Painting by NOVA student **Young-Eun**

CATALOG

2023–2024

NOVA | Northern Virginia Community College

Welcome to NOVA!

Thank you for choosing NOVA!
More than 70,000 students this year are discovering that NOVA has exactly what they're looking for to meet their educational needs.

The high quality of NOVA's offerings is well known:

- Our classes feature up-to-date technology and course content to prepare you for today's competitive job market;
- We also offer courses that will transfer to colleges all over Virginia and the nation. In fact, NOVA has guaranteed admission agreements with more than 40 colleges and universities for students who meet specific requirements.

NOVA's excellence is delivered by a devoted faculty who loves teaching and really cares about the success of every student, and a staff who works hard to make sure you have what you need to accomplish your goals.

At NOVA, you'll find students with diverse backgrounds and views who will enrich your educational experience.

As if that weren't enough, NOVA offers the most affordable education in the area, so that with planning, you can still transfer to the university of your choice when you graduate with an A.A. or A.S. degree. Other programs prepare graduates for great jobs.

We are delighted to welcome you—and look forward to serving you.

Anne M. Kress President
Northern Virginia Community College

NOVA'S MISSION

Northern Virginia Community College provides equitable access to affordable and exceptional higher education and workforce programs, transforming the lives of our students and advancing opportunity in our community.

ACCREDITATION

Northern Virginia Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award the associate degree. Northern Virginia Community College also may offer credentials such as certificates and diplomas at approved degree level. Questions about the accreditation of Northern Virginia Community College may be directed in writing to the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website.

For other information about the College, please contact NOVA's Administrative Offices, 4001 Wakefield Chapel Road, Annandale, Virginia 22003 (703-323-3000). Curricula of the College are approved by the College Board and by the State Board. The two-year associate degree programs are also approved by the State Council of Higher Education for Virginia (SCHEV).

EQUAL EMPLOYMENT OPPORTUNITY/AFFIRMATIVE ACTION

Northern Virginia Community College does not discriminate on the basis of race, sex (including pregnancy), color, national origin, religion, sexual orientation, gender identity, age, political affiliation, family medical history or genetic information, disability, or veteran status in its programs and activities. Inquiries regarding the non-discrimination policy may be addressed to: Office of Fair Practices, 7630 Little River Turnpike, Ste. 301, Annandale, VA 22003, (703) 323-3284, *eo@nvcc.edu*

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Northern Virginia Community College Board

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General Information

History of the College

Northern Virginia Community College (NOVA) was established in 1964 as Northern Virginia Technical College to serve the counties of Arlington, Fairfax, Loudoun and Prince William and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park.

The College opened for classes in the fall of 1965 in a single building in Bailey's Crossroads. Enrollment was 761 students who were served by a faculty and staff of 46. Robert L. McKee was the first president. Dr. Richard J. Ernst became the second president of the College in September 1968 serving for thirty years. Dr. Belle S. Wheelan became the third president of the College in July 1998 serving for three years. Dr. Robert G. Templin, Jr., became the fourth president of the College in August 2002 serving for thirteen years. Dr. Scott R. Ralls became the fifth president of the College in September 2015 serving for four years. Dr. Melvyn Schiavelli became interim president in 2019, and Dr. Anne Kress became president of the College in 2020.

The College was renamed Northern Virginia Community College in 1966 when the Statewide General Assembly changed the name of the technical college system to the Virginia Community College System (VCCS). College transfer curricula were added to the existing career/technical curricula for a more comprehensive program.

In 1966, the College bought 78 acres in Annandale, which became the first of six permanent campus sites. The first building was constructed there and opened in 1967. That same year, 100-acre sites were purchased for campuses in Sterling, Manassas, and Woodbridge. In 1969, a campus site was purchased for Alexandria. The campus site for the Medical Education Campus was purchased in 2000.

Classes were first offered in Loudoun, Manassas, and Woodbridge in the fall of 1972. Classes moved from Bailey's Crossroads to the Alexandria Campus in 1973. The Extended Learning Institute (ELI) began offering home study courses in January 1975 and has developed into a leader in online education, renaming itself NOVA Online in 2018. In the fall of 2003, the Medical Education Campus opened in Springfield, Virginia, to meet both student and employer demand for health professions education. The College opened a new educational center in 2006 in Reston.

The College's enrollment and programs grew rapidly. By 1970, enrollment exceeded 10,000 students. By 1973, NOVA became the largest institution of higher education in Virginia with 17,260 students. During the 2015-2016 academic year, the College served more than 75,800 students in credit courses and another 22,400 in noncredit courses.

The College

Northern Virginia Community College is an open access, comprehensive community college offering two-year associate degrees, one-year certificates, and career studies certificates as well as continuing education and community services programs. As one of the 23 colleges comprising the Virginia Community College System, NOVA is governed by the Virginia State Board for Community Colleges.

NOVA strives to meet the educational and training needs of people with differing abilities, education, experiences, and individual goals through a variety of curricula and co-curricular programs and community services. Many curricula are available on all campuses although some highly specialized programs are offered on only one or two campuses. Each campus offers a comprehensive array of student services, all of which are outlined on the NOVA Website and in the Student Handbook.

NOVA provides a strong counseling program to assist students in making sound decisions regarding career, educational, and personal goals. Counselors work with students to guide them to the curriculum that best suits their needs and interests. The College also provides services in pre-college and freshman orientation, career counseling, financial aid, testing, veterans affairs, and student life.

The College operates on the semester system with 15-week Fall and Spring Semesters and a 10-week Summer Session. Many courses are offered in shorter sessions, often including 12/13-week, 10-week, 8-week, and 6-week sessions, to meet the needs of students, business, and industry.

Virginia Community College System

Northern Virginia Community College is one of 23 two-year colleges that make up the Virginia Community College System (VCCS). The VCCS was established in 1966 with a mission that complements the missions of the secondary schools and the senior colleges and universities in the Commonwealth of Virginia. The VCCS mission states: "The mission of the Virginia Community College System is to provide equitable access to affordable and exceptional higher education and workforce programs, transforming the lives of our students and advancing opportunity in our community."

Governance

The governing board for all 23 colleges in the Virginia Community College System is the State Board for Community Colleges. The governor of the Commonwealth of Virginia appoints the members to this board. Each community college establishes its own local board. The

Northern Virginia Community College Board provides local leadership and approves items to be recommended to the State Board for consideration. Members of the College Board are appointed by the nine political jurisdictions served by the College. The local board is composed of three members from Fairfax County and one member from each of the other jurisdictions.

Members of the community serve on curriculum advisory boards for career and technical curricula offered at the College. Board members are selected from career fields that are directly related to the career objectives of programs at NOVA. These boards provide the guidance necessary for planning new programs and ensuring that courses and programs continue to provide instruction in the skills suited for the job market in Northern Virginia. A website listing all boards and their members is currently under construction.

The maintenance and operating budget for the College is provided through appropriations made by the Virginia General Assembly. The nine political jurisdictions of Northern Virginia provide local funding for the purchase of sites and site development. The General Assembly approves capital outlay funding for building construction and initial equipment.

Accreditation and Recognition

Northern Virginia Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award the associate degree. Northern Virginia Community College also may offer credentials such as certificates and diplomas at approved degree level. Questions about the accreditation of Northern Virginia Community College may be directed in writing to the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website.

Curricula of the College are approved by the College Board and by the State Board for Community Colleges. Its two-year associate degree programs are also approved by the State Council of Higher Education for Virginia (SCHEV). Certain curricula of the College are accredited or otherwise recognized by specialized accrediting organizations. They include.

Program	**Accrediting/Approval Agency**
Air Conditioning and Refrigeration	HVAC Excellence
Automotive Technology (Alexandria Campus)	ASE Education Foundation
Automotive Technology (Manassas Campus)	ASE Education Foundation
Cybersecurity	National Security Agency
Culinary Arts	American Culinary Federation Education Foundation
Dental Hygiene	American Dental Association's Commission on Dental Accreditation
Dental Assisting	American Dental Association's Commission on Dental Accreditation
Diagnostic Medical Sonography	Commission on Accreditation of Allied Health Education Programs upon the recommendation of the Joint Review Committee on Education in Diagnostic Medical Sonography
Early Childhood Development	National Association for the Education of Young Children
Emergency Medical Services	Commission on the Accreditation of Allied Health Education Programs upon the recommendation of the Committee on Accreditation of Educational Programs for Emergency Medical Services Professions
Health Information Management	Commission on Accreditation for Health Informatics and Information Management Education
Medical Lab Technology	National Accrediting Agency for Clinical Laboratory Sciences
Nursing	Accreditation Commission for Education in Nursing (ACEN) VA Board of Nursing
Occupational Therapy Assistant	Accreditation Council for Occupational Therapy Education
Paralegal Studies	American Bar Association
Physical Therapist Assistant	Commission on Accreditation in Physical Therapy Education
Respiratory Therapy	Commission on Accreditation for Respiratory Care
Veterinary Technology - On-Campus	American Veterinary Medical Association - Committee on Veterinary Technician Education and Activities
Veterinary Technology - On-Line	American Veterinary Medical Association - Committee on Veterinary Technician Education and Activities

See the individual program descriptions for additional details.

Statement of Values

Our Commitment

We, at Northern Virginia Community College, are committed to our students, to our community, and to each other. We are committed to excellence in education and take pride in our educational mission as a significant extension of the democratic tradition, and we remain true to the ideals and principles of that cherished tradition. The foundation of our institution is the unique diversity of educational experiences we provide for the community, shaped by our dedication to teaching and learning and to the values that we share.

Our Shared Values

Opportunity with Excellence

We are committed to providing open access and promoting equality for all who seek to improve their lives.

We are committed to offering a wide variety of programs and services within the means of all residents and with each having its standards of excellence.

We encourage our students to take advantage of opportunities and to fulfill their potential in aesthetic and cultural enrichment, technical knowledge, personal growth, understanding of the basic academic disciplines, and recreational and avocational pursuits.

Responsiveness

We believe that the residents of Northern Virginia, both individual and corporate, should help shape the programs, courses, and services of the College.

We are committed to listening to the community and inviting its participation in shaping the programs and services of the College.

We believe our worth as a community college is measured by the quality and timeliness of our response and service to the community.

Comprehensive Educational Programs

We see learning as an end in itself, as the most practical means to a full life, and as essential to improving the quality of life of the individual.

We value our comprehensive programs—liberal arts and sciences, career and technical education, continuing education, developmental education, specialized educational services, and student services—and hold all to be of equal distinction and prominence.

We believe each aspect of our comprehensive educational program has high value to those served; therefore, we advocate the offering of these comprehensive services alongside each other and in a unified educational setting.

We are foremost an institution focused upon teaching—we are dedicated to teaching through varied approaches and to upholding innovation with free, open discussion of ideas and values.

Caring Environment

We believe in the worth, dignity, and human potential of each individual who participates in the programs and services of the College.

We recognize our responsibility to build and maintain a College environment that encourages all individuals to realize their potential and to provide the diverse learning support and growth opportunities each person needs to be successful.

We are committed to maintaining a caring environment for all those associated with the College—students, faculty, staff, and the community in general.

Public Trust and Responsibility

We are committed to individual and organizational performance that builds and maintains public trust and confidence.

We hold ourselves accountable for attaining management, operational, and fiscal practices that are efficient and effective.

We are committed to high ethical standards, equal opportunity, and effective involvement in and support for local community activities and economic development.

NOVA Mission and Vision

Our Mission

Northern Virginia Community College provides equitable access to affordable and exceptional higher education and workforce programs, transforming the lives of our students and advancing opportunity in our community.

Our Vision

To be a learning-centered organization that promotes student success.

NOVA General Education Competencies

The College has established goals for each degree program to enhance student learning experiences beyond the major area of study. The following are the College's general education goals:

Civic Engagement

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.

Critical Thinking

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.

Professional Readiness

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.

Quantitative Literacy
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.

Scientific Literacy
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.

Written Communication
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.

Graduation Rates
Many students attending Northern Virginia Community College do not plan to graduate with an associate degree or certificate, but enroll for the purpose of improving job skills, taking credits for transfer to another college, or for some specialized need or personal satisfaction. Determining graduation rates, given students' varied objectives is difficult; however, prospective, or enrolled students who would like to know more about the enrollments and completion rates for a particular curriculum may obtain much of this information on the College's Office of Institutional Research website at https://www.nvcc.edu/osi/oir/data-insights/achievement.html#panel5.

Offerings

College Transfer Education
NOVA's transfer programs include courses typical of the first two years of a baccalaureate degree. Transferrable courses closely parallel coursework offered at four-year institutions, meeting standards acceptable to baccalaureate degree programs. Since requirements vary among four-year colleges and universities, those planning to transfer must check the requirements of their intended transfer institution before planning a course of study at NOVA. For more information on college transfer, refer to NOVA's transfer website at http://www.nvcc.edu/transfer/index.html.

Career and Technical Education
The career and technical education programs are designed to meet the increasing demand for technicians, office workers, paraprofessionals, and skilled craftspersons for employment in industry, business, the professions, and government. These programs, which normally require two years or less of education beyond high school, may include preparation for agricultural, business, engineering, health, and medical, industrial, service, and other technical and career fields. The curricula are planned primarily to meet the needs for workers in the region being served by the College, but the State Board for Community Colleges may designate certain community colleges as centers to serve larger areas of the state in offering expensive and highly specialized career and technical education programs.

General Education
General education is that portion of the collegiate experience that addresses the knowledge, skills, attitudes, and values characteristic of educated persons. It is unbounded by disciplines and honors the connections among bodies of knowledge.

NOVA degree graduates will demonstrate competency in the following general education areas: communication, critical thinking, cultural and social understanding, information literacy, personal development, quantitative reasoning, and scientific reasoning.

Developmental Studies
Developmental courses are offered to prepare students to succeed in the College transfer and career/technical programs. These English and mathematics courses are designed to develop the basic skills and understanding needed for success in other courses and curricula.

English as a Second Language (ESL) Programs
NOVA ESL programs support students whose primary language is not English in accessing American higher education, entry or advancement in the workforce, or language improvement. NOVA ESL students may be residents of Northern Virginia, students with F-1 status, or other visitors to the United States. NOVA offers courses through College ESL and the American Culture & Language Institute (ACLI). In both ESL programs, students acquire fluency, enhance their ability to express nuanced ideas, and gain greater control of linguistic complexities.

College ESL builds the literacy and critical thinking skills necessary for success in American higher education. College ESL consists of four levels of instruction from low-intermediate ESL through advanced ESL. Students in the top two levels of instruction are often concurrently enrolled in college-level courses in a variety of disciplines.

The ACLI is housed in NOVA Workforce. ACLI offers ESL classes to residents of Northern Virginia and other visitors in its Part-Time ESL and Career Readiness Programs, and to students with F-1 status in its Intensive English Program. ACLI courses range from introductory to

high-intermediate-level ESL. They prepare individuals for entry into College ESL and academic studies or for advancement in the workforce. ACLI courses are fee-based.

Students take a placement test to assess their English proficiency prior to enrolling in ESL courses at NOVA. More information can be found in the "Placement" section of this catalog and on NOVA's ESL Website at: *https://www.nvcc.edu/nova-esl/college/index.html*.

NOVA Workforce

NOVA Workforce partners with industry leaders to develop education and training programs for a diverse group of learners and companies. The close business partnerships enable NOVA Workforce to keep a pulse on new and emerging technologies, sectors, and business practices. Programs include hundreds of classes for high-demand jobs and corporate training. As part of the program development, NOVA Workforce includes industry experts on advisory boards that guide the design and development of each program. Programs are offered in sectors such as Information Technology, Cybersecurity, Healthcare, Medical, Business and Management, Trades, ESL, and Education. NOVA Workforce offers recognized credentials from Amazon, EC-Council, CompTIA, Cisco, NHA, SHRM, and more. Financial assistance is available for select programs. FastForward subsidizes the cost of certain pre-approved, high-demand programs. Students pay one-third of the cost of the program with the expectation that they will seek and obtain the related credential identified for their program. The funds are available to Virginia residents who meet Virginia domicile requirements. Students who participate in FastForward programs are financially responsible for the first third of the course cost. Additional financial assistance options, such as FANTIC and G3, may be available to cover students' first third. Funding for these programs is limited and on a first-come, first-served basis.

For further information, please visit *https://www.nvcc.edu/workforce/* or contact NOVAWorkforceAnswers@nvcc.edu.

Apprenticeship and Corporate Training

Apprenticeships combine learning, industry-recognized credentials, and structured on-the-job training and mentorship to successfully fill a company's talent needs. NOVA Workforce partners with regional employers to provide curriculum and instruction as part of the company's apprenticeship program. Apprenticeship programs are approved through the Apprenticeship Division of the Virginia State Department of Labor and Industry. Formal apprenticeship programs require related technical instruction, and NOVA offers many courses for this program requirement.

NOVA Workforce serves regional employers with tailored curriculum and customized training to address their specific needs. Training can be offered online, on one of our campuses, or on-site at their business.

Business and Community Engagement

Business and community partnerships are data-driven and focused on delivering short and long-term results. NOVA's office of Strategy, Research and Workforce Innovation conducts labor market research projects, using real-time analytics and economic modeling, to illustrate Northern Virginia's economic landscape, including market conditions and growth areas, skill shortages, and talent demands. Research also includes employer focus groups, surveys, and education data, which layer real-time information onto economic and demographic data to provide clear insight into workforce demands. Strategy, Research and Workforce Innovation merges labor market information with communications campaigns to inform students, teachers, and parents of in-demand careers and job projections to address skills gaps before they happen. Through various media, we reach out to high schools, parents, veterans, college students, career-changers, and incumbent workers.

Through Employer Engagement and Career Services, the College enables employers to connect directly with today's students and the workforce of tomorrow. Each year, the College works with thousands of employers to support these efforts. Career Connection, NOVA's career services management system, is available to recruit students and a variety of professional development opportunities are hosted virtually and on each campus throughout the year. Employer can also engage with the College through the Business Engagement Center, which supports employers navigate opportunities at the College and efforts to bolster the region's diverse and evolving economy.

Continuing Education

Through NOVA Workforce, continuing education programs are offered to afford individuals the opportunity to continue their learning experiences. Continuing education programs are generally noncredit courses offered during the day and evening hours. The College awards Continuing Education Units (CEU) upon completion of most noncredit courses.

Community Education Services

The College provides specialized services to help meet the cultural and educational needs of the residents of the Northern Virginia area. These services include non-classroom and noncredit cultural events, workshops, meetings, lectures, conferences, seminars, short courses, and special community projects that are designed to provide cultural and educational opportunities for the residents of the region. The College works cooperatively with other local and state agencies and with businesses interested in developing such services.

Library

Students, faculty, staff, and members of the community may access the combined College collection of more than 200,000 units of print and nonprint materials that is available at all of the campuses or remotely. Books, periodicals, and media are loaned among the campuses by intercampus mail couriers.

Open stacks and immediate access to materials are common to all campuses. Books, periodicals, online databases, and media are selected primarily for support of the campus instructional programs, for personal intellectual growth, and the development of a cultural environment. Extensive access to online materials adds breadth and depth to the resources. Students may also access copies of course materials at no cost. All patrons may use networked workstations on campus to search a variety of online resources and the Internet. Access to electronic resources and campus library information is available at *www.nvcc.edu/library*.

Staff members provide research assistance and instruction in the use of resources both on-site and virtually. Through a reciprocal agreement, NOVA students, faculty, and staff have access to the library collections at George Mason University.

Learning Laboratories and Testing Services

Systems for individual use of self-instructional materials are common to all campuses. Individualized instruction is offered through a variety of instructional systems. Testing services for placement purposes, for classes, and in support of NOVA Online are available in the Testing Centers. Trained staff members provide access, instruction, and tutorial assistance in foundation subjects. Both specialized and generalized learning laboratories are designed to support and complement the instructional programs on the individual campuses.

Instructional Technology Services

Instructional Technology Services supports classroom instruction, community services, the library, and the learning laboratories. The staff assists faculty in the technological aspects of instructional design, including photography, computer graphics, web page design and video production, and provide support for the use of distance education systems and software.

Information Technology Support Services

Information Technology Support Services provides College personnel with information technology services, which include computer installation, hardware and software troubleshooting, telephone services, network connections, and technology training.

Assistive Technology Services

Accommodations and Accessibility Services provides support to college personnel in the use of assistive technology used to serve students with disabilities.

Assistive Technology may include software programs to help enhance academic skills in reading and writing, text-to speech programs, dictation software programs, as well as hardware such as alternate keyboards, text magnifiers, and smart pens.

Accommodations and Accessibility Services also provides instruction in the conversion of alternate format for texts and course materials when needed to support the specific needs of students with disabilities.

Course Substitutions for Students with Documented Disabilities

Otherwise qualified students with documented disabilities covered by the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973, as amended, who are unable to complete a requirement of their program because of a disability, with or without reasonable accommodations, may request an approved course substitution.

Substitutions will generally not be granted for any course that is deemed essential to the program of instruction being pursued by such student or to any directly related licensing requirement. If requirements are waived, students must successfully complete other courses to compensate for the credit hours. For more information, contact the Accommodations and Accessibility Services at accommodations@nvcc.edu.

Video Services

The Video Services team films and produces videos to share College events and stories with the NOVA community, including through marketing/promotional pieces and social media. That includes capturing events such as Commencement, Convocation and guest speakers; filming lectures and instructional videos; and interviewing students, faculty, staff and community members. The team also generates educational and informational programming for the NVCC TV channel and provides support for the College's regional cable-TV headend, video-on-demand services and video production facilities. To request video production support, please submit the Video Production Request Procedures and Proposal Form.

The television facility is located on the Annandale Campus and provides a complete television production, editing and transmission facility. The television facility provides a direct link to local cable TV systems for college programming and also has connections to George Mason University to provide satellite uplink services.

Laptop Expectations

To attend NOVA, students are expected to have a laptop (or a desktop with webcam and microphone) that meets the minimum requirements for their major and internet access at home or through a mobile device hot spot. (NOTE: Chromebooks and iPads are useful but insufficient to replace a laptop. They will not run all the software typically needed at NOVA). Students can find the required specifications for their computers in the Student Computer Specifications document at: *https://www.nvcc.edu/admissions/_files/Student-Computer-Specifications.pdf*.

NVCC Educational Foundation

Founded in 1979, the NOVA Educational Foundation is dedicated to supporting Northern Virginia Community College's goal of providing all students with a high-quality, life-changing education. By connecting donors to NOVA programs, the Foundation, a 501(c)3 organization, secures funding, increases visibility, and strengthens partnerships among the College, individual donors, businesses and state and local communities.

The Foundation provides scholarships, emergency student aid and program grants to support the more than 75,000 students who attend NOVA. Gifts become textbooks and laptops while also helping students continue their education through emergency grants to assist with basic needs insecurities like food, housing, or medical needs. The Foundation generates important private donations to support NOVA as a pathway institution, offering students the skills and education to secure employment or transfer to a four-year college to pursue their career goals.

At NOVA, every student succeeds, every program achieves, and every community prospers. Make a gift. Make a difference. Visit us on the web at https://giving.nvcc.edu/. We are located at 4001 Wakefield Chapel Road, Suite 252, Annandale, VA 22003 and can be reached at foundation@nvcc.edu.

Alumni Federation

Established in June 1983, the Northern Virginia Community College Alumni Federation seeks to advance the growth and development of the College; to promote the personal, educational, and professional development of alumni; to promote meaningful relationships between alumni and current students; and to establish, encourage, and maintain a mutually beneficial relationship among the College, its alumni, and the Northern Virginia community.

Information about the Alumni Federation can be found at *https://giving.nvcc.edu/alumni*.

Admission Information

Student Classifications

Curricular Student

Individuals are classified as curricular students when they declare a major, that is, when they are admitted to a curriculum of the College. The student must be a high school graduate, have earned a General Educational Development (GED) diploma, have completed an approved developmental program, or have been otherwise determined qualified for admission. The applicant's academic record must contain all of the information required for admission to the College. A curricular student may be either a full time or part-time student working toward completion of a certificate or associate degree at the College.

Non-curricular Student

Students who are not formally admitted to a credit bearing program of study are considered non-curricular students. Non-curricular students may still enroll in courses by identifying the reason for enrolling at NOVA. Students are expected to declare a major prior to completing 30 credit hours of coursework. Students may be classified as non-curricular for purposes of the following:

- upgrading employment skills for one's present job
- developing skills for a new job
- exploring a new career
- seeking personal satisfaction or general knowledge
- taking developmental studies courses

Other non-curricular students may include the following:

- a transient (visiting) student. Such students may be enrolled at NOVA while maintaining primary enrollment with another college or university.
- a nondegree transfer student. Such students may be enrolled at NOVA to take only a certain number of courses for transfer to another college or university prior to completing the graduation requirements of a specific curriculum at NOVA.
- a high school junior or senior or the home-school equivalent. (Please see "Dual Enrollment.")
- a student with general or curricular requirements pending. The student may not have met all of the general or specific admission requirements as stated in the College *Catalog* but may be accepted by the College to take courses for one semester only, with approval from the College.
- a student whose desired program has restricted enrollment. The student may meet admission requirements of a specific curriculum but be denied entry because of an enrollment limitation. The student may enroll in other courses while waiting for entry into the chosen curriculum, with approval of the College.

Full-Time Student

Students enrolled for 12 or more credits in a semester are considered full-time students.

Part-Time Student

Students enrolled for fewer than 12 credit hours in a semester are part-time students.

Admission Procedures

Admission to the College

Individuals who have a high school diploma or the equivalent or are at least 18 years of age and are able to benefit academically from enrollment as demonstrated by assessment in reading, writing, and mathematics are eligible for admission to Northern Virginia Community College. Minimum placement criteria can be found in the "Placement " section of this *Catalog*. Exceptions to this policy may be made by the College president only for documented reasons.

High school and home-schooled students may be eligible to enroll in certain dual enrollment courses. (See the section on "Dual Enrollment.")

The College welcomes transfer students from other colleges. Those who meet NOVA's admission requirements may be admitted with no restrictions.

All applicants must complete the Application for Admission. A Social Security number is not required unless the student is applying for financial aid or veteran/active-duty military education benefits. Students are accepted on a first-come/first-served basis, except in restricted programs or when enrollment must be limited. In such cases, priority will be given in the following order:

1. legal residents domiciled in the cities and counties supporting the College
2. other Virginia legal residents
3. out-of-state applicants
4. international students requiring Form I-20

For certain health technology programs, "counties supporting the College" may include those in which clinical affiliates have contractual agreements with NOVA.

It is even more important for individuals to apply early to the College if they are interested in being admitted to a particular curriculum. High school transcripts are not generally required but are useful for academic advisement and for placement to better ensure success in a chosen curriculum and to evaluate for college-level courses. Transcripts may be required in some cases, i.e., prior to dual enrollment, or to verify prerequisites for college-level courses. High school transcripts are required to be considered for admission to the Veterinary Technology, Dental Hygiene, and Nursing Programs. Transcripts are preferred for the Emergency Medical Services Programs.

Contact the appropriate campus Student Services Center regarding admission to these programs.

The Application for Admission is available online at *www.nvcc.edu*. For those with no computer access, paper forms are available at any campus Student Services Center. Applicants are urged to submit their Application for Admission to the College at least 30 days prior to the first day of classes for the semester in which they plan to enroll.

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 another college or determined by said college to be a threat, potential danger, or significantly disruptive. Students whose admission is revoked after enrollment must be given due process. Individuals who enroll as a student at NOVA accept the rules and regulations of the College. Any violation will be subject to appropriate action by the College. All NOVA policies are superseded by VCCS policy if differences inadvertently occur.

Readmission to the College

Former NOVA students who have not been enrolled for three years (nine consecutive terms) and wish to return to the College must also complete an Application for Admission to reactivate their records.

Reinstatement as a Result of Military Service

Students who are called to active duty or mobilized shall be given a reasonable opportunity to be reinstated in the same program of study if they return to NOVA after a cumulative absence of not more than five years, so long as they provide notice of intent to return within three years after the completion of the period of service. Please send military orders to militaryservices@nvcc.edu if you are seeking reinstatement due to being mobilized.

Admission to a Curriculum

Students may be placed in no more than two degree programs, and placement in certificate programs should be limited. Students who wish to change their program should ask their advisors to place them in the new program and remove them from any programs they do not plan to complete.

Apart from the general admission requirements for acceptance by the College, some curricula have additional requirements for admission; these are listed in the "Programs of Study (A-Z) " section of this *Catalog*. Students should check the curriculum of their choice to see if they have met the required prerequisites for enrolling in that curriculum. Those who do not meet these requirements may be able to make up deficiencies by taking developmental or other courses.

Readmission to a Curriculum

Students who wish to be readmitted to a restricted program after nonattendance for at least one year must consult the specific program listing under "Programs of Study (A-Z)" for detailed readmission requirements. Students who were placed in a nonrestricted program will not have to reapply for admission to their curriculum; however, students should check to see whether the program requirements have changed since their last attendance.

Dual Enrollment of High School and Home-Schooled Students

Dual enrollment allows students to earn college credit(s) while still in high school. High school juniors and seniors, or the home-school equivalent, are eligible to take NOVA courses if they meet admission and placement requirements. Students may be able to use dual enrollment courses to meet both College and high school graduation requirements, or they may choose to take courses for college credit only. Since dual enrollment courses are college courses, they have college content and include college discussions. Students who take a dual enrollment course will have a NOVA transcript that documents the course(s) taken and the grade(s) earned.

In addition, highly qualified students who meet stringent admission criteria may be able to complete a certificate or degree while in high school. Students interested in this opportunity should consult with their high school and NOVA's Office of Dual Enrollment.

High School Students

High school juniors or seniors may take dual enrollment courses at a NOVA campus, through NOVA Online, or take NOVA courses taught at their high school. Exceptions may be considered for freshman and sophomore students who demonstrate readiness for college coursework through the College's established institutional policies. Because enrolling freshman and sophomore students is considered exceptional, each freshman and sophomore student will be considered on a case-by-case basis and require formal approval by the College president (or designee). It is required that all prospective dual enrollment students meet criteria established by the Virginia Community Colleges System prior to enrolling in dual enrollment coursework. (See "Placement Criteria")

The College also has dual enrollment agreements with local public school systems and private schools whereby some dual enrollment classes are taught at some high schools during the school day. These classes are arranged annually with the high school administration. Students should contact their high school counselor for more information

about dual enrollment courses that may be offered at their high school.

Home-Schooled Students

Students who are the home-schooled equivalent of a high school junior or senior may be eligible to take courses at a NOVA campus or through NOVA Online. Dual enrollment is considered enrichment to the home-school program and cannot substitute for the home-school curriculum.

Admission Procedures for Dual Enrollment

Applicants for dual enrollment at a NOVA facility

High school students taking NOVA courses on campus or virtually/online through NOVA are designated as independent dual enrollment. Courses taken through independent dual enrollment require students to pay tuition and fees and purchase any required textbooks and course materials. First time students should complete the online application available at *www.nvcc.edu*. Each semester that a student requests enrollment, a student must also submit a Dual Enrollment Recommendation Form (125-208) to the Office of Dual Enrollment. These forms can be found online at *www.nvcc.edu/forms*. The Director of Dual Enrollment or his/her designee will review the forms.

These forms include a place to list any NOVA courses the student wishes to use to fulfill Virginia high school graduation requirements. The student's parent or guardian must sign the form to indicate they believe the student is ready for college courses. In addition, the student's high school principal and high school counselor must sign the form to indicate that they believe the student is ready for college work and that the district will accept appropriate coursework for high school credit. Each academic year, home-schooled students must provide either a copy of a current signed home school agreement between the respective school system and the authorizing parent or guardian or a letter from the parent or guardian declaring home school for religious exemption.

Before final approval of a dual enrollment request is granted, students who wish to take classes at a NOVA campus or through NOVA Online, must complete the enrollment checklist and submit the appropriate form at least two weeks before the start of classes. Each academic year, a current high school or home school transcript (official or unofficial) must be on file in the student's account. Returning dual enrollment students will have their NOVA transcript or course progress reviewed, in addition to their high school or home school transcript, prior to approving or denying future reenrollments at the College. All students must meet admission and course placement requirements and/or prerequisites.

The entire enrollment process, including registration, must be completed before the first day of class. Payment must comply with the payment due date for the semester as established by the College.

Applicants for a dual enrollment course at their high school

Students considering taking dual enrollment courses will only be allowed to register with permission of their high school and should talk to their counselor to verify that they meet college readiness requirements through GPA, PSAT, SAT, or ACT scores.

Students taking courses at their high school must apply to NOVA prior to the start of the course. After applying to NOVA, students are required to create a Dual Enroll account at nvcc.dualenroll.com. On this site, students will be able to obtain parent permission to enroll in the dual enrollment course, upload evidence of qualifying GPA or test scores, and select the courses they intend to take.

High school students are not permitted to register themselves for dual enrollment courses. Once a student has applied to NOVA and completed all the steps required on nvcc.dualenroll.com, they will be registered for their selected courses by the Office of Dual Enrollment based on the high school rosters provided.

Dual enrollment courses taken at a high school are offered free of charge. This applies to any course taken within the high school that is included under the contract between the school district and NOVA.

Policies on Dual Enrollment

The following policies will apply to all dual enrollment high school and home-schooled students:

- The College reserves the right to evaluate applications for admission and to refuse admission to applicants when it is considered to be in the best interest of the College. Factors in a student's academic or personal record may be considered as a part of approving or denying a dual enrollment request.
- Dual enrollment students must meet admission requirements, which include demonstrated proficiency in reading, writing, and mathematics as established by the Virginia Community College System. See "Placement Criteria" for further information.
- Dual enrollment students must meet all course prerequisites.
- Dual enrollment students are not eligible for federal financial aid through NOVA.
- Dual enrollment students are not eligible to enroll in developmental courses.
- Dual enrollment students must take courses for graded credit and may not audit courses.
- All NOVA students, regardless of age, are subject to all of the rules, policies, and procedures of the College pertaining to attendance, confidentiality of records,

conduct, etc., as found in the College *Catalog* and the College *Student Handbook*.

- For more information consult the dual enrollment manual, found at *www.nvcc.edu/dual-enrollment*. The manual provides all the information needed to enroll in a dual enrollment class at a NOVA facility, through NOVA Online, or at a local high school.

International Students

NOVA welcomes all international students. To be admitted, all applicants must complete an online application and submit additional documentation to the Office of International Students. Specific details can be found at: *www.nvcc.edu/admissions/apply/international*. When an online application is completed, the student will receive a student identification number (SIS number) and email on the next steps.

Student Visas (F-1 or Other Visa Categories)

All international students from abroad and inside the United States must request an I-20 from NOVA using their assigned SIS number. For complete details on the I-20 for academic programs or intensive programs, please visit *www.nvcc.edu/admissions/apply/international/index.html*.

Students on other approved visa categories will need to provide evidence of their legal status to the Enrollment Services office on campus or via email enrollmentservices@nvcc.edu before they can register for classes.

If students have questions about how their status might affect their studies, please contact the Office of International Students at OISS@nvcc.edu.

International Student Success

International students at NOVA are required to check in online with the Office of International Students, attend an International Student Orientation lab and meet with their international student advisor prior to enrollment in classes.

F-1 students will need to provide the below documents to the Office of International Students upon arrival to NOVA.

- I-94 record of arrival
- F-1 visa and passport
- Signed copy of I-20

Undocumented Students

It is the policy of Northern Virginia Community College to admit to those applicants who are residing in Virginia and have graduated from a Virginia high school with a high school diploma or equivalent (homeschooling, GED), even if they are not able to document their legal presence. Those who are unable to provide evidence of legal status will not be eligible for in-state tuition.

Senior Citizens

The *Virginia Senior Citizens Higher Education Act of 1974* and amendments allow senior citizens to take classes at no charge under certain circumstances. Individuals who are 60 years of age or older and have been legally domiciled in Virginia for one year prior to the beginning of the semester in which they enroll may qualify to attend credit and many noncredit classes at NOVA without paying tuition.

- Such individuals may take a credit course for free on a space-available basis if their taxable income did not exceed $23,850 in the previous year.
- Regardless of income, senior citizens may take a credit course for free if they audit (do not receive a grade).
- They may take a noncredit, workforce development course for free if space is available. To enroll in noncredit courses, contact the Workforce Development Office at the campus where the course is being offered.
- For all courses, senior citizens must complete both an Application for Admission and the Senior Citizen Certification of Eligibility for Free Tuition Form (105-088).
- To audit an NOL online learning course, senior citizens must have the instructor's permission.

Senior citizens may register beginning the last business day before the session begins unless they pay tuition. NOVA has various start dates throughout each term. However, senior citizens who have completed 75 percent of their degree requirements may enroll at the same time as tuition-paying students. Tuition-paying students are accommodated in courses before senior citizens participating in this program are enrolled. Tuition waivers may not be used for one-on-one instruction in art, music, or other individual study courses.

- Senior citizens who apply for free tuition AFTER registering and paying for a class are not eligible for a refund for that class.
- Senior citizens will still be expected to pay all course expenses other than tuition, such as art, music, and laboratory fees, by 5:00 p.m. the day after registration.
- Audit and noncredit enrollment is limited to three courses in one term.
- The College reserves the right to cancel any class.

Complete information is available on the NOVA Senior Citizens' web page. *http://www.nvcc.edu/admissions/apply/seniors.html*.

Visiting (Transient) Students

"Transient" or visiting students maintain their primary enrollment with the four-year college or university (home institution) and elect to enroll at NOVA for the limited purpose of taking one or more classes. Students must provide specified documentation showing current enrollment or admission to a four-year college or

university. Documentation will be required to show successful completion of course prerequisites. Full information and directions are available at *https://www.nvcc.edu/admissions/apply/visiting-students.html*.

NOVAConnect Student Information System (SIS)

NOVAConnect is the name for the College's Student Information System (SIS). Access to NOVAConnect requires an Internet connection, a web browser, and a Student ID number. NOVAConnect allows students to complete many business transactions with the College online. Students will be able to access NOVAConnect by clicking on "My NOVA" located on the home page of NOVA's website. Through NOVAConnect, students can do the following:

- register for and drop classes
- search for classes by availability, day, instructor, and location
- view and print their class schedule
- use the advising report for future course selections based on one's degree requirements
- find their priority registration date
- check their advisement report
- review grades and print unofficial transcripts
- request an official NOVA transcript
- view a transfer credit report
- view advisor information and email an advisor
- view course/grade history
- view an account summary, including tuition and fees
- make a payment by clicking "Go to QuikPAY"
- check financial aid eligibility status
- check outstanding financial aid payments
- review their financial aid award
- view their financial aid history
- update personal information, such as addresses and phone numbers
- submit an application for graduation

For a complete list of functions available through NOVAConnect, students can view tutorials at *www.nvcc.edu/novaconnect*.

Student ID Number

Students will need to use their ID number throughout their NOVA college career to identify themselves in NOVAConnect and their college records. NOVAConnect assigns a seven-digit Student ID number at the time a student applies for admission.

Social Security Number

The student's Social Security number is not required as part of the student record, so it will not be used as a Student ID number. Students must, however, submit their Social Security number to receive financial aid or military/veterans' benefits. For students who receive financial aid, the Social Security number will be used in connection with federal financial aid funds such as Pell Grants, and deferments for previous student loans.

Identification Cards (NOVACard)

Student photo identification cards, NOVACard IDs, are provided to credit-seeking students through the Student Life fee. The cards are distributed through campus NOVACard Offices. Students should wait 24 hours after first registering for classes before going to a campus NOVACard Office to obtain an ID card. ID cards may be required for library material use, admissions to special student activities, and so forth. There is a fee to replace lost cards. Contact a campus NOVACard Office for more information.

Student Records Access

The College enforces Public Law 93-380 in providing for the privacy of official student records and the rights of students to review these records. Students may review their official records by making a request to the Student Services Center. NOVA will not release any personally identifiable information other than directory information about a student without his or her permission, except to certain school and governmental officials as required by law.

As required by state law (SB559/HB984, §23-2.2:1), the VCCS provides the Virginia State Police with the following information about all students within seven days of their acceptance to the College: the student's full name, Social Security number, date of birth, and gender. The State Police compare this information to the Virginia Criminal Information Network, as well as the National Crime Information Center Convicted Sexual Offender Registry File.

Requests by individuals and agencies for release of student information must be presented in writing. A student's permission for the College to release any information must also be in writing. Information that is considered directory (public) information is described in the current issue of the College *Student Handbook*.

Campus of Record

Once admitted to the College, students may take courses at any campus or through NOVA Online, though some majors and some courses are offered only at selected campuses. Most students identify with one campus as the place where they obtain services, such as counseling, academic advising, participation in activities, testing, etc. Academic advising should be sought at a campus that offers the student's intended major. This is especially true of restricted programs, such as Nursing and Health Science programs. Questions about where or how to use the services of the College should be directed to the Student Services Center at any campus.

Placement

As of the Fall 2021 semester, most NOVA students will not be required to take placement tests to determine placement for entry level English and Math courses. * Students' eligibility for course enrollment is based on their U.S. high school grade point average (GPA) or their standardized test scores (i.e. SAT, ACT, or GED). Students should complete the direct enrollment/self-informed placement survey to determine placement.

- A student's U.S. high school GPA is valid for 5 years after the date of high school graduation.
- Students who completed U.S. high school 6 or more years before applying to NOVA may select courses through informed self-placement. Students may consult the Informed Self Placement Advising Survey to help decide which classes to take, *www.nvcc.edu/academics/placement/index.html*.
- SAT, ACT, and GED test scores are valid for 5 years after the date of the test.

*The Virginia Placement Test (VPT) is still required for students who will receive veterans' benefits. Students who have not completed high school or a GED, including dual enrollment students, will also be able to take the VPT under certain circumstances. Students whose primary language is not English should take the ESL assessment.

Math Course Placement*

Course	Minimum Placement Requirement
MDE 10	1.99 or lower HS GPA
MDE 60	2.0 or higher HS GPA without HS Algebra 2
MTH 111, MTH 133	2.0 or higher HS GPA with or without HS Algebra 2
MTH 154 + MDE 54	2.0-2.99 HS GPA with or without HS Algebra 2
MTH 154	3.0 or higher HS GPA with or without HS Algebra 2
MTH 161 + MDE 61	2.0-2.99 HS GPA with HS Algebra 2
MTH 161	3.0 or higher HS GPA with HS Algebra 2
MTH 167	3.0 or higher HS GPA with HS Algebra 2

SAT/ACT/GED Scores for Math Placement

Test	If you scored...	You may enroll in...
SAT-Math	500 or above	MTH 111, MTH 133, MTH 154, MTH 161, MTH 167
SAT-MTH	470-490	MTH 111, MTH 133, MTH 154, MTH 161 + MDE 61
ACT-Subject Area Test Math	18 or above	MTH 111, MTH 133, MTH 154, MTH 161, MTH 167
ACT-Subject Area Test Math	17	MTH 111, MTH 133, MTH 154, MTH 161 + MDE 61
GED-Math	165 or above	MTH 111, MTH 133, MTH 154, MTH 161 + MDE 61
GED-Math	155-164	MTH 111, MTH 133, MTH 154 + MDE 54, MDE 60
GED-Math	154 or below	MDE 10

* The math course you take depends on your academic goals and program of study. Visit the Math Discipline website for more information.

Placement into Higher-Level Math

- Recent high school graduates (students who graduated from high school within the last 5 years) may be placed into certain higher-level math courses based on their high school coursework. The student must provide a copy of their high school transcript for consideration. A minimum GPA of 3.0 with at least Algebra II is required for consideration for placement into higher level math courses. Placement into higher-level math courses is determine by the table below.

High School Course	MTH 162	MTH 245	MTH 261	MTH 263
Math Analysis	A or B in Honors Course	A or B	A or B in Honors Course	N/A
PreCalculus without Trigonometry	N/A	A or B	N/A	N/A
PreCalculus with Trigonometry	A or B in Honors Course	A or B	A or B in Honors Course	N/A
Algebra III	A or B	A or B	A or B	N/A
Calculus	A or B	A or B	A or B	A or B
AP Calculus AB or BC	A or B	A or B	A or B	A or B
IB Math - Analysis and Approaches- Higher Level	A or B	A or B	A or B	A or B
Probability and Statistics	N/A	A or B	A or B	A or B
AP Statistics	N/A	A or B	N/A	N/A
Discrete Math	N/A	A or B	N/A	N/A

- Recent high school graduates who have a GPA of at least 3.0 and have taken at least Algebra II, but do not meet the grade criteria in the table above, may take the "Calculus only" portion of the VPT (CVPT) to determine placement into MTH 162, MTH 245, MTH 261, or MTH 263. Contact NOVATesting@nvcc.edu.
- Non-traditional students (students who graduated from high school more than 5 years ago) without college credit or with college coursework not analogous to NOVA course prerequisites, and recent high school graduates with international transcripts are permitted to take the CVPT to determine placement into MTH 162, MTH 245, MTH 261, or MTH 263. Contact NOVATesting@nvcc.edu.

- Students who have already attempted a math course at NOVA are not permitted to take the CVPT to determine placement.
- Students with college credit may be placed into higher level math using prior college coursework, per VCCS Policy 6.4.0.2. A grade of C- or higher is acceptable for placement, although NOVA credit will not be awarded.
- Students enrolled in the prerequisite at another college or university may be permitted to enroll in a higher-level math course for the subsequent semester. Students may need to provide documentation that they have earned the required grade, per the prerequisite standards for the course, to avoid being dropped from the course.

English Course Placement

Course	Minimum Placement Requirement
EDE 10. ESL students may take the ESL assessment for guidance	1.99 or lower HS GPA
ENG 111 + EDE 11. ESL students may take ENG 111 with ESL 95	2.0-2.99 HS GPA
ENG 111	3.0+ HS GPA
ENG 115	2.0+ HS GPA

SAT/ACT/GED Scores for English Placement

Test	If you scored...	You may enroll in...
SAT-ERW, Evidence-Based Reading and Writing	**480 or above**	ENG 111
SAT-ERW, Evidence-Based Reading and Writing	400-470	ENG 111 + EDE 11. ESL students may take ENG 111 with ESL 95
ACT, Subject Area Tests English and Reading	18 or above	ENG 111
ACT, Subject Area Tests English and Reading	15-17	ENG 111 + EDE 11. ESL students may take ENG 111 with ESL 95
ACT, Subject Area Tests English and Reading	14 or below	EDE 10. ESL students may take the ESL placement assessment.
GED-English	165 or above	ENG 111. ESL students may take ENG 111 with ESL 95
GED-English	164 or below	EDE 10

TOEFL/IELTS/DuoLingo Scores for English Placement

Test	If you scored...	You may enroll in...
TOEFL iBT	92 or higher	ENG 111.
TOEFL iBT	76-91	ENG 111 + ESL 95
TOEFL iBT	59-75	ESL 51 + ESL 52
TOEFL iBT	43-58	ESL 41 + ESL 42
IELTS Band Average	7 or higher	ENG 111
IELTS Band Average	6.5	ENG 111 + ESL 95
IELTS Band Average	5.5-6	ESL 51 + ESL 52
IELTS Band Average	5	ESL 41 + ESL 42
DuoLingo	125+	ENG 111
DuoLingo	110-120	ENG 111 + ESL 95
DuoLingo	95-105	ESL 51 + ESL 52
DuoLingo	80-90	ESL 41 + ESL 42

International students who do not have the above scores will need to complete the ESL placement assessment. Students with scores lower than those listed above may contact ESL@nvcc.edu for additional guidance.

What is the ESL Placement Assessment?

This assessment has three parts and should take less than two hours to complete:

1. Reading Comprehension section with questions about multiple short reading passages.
2. Reading Response section with a short reading to which you will write a response.
3. Writing Response section with an open question to which you will write a response.

How do I take the ESL Placement Assessment?

- Contact the Testing Center at NOVATesting@nvcc.edu to take the assessment.
- You can take this assessment only once, so be sure you take it at a time you can do your best.

Enrollment Information

Before enrolling in classes, an individual must be admitted to the College. Refer to the *Schedule of Classes* at *www.nvcc.edu/schedule* for specific instructions on how and when to register.

Students may register by using NOVAConnect, the online Student Information System, at *www.nvcc.edu/novaconnect*. Individuals who do not have their own computer with web access are welcome to use the computers at any NOVA campus or other location, such as at a public library. The Student Services Center at each campus also has staff members who can assist with registration.

Registering, Dropping, or Withdrawing from Courses

Schedule changes are effective at the time they are processed.

Drop Initiated by Student

Students who change their mind about taking a course must drop the course and process the drop online through NOVAConnect. Otherwise, the student will be charged for the course and may receive a failing grade. Students may drop a course and receive a refund up until the "last day to drop with a tuition refund (census date)" as noted on the academic calendar.

Cancellation of a Section or Course by the College

In the event that the college needs to cancel a course or section, students enrolled will receive a tuition refund unless they transfer to another course. All students in a cancelled course will be notified of the cancellation via their NOVA email. The number of credits for the replacement course will determine whether a student owes the College additional tuition or is entitled to an adjusted refund.

Drop due to Administrative Deletion

Students who enroll in a course are expected to attend every class. Students who do not attend at least one class meeting or participate in an online learning class by the "last day to drop with a tuition refund (census date)" may be administratively deleted from the class. This means that there will be no record of the class or any letter grade on the student's transcript. In this situation, the student's class load will be reduced by the course credits, and this may affect his or her full-time or part-time student status. This, in turn, can impact financial aid, veterans' benefits, and F-1/M-1 status. The student's tuition will not be refunded.

Withdrawal from a Course

Students may withdraw from a course within the first 60 percent of a session without academic penalty and will receive a grade of W. Students may withdraw from a course through NOVAConnect. NOVA Online students may contact the NOVA Online registration office at 703-323-3347 or onlinereg@nvcc.edu.

Late Withdrawal for Mitigating Circumstances

Withdrawal after the first 60 percent of the session will result in a grade of F, except under mitigating circumstances that must be documented on the course withdrawal form, approved by the instructor and dean, and submitted to the Office of Student Rights and Responsibilities (OSSRC). Students may withdraw after the 60 percent point only if they are in good academic standing in the class. This documentation will be retained electronically. See "Grading System" in "Academic Policies and Information" section for an explanation of grades. The student will not receive a refund for courses from which they withdraw. To obtain a refund, students must have dropped the classes within the published tuition refund deadlines. A student may request a voluntary late withdrawal from the College for emergency and severe medical and/or psychological reasons for mitigating circumstances. Mitigating circumstances must have been severe, not foreseeable and/or could not have been reasonably prevented during the time period in question. Examples of situations that may fall into this category include:

- A major medical emergency or severe, extended illness occurring during the semester the student is registered which requires hospitalization, is life-threatening, or is contagious and a danger to the remainder of the College community. The student must have been absent more than 10 percent of the session length. A written verification by the attending physician is required.
- Death of the student or a member of the student's immediate family (mother, father, sister, brother, husband, wife, grandparent or child). An obituary or death certificate is required.
- Mobilization, deployment, change of duty station or call to active duty for military students. A copy of the military orders is required.

The student will complete the Late Withdrawal for Mitigating Circumstances Form (125-047) with appropriate documents attached. NOVA Online students may contact the NOVA Online registration office at or 703-323-3347 or onlinereg@nvcc.edu. Any documentation from medical or mental health personnel should be detailed enough for the Dean of Student Success to make an informed determination. The form will be submitted to the Office of Student Rights and Responsibilities (OSSRC).

If the withdrawal is approved by the OSSRC and the Academic Dean, a grade of W will be assigned to the student's records. In most cases, Late Withdrawal for Mitigating Circumstances applies to all courses in which

the student is currently enrolled. Withdrawal from fewer than all courses will be considered in extenuating circumstances.

Students may request consideration for a tuition refund by following the Business Office procedures.

If the withdrawal is approved by the Dean of Student Success, the dean will forward the information to the registrar, financial aid (when appropriate), and the Business Office. The Office of the Dean of Student Success will notify the affected faculty that the student has been withdrawn.

Late withdrawal requests must be submitted by the end of the following semester:

- Last day of spring semester for the previous fall semester
- Last day of summer sessions for the previous spring semester
- Last day of fall semester for the previous summer session

Withdrawal as a Result of Military Service

Military students who are mobilized or ordered to active duty, and request to be withdrawn from the College after the census date may contact the Office of Military Services at militaryservices@nvcc.edu. The military student should provide his/her name; Student ID number; and a copy of his/her military orders, deployment orders, or documentation. If the service member used Tuition Assistance (TA), the service member must contact militaryservices@nvcc.edu regarding dropping/cancelling TA due to military-related duties or assignments. If the military member used VA benefits, it is the member's responsibility to contact the College veteran's office veteranmilitaryservices@nvcc.edu. If the member needs guidance through this process, he/she should contact the Office of Military Services at militaryservices@nvcc.edu.

Withdrawal by Students Receiving Veterans Benefits

Military students who are mobilized or ordered to active duty, and request to be withdrawn from the College after the census date may contact the Office of Military Services at militaryservices@nvcc.edu.

The military student should provide his/her name; Student ID number; and a copy of his/her military orders, deployment orders, or documentation. If the service member used Tuition Assistance (TA), the service member must contact militaryservices@nvcc.edu regarding dropping/cancelling TA due to military-related duties or assignments. If the military member used VA benefits, it is the member's responsibility to contact the College veteran's office veteranmilitaryservices@nvcc.edu. If the member needs guidance through this process, he/she should contact the Office of Military Services at militaryservices@nvcc.edu.

Withdrawal as an International Student

Degree level students must enroll in 12 credit hours per semester to be considered full time. If you find that you must withdraw from a course, you should talk to an international student advisor before you withdraw. F-1 regulations give the College the authority to authorize exceptions to the full course of study requirement only for limited and specific reasons.

Withdrawal Policy for Students with Federal Financial Aid

Students who have received federal financial aid (Title IV) funds and have withdrawn from all their courses within the first 60 percent of their period of enrollment, or who drop, withdraw, or stop attending a course while not simultaneously attending another are subject to the mandatory refund policy for federal student financial aid (Return to Title IV or R2T4). To withdraw after the published withdrawal deadline due to mitigating circumstances, students must complete an official withdrawal (Form 125-047) and submit it to the Student Services Center. Students must include their last date of attendance in the course. Financial aid recipients who stopped attending all courses and did not complete the "official" withdrawal process, but who can produce an instructor-documented last date of class attendance (i.e., last exam, last paper, etc.), will have R2T4 calculated based upon their last reported date of attendance.

For financial aid recipients who stopped attending all their courses and their last date of attendance is unknown, the calculation of federal refunds returned will be based upon the midpoint (50 percent) of the period of enrollment. Students who did not attend beyond the census date of a course will have their financial aid recalculated based upon the enrollment level of courses in which attendance beyond the census date was established. Such students may be liable for repayment of federal funds. For more information, review the Return of Title IV Financial Aid Funds Policy and the information provided on the impact of dropping, withdrawing, auditing, or not attending a course that is provided on the financial aid website, *https://www.nvcc.edu/financialaid/policies/impacts-FA.html*.

Financial aid applicants who withdraw from courses may have difficulty subsequently in achieving the satisfactory academic progress standards for financial aid (see Satisfactory Academic Progress on the financial aid website or in the Student Services Financial Aid Handbook). Failure to follow established procedures could affect a student's future eligibility for financial aid benefits.

NOVA Online (NOL)

NOVA is committed to preparing students for today's workforce and recognizes computers to be an extension of the learning tools needed to be globally competitive. All NOVA students are expected to have a laptop (or a desktop

with webcam and microphone) that meets the minimum requirements for their major. Students are also expected to have access to reliable internet at home or through a mobile device hot spot. (NOTE: Chromebooks and iPads are useful but insufficient to replace a laptop. They will not run all the software typically needed at NOVA). Students can find the required specifications for their computers at *https://www.nvcc.edu/admissions/_files/Student-Computer-Specifications.pdf*.

NOVA Online offers online learning courses to students who require a more flexible schedule for their academic work, seek to complete NOVA courses while residing outside the local area, or prefer to learn online. Many NOVA degrees/specializations and certificates can be earned in their entirety or in part online. Courses are available in more than sixty disciplines. See the NOVA Online website at https://online.nvcc.edu/ for a complete listing of programs and courses.
While most of NOVA's Online coursework may be completed at home, some courses require some face-to-face participation. For each 3-credit course, students should plan to study at least 6-9 hours each week. Similar to campus-based courses, NOVA Online courses have regular deadlines for assignments. When taking a NOVA Online course, students will have faculty and staff support when they need it. Faculty provide valuable assistance by telephone, e-mail, office visits, or web conferencing. In addition to campus-based resources, NOVA Online students have access to holistic support services dedicated to online students including academic counselors, success coaches, librarians, online tutors, and other support staff.
Courses include two or more proctored exams/assignments. Similar to campus-based courses, faculty will be proctoring your assessments virtually during a scheduled period using either Respondus Monitor and Respondus Lockdown Browser and/or Zoom Live proctoring scenarios. Under special circumstances students may need to secure an exam proctor. Testing information can be found at https://online.nvcc.edu/testinginfo.html.
Students may enroll in NOVA Online courses the same way they enroll in on-campus courses, through NOVAConnect online (also known as myNOVA). Most NOVA Online courses have multiple sections starting throughout the semester. When course capacity limits are reached, NOVA Online sections are closed to further enrollment.
Veterans and military-related students who use VA benefits must have classes certified by completing the online Veterans Enrollment Form. For international students, are restricted to three (3) NOL credits per semester. For more information on registration please go to https://online.nvcc.edu/registration.html.
For additional information, see "NOVA Online" in the Academic Policies and Information section or visit the NOVA Online website at https://online.nvcc.edu/.

NOVA Online Enrollment

Students may enroll in NOVA Online courses through NOVAConnect (also known as myNOVA). Most courses have multiple sections starting throughout the semester. Details are available by visiting online.nvcc.edu. Please note that some NOVA Online courses have different Critical Course Deadlines than campus-based courses.

Students taking their first online course at NOVA should also complete NOVA Online's on-demand virtual orientation: online.nvcc.edu/orientation. Part 1 of the Orientation covers Student Services information, focusing on getting started in courses, accessing the Canvas course site, identifying tips for success, and student support services. Part 2 shows the student a sample Canvas course and demonstrate the course navigation.

Check the NOVA Online website or contact the NOVA Online Hotline at 703-323-3347 or onlinereg@nvcc.edu for registration information.

When registering for sequential courses, such as ENG 111 and ENG 112, students should sign up for only one course at a time.

Course Schedule Changes During the First Week of a Session

Dropping a course will change course load and can also impact financial aid benefits, veterans' benefits, F-1 status, etc.

Schedule adjustments are allowed during the first week of classes ONLY if students have documented mitigating circumstances. Students who find themselves in this situation must talk to the appropriate academic dean. Students will need to complete a Registration with Permission During the First Week of Class Form (125-070) and submit supporting documentation to the appropriate academic dean for approval. The academic dean or designee is the only person who can grant permission for schedule adjustment. Tuition is charged for courses added.

Students who enroll in an entry-level regular course for which there is a preparatory developmental course and then have difficulty in keeping up with the regular coursework in the first week (7 calendar days) may, with the approval of the instructor, initiate a drop and enroll in a developmental course that is more suited to their current skills. This must be documented on a Registration with Permission During the First Week of Class Form (125-070) and approved by the academic dean or designee. In making the transfer from the regular course to the developmental course, the student will be charged additional tuition on a per-hour basis for any additional credit hours. If the exchange results in fewer credit hours, the student qualifies for a tuition refund only if the transaction occurs before the last day to drop with a tuition refund for the session.

After in-class diagnostic testing in EDE or ESL, students may transfer from one developmental course to the appropriate level course in the same discipline, as determined by the diagnostic. This transfer occurs during the first week of classes only with permission from the academic dean and should be documented on a Registration with Permission During the First Week of Class Form (125-070). No change in tuition occurs if the change from one developmental course to another developmental course occurs within the same discipline and the credit-hour values of the courses remain identical. Any credit hours that are added as a result of this course exchange will result in additional tuition on a per-hour basis. If the exchange results in fewer credit hours, the student qualifies for a tuition refund only if the transaction occurs before the last day to drop with a tuition refund for the session.

Course Section Changes After the First Week of a Session

Students may request a change from one section to another of the same course within the same semester after the last day for a tuition refund for the session if they can justify mitigating circumstances. This justification must be recorded on a Change of Section After First Week of Session Form (125-014) and approved by the instructors of the sections involved and their academic dean. If such changes are approved, no additional tuition will be charged.

To change from a campus course to a NOVA Online course after the last day for a tuition refund, students must receive approval from the academic dean, who will make the decision in consultation with NOVA Online. If the change is approved, there is no refund eligibility for the online course.

Hold on Student Records/Service Indicators

A hold or service indicator will be placed on a student's official record under certain conditions. Nonpayment of financial obligations, such as tuition, College fines, and other debts will result in a hold on the student's record. Disciplinary action, academic suspension, or dismissal may also result in a hold on one's enrollment. A hold will restrict a student from enrolling, having transcripts or grade reports issued, or receiving other College services.

Auditing a Course

Students may audit a course and attend without taking examinations. Audited courses carry no credit and do not count as a part of one's course load, which will affect a student's status if he or she receives financial aid or veterans benefits or holds an F-1/M-1 visa. Students who wish to change status in a course from credit to audit or from audit to credit must complete the Auditing a Class Form (125-012) and have it signed by the instructor and the academic dean within the add/drop period for the course (no later than the census date). Students may also audit NOVA Online courses with the instructor's permission. The instructor may require a certain level of attendance or completion of some assignments; students should follow the guidelines on the course syllabus or negotiate expectations with the instructor early in the semester.

Students who wish to earn credit for a previously audited course must retake the course by reenrolling in the course for credit and paying normal tuition to earn a grade other than "X." Advanced standing credit will not be awarded for a previously audited course.

The regular tuition rate is charged. However, senior citizens auditing a course do not need to pay tuition so long as they follow the process outlined under Admission Information.

Complete instructions for auditing a class can be found on Form 125-012, available on the College website.

Financial Information

Tuition

Tuition rates and deadlines are posted online at *www.nvcc.edu/tuition*. Several payment options are available. Payment of tuition entitles students to use the library, bookstore, food services, student lounge, and other facilities of the College except for parking. (See *www.nvcc.edu/parking* for information about parking.) Students must pay for any school property that they damage or lose, such as laboratory or shop equipment, supplies, library books, and materials.

Some courses, such as physical education, may require non-College support services from other agencies and individuals. Costs for these additional charges are paid by students directly to the individual or agency providing the service.

All tuition and most fees are approved by the State Board for Community Colleges, which has the authority to change any and all tuition and fees without prior notice.

In-State Tuition Eligibility

To be eligible for in-state tuition rates, students must be domiciled in Virginia for a minimum of one year before the first official day of classes. When students apply for in-state tuition, they should be prepared to present documentation to support their claim. See the following "Domicile Requirements" section for details.

To change one's tuition status from out-of-state to in-state the student must initiate the process by completing the "Domicile Determination Form" section of the Virginia Community College System Application for Admission Form (125-030), which can be obtained online at *www.nvcc.edu/forms* or at any campus Student Services Center. It must be completed and returned to the Student Services Center for review before the enrollment period begins for the semester in which the in-state charges will take effect.

The College reserves the right to collect the difference between in-state and out-of-state tuition charges when the wrong tuition rate is paid. The Student Services Center on any campus can assist with questions concerning domicile status.

Domicile Requirements

All applicants for admission to Northern Virginia Community College are required by the Code of Virginia, 23-7.4, to complete the "Domicile Determination Form" section of the Application for Admission Form (125-030).

To be eligible for in-state tuition, an individual must be domiciled in Virginia for a minimum of one year before the first official day of classes. Domicile is defined as an individual's "present, fixed home where you return following temporary absences and where you intend to stay indefinitely." In essence, domicile has two parts and an individual must meet both to qualify for in-state tuition. The individual must reside in Virginia and must intend to keep this as his or her home indefinitely.

Regardless of other factors such as dependency, non-U.S. citizens on most temporary visas, in restricted classifications, or undocumented are not eligible to establish Virginia domicile or eligibility for in-state tuition. Students who are in the United States under Temporary Protected Status (TPS) are eligible to establish Virginia domicile.

In most cases, dependent students have the same domicile as their parents or legal guardian. Individuals are presumed to be a dependent of their parent or legal guardian if they are under the age of 24, unless they are a veteran or active duty member of the U.S. Armed Forces; are a graduate or professional student (beyond a bachelor's degree); are married; are a ward of the court or were a ward of the court until age 18; have no adoptive or legal guardian when both parents are deceased; have legal dependents other than a spouse; or are able to present clear and convincing evidence that they are financially self-sufficient. Children and the dependent spouse of a Virginia domiciliary may be eligible for in-state tuition. Additional documentation may be required.

Dependent children who are U.S. citizens may be eligible to establish Virginia domicile separate from their noncitizen parents. They must present clear and convincing evidence that they are domiciled in Virginia and must provide documentation of their citizenship.

The College may review many factors and documents when determining an individual's domicile. The following are some examples:

- residence during the past year prior to the first day of the semester
- state to which income taxes are filed or paid
- driver's license
- motor vehicle registration
- voter registration
- employment
- property ownership
- sources of financial support
- other social or economic ties with Virginia and other states

However, the presence of any or all of these factors does not automatically result in Virginia domicile. The factors used to support a case for in-state tuition benefits must have existed for one year before the first official day of classes. Contact the Student Services Center at any campus for additional information. Students who have been denied in-state domicile status and wish to appeal should see the "Domicile/Tuition Appeal Process" online or contact a Student Services Center.

Students classified as out-of-state who can provide clear and convincing evidence that they were eligible for Virginia domicile on the first day of class for a term may have their tuition status changed for the current term. Students should follow the institution's domicile appeal policy.

In the event that a student's circumstances change after a semester has begun, the student may be eligible for reclassification of his/her tuition status. This reclassification shall be effective for the next academic semester or term (Fall, Spring, or Summer) following the date of the application for reclassification. Students should follow the institution's domicile appeal policy.

Changes that may occur later in one's residence, tax payment status, auto registration, etc., must be reported to a campus Student Services Center. Failure to report changes that could affect an individual's domicile and eligibility for in-state tuition could result in the College's billing the student for tuition due and/or taking disciplinary action against him or her.

Domicile Information for Military Families

The following is a summary of the State Council of Higher Education for Virginia domicile guidelines, based on the Code of Virginia, 23-7.4, as they relate to active-duty military personnel, their spouses and dependents, who may not otherwise qualify for in-state tuition privileges. These guidelines are subject to annual legislative review and change; normally changes take effect on July 1 of each year. See a campus Student Services Center for updated information and details.

Active-Duty Military Personnel (Service Members)
Any active-duty service members, activated guard or reservist members, or guard or reservist members mobilized or on temporary active orders for six months or more, that are either stationed or assigned by their military

service to a work location in Virginia, and reside in Virginia, are eligible to pay tuition at the in-state rate. Such individuals must complete the In-state Tuition for Active-Duty Military and Dependents living in Virginia Form (125-115) and take it, along with the documents specified on the form, to a campus Student Services Center to claim this benefit.

An active-duty military service member may qualify for a waiver of the one-year residency requirement by electing to establish domicile in Virginia. The one-year residency requirement will be waived only if all other conditions for establishing domicile are met, including, but not limited to, Virginia resident income taxes on all income (Leave/Earning Statement showing Virginia tax withheld), Virginia State of Legal Residence Certificate (DD 2058), Virginia driver's license, and Virginia vehicle registration. Copies of these documents must be provided by the student to claim eligibility for this waiver prior to the beginning of the semester/term for which in-state charges are requested.

In December 2016, Congress passed Public Law 114-315, which modifies 38 U.S.C. 3679(c). As amended, 38 U.S.C. 3679(c) requires that the following individuals be charged the resident rate:

- A Veteran using educational assistance under either chapter 30 (Montgomery G.I. Bill® - Active-Duty Program) or chapter 33 (Post-9/11 G.I. Bill), of title 38, United States Code, who lives in the state in which the institution is located (regardless of his/her formal State of residence) and enrolls in the institution within three years of discharge or release from a period of active duty service of 90 days or more.
- Anyone using transferred Post-9/11 GI Bill® benefits (38 U.S.C. § 3319) who lives in the state in which the institution is located (regardless of his/her formal State of residence) and enrolls in the institution within three years of the transferor's discharge or release from a period of active-duty service of 90 days or more.
- Anyone described above while he or she remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters, or terms) at the same institution. The person so described must have enrolled in the institution prior to the expiration of the three-year period following discharge or release as described above and must be using educational benefits under either chapter 30 or chapter 33, of title 38, United States Code.
- Anyone using benefits under the Marine Gunnery Sergeant John David Fry Scholarship (38 U.S.C. § 3311(b)(9)) who lives in the state in which the institution is located (regardless of his/her formal State of residence). Individuals using the Marine Gunnery Sergeant John David Fry Scholarship are no longer required to enroll within three years of the service member's death, and there is no longer a requirement that the deceased service member's death in the line of duty followed a period of active-duty service of 90 days or more.
- Anyone using transferred Post-9/11 G.I. Bill® benefits (38 U.S.C. § 3319) who lives in the state in which the institution is located (regardless of his/her formal State of residence) and the transferor is a member of the uniformed service who is serving on active duty.
- Public Law 117-68 amends Title 38 USC 3679(c)(2)(A) Chapter 35 recipients to the definitions of covered individuals to be charged in-state tuition effective August 1, 2022.

Military Spouses and Dependent Children
The dependents of an active-duty military person stationed in Virginia, the District of Columbia, or a state contiguous to Virginia, who reside in Virginia, are eligible for in-state tuition. Such individuals should complete the In-state Tuition for Active-Duty Military and Dependents Living in Virginia Form (125-115) and take it, along with the documents specified on the form, to a campus Student Services Center to claim this benefit.

Military Benefits

Active-Duty Tuition Assistance

The College participates in the Armed Forces Tuition Assistance (TA) program. Tuition Assistance is a benefit paid to eligible members of the Army, Navy, Marines, Air Force, and Coast Guard. Congress has given each service the ability to pay up to 100 percent for the tuition expenses of its members. If TA does not cover fees required by the College, the service member is responsible for paying the out-of-pocket fees. Each service has its own criteria for eligibility, obligated service, application processes, and restrictions. This money is usually paid directly to the institution by the individual services. For more information on using Tuition Assistance, students should contact their branch of service education office or NOVA's Military Services Office at *militaryservices@nvcc.edu*.

Reserves and National Guard Tuition Assistance

Members of the Selective Reserves are eligible for Tuition Assistance (TA). However, each of the Armed Forces determines how to administer their own Tuition Assistance. In addition, Virginia offers its National Guard service members state-funded education incentives based on state guidelines and eligibility. For more information on using Tuition Assistance, students should contact their branch of service education office or NOVA's Military Services Office at *militaryservices@nvcc.edu*.

Military Spouse Career Advancement Account (MyCAA)

NOVA remains committed to the education of military members and their spouses. NOVA is an approved school for the Military Spouse Career Advancement Accounts (MyCAA) program. MyCAA allows select military spouses

to receive financial assistance for licenses, certificates, certifications, or associate degrees (excluding General Studies and Liberal Arts) necessary for gainful employment in high demand, high growth portable career fields. For more information, contact the Military Services Office at *militaryservices@nvcc.edu*.

Military Survivors and Dependents Education Program

Under the Military Survivors and Dependents Education Program, a child between the ages of 16 and 29, or spouse of a military service member killed, missing in action, taken prisoner, or at least 90 percent disabled may be eligible for education benefits. These benefits may include full payment of tuition, fees, room and board, and books at any state-supported college or university in Virginia. The veteran must have been a Virginia citizen at the time he or she entered the military or must have been a Virginia citizen for at least five years prior to the surviving dependent's Application for Admission. The telephone number to the Virginia Department of Veteran Services is 804-225-2083.

Veterans Benefits

This institution is approved to offer GI Bill® educational benefits by the Virginia State Approving Agency (SAA). The SAA is the approving authority of education and training programs for Virginia. Their office investigates complaints of GI Bill beneficiaries. While most complaints should initially follow the school grievance policy, if the situation cannot be resolved at the school, the beneficiary should contact the SAA office via email at saa@dvs.virginia.gov.

Most College degree and certificate programs are approved for training-eligible servicepersons, veterans, and dependents. Additional information is available from the veteran's advisor on each campus.

Veterans and veterans' dependents may be eligible for educational benefits from the Department of Veterans Affairs. Students who wish to determine eligibility for veterans' benefits should contact the Department of Veterans Affairs. Once eligibility is determined, such individuals should contact their campus veterans' advisor each semester to complete the necessary forms to establish and maintain their eligibility for benefits. Full-time educational benefits are available to those registering for and maintaining 12 or more credits in degree program courses. Three-quarter-time benefits are paid for 9 to 11 credits and half-time benefits are paid for 6 to 8 credits per semester. Active-duty servicepersons and those registered for less than 6 credits are entitled to tuition reimbursement only. Certificate programs are measured differently for payment. Courses taken through NOVA Online and accelerated courses are also measured differently, per the Department of Veteran Affairs policy. See a campus veterans' advisor for details.

Students who receive educational benefits must report their enrollment each semester to the Office of Military and Veteran Services by completing the online Veteran Enrollment Reporting Form (VERF). The information will then be certified and reported to the Department of Veterans Affairs Regional Office. Any changes to a student's enrollment must also be reported by completing the online Veteran Adjustment Form to the Office of Military and Veteran Services. Changes include canceled classes, dropped classes, withdrawing from classes, adding classes, or any other type of change that may affect one's eligibility to receive benefits from the Department of Veterans Affairs. Excessive absences may result in the student's dismissal from the course and adjustment of benefits from the Department of Veterans Affairs. Any change in status must be reported to the Department of Veterans Affairs as soon as possible, but no more than 30 days after the change has been officially completed at the College. Students who are using veteran related benefits will be responsible of overpayment of BAH, tuition, or book stipend due to not attending class(es) or any changes in enrollment.

Satisfactory Progress Policy for Recipients of Veterans Benefits

To be eligible for veterans' educational benefits, students must maintain satisfactory academic progress in accordance with Northern Virginia Community College standards. The following standards must be met:

Students will be reported to the Department of Veterans Affairs as making unsatisfactory progress if their cumulative GPA falls below the required level based on the following:

Regular Credits Attempted (A, B, C, D, F)	Minimum Cumulative GPA Requirement
13-23 credits	1.50
24-47 credits	1.75
48 or more credits	2.00

This standard will be applied each term. However, students who do not achieve the above minimum cumulative GPA requirement but do achieve a GPA of at least a 2.00 for the term being evaluated, may be certified for that term as making satisfactory progress.

When a student's academic record does not meet the above standards, the student will be notified in writing/via email by the college school certifying official (SCO) that his/her next term will be "probationary." The student will be required to meet with a counselor or academic advisor to develop a written plan to indicate how he/she will successfully complete his or her educational objective and how he or she will satisfy the GPA requirement for satisfactory progress toward graduation. This plan will be kept on file in the Veterans Office.

Those who do not meet the minimum cumulative GPA requirement or do not earn a minimum GPA of 2.00 for the probationary term will be reported to the Department of Veterans Affairs as making unsatisfactory progress. The student may be certified on a retroactive basis for the following term if he/she receives a minimum GPA of 2.00 for that semester. When the student's cumulative GPA meets or exceeds the minimum requirement, educational benefits will be restored on a regular basis.

If a student is subject to academic suspension, he/she must be reported to the Department of Veterans Affairs as making unsatisfactory progress. Benefits will not be resumed until the student is making satisfactory progress.

Questions regarding this policy should be addressed to the Office of Military and Veteran Services at militaryservices@nvcc.edu.

Survivors of Deceased Public Safety Officers of Virginia Tuition Benefits

The Code of Virginia (Sec. 23-7.1:01) provides tuition benefits for certain children and spouses of deceased public safety officers. A student may be eligible for free tuition at the College if his or her parent or spouse was killed in the line of duty while employed in Virginia as a Virginia law enforcement officer; firefighter; rescue squad member; agent of the Department of Alcoholic Beverage Control; state correctional, regional, or local jail officer; sheriff and deputy sheriff; or a member of the Virginia National Guard serving in the Virginia National Guard or the United States Armed Forces. Children must be between the ages of 16 and 25. For more information on eligibility requirements and application procedures, students may contact any campus Student Services Center.

Tuition Payment

Once students have registered for a class or classes, they have until 5:00 p.m. the next business day to pay. Classes may be dropped if not paid by the next business day. However, students should not assume that they will be dropped automatically from classes for which they have not paid. It is the student's responsibility to drop all classes they do not want to take prior to the class census date. The student should confirm their schedule of classes before the census date to assure their tuition costs are what they expect.

Tuition is payable by credit card (Visa, MasterCard, or American Express) on NOVAConnect. Tuition is also payable by check, money order, NOVA's Tuition Payment Plan, contract, or approved financial aid. The College accepts checks and money orders made out for the exact amount payable to the order of NOVA or NVCC. Checks made payable to the order of the College and the student are also accepted. The College can also accept wire transfer of funds from a bank to pay tuition. Students must contact a campus business office for specific instructions. Without exception, all checks must include the student's name and identification number.

NOVA charges a penalty fee to anyone whose payment is dishonored. A dishonored check is any check returned because of insufficient funds, a stop payment, or any other reason. A dishonored credit card payment is one for which the College's account is debited. If a check is dishonored the student will be disqualified from paying by check for one-year after the original debt and penalty fee are paid.

Changes in Enrollment for Veterans

Changes in enrollment may result in overpayment of tuition and fees and/or Yellow Ribbon benefits. As a result, students may receive an automated notification from Veterans Affairs stating that the debt amount must be repaid and will be collected by the Debt Management Center. However, Veterans Affairs will instead collect these amounts from the college itself. NOVA may require students to pay any outstanding balance for tuition and fees. Students will still be responsible for repaying any debts associated with the monthly housing allowance and the books and supplies stipend to Veterans Affairs. If you have questions regarding overpayments and debts, contact militaryservices@nvcc.edu.

Delayed Payment Policy for Veterans

Northern Virginia Community College currently complies with the requirements of 38 USC 3679(e). The college will permit a covered individual that is entitled to education assistance under chapter 31, Vocational Rehabilitation and Employment, or chapter 33, Post-9/11 GI Bill® benefits to attend or participate in course of education during the period beginning on the date on which the individual provides to education institution a certificate of eligibility for entitlement to educational assistance under chapter 31 or 33. To ensure proper on-boarding, the college requires students veteran provide one of the following to protect classes/enrollment being dropped due to nonpayment: the student veteran or family member must report to the nearest campus veterans office to submit: ONLINE VERF (veteran enrollment reporting form), COE (certificate of eligibility) or statement of benefits from the e-benefits website or for chapter 31 authorization, veteran case manager must send the benefit authorization to the Office of Military Services via Tungsten Portal. This will ensure veterans are processed and classes are protected until VA send tuition payment to the college. Without following the necessary steps this can cause delay in processing benefits in a timely manner.

With following the above policy and steps, this policy ensures the College will not impose any penalty, such as late fees, denial of access to classes, libraries, or other institutional facilities or the requirement that a covered individual borrow additional funds, on any covered individual because of the individual's inability to meet his or her financial obligations to the institution due to the

delayed disbursement funding from VA under chapter 31 or 33.

Tuition Refunds

Tuition refunds are not automatic except when the College cancels courses.

Students may be eligible for a tuition refund under some very special circumstances. To request a refund, students should contact the staff of a campus Business Office to determine the correct procedures to follow. Complete information about tuition refunds can be found online at *www.nvcc.edu/payment/refunds.html*.

Veteran Refund Policy

If a student using veterans' benefits cannot complete a course (i.e., if the course is discontinued or the student withdraws), the unused portion of the tuition and/or fees paid by the student or Veterans Affairs will be refunded. The exact amount of the refund will be determined based on the class census date or once Veterans Affairs requests a return of tuition. Students will be responsible for returning tuition to Veterans Affairs if classes are dropped after the census date.

Students may request refunds through NOVA's business office. Refunds will be processed once all necessary paperwork is processed for Department of Veterans Affairs and will be sent in the form of payment the student used to pay for the class (i.e., check, credit card, etc.).

Students may be eligible for an exception to college policy regarding tuition debt under special circumstances.

Students will receive a refund or incur no debt if:

- the student drops a class before the session's census date (see NOVA's Academic Calendar or Schedule of Classes), or
- the class is canceled by the College.

If a student replaces the dropped or canceled class with another class for a different number of credits, the student may be entitled to a refund if the new class carries fewer credits. The student may also owe NOVA money if the new class carries more credits.

Fees, Charges, and Expenses

Books and Supplies

Students are expected to obtain their own books, supplies, and consumable materials needed in their studies. A bookstore is located on each campus. Textbooks may be purchased new, used, or rented (selected titles only) from the store or online. Check the bookstore website at http://nvcc.bncollege.com for each campus bookstore's hours of operation.

Students with pending financial aid that covers their tuition and fees may be able to use their excess financial aid to purchase books, supplies, or a laptop through the NOVA bookstore. Please visit *https://www.nvcc.edu/financialaid/policies/charge-books.html* for details.

Library Charges

Library patrons are responsible for the replacement cost of any item they lose. Payments for lost materials are not refundable. This nonrefundable rule also applies to fines and replacement costs charged for materials borrowed from other libraries with a NOVACard Student ID.

Because access to high-demand reserve materials is critical, the College libraries charge fines for overdue reserve materials. Patrons returning regular reserve materials late will be charged a fine of $2.00 per day. Patrons returning timed reserve materials late will be charged a fine of $2.00 per hour. Timed reserve materials are those with specific time limits on their use in the Library. The maximum fine for keeping reserve materials late is $80.00.

Patrons with overdue circulating or reserve items will not be able to check out additional materials until all overdue items are returned and fines paid. Continued enrollment and the release of transcripts will be prevented if overdue items are not returned.

Parking Fees

Any student, full- or part-time, who wishes to park a vehicle in the student parking lots on any campus during any semester, including Summer, must purchase a valid parking permit. Students are not required to have a permit or purchase hourly parking while parked in a student lot after 3:45 p.m. on weekdays or anytime on weekends. Hourly pay parking is also available at all campuses for those who do not have a current permit.

Permits are available for purchase beginning May 1 for the Summer, August 1 for the Fall Semester, and December 1 for the Spring Semester. Students may purchase student parking permits online through the parking services website at *www.nvcc.edu/parking*. Parking Services utilizes a virtual permit system where license plates act as a permit. The license plate(s) provided when purchasing a permit will serve as the credentials needed while parking on campus. No physical permit needs to be displayed and permits are active immediately after purchase. The cost of a parking permit and hourly parking rates are specified on the parking website.

Parking enforcement on student lots will begin at 6 a.m. Monday through Friday following the end of the schedule adjustment period. Campus signage will indicate specific dates. Parking regulations are enforceable 24 hours per day, seven days per week.

Questions regarding parking on campus can be directed to the Parking Services Office or by emailing parking@nvcc.edu.

Graduation

There is no fee for graduation. However, students are required to purchase academic regalia, available at the campus bookstores, if they wish to participate in the Commencement ceremony. All students who purchase their regalia may attend Commencement, but if they wish to receive a diploma, they must apply before the semester's Graduation Application Deadline.

Nonpayment of Debts

Continued attendance at NOVA is dependent upon proper settlement of all debts owed the institution. Should a student fail to satisfy all due and payable amounts for tuition and fees, College loans, College fines, dishonored checks, or other debts owed the College, the student may be withdrawn from his or her courses. The student would be assigned "W" grades for his/her courses, and those will become part of the official transcript. When the debt is satisfied, the student may petition the Dean of Student Success to have the "W" grades removed and to be reinstated in his/her courses. Decisions on reinstatement are made on a case-by-case basis. Until all current debts have been satisfied, a hold will be placed on the student's records, and he or she will receive very limited College services. See "Holds on Student Records/Service Indicators."

If the College has agreed to accept tuition payment from a student's employer or other third-party provider, and the tuition is not paid within the required time, the student is responsible for the tuition payment. As stated above, continued enrollment is dependent upon proper settlement of the debt. If not paid, the student may be withdrawn from his/her courses. For students who are withdrawn, the debt to the College is not forgiven.

In addition, the College reserves the right to pursue payment through debt collection services and other lawful means. Debtors are subject to late fees and collection costs.

Financial Aid Information

NOVA strives to assure that no one be denied the opportunity to attend the College for financial reasons. Financial aid programs provide a variety of funds to assist students in paying for college.

Financial aid representatives at each campus and the College Financial Aid Office provide information about financial aid programs, application procedures, and eligibility requirements. Applications, forms, and information are posted on the office's website at *www.nvcc.edu/financialaid*. The College updates the Student Services Financial Aid Handbook annually. This publication provides detailed information on application procedures and program eligibility criteria. The handbook can also be found online at *https://www.nvcc.edu/financialaid/policies/handbook.html*.

Applications for need-based financial aid begin with filing the Free Application for Federal Student Aid (FAFSA). FAFSA on the Web Worksheets are available from Campus Financial Aid Offices or at https://studentaid.gov/h/apply-for-aid/fafsa. FAFSAs for the following fall can be completed starting October 1 each year. Applications should be completed several months in advance of the semester for which assistance is needed. Applicants for all aid programs, including loans and work study, must file the FAFSA. Completed applications received by March 1 for Fall, October 1 for Spring, and April 1 for Summer will receive priority consideration.

Additional information on scholarships, grants, loans, and on-campus employment, as well as information about financial aid policies pertaining to class attendance, recalculation of awards, satisfactory academic progress, and repayment of funds, can be found in the *Student Services Financial Aid Handbook* and at *www.nvcc.edu/financialaid*.

NOVA Financial Aid Satisfactory Progress Standards

Federal regulations require that a student receiving federal financial aid make satisfactory academic progress (SAP) in accordance with the standards set by NOVA and the federal government. These limitations include all terms of enrollment, whether or not aid was awarded or received. At NOVA, satisfactory academic progress standards apply also to nonfederal aid, including state funds, institutional funds, and foundation scholarships. Progress is measured throughout the academic program by the student's cumulative grade point average (Qualitative) and by credits earned as a percentage of those attempted (Quantitative or Pace of Completion). In addition, students must complete their programs of study before attempting 150 percent of the credits required to complete the program.

The College Financial Aid Office will evaluate satisfactory academic progress before aid is awarded and again after most grades are posted for every term, starting with the first term of enrollment. Some career studies certificate programs are ineligible for student financial aid, but those credits will be counted toward all SAP requirements (GPA, Completion Rate, Maximum Timeframe, and Developmental Maximum) if the student later enrolls in an eligible program.

Financial Aid Status

Financial Aid Good Standing (GS)

Students who are meeting all aspects of the satisfactory academic progress policy or successfully following a designated academic progress plan are in good standing.

Financial Aid Warning Status (WS)

Students who fail to meet satisfactory academic progress for the first time (excluding students who have already attempted 150 percent of the credits required for their

programs of study or those flagged by the Department of Education for having unusual enrollment history) will be automatically placed in a warning status for one term and are expected to meet SAP requirements by the end of that term. Students who fail to meet SAP requirements at the end of the warning status term will be placed on financial aid suspension. However, with a successful SAP appeal, those students will be placed on financial aid probation and will retain financial aid eligibility. Students who attempt at least half-time status and fail or withdraw from all classes can immediately be placed in financial aid suspension status.

Financial Aid Probation Status (PS)

Students who have successfully appealed financial aid suspension are placed in probation status (PS). Students in probation status are eligible to receive financial aid for one semester, after which they MUST be in good standing (GS) or meeting the requirements of an academic progress plan that was preapproved by the College Financial Aid Office. (See "Financial Aid Appeals" for additional information.)

Financial Aid Suspension Status (SS)

Students who do not meet the credit progression schedule and/or the cumulative grade point average standard, who fail to meet the requirements of their preapproved academic progress plan, or who are flagged by the Department of Education for having unusual enrollment history with no recent academic success at NOVA will be placed in suspension status (SS). Students in suspension status are not eligible to receive financial aid unless an appeal and academic plan are submitted and approved.

Academic Suspension (AS)

Academic requirements for avoiding warning status and staying in school differ from financial aid requirements for satisfactory academic progress. Academic status will be noted on registration records; financial aid status will be noted on financial aid screens in the Student Information System (NOVAConnect). Any student suspended from NOVA for academic or behavioral reasons is automatically ineligible for financial aid.

Evaluating Progress

Quantitative Standards or Pace of Completion

Completion Rate (67 Percent Rule): Students must, at a minimum, receive satisfactory grades in 67 percent of cumulative credits attempted. This calculation is performed by dividing the cumulative total number of successfully completed credits by the cumulative total number of credits attempted. All credits attempted at NOVA are included (except audits, which must be entered as such by the class census date). All credits accepted in transfer count as both attempted and successfully completed credits. This evaluation will be made prior to aid being awarded and after grades are posted at the end of each semester a student is enrolled at the College. Satisfactory grades at the College consist of "A," "B," "C," "D," "P," or "S." NOTE: Federal student loan borrowers must meet satisfactory academic progress requirements at the point of loan certification and again prior to the disbursement of any loan proceeds.

Maximum Hours (150 Percent Rule): In order to continue receiving financial aid, a student must complete his/her program of study before attempting 150 percent of the credits required for that program. Developmental and ESL coursework are excluded in this calculation. Attempted credits from all enrollment periods at the College plus all applicable transfer credits are counted; whether or not the student received financial aid for those terms is of no consequence.

Transfer Students: In order to properly calculate satisfactory academic progress, transfer students who apply for financial aid must request official transcripts from all other colleges attended. Official transcripts must be submitted directly to the College Records Office or one of the campus Student Services Centers for evaluation. The student must only complete NOVA's Request for Evaluation of Transcript Form (125-049) if credits are from another VCCS college. Credits officially accepted in transfer will be counted in determining the maximum number of allowable semester credit hours for financial aid eligibility. The College has the option to put an individual transfer student directly in financial aid warning status (WS) or suspension status (SS) immediately upon evaluation for financial aid if a pattern of unsuccessful academic work at previous colleges is indicated.

Second Degree Students: Credits earned from a first degree or certificate must be counted if the student changes programs or attempts a second degree or certificate. Depending on the circumstances, an appeal might be warranted.

ESL and Developmental Studies: Students may receive financial aid for a maximum of 30 semester hours of developmental studies courses as long as the courses are required as a result of placement testing, the student is in an eligible program of study, and SAP requirements continue to be met. ESL credits are unlimited in number as long as they are taken as part of an eligible program and SAP requirements continue to be met.

Additional Considerations for Quantitative or Pace of Completion Standards:

- Withdrawal ("W") grades that are recorded on the student's permanent academic transcript will be included as credits attempted and will have an adverse effect on the student's ability to meet the requirements of the completion rate for financial aid.
- Incomplete ("I") grades: Courses that are assigned an Incomplete are included in cumulative credits attempted. These cannot be used as credits earned in

the progress standard until a successful grade is assigned.

- Repeated courses enable the student to achieve a higher cumulative grade point average. Students can repeat courses with financial aid until successfully completed, but repeating courses adversely affects the student's ability to meet completion rate requirements. Financial aid can be considered for successfully completed classes that are repeated to achieve a higher grade but for only one additional attempt. Only the latest attempt will count toward the cumulative grade point average. Please visit the “Repeating a course” section.

Qualitative Standards

Cumulative GPA Requirements (GPA Rule): In order to remain eligible for financial aid consideration, students must meet minimum cumulative grade point average requirements based on a progressive scale. Only nonremedial courses with grades of "A," "B," "C," "D," and "F" are included in this calculation. Transfer credits are excluded from GPA evaluation. In order to graduate, a minimum cumulative grade point average of 2.0 is required.

Total Number of Credits Attempted	GPA Requirement
1-15	1.50
16-30	1.75
31 or more	2.00

Regaining Eligibility for Financial Aid

Students who do not meet the credit progression requirements (Quantitative or Pace of Completion) and/or cumulative grade point average requirements (Qualitative) will be immediately ineligible for financial aid. Removal from financial aid does not prevent students from enrolling without financial aid if they are otherwise eligible to continue their enrollment.

Unless extenuating circumstances can be documented and an appeal is granted (see "Financial Aid Appeals"), a student in financial aid suspension should expect to continue classes at his or her own expense until satisfactory academic progress requirements are again met.

Students who fail to meet these satisfactory academic progress standards and who choose to enroll without benefit of student financial aid may request a review of their academic records after any term in which they are enrolled without the receipt of financial aid to determine whether they have again met satisfactory academic progress standards. If standards are met, eligibility is regained for subsequent terms of enrollment in the academic year. Students should consult their campus financial aid advisors for assistance in appealing any element of this policy or to determine how to regain eligibility for financial aid.

Financial Aid Appeals

Under certain circumstances, students who fail to meet SAP standards and lose eligibility for financial aid can appeal the financial aid suspension. Students must clearly state what caused the suspension and must also clearly indicate what has changed that will now allow the student to succeed. Appeals are encouraged in the following cases:

- The student has experienced extenuating circumstances (for example, the student's serious illness or accident; death, accident, or serious illness in the immediate family; other mitigating circumstances).
- The student has successfully completed one degree and is attempting another.
- The student on suspension for other than Maximum Hours (150 percent), who has not yet met SAP requirements, has during suspension enrolled in and successfully completed at least 12 semester credits at the College with a minimum GPA of 2.0.

Students appealing a suspension must do the following:

1. Complete the "Understanding Satisfactory Academic Progress (SAP) and the Financial Aid SAP Appeal Process" online counseling session at https://nova.get-counseling.com/. Instructions for logging in and using NOVA's Financial Aid Counseling Center are available at *http://www.nvcc.edu/financialaid/_docs/FATV-Using-the-Counseling-Center.pdf*.
2. Complete the Satisfactory Academic Progress (SAP) Appeal Form (125-323), which is accessible when the aforementioned online counseling session is successfully completed.
3. Attach documentation in support of the appeal.
4. Meet with a faculty or academic advisor to develop an academic plan (page 2) or an advisor statement showing remaining credits to graduation for 150 percent appeals.
5. Submit all items to a Campus Financial Aid Office or the 24-Hour Support Center.

Only complete appeal submissions, with documentation, will be evaluated by the Financial Aid Office. The decision is final. Depending on the circumstances, the student could be required to complete additional requirements (for example, see a career counselor or another type of counselor, meet with an advisor to develop an academic progress plan for completion, limit enrollment, etc.) before an appeal is granted. The goal is to help the student get back on track for graduation. The reasonableness of the student's ability for improvement to again meet SAP standards and complete the student's program of study will be carefully considered. Appeals will be approved or denied. Students who have appeals approved will be in probationary status for the coming term. During probationary status, all attempted credits must be successfully completed with at least "C" or "S" grades, and any additional requirements of probation must be met, or

the student will return to suspension. If an academic progress plan has been preapproved by financial aid, continuing to meet the requirements of that plan will put the student back into good standing.

Scholarships

Private citizens, businesses, nonprofit institutions, and associations have generously donated scholarship funds for students. Recipients are selected by the NOVA Scholarship Committee or a campus committee. Most scholarships require that students provide a statement of financial need by completing the Free Application for Federal Student Aid (FAFSA): some scholarships are field or career related and do not stipulate financial need as a requirement. Campus Financial Aid Offices and the financial aid website provide information about the current availability of individual scholarships as well as application materials. The NOVA Educational Foundation publishes a list of available scholarships with their general criteria and deadlines. Scholarship information and the online application can be found on the College website by searching "Scholarships."

Student Services

Each campus (and NOVA Online) provides a number of services designed to help with a student's education, career, and personal development.

The NOVA *Student Handbook* provides additional information about the College, including student activities and organizations and the statement of student rights and responsibilities. Copies of the Student Handbook may be accessed online at *www.nvcc.edu/students/handbook*.

The Dean of Student Success on each campus is responsible for most of the student services. Contact the dean or members of the Student Services staff to take full advantage of these opportunities for assistance.

The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.

For information, please go to the Student Records (FERPA) page and Federal FERPA page.

Student Rights and Responsibilities

There are certain rights that each NOVA student may expect to enjoy as well as obligations that each student accepts by his or her enrollment. The current edition of the *Student Handbook* contains a statement on student rights and responsibilities and the College's policies on academic dishonesty, illegal substances, and student conduct and discipline.

Counseling and Advising Services

Academic Advising

Academic advising is a comprehensive program facilitated by counselors, advisors, teaching faculty and student services personnel who share responsibility with advisees for student success. The advising relationship is a continuous developmental process involving open communication in an atmosphere of mutual respect and honesty. It assists students with the transition to college and the evaluation and attainment of their academic, career, and personal goals. By their participation in a range of advising activities, including individual and group advising sessions, classes, and workshops, students gain an understanding of campus and College resources and develop the skills to make informed, independent decisions.

All new students should work with a counselor or academic advisor to select a program to meet their educational objectives. Once the student has chosen a major, he/she will then be referred to a faculty advisor or counselor who will assist in planning the rest of the student's program for all subsequent terms.

Students should meet with their advisor to discuss progress toward graduation near the midpoint of their program. All students are encouraged to seek information and assistance from academic advisors in career planning in addition to curriculum planning. Even students not enrolled in a specific curricular major may seek assistance from academic advisors and counselors to help select courses during enrollment.

Academic Planning

Students should use the online Advisement Report to monitor their progress toward their degree or certificate by logging onto NOVAConnect. From the My NOVA tab on the College's home page, students can enter the VCCS SIS: Student Information System and click on "Self Service." After clicking on the "Student Center," the "My Academics" selection offers students a menu option to view their "Advisement Report."

Virtual Advising

Virtual advising is offered through live chat and rapid response email. Students can log on during specified hours and chat with an advisor. In addition, email sent to *VirtualAdvising@nvcc.edu* will be answered within 24 hours. Virtual advisors can help current and prospective students declare or change their major, review their degree progress, register for classes, prepare for graduation, determine their eligibility for individual courses or programs, and a host of other activities. For more information, visit www.nvcc.edu/virtualadvising.

Counseling Services

Counselors, located in the Student Services Center, are professionals who are available to assist students in their

educational, career, and life planning. They can help students to make effective decisions and to deal with problems they may be facing while in attendance at the College. Interviews with counselors are confidential. Referral information is available for persons requiring professional assistance beyond the scope and training of the counselors.

A counselor can help students explore and develop career goals and plan their education to help meet those goals. Students who want to enroll in a degree or certificate curriculum and did not indicate a choice of curriculum on their Application for Admission should meet with an advisor to select a major. This may mean planning a developmental program to gain the necessary skills in certain areas to meet the entrance requirements for a curriculum. It may mean planning a program to take the right courses for transfer to a four-year college or university when the student leaves NOVA. It may mean selecting the career/technical program best suited to one's career goals. The counseling service on each campus provides a testing program to help students better understand their abilities, interests, skills, and values. Tests and inventories are administered and interpreted at a nominal charge to students.

During a student's first semester at NOVA, the counselor may refer him or her to a faculty advisor who will assist in planning the student's second semester and the rest of his or her program.

Counseling services are open to students throughout their enrollment at the College.

Counselors assist with such information as transfer, self-assessment inventories, career opportunities, volunteer service placement and job counseling. Special group programs are also available in career planning, personal exploration, and other skill-building topics.

Students requiring accommodations or special services should see the "Accommodations and Accessibility Services" section of the website for more information.

Career Development Services

Career Planning Services

A variety of career planning information is available online at https://www.nvcc.edu/career-services/. A self-assessment tool, Focus II, is available to all students, and counselors are available to discuss the results with students. Information on entrance requirements, working conditions and compensation for thousands of careers is also available on the website under, "I am a Student and I Would Like To..." College transfer information is available online at *www.nvcc.edu/transfer*, including transfer agreements.

NOVA Online Students

NOVA Online provides a variety of student services to NOVA Online students, including academic counseling, financial aid assistance, student success coaching, transfer advising, career services, accommodations and accessibility services, library services, online tutoring, New Student Orientation, registration support, and student life opportunities. NOVA Online students may also use services provided at any of the NOVA campuses and centers.

Student Life

To encourage students to make the most of their educational experience at NOVA, the College offers diverse educational, cultural, and social activities and programs. These unique opportunities are offered to complement and enhance the student's learning process both in and out of the classroom environment. Student activities include student government, student publications, intercollegiate and intramural sports, performing arts, political organizations, professional and community service organizations, cultural and religious organizations, and many other interest groups. Students interested in getting involved should contact the Office of Student Life on each campus and NOVA Online.

Accommodations and Accessibility Services

NOVA is committed to ensuring all students have an opportunity to pursue a college education regardless of the presence or absence of a disability. NOVA makes reasonable accommodations in providing course, program, and building modification, and/or auxiliary aids and services in compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. No academically qualified student with a disability will be denied access to or participation in the services, programs, and activities of the College.

Students who require services should contact Accommodations and Accessibility Services at least four weeks prior to the beginning of classes for support. To qualify for accommodations, students must provide clear and specific evidence of a documented disability by a qualified professional. In general, documentation should be no more than three years old or must be based on adult norms. All information obtained in any diagnostic and/ or medical reports will be maintained and used in accordance with applicable confidentiality requirements. College policy reclassifies any student not enrolled for three full years as inactive. Disability documentation records of inactive students will not be maintained.

Otherwise, qualified students with documented disabilities who are, by reason of their disability, unable to complete a requirement of their program with or without reasonable accommodations, may request an approved course substitution. Substitutions will generally not be granted for any course that is deemed essential to the program of instruction being pursued by such student, or to any

directly related licensing requirement. If requirements are waived, students must successfully complete other courses to compensate for the credit hours.

Handicapped parking spaces are available at each campus. A handicapped permit issued by the Department of Motor Vehicles is required. The College does not issue handicapped parking permits.

Additional information about services provided by the office may be obtained by visiting: *https://www.nvcc.edu/accommodations*.

Military and Veteran Services Office

NOVA's Office of Military and Veteran Services helps all members of the military community-active duty, veterans, and family members-achieve their education and career goals. Military members can receive assistance with navigating the admissions process, troubleshooting payment issues, understanding Tuition Assistance (TA) and VA benefits, and provide connections with College representatives and community resources.

The office coordinates all veterans' educational benefits from the federal Department of Veterans Affairs for the College. Information, counseling, and certification of enrollment for veterans are available from each campus veteran's advisor. See also "Admission" and "Financial Information" for further information relative to veterans.

Safety Information

The College has a professionally trained police force on each campus. These officers provide protection for the campus community. The College publishes the *Annual Security Report*, which can be found on the Police section of NOVA's website. The document details the College's safety programs, crime statistics, and crime prevention. Furthermore, it includes the College's policies and procedures to address alcohol and drug use, the reporting of crimes, sexual assault, and other matters.

Copies of the *Annual Security Report* are available from the campus Police Offices and Student Services Centers. It can also be found on the College web page at *www.nvcc.edu/police/college-safety*.

Sexual Harassment

Sexual harassment of any member of the College community is serious misconduct and shall not be tolerated. The College has developed policies and procedures addressing sexual harassment and reporting of such complaints. The policies and procedures are available in the *Student Handbook*, which is located on the College website.

Substance Abuse

In accordance with the Drug-Free Schools and Communities Act of 1989, NOVA supports efforts to eliminate drug and alcohol abuse through a series of programs and services designed to prevent use of substances that are illegal and harmful, and to assist individuals who suffer from substance abuse. The use of drugs and the abuse of alcohol can endanger one's health and future. Students who need help can contact Counseling Services at any campus for information about referral to community agencies.

No one may possess, sell, use, manufacture, give away, or otherwise distribute illegal substances while on campus or at College-sponsored events or meetings off-campus. Students who violate this policy will be subject to College discipline imposed through established due process procedures. The College will notify its Police and any other appropriate law enforcement agencies when its rules regarding illegal substances are broken and cooperate fully in any investigation and prosecution.

Technology Support and Guidelines

NOVA students will have access to and use of information technology applications, services, and resources as part of their enrollment. Enrolled students are provided with a LAN (Local Area Network) account to access campus computer workstations and an official VCCS account (NOVA Student ID) to access their student email account, the Student Information System (NOVAConnect), and online Canvas courses. NOVAConnect allows students to enroll and pay for courses online.

Students are responsible for checking their email often for College announcements on student services or messages from instructors and classmates. To ensure student privacy, the College will use a student's official College email address.

The Virginia Community College System has established a student ethics agreement for the use of College computer information technology. Student use of this technology is limited to his or her role as a student at the College, and there are certain security procedures that all students are expected to observe. The Information Technology Student/Patron Ethics Agreement is available in the *Student Handbook* and posted in computer laboratories, libraries, and other areas where access to College computer services is available. Students may view this agreement at *www.nvcc.edu/policies*.

Voter Registration

Northern Virginia Community College encourages all eligible students to register to vote. Campus libraries and Student Services Centers can provide students with voter registration information, or students may register at http://vote.elections.virginia.gov.

Student Consumer Information

The College is obligated under the 1998 Amendments to the Higher Education Act of 1965 to disclose annually where the following student consumer information may be found.

Academic Policies and Information

Academic Integrity

When College officials award credit, degrees, and certificates, they must assume the absolute integrity of the work students have done; therefore, it is important that students maintain the highest standard of honor in their scholastic work.

The College does not tolerate academic dishonesty. Students who are not honest in their academic work will face disciplinary action along with any grade penalty the instructor imposes. Procedures for disciplinary measures and appeals are outlined at *https://www.nvcc.edu/policies/_files/224-Academic-Integrity.pdf*. In extreme cases, academic dishonesty may result in dismissal from the College. Academic dishonesty, as a general rule, involves one of the following acts:

- cheating on an examination or quiz, including giving, receiving, or soliciting information and the unauthorized use of notes or other materials during the examination or quiz;
- buying, selling, stealing, or soliciting any material purported to be the unreleased contents of a forthcoming examination, or the use of such material;
- substituting for another person during an examination or allowing another person to take the student's place;
- plagiarizing, which means taking credit for another person's work or ideas. This includes copying another person's work either word-for-word or in substance without acknowledging the source;
- accepting help from or giving help to another person to complete an assignment, unless the instructor has approved such collaboration in advance;
- knowingly furnishing false information to the College; forgery and alteration or use of College documents or instruments of identification with the intent to defraud.

Academic Advising

Academic Advising is provided by faculty in academic departments and Counselors/Advisors in the Student Services Centers. See NOVA's Advising & Counseling web page for further information.

Attendance/Student Participation

Education is a cooperative endeavor between the student and the instructor. Instructors plan a variety of learning activities to help their students master the course content. Students are expected to participate in these activities within the framework established in the class syllabus. Faculty will identify specific class attendance policies and other requirements of the class in the syllabus that is distributed at the beginning of each term. Successful learning requires good communication between students and instructors; therefore, in most cases, regular classroom attendance, or regular participation in the case of a nontraditional course format, is essential.

It is the student's responsibility to inform their instructor prior to an absence from class. Students are responsible for making up all coursework missed during an absence.

If a student does not attend at least one class meeting or participate in an online class by the "last day to drop with a tuition refund" (census date), their class registration may be administratively deleted. This means that there will be no record of the class or any letter grade on the student's transcript. Furthermore, the student's class load will be reduced by the course credits, and this may affect their full-time or part-time student status. Tuition will not be refunded.

Course Load

The normal academic course load for students is 15-17 credits per semester. The minimum full-time academic load is 12 credits, and the normal maximum full-time load is 18 credits or 19 if one is a one-credit Student Development (SDV) course. To enroll in more than 18 credits, students must have a 3.00 grade point average or higher on the last 12 credits or most recent semester of full-time enrollment completed at NOVA or another accredited college or university, and the approval of the dean of students at their primary campus. In the case of students with considerable professional experience, successful completion of college-level training may substitute for the credit hour and GPA requirement. Approval for an overload based on professional training may be granted by the dean of students in consultation with the appropriate program head/program director.

Students requesting an academic overload should visit the College Forms Library, forms for students, to complete the Academic Overload Request (More than 18 Credits, Excluding SDV), College Form #125-016, and email it to academicoverload@nvcc.edu for the Dean of Student Success review and approval.

Credits

A credit at NOVA is equivalent to one collegiate semester hour. One credit is awarded for each of the following:

- one hour per week of lecture (15 hours per semester plus an exam period)
- two hours per week of laboratory with one hour of out-of-class practice (45 hours per semester plus an exam period)
- three hours per week of laboratory with no out-of-class practice (45 hours per semester plus an exam period)

Courses offered in a nontraditional format require an equivalent amount of time.

Grades

Grade Reports

Grades are obtained through NOVAConnect at www.nvcc.edu/novaconnect. Grade reports are not mailed.

Grading System for Credit Classes

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 an online course. In an online learning course, initial student attendance is determined by completing a class assignment. The College will administratively drop students who enroll in a course but do not attend a minimum of one class meeting or the online learning equivalent by the census date. 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:

A = Excellent - 4 grade points per credit
B = Good - 3 grade points per credit
C = Average - 2 grade points per credit
D = Poor - 1 grade point per credit
F = Failure - 0 grade points
I = Incomplete - No grade point credit. The incomplete ("I") grade is 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 have satisfactorily completed more than 60 percent of the course requirements and attendance and 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 "I" grade extends enrollment in the course, requirements for satisfactory completion will be established through consultation between the faculty member and the student and documented on the "I" Grade Assignment Form (125-076). In assigning the "I" grade, the faculty must complete documentation that:

- states the reason for assigning the grade;
- specifies the work to be completed and indicates its percentage in relationship to the total work of the course;
- specifies the date by which the work must be completed; and
- identifies the default grade ("B," "C," "D," "F," "P," "R," or "U") based upon coursework already completed.

Completion dates may not be set beyond the last day of the subsequent semester (to include the Summer Session) without written approval of the provost. The student will be provided a copy of the documentation. All "I" grades that have not been changed by the faculty member through the normal grade change processes will be 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 provost.

P = Pass - No grade point credit. Applies only to non-developmental courses. The "P/U" grading option may be used for an entire section of any course but not for an individual student within a course. Use of this grade must be approved by the academic dean. Grades of "P" are not included in grade point average calculations. Only seven credit hours of "P" grades may be applied toward graduation. This maximum may be extended to 15 credit hours for an Experiential Learning Portfolio course (formerly known as PLACE).

R = Reenroll - No grade point credit. The reenroll "R" grade may be used as a grade option in developmental and College ESL courses only, to indicate some progress toward meeting course objectives. In order to complete the course objectives, students receiving an "R" grade must reenroll in the course and pay the specified tuition. The "R" grade may be given only once per course.

S = Satisfactory - No grade point credit. Used only for satisfactory completion of a developmental studies course (numbered 1-9) or any College ESL course. Grades of "S" are not included in grade point average calculations.

U = Unsatisfactory - No grade point credit. Applies to non-developmental courses being offered with a "P/U" grading option, as well as to developmental studies, ESL courses, noncredit courses, and specialized courses and seminars at the discretion of the College. The "P/U" grading option may be used for an entire section of any course, but not for a single individual student within a course.

W = Withdrawal - No grade point credit. A grade of "W" is awarded if a student withdraws or is withdrawn from a course after the add/drop period but prior to the completion of 60 percent of the session, using the Withdrawal Initiated by Student Form (125-047) or Withdrawal Initiated by Instructor Form (125-031). After the 60 percent point, the student will receive a grade of "F" except under mitigating circumstances that must be documented on either the 125-047 or 125-031 Form. In all cases, the instructor and academic dean must approve the withdrawal, and the dean forwards the signed form to the Student Services Center. This documentation will be retained in the student's record. See also "Withdrawal from a Course" section, under "Enrollment."

X = Audit - Students auditing a course may attend without taking examinations or receiving credit for the course. Permission of the instructor and the academic dean is required to audit a course no later than the census date for the course.

See "Auditing a Course," under "Enrollment," for more information.

Calculating the GPA

The grade point average (GPA) is determined by dividing the total number of grade points earned in courses by the total number of credits attempted. Courses that do not generate grade points are not included in credits attempted. The GPA is carried out to two digits past the decimal point (example 1.00). No rounding shall be done to arrive at the GPA.

Three types of GPA are defined by the Virginia Community College System (VCCS).

Semester 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.

Cumulative GPA, which includes all courses attempted, is computed each semester and is maintained on a continuing basis as a record of the student's academic standing. When students repeat a course, please refer to the Repeating a Course section below for the computation of the cumulative GPA and for satisfying curricular requirements. In instances of courses designated as repeatable for credit or General Usage courses, all grades/credits are counted in the computation of the cumulative grade point average. Grades of "S," "P," "U," "W," "X," and "I" shall not count as first or subsequent attempts when calculating cumulative GPA. Courses that do not generate grade points are not included in credits attempted.

A program GPA (same as Plan GPA on the advising report), which includes only those courses applicable to the student's program of study, is computed in order to ensure that the student satisfies the graduation requirement for that curriculum.

The following table illustrates a GPA of 2.00 obtained by dividing 30 by 15.

Special Note: For students enrolled during Spring 2020 (when special grades were issued due to COVID-19), no quality points were issued for the P+ and P- grades. P+ or P- grades will not affect a student's GPA.

Course	Credit Hours Attempted	Grade	Grade Points	Credit Hours Completed	Total Grade Points
BIO 101	4	C	2	4	8
ENG 111	3	B	3	3	9
MUS 141	2	A	4	2	8
PED 109	1	F	0	0	0
FRE 101	5	D	1	5	5
PSY 100	0	W	0	0	0
Totals	**15**		**10**		**30**

Course Grade Appeals

Students who think that a semester grade is in error may check by contacting the appropriate instructor within 30 calendar days after the first day of classes for the next Fall or Spring Semester. If the grade is in error, the instructor will take the necessary steps to correct it. After the next semester, the grade will stand. Students should review the Student Grievance Form (125-021) online for guidance in the process.

Developmental Course Grading

An "S" grade will be assigned to indicate satisfactory completion of the course objectives for each developmental course (numbered 1-9).

Students who are making progress but have not completed all of the instructional objectives for a developmental course will be assigned an "R," must reenroll, and must pay the appropriate tuition to complete course objectives.

Students who are not making satisfactory progress in a developmental course will be assigned a "U" (unsatisfactory). Such students should meet with a counselor for possible reevaluation of goals and for determination of any subsequent academic work.

Credits earned for developmental courses are not counted in grade point computations toward graduation or in determining sophomore status. They are used in determining full-time or part-time status.

Repeating a Course

Students normally are limited to two enrollments in a credit course that is not designated as repeatable for credit in the VCCS Master Course File or is not identified as a general usage course. Repeatable courses are listed below under "Course Repeat Exceptions." General usage courses are those courses numbered 90-190-290; 93-193-293; 95-195-295; 96-196-296; 97-197-297; 98-198-298; or 99-199-299.

There are currently two course repeat policies in effect, and it is based on when a student first took the course in question. This policy does not apply to credit courses that

are designated as repeatable for credit in the VCCS Master Course File or are identified as general usage courses.

For students who completed a course during any semester from Fall 1988 to Summer 2021 and repeated a course, only the last "A" through "F" grade earned, not the higher of the two grades, is counted in computing the cumulative or curriculum grade point average (GPA) calculations and for satisfying curricular requirements.

For students who completed a course during any semester from Fall 2021 and beyond, and subsequently repeated the course, the highest "A" through "F" grade earned is counted in computing the cumulative and curriculum GPA and for satisfying curricular requirements. Example, student takes MTH 161 in Fall 2021 and earns a C grade; student repeats course in Spring 2022 and earns a D grade - C grade will count instead of D grade.

If the subsequent grade is a "W," "X," or "I," it does not replace the grade earned previously. When a course is repeated and the grade of "F" is earned, all grades, credits attempted, credits completed, and quality points for previous enrollments in that course are no longer applicable. Grades of "W," "X," and "I" shall not count as first or subsequent attempts for purposes of GPA calculation. Courses exempt from the course repeat policy (see exceptions) are not affected by this policy: each grade counts.

Repeating a course does not change a student's GPA for a given semester. A graduate's program and cumulative GPAs and Honors designations at the time of graduation will remain unchanged if the graduate repeats a course.

A student is not entitled to repeat a course that is no longer offered by the College. If the course has been replaced, the replacement course may be used in calculating the curriculum grade point average, but the grade in the previous course will be counted in the cumulative grade point average.

Students are advised that other colleges may recalculate the GPA to include all courses, including those that NOVA does not count in the GPA.

Please note: the course repeat and GPA recalculation processes are run at the end of each semester after the grade submission deadline has passed. They are run only one time per semester in batch.

Course Repeat Exceptions

Normally, students may enroll a maximum of two times in a credit course that is not a general usage course, or a course designated as repeatable for credit. Exceptions to this policy will be considered on a case-by-case basis when a student submits a Course Repeat Request Form (125-013) to the academic division offering the course.

Credit courses that are designated as repeatable for credit in the VCCS Master Course File or are identified as general usage courses may be repeated for credit. Other than the general usage courses, only those courses designed to develop and maintain proficiency in the visual and performing arts, or to meet requirements for certification or recertification in allied health or applied technology fields, may be designated as repeatable for credit. Examples are applied music courses, automotive emissions inspection courses, and theatre workshops. Students will be limited to 10 credits earned through multiple enrollments in the same course.

The following courses are exempt from the two-enrollment limit:	
AUT	AUT 215, AUT 225, AUT 226
CST	CST 132, CST 136
EMS	EMS 115
GOL	GOL 135
MUS	MUS 136, MUS 137, MUS 138, MUS 145, MUS 148, MUS 149, MUS 155, MUS 165, MUS 175, MUS 185, MUS 236, MUS 237, MUS 238, MUS 245, MUS 248, MUS 249, MUS 255, MUS 265, MUS 275, MUS 285
PED	PED 160, PED 161, PED 163, PED 164, PED 166
General Usage Courses: 90, 190, 290; 93, 193, 293; 95, 195, 295; 96, 196, 296; 97, 197, 297; 98, 198, 298; and 99, 199, 299.	

10-Year Course Limit for Some Technology Programs

A note for students pursuing the following programs:

- Computer Science A.S.
- Cybersecurity A.A.S. and all related Career Studies Certificates
- Information Systems Technology A.A.S. and all related Career Studies Certificates
- Information Technology A.S.

Any Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses must not be older than ten years, as of the first day of the fall semester in the academic year they graduate, unless approved by the pathway dean.

Course Prerequisites

Some courses have prerequisites or corequisites. These requirements, which were established to foster a student's success in the course, are identified in the Course Descriptions section of this *Catalog*. Students may not enroll in a course for which they do not meet the prerequisites by the time the course begins. (The authorization for a waiver of any prerequisite may be made only by the dean of the instructional division offering the course.) Students may be administratively dropped from

any course for which they have not met the prerequisite. This includes students who wish to audit the course.

In a course that requires placement tests, students must obtain the required minimum scores to enroll in a course or complete prescribed developmental studies courses before enrolling in the desired course.

For alternatives to placement tests, see the "Placement." section of this catalog.

Although there is no test for computer competency, most courses do require students to use the computer for research, papers, and other assignments. Students who are not experienced using a computer can take introductory courses available to help increase their proficiency.

Course prerequisites apply to all students taking a course, including any who want to audit it.

Student Development Courses

All curricular students, except those in some career studies certificate programs with fewer than 16 credits, shall participate in a one-credit student development course designed to help them succeed in college. Depending on the program of study, this may be either SDV 100 College Success Skills or SDV 101 Orientation to (a Specific Discipline). All SDV courses cover topics related to academic success, responsible decision making, and College information. Some sections address additional topics, and some are intended for students in specific programs.

NOVA students must take an SDV course within their first 15 semester hours at the College unless the requirement has been waived. SDV waivers may be granted for students who have graduated with an associate, baccalaureate or higher degree from a regionally accredited United States institution of higher education. Students still must complete the required total number of credits for their degree.

Course Substitutions for Students with Documented Disabilities

Otherwise, qualified students with documented disabilities covered by the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973, as amended, who are, by reason of their disability, unable to complete a requirement of the program pursued by the student, with or without reasonable accommodations, may request an approved course substitution.

Substitutions will generally not be granted for any course that is deemed essential to the program of instruction being pursued by such student, or to any directly related licensing requirement. If requirements are waived, students must successfully complete other courses to compensate for the credit hours. For more information, contact the Office of Accommodations and Accessibility (accommodations@nvcc.edu).

Transferring Credit to NOVA

NOVA allows previous academic study, examination, or career experience to be evaluated for possible College credit. Students may transfer a course into NOVA matching up to 80 percent of a course offered at NOVA. Students must have completed at least one course at NOVA before an official transcript reflecting transfer credit will be issued. No more than 75 percent of a degree or certificate may be earned through transfer credit and/or credit for prior learning. Only credit applicable to a student's academic program will be transferred. Prior learning credits that are to be used to meet the specific requirements of a curriculum must be approved by the academic dean responsible for a student's curriculum.

Credit from Other Colleges and Universities

NOVA accepts transfer credit for college-level courses completed at an accredited college with a grade of "C" or higher, provided the courses are consistent with the course requirements of the curriculum in which the student enrolls at NOVA. To have such credit evaluated, students must submit an official transcript from their previous institutions to the College Records Office via asktheCRO@nvcc.edu or a Student Services Center on any campus. An official transcript is one that has the seal of the institution or testing organization and the signature of an official of that institution or organization. An official transcript must be received electronically directly from the transcript company or in a sealed envelope from the originating institution that has no overt sign of having been opened or otherwise disturbed. NOVA's College Records Office prefers the electronic process as a primary method of sending transcripts. Students should have their institutions directly send their electronic transcripts through Parchment or the Clearinghouse. Students can mail paper transcripts to NOVA's College Records Office at the following address:

Northern Virginia Community College
College Records Office FX - P13
Annandale, VA 22003

If students decide to hand deliver their transcripts to any campus Student Services Center, the transcripts must be in acceptable condition, such that the receiving registrar has confidence that the record received is authentic and official. Official transcripts that are sent to College faculty also may be accepted.

International transcript evaluations should be sent electronically or to College Records at the address above rather than to a campus. Students who have earned college credit from universities outside the United States must have their credit evaluated by an international credit evaluation agency before submitting it to the College. NOVA accepts international transcript evaluations from World Education Services (WES at *http://www.wes.org/students/index.asp*),

the International Education Research Foundation (IERF at http://www.IERF.org), Educational Credential Evaluator (ECE at https://www.ece.org), and Foreign Credentials Services of America (FCSA at http://foreigncredentials.org). NOVA will accept American Association of College Registrars and Admissions Officers (AACRAO www.aacrao.org) transcript evaluations dated prior to August 2016.

Credit for Prior Learning

NOVA recognizes prior college-level learning from nontraditional sources. Students may request an evaluation of professional trainings, certifications, or college-level coursework by submitting the appropriate documentation specified in the Credit for Prior Learning Manual and filling out the Transfer Credit Evaluation Request Form 125-049E. The Credit for Prior Learning Manual is updated annually and has an effective implementation date the of the first day of the Fall semester of each academic year. Consult NOVA's Credit for Prior Learning Manual at https://www.nvcc.edu/prior-learning for complete information and a list of credit for prior learning opportunities or contact an academic advisor or counselor. Credit for prior learning is available to students for nontraditional educational experiences that fall into the following categories:

- Credits from Post-Secondary institutions (i.e., Transfer Credit)
- Credit by Exams (e.g., College Level Examination Program (CLEP), DANTES, UExcel, Advanced Placement (AP), International Baccalaureate (IB), Abitur, and more).
- Credits from nontraditional program completion (e.g., professional training programs, approved online training programs, and/or military training.)
- Credit by Experiential Learning Portfolio Development, (formerly known as PLACE), a NOVA program for adults who have acquired college-level learning through life experiences, such as work, volunteer activities, participation in civic and community assignments, travel, independent study, and more.

Foreign Language Credit

Students who have completed two years of a single foreign language in high school or whose native language is not English have the following options:

- Request assessment by the College faculty if it is a language currently taught at NOVA. Such assessment could place the student into levels above the introductory course in the foreign language sequence. For students who are granted advanced placement, additional general electives may have to be completed to meet the minimum credit requirements for the degree.
- Take a CLEP, NYU or other approved foreign language exam. Students who achieve a satisfactory score will be awarded credit for the foreign language that may be used toward completion of a degree.
- Request a waiver of the foreign language requirement for those who are proficient in a foreign language not offered by NOVA or through examination. Proficiency is generally indicated if the student has at least the equivalent of a high school diploma from an institution where the primary language is other than English. If the foreign language requirement is waived, additional open electives must be completed to meet the minimum credit requirements for the degree. To receive the waiver, students must submit a high school transcript or other official documentation indicating that the language of instruction was not English.

Examinations

Students are expected to take tests at regularly scheduled times. In addition, every student is required to take a final examination, receive an appropriate evaluation instrument, or continue receiving instruction during the scheduled final examination period. Any deviation from the final examination schedule must be approved by the campus provost. Students have the right to review their final exam for one semester after the end of the term in which the final exam was taken.

Academic and Graduation Honors

Academic excellence recognitions can be viewed online on a student's unofficial transcript through NOVAConnect at www.nvcc.edu/novaconnect.

The College provides the following recognitions for academic excellence:

Presidential Scholars

A student's name will be placed on the Presidential Scholars list for any semester that his/her grade point average is 3.75 to 4.00. The student must have completed at least nine semester hours in the current semester (excluding developmental courses) and have earned a minimum of 20 semester hours of credit at NOVA.

Dean's List

A student's name will be placed on the Dean's List for any semester that his/her grade point average is 3.50 to 3.74. The student must have completed at least six semester hours in the current semester (excluding developmental courses) with no grade lower than "C."

Graduation Honors

Students attending NOVA for a minimum of 30 credit hours in degree programs are eligible for graduation honors. Those attending NOVA for a minimum of 50 percent of the credit hours in their certificate program are eligible for graduation honors. Students must apply online for graduation to be eligible for graduation honors.

Graduation honors are determined by the student's cumulative grade point average at the completion of the semester for which he/she is certified for graduation.

Appropriate honors are based on scholastic achievements and recorded on the degree or certificate as follows:

Cumulative Grade Point Average	Honor
3.20	Cum Laude (with honor)
3.50	Magna Cum Laude (with high honor)
3.80	Summa Cum Laude (with highest honor)

Graduation

Graduation Application

Students can apply for graduation online at the beginning of the semester they intend to graduate. Visit *www.nvcc.edu/graduation* and click on Application for Graduation. Students must observe the application deadline dates: October 1 for Fall graduation, March 1 for Spring graduation, and June 1 for Summer graduation. Applications received after these dates will be processed for the following semester. If requirements are not met by the end of the awarding period, students must apply for graduation in the subsequent semester.

Associate Degree and Certificate Requirements

To be eligible for graduation with an associate degree (A.A., A.S., A.F.A., A.A.A., or A.A.S.), certificate, or career studies certificate from the College, students must have:

- been admitted to a curriculum (declared a major);
- completed all curricular requirements as outlined in the College *Catalog* including receiving a passing grade in all of the coursework and fulfilling the credit hour requirements. The *Catalog* to be used to determine graduation requirements is the one in effect at the time of the student's admission to a curriculum from which the student is graduating. If a student elects not to attend NOVA during the academic year admitted, the Catalog would be the one in effect when the student begins attendance or any subsequent *Catalog* of the student's choice as long as it is from an academic year in which he/she attended NOVA. The Catalog to be used in certifying the student's graduation may not be more than seven academic years old at the time of graduation. For example, a student placed in the 2017-2018 catalog year may be eligible to graduate up until Summer 2024;
- taken courses at NOVA that total at least 25 percent of the credit to be applied to the curriculum (ABLE credit does not count toward the residency requirement);
- earned a grade point average of at least 2.00 in courses attempted that are applicable toward graduation in the curriculum;
- applied for graduation online on or before the published dates; and
- resolved all financial obligations to the College and returned all materials, including library books.

Additionally,

- students in programs that have been discontinued must graduate within 3 years from the term of discontinuance and
- certificate and career studies certificate candidates enrolled in a program of more than 15 credits must also complete a Student Development (SDV) course even if none is required for a specific curriculum.

Multiple Degrees

Students who wish to earn a degree, diploma, certificate, or career studies certificate in addition to any other degree, diploma, certificate, or career studies certificate must complete all requirements of both programs, and the awards must differ in content from one another by at least 25 percent of the credits.

Certificates of Completion

Program administrators may award a certificate of completion for successful completion of a cohesive set of courses for which no standard award (degree, certificate, or career studies certificate) is given. Certificates of completion may be given for completion of credit or noncredit courses. These awards are conferred by program administrators, not by the College, so recipients are not considered College graduates and are not eligible to participate in Commencement. Certificates of completion are not recorded on the student's official transcript.

Posthumous Degrees

Upon request, posthumous degrees may be awarded to students who are in their last semester of study and/or within 15 credits of degree completion at the time of death. The degree award must be approved by the Vice President for Academic Affairs. The diploma will bear the notation "Awarded Posthumously."

Issuing of Diplomas

Diplomas are issued at the end of each term after final verification of grades and completion of requirements. Diplomas will be mailed to the address the student entered in his/her online graduation application. Students will receive only one diploma for each degree or certificate earned. For students who complete additional coursework after the awarding of a degree, the cumulative and new plan

grade point averages (GPAs) will be affected, but not the GPAs entered when the degree was awarded. The updated grades and GPAs will be reflected on the student's transcript but will not have any bearing on the diploma.

Participation in the Commencement Ceremony

Students are eligible to participate in the Commencement ceremony if they completed their program requirements during or prior to the current academic year. For example, this means that students who have completed their program requirements in Spring 2023, Fall 2022, Summer 2022, or earlier may participate in the Spring 2023 Commencement Ceremony. Spring Semester graduation applicants who participate in the Commencement ceremony are not guaranteed the awarding of a degree, and graduation applicants still must successfully complete their program requirements to graduate from NOVA.

Students who have completed only the Uniform Certificate of General Studies (UCGS) are not eligible to participate in the Commencement ceremony.

Transcripts

The official NOVA transcript of a student's academic record can be requested by searching Transcript Request and ordering it through Parchment eTranscript Service for a fee. Transcripts will be sent electronically within 24-48 hours, or students can request a paper copy for an additional fee. Students may print their own unofficial transcript through MyNOVA.

Transfer from NOVA

Since admission policies and program requirements vary among four-year colleges, all students need to be acquainted with the specific requirements of the college or university of their choice. Students should consult and work closely with counselors and/or academic advisors in transfer planning and for designing an appropriate NOVA program of study.

NOVA offers transfer programs that lead to the associate of arts (A.A.) degree, the associate of fine arts (A.F.A) degree, or the associate of science (A.S.) degree. These programs are designed for students who plan to complete the freshman and sophomore years of college work at the community college and then transfer to a four-year college or university to complete the junior and senior years of a bachelor's degree. Some four-year colleges will accept certain associate of applied science (A.A.S.) and associate of applied arts (A.A.A.) programs, but each institution has a different policy.

The College transfer website, *www.nvcc.edu/transfer*, is a good first stop in planning one's transfer from NOVA to a four-year institution. Guaranteed admission and articulation agreements, four-year school transfer guides and admission information, campus transfer events, and more, are all linked on this site. After viewing the site, a follow-up visit with a campus transfer counselor is recommended.

Only courses with a grade of "C" or better are accepted for transfer even if the student has an A.A. or A.S. degree. Students must submit a completed transcript request form online through NOVAConnect or to a NOVA Student Services Center to have an official copy of their transcript forwarded to the intended transfer college or university.

The State Council of Higher Education for Virginia (SCHEV) and the State Board for Community Colleges have endorsed a State Policy on Transfer. This policy gives guidelines for Virginia community colleges and state-supported senior institutions on admission of transfer students, acceptance and application of transfer credits, services for and responsibilities of transfer students, and guidelines for students who transfer without an A.A. or an A.S. degree.

Guaranteed Admission and Articulation Transfer Agreements

NOVA has formal guaranteed transfer partnerships and guaranteed admission and articulation agreements with many institutions. These agreements detail the terms of transfer for NOVA students completing associate degree programs. They define the way courses, programs, or entire categories of programs transfer to another institution and may include admission guarantees. Counselors can provide students with more specific information on how these agreements relate to individual transfer plans. For a current list of agreements, visit the transfer services website at *www.nvcc.edu/transfer*.

Academic Standing

Students are considered in good academic standing if they maintain a semester minimum GPA of 2.00, are eligible to reenroll at the College, and are not on academic suspension or dismissal status.

Students who are on academic warning or academic probation but are eligible to reenroll may be considered eligible to receive financial aid assistance or other benefits requiring a "good academic standing" status.

Students who are having academic difficulty will have one of the following official indications appear in their grade report on NOVAConnect.

Students will be notified by email if they are placed under Academic Warning, Probation, Suspension, or Dismissal.

Academic Warning

Students who fail to maintain a minimum grade point average of 2.00 for any semester will receive an academic warning. Students on academic warning are encouraged to consult with their advisor/counselor and take advantage of academic support services provided by the College.

Academic Probation

Students who fail to maintain a minimum cumulative grade point average of 1.50 will be placed on academic probation until their grade point average reaches 1.75 or better. The statement "Academic Probation" will be included on the student's permanent record. Students on probation are ineligible for appointive or elective office in student organizations unless special permission is granted by the Dean of Student Success or designee. Students on academic probation are required to consult with a counselor and will be limited to a maximum of 8 credits, unless otherwise approved by the Dean of Student Success (or designee). Students shall be placed on probation only after they have attempted 12 semester credits.

Academic Suspension

Students who are on academic probation and fail to attain a semester GPA of 1.50 or better shall be placed on suspension only after they have attempted 24 semester credits. Academic suspension will be for one semester. The statement "Academic Suspension" will be placed on the student's permanent record. Students who are placed on academic suspension and wish to appeal should follow the appeal process established by the College. Students may be reinstated at the conclusion of the suspension period by following the process established by the College. Students who have been reinstated from academic suspension must achieve a 2.00 GPA for the semester of their reinstatement and must earn at least a 1.75 GPA in each subsequent semester of attendance. The statement "Subject to Dismissal" will be placed on their permanent record. Students who have been reinstated from academic suspension will remain subject to dismissal until their cumulative GPA is raised to a minimum of 1.75. Reinstated students may be required to carry less than a normal course load the following semester and are required to consult with their advisor/counselor. Reinstated students are encouraged to take advantage of additional academic support available to them.

Academic Dismissal

Students who do not attain at least a 2.00 GPA for the semester of reinstatement following academic suspension will be academically dismissed. Students who achieve at least a 2.00 GPA for the semester of their reinstatement following academic suspension must earn at least a 1.75 GPA in each subsequent semester of enrollment. Failure to attain a 1.75 GPA in each subsequent semester until the cumulative GPA reaches 1.75 will result in academic dismissal. The statement "Academic Dismissal" will be placed on the student's permanent record. Academic dismissal is normally final, but students who believe they have an exceptional case may appeal to the Dean of Student Success for reinstatement following an absence of five years (60 months). To appeal, the student must submit a written request to the Dean of Student Success explaining why he/she did not do well in the past and why the student thinks he/she will be successful if allowed to return to the College. The student must submit an appeal at least 30 days before the start of the semester when he or she wishes to return. Students who are readmitted after dismissal should consult College policy on academic renewal, which follows. Students who are reinstated after academic dismissal will remain subject to dismissal until their cumulative GPA is raised to a minimum of 1.75. Reinstated students may be required to carry less than a normal course load the following semester and are required to consult with their advisor/counselor. Such students are encouraged to take advantage of additional academic support available to those who have been reinstated following academic dismissal.

College Procedures for Students Academically Suspended or Dismissed

The procedures listed below apply to students who have been academically suspended or dismissed:

1. Notice of a student's academic suspension/dismissal is provided through both his/her grade report on NOVAConnect and a letter sent from the College that describes the suspension/dismissal policy and the steps available for appealing.
2. A "hold" will be placed on the student's record so that he/she cannot register. The hold will indicate "academic suspension" or "academic dismissal" and is a part of the student's academic record.
3. Students who choose to appeal are required to write a letter to the chair of the Admissions Committee requesting an exception to the policy. The letter should detail the causes for academic difficulties and describe remedies the student proposes to improve his or her academic performance.
4. Students who are requesting reinstatement to the College must meet with a counselor and/or Dean of Student Success.
5. The campus Dean of Student Success will make the reinstatement decision.
6. The Dean of Student Success' reinstatement decision may be appealed to the campus provost.

Academic Renewal

Students who return to the College after five years (15 terms) or more without taking NOVA courses for credit may petition for academic renewal. The request must be in writing and submitted to a campus Student Services Center.

For students who are found 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 2.50 GPA in the first 12

semester hours completed at NOVA after reenrollment.

- All grades for credit courses received at the College will be a part of the student's official transcript.
- The student 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 coursework taken at the College after readmission, as well as former coursework for which a grade of "C" or better was earned, and credits accepted from other colleges or universities.
- The academic renewal policy may be used only once and cannot be revoked after approval by the Dean of Student Success.
- Academic renewal cannot be applied to a degree or certificate that has already been conferred.

Policies and Procedures on Student Grievance

It is the policy of Northern Virginia Community College to provide fair and orderly procedures to resolve student grievances. Nothing in this policy prevents a student from discussing a complaint informally with any appropriate College employee, but students must follow the specific procedures and timelines in the Student Handbook to initiate a formal grievance the complaint procedures outlined in the NOVA Student Handbook are subject to oversight of the State Council of Higher Education for Virginia (SCHEV). If an issue cannot be resolved by NOVA's internal processes, military affiliated students may file a formal complaint directly with the State Council of Higher Education for Virginia (SCHEV) and with the State of Approving Agency (SAA) at saa@dvs.virginia.gov. The Virginia State Approving Agency (SAA) is the approving authority of education and training programs for Virginia. The SAA investigates complaints of GI Bill® beneficiaries. While most complaints should initially follow the school grievance policy, if the situation cannot be resolved at the school, the beneficiary should contact our office via email saa@dvs.virginia.gov.

Virginia State Approving Agency Advertising Statement

This institution is approved to offer GI Bill® educational benefits by the Virginia State Approving Agency.

Academic Options

Apprenticeship Training

Apprenticeship training programs are approved through the Apprentice Division of the Virginia State Department of Labor and Industry. Formal apprentice training programs are subcontracted by the Virginia Community College System to local school boards. These programs include approved on-the-job experiences and related instruction classes. NOVA offers many of the related instruction classes specified in apprenticeship programs. In addition, NOVA offers certificates associated with apprenticeship programs in air conditioning and refrigeration at the Woodbridge Campus.

Cooperative Education and Internships

Cooperative Education and Internship courses provide the opportunity for students to apply the concepts and skills learned in the classroom to a job situation. The professional and technical experience gained through Cooperative Education establishes a record of performance in one's career field and eases entry into a permanent career position. Students who co-op with a federal government agency can be retained noncompetitively in a permanent position upon graduation.

To be eligible to participate in Cooperative Education or Internship courses, students must have:

- declared a major in a NOVA degree or certificate program;
- successfully completed 15 semester hours of college work or the equivalent, including transfer credit;
- successfully completed a minimum of two courses in a major area of study at NOVA;
- obtained a 2.00 or better grade point average; and
- obtained divisional approval after a review of the student's academic/employment record and a determination of his/her potential for success in a co-op position or internship.

Credit earned in Cooperative Education and Internship courses may be used as a substitute for up to 10 credits of coursework in selected degree programs if approved by the student's academic advisor, used for elective credit, or earned as additive credit. For more information, see *www.nvcc.edu/co-op*.

G3 Initiative

The Governor's Get Skilled, Get a Job, Give Back (G3) initiative is a last-dollar grant for eligible students after all other qualified federal and state financial aid are applied. G3 is a limited pool of funds and will be awarded on a first-come/first-served basis as eligibility is determined. Only students placed in certain Associate of Applied Science and Certificate programs are eligible for G3. More information is available on NOVA's G3 webpage.

Developmental Studies

Developmental courses are offered to prepare students to succeed in the College transfer and career/technical programs. These English (EDE) and mathematics (MDE) courses are designed to develop the basic skills and understanding needed for success in other courses and curricula. Some MDE and EDE courses are offered as co-

requisites to MTH and ENG classes to provide support for the college-level courses.

In some cases, students must complete developmental courses before enrolling in certain courses or being admitted to a curriculum. In other cases, students can take college-level courses along with developmental courses.

Credits earned in these courses are not applicable toward associate degree, certificate, or career studies certificate programs.

A wide variety of instructional methods and materials are used at the College for developmental courses. EDE and MDE courses are offered in a variety of formats. Students who have any questions should check with a counselor or academic advisor.

NOVA Online

NOVA Online offers online learning courses. NOVA Online courses are designed to offer "anytime access" to higher education from the convenience of one's home or office. Online courses are primarily web-based and require access to the Internet. Courses are designed to do the following:

- create a community of learners
- support communication between student and faculty
- guide students to valuable and appropriate resources

Some things to consider when choosing an online learning course are the following:

- To be successful, students need strong reading and time-management skills, and must be self-disciplined and motivated.
- Additional technology may be required, including web conferencing software for live meetings or office hours, using live chat or social media tools like Twitter, or using interactive websites in addition to accessing materials in Canvas.
- Some online courses require in-person meetings or labs, and some require live meetings attended from home via web conferencing.
- All NOVA Online courses require at least two proctored exams. Students should follow the instructions in their course syllabus for specific requirements. Examinations in NOVA Online learning courses can be taken at any NOVA campus Testing Center during open Testing Center hours. Individuals living outside the Washington, DC metropolitan area may arrange to have exams proctored by a NOVA-approved proctor. Exams in most courses may also be taken from home using NOVA Online's online proctoring service.
- Some online learning courses allow students the flexibility to work ahead on their own and complete a course early, while others require students to keep the same basic pace as their classmates. Be sure to check individual course descriptions for specific requirements or contact the individual instructor with questions.

Program Administration
Some degrees and certificates can be completed partially or entirely through NOVA Online. Prospective degree candidates should contact a NOVA Online counselor, a campus counselor, or an academic advisor to plan their program of study.

Textbooks
Textbooks for NOVA Online courses might not be the same as those used on campus, so students should check the NOVA Online bookstore specifically when looking for textbook information. NOVA Online books may be purchased or rented through the Alexandria Campus bookstore or ordered online at https://nvcc-alexandria.bkstore.com.

Assignments
Students are required to submit assignments by specific due dates. Students who do not submit at least one assignment by the specified deadline will be administratively dropped from the course. Courses may also contain other progress requirements that students must meet to avoid being administratively withdrawn.

Honors

Qualified, highly motivated students may enrich their study through participation in NOVA's Honors Program or by enrolling in individual Honors courses. Honors Lead Faculty are available to help students decide if the Honors Program or specific Honors courses will help focus their academic goals. Student Services Center staff, counