. Lecture 1 hour per week.

**SDV 101 Orientation To Communication Design** (1 cr.) Introduces students to the skills which are necessary to achieve their academic goals, to services offered at the college and to the discipline in which they are enrolled. Covers topics such as services at the college including the learning resources center; counseling, and advising; listening, test taking, and study skills; and topical areas which are applicable to their particular discipline. Lecture 1-3 hours per week.

## ■ Welding(WEL)

**WEL 120 Introduction to Welding** ( 3 cr.) Introduces history of welding processes. Covers types of equipment, and assembly of units. Stresses welding procedures such as fusion, non-fusion, and cutting oxyacetylene. Introduces arc welding. Emphasizes procedures in the use of tools and equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**WEL 123 Shielded Metal Arc Welding (Basic)** (3 cr.) Teaches operation of AC and DC power sources, welding polarities, heats and electrodes for use in joining various metal alloys by the arc welding process. Deals with running beads, butt, and fillet welds in all positions. Emphasizes safety procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**WEL 124 Shielded Metal Arc Welding** (Advanced) (3 cr.) Continues instruction on operation of AC and DC power sources, welding polarities, heats and electrodes for use in joining various metal alloys by the arc welding process. Deals with running beads, butt, and fillet welds in all positions. Emphasizes safety procedures. 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 (TIG or GTAW) arc welding. Discusses equipment, safety operations, welding practice in the various positions, process applications, and manual and semi-automatic welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**WEL 138 Pipe and Tube Welding** (2 cr.) Develops entry-level skills for the inert gas tungsten welding process (TIG) with emphasis upon thin and thick wall carbon and stainless piping and tubing. *Prerequisite: WEL 136 or Instructor Permission.* Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

**WEL 141 Welder Qualification Test I** (3 cr.) Studies techniques and practices of testing welded joints through destructive and non-destructive testing. Part I of II. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**WEL 142 Welder Qualification Test II** (3 cr.) Studies techniques and practices of testing welded joints through destructive and non-destructive testing. Part II of II. 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 160 Gas Metal Arc Welding** (3 cr.) Introduces semi- automatic welding processes with emphasis on practical application. Includes the study of filler wires, fluxes, and gases. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**WEL 175 Semi-Automatic Processes** (3 cr.) Introduces semi-automatic processes (FCAW) performed with carbon steel. Emphasizes practical applications in field techniques. Includes the study of filler wires, fluxes and cover gasses. Lecture 1 hour, Laboratory 4 hours. Total 5 hours per week.

**WEL 195 Advanced Gas Tungsten Arc Welding** (3 cr.) Introduces practical operations in use of tungsten arc welding and equipment, operations, safety practices in various positions, shielding gases, filler rods, process variations, and their applications. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

# Administrative Faculty, Faculty, and Staff

## *Administrative, Professional, and Teaching Faculty (with year of appointment)*

**Aiken, Lisa:** (2015) Instructor of Emergency Medical Services, A.A. Liberal Arts, SUNY Adirondack.

**Alderman, Michael D.:** (1991) Associate Professor of Heating, Ventilation, and Air Conditioning; B.S., Norfolk State University.

**Alexander, Karen L.:** (2018) Coordinator of Admissions & Records/College Registrar: AA&S, Southwest Virginia Community College, B.S., Virginia Polytechnic Institute & State University; M.B.A., Virginia Polytechnic Institute & State University.

**Atkinson, James D.:** (1999) Associate Professor of Mathematics; B.S., Indiana University; M.A., University of Arizona.

**Ayala, Nelson :** (2019) Assistant Professor for Chemistry; B.S., Brooklyn College; M.S., State University of New York; M.B.A., University of Lynchburg; Ph.D. University of Virginia.

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Ms. Cindy Goodrich	Ms. Holly Puckett	

### Heating, Ventilation, and Air Conditioning

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Mr. Jamie Dalton	Mr. Mark Pauley

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 Ms. Taylor Hayden  
 Ms. Lisa Jordan

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 Ms. Ashley Pearson  
 Mr. Joshua Schneider

Ms. Karen Simonton  
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 Ms. Brandy Wright

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 Ms. Patricia Ann Doorley

Mr. Chad A Gibbs  
 Ms. Jennifer Martin  
 Dr. Michael G. Milam

Mr. George Morcom  
 Mr. Don O'Regan  
 Ms. Vicki Williams

**Welding**

Mr. Daniel Brown  
 Mr. Bob Campbell  
 Mr. Jason Edwards

Mr. Duane Newman  
 Mr. Mike McPeake  
 Ms. Mary Tinsley

Mr. Will Westgate  
 Mr. John Wright

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**Whom To Contact About Important Things****Type of Question.....To be Consulted**

Academic Difficulty .....	Counseling Center
Academic/Career Choice.....	Counseling Center
Applying to College.....	Admissions and Records
Disabled Individuals.....	Counseling Center
Enrolling in Classes.....	Admissions and Records
Evaluation of Transcripts .....	Admissions and Records
Financial Aid and Loans .....	Financial Aid
Grades Not Understood.....	Appropriate Faculty Member
Student Activities .....	Student Activities Coordinator
Job Information .....	Career Connections
Lost and Found .....	Campus Police
Personal Problems/Social Adjustments..	Counseling Center
Scholarships .....	Foundation
Study Habits and Budgeting Time .....	Counseling Center
Transcripts .....	Admissions and Records
Tutoring .....	Student Success Center
Veterans' Affairs .....	Veterans Coordinator
Withdrawal from Class .....	Admissions and Records
Withdrawal from College .....	Admissions and Records

**Hours For College Offices and Facilities**

Admissions and Records ....	Mon – Fri 8:00 a.m. to 5:00 p.m.
Bookstore .....	(See current class schedule)
Business Office .....	8:00 a.m. to 5:00 p.m.
Counseling Center .....	By Appointment or Mon – Thurs 8:00 a.m. to 6:00 p.m. Friday 8:00 a.m. to 5:00 p.m.
Faculty Offices.....	As Posted
Financial Aid .....	8:00 a.m. to 5:00 p.m.
Library.....	Mon – Thurs 8:00 a.m. to 7:30 p.m. Friday 8:00 a.m. to 5:00 p.m.
Off-Site Centers ....	Contact each site for hours of operation
Testing Center.....	Mon – Thurs 9:00 a.m. to 9:00 p.m. Friday 9:00 a.m. to 5:00 p.m. Saturday 9:00 a.m. to 1:00 p.m.

**Helpful Telephone Numbers****Support Service Numbers**

Academic and Student Affairs .....	832-7642
Accounting Office. ....	832-7638
Admissions and Records .....	832-7633
Alumni Affairs .....	832-6691
Bookstore.....	237-0749
Counseling Center.....	832-7800
Distance Education Center.....	832-7745
Financial Aid .....	832-7814
Graduation .....	832-7619
IT Helpdesk and Audiovisual .....	832-7649
Job Information and Career Advisor .....	832-7689
Library Information.....	832-7750
Marketing .....	832-6691
Placement Testing.....	832-7800
Police Office (on CVCC's main campus).....	832-7700
Student Activities .....	832-7654
Student Emergencies .....	832-7700
Student Success Center .....	832-7827
Switchboard .....	832-7600 or 1-800-562-3060
TDD (hearing impaired) .....	RELAY 711
Transcripts .....	832-7634
Veterans' Affairs .....	832-7631
Web Application .....	832-7632
Workforce Solutions.....	832-7607

**Academic Division Telephone Numbers**

The Technology, Trades, and Workforce Development.....	832-7680
The Arts and Sciences .....	832-7657

**Off-Site Centers**

Amherst Center .....	832-7898
Appomattox Center.....	832-7200
Bedford Center.....	832-7684

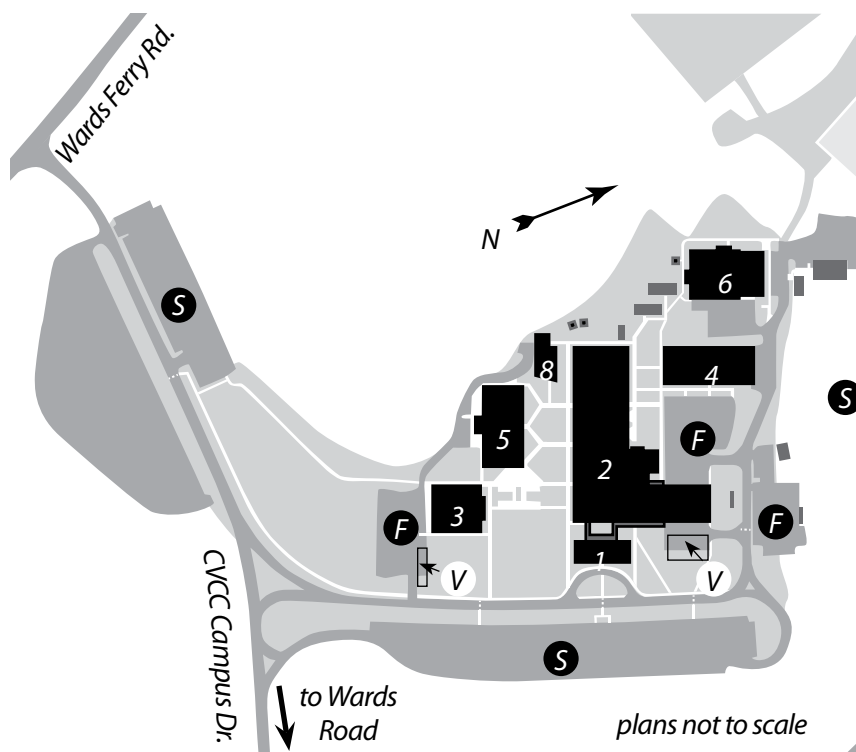
Note: Please visit our website at [www.centralvirginia.edu](http://www.centralvirginia.edu)  
for other CVCC telephone numbers.



# Building/Room Maps

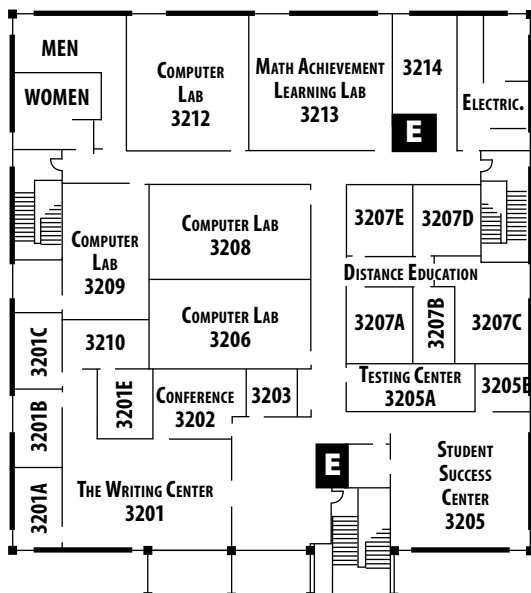
as of August 2019

- 1 Appomattox Building**  
(1000)
- 2 Amherst Hall**  
(2000)
- 3 Bedford Hall Learning Commons**  
(3000)
- 4 Campbell Hall**  
(4000)
- 5 Merritt Hall**  
(5000)
- 6 Framatome Tech. Center**  
(6000)
- 8 Seven Hills Hospitality & Culinary Center**  
(8000)
- S Student Parking**
- F Faculty & Staff Parking**
- V Visitor Parking**

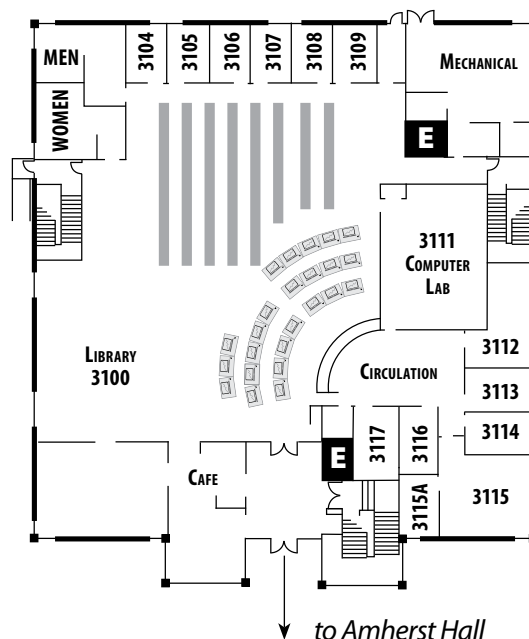


## Bedford Hall Learning Commons

*Upper level*

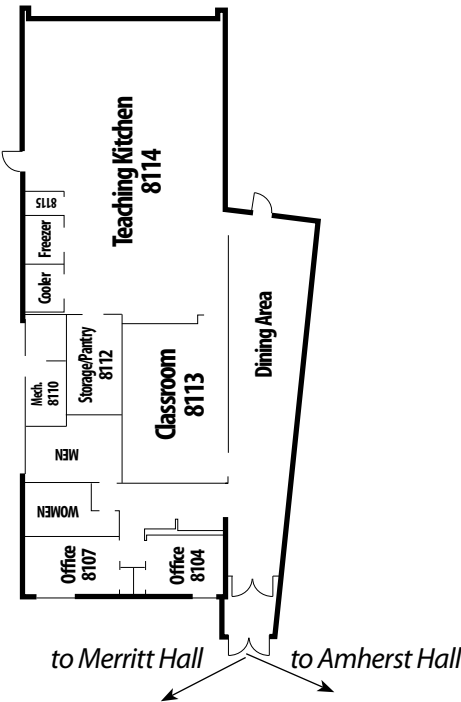


*Lower level*



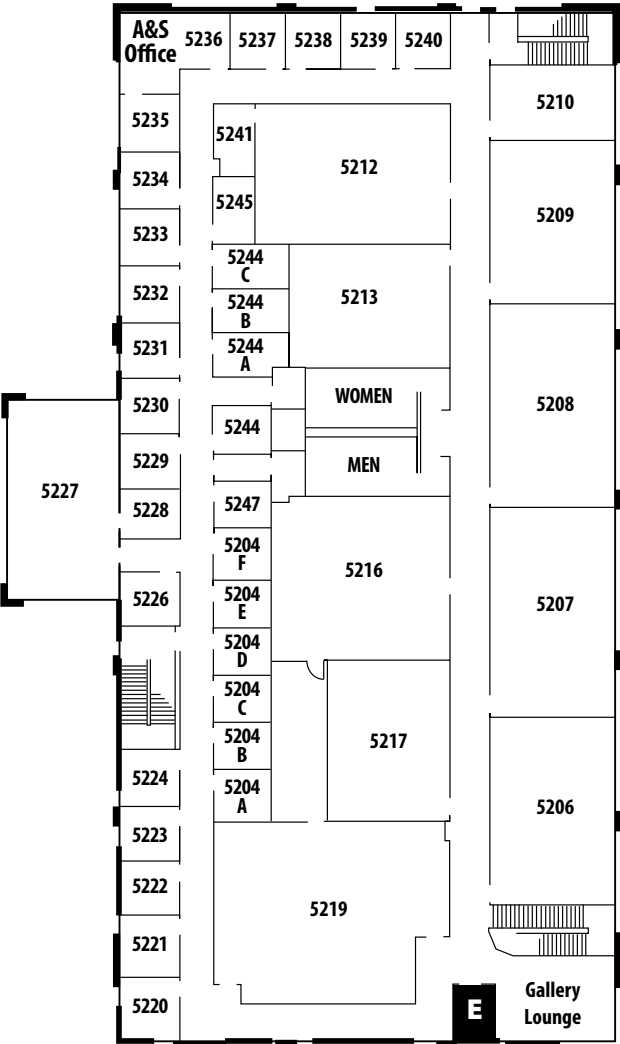
plans not to scale

Seven Hills Hospitality  
& Culinary Center

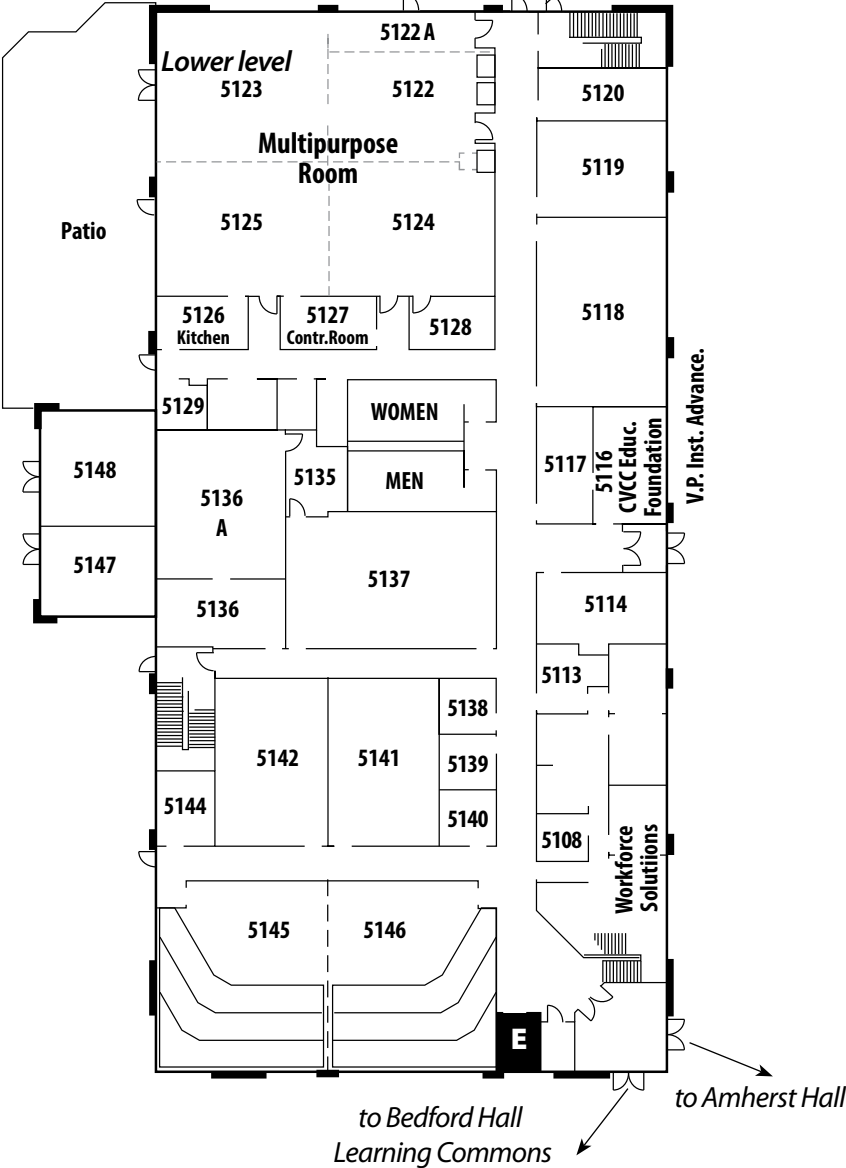


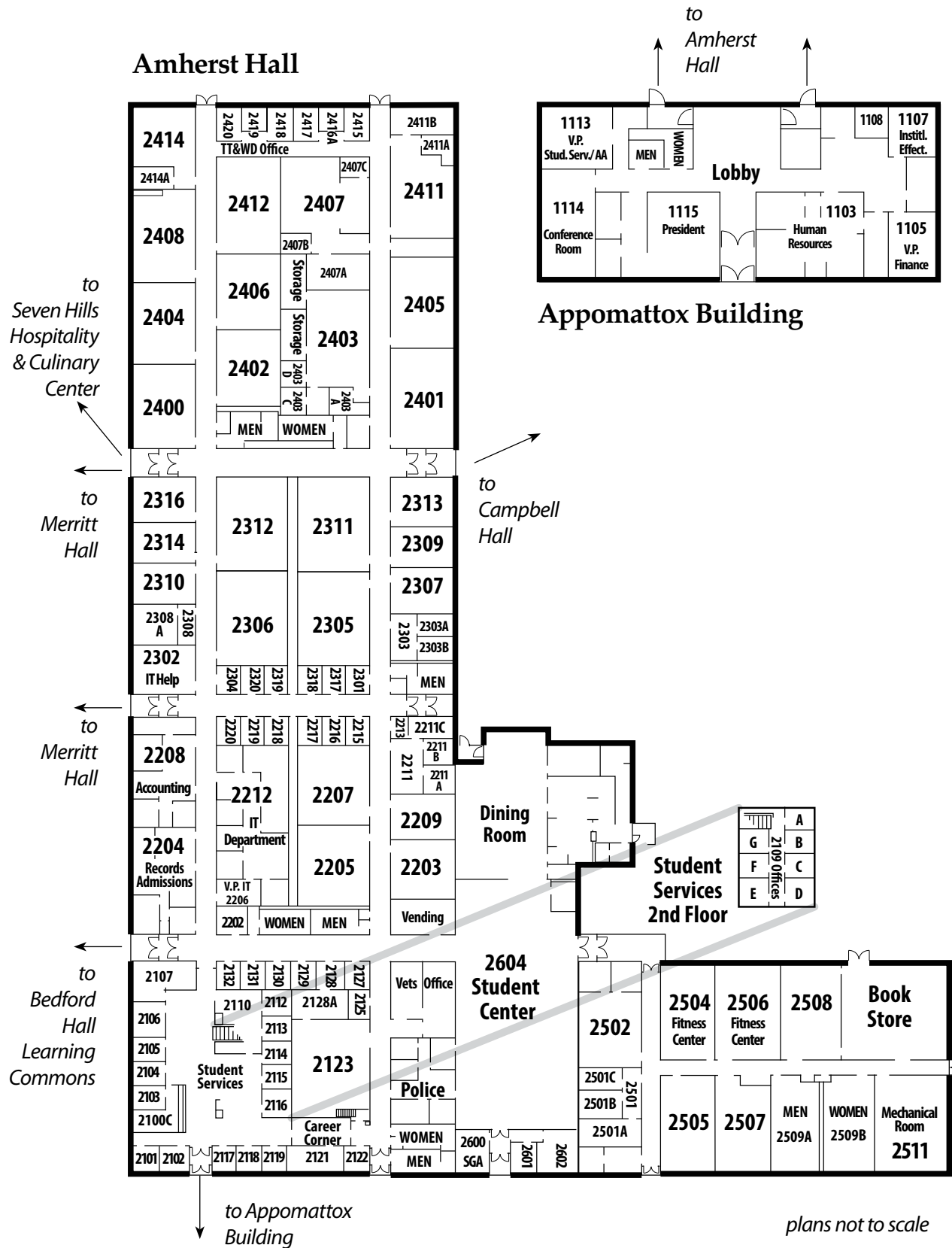
Merritt Hall

Upper level

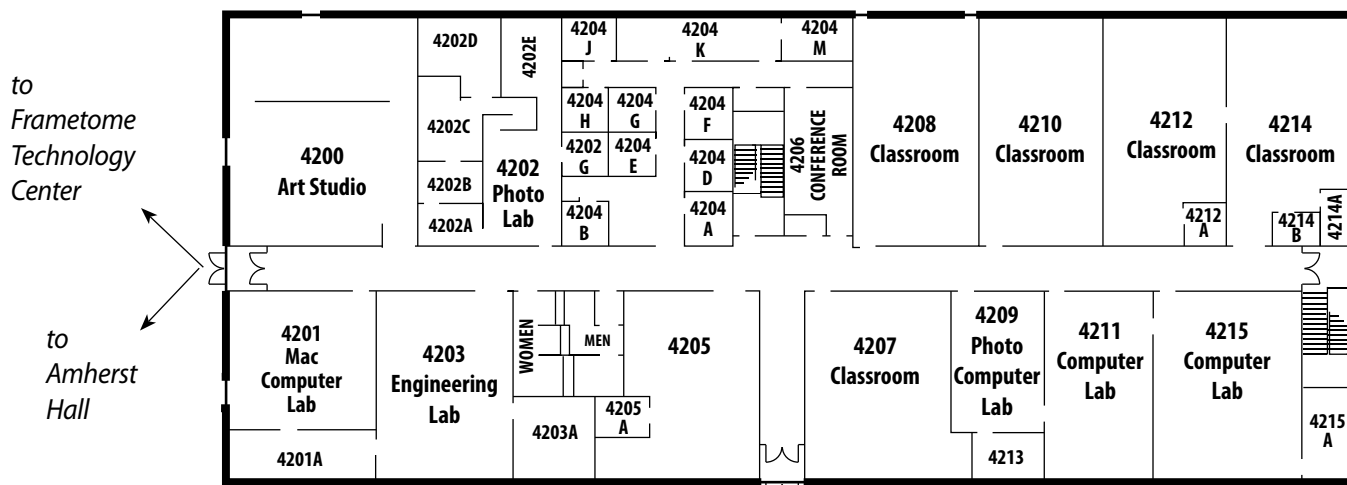
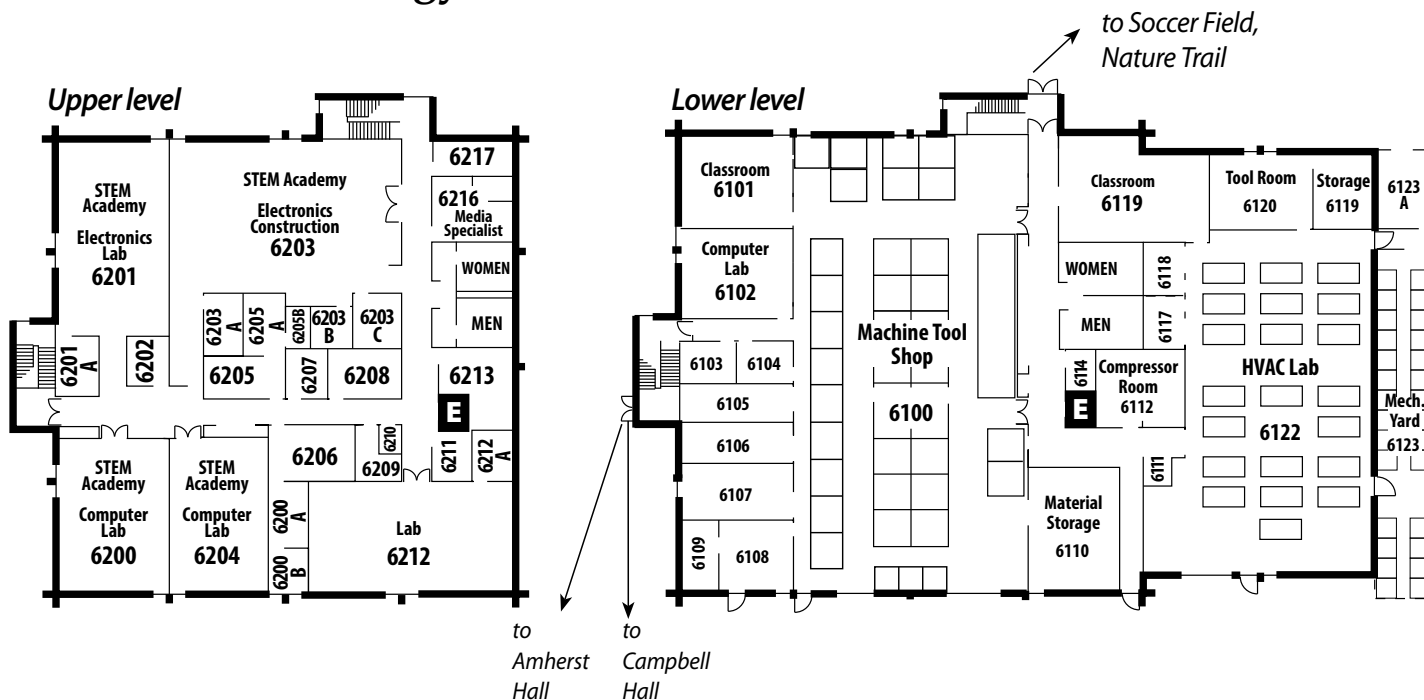


to Seven Hills Hospitality  
& Culinary Center

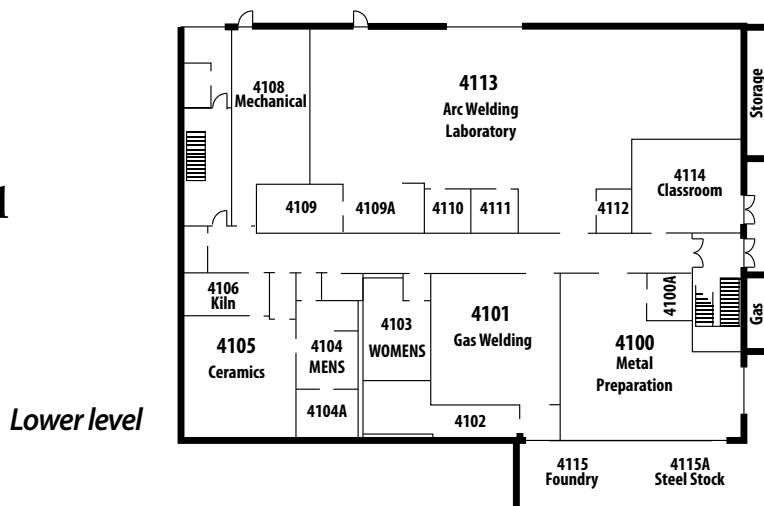




# Framatome Technology Center



## Campbell Hall



**Notes:**



**Central Virginia Community College**

3506 Wards Road, Lynchburg, VA 24502

[www.CentralVirginia.edu](http://www.CentralVirginia.edu)

434-832-7600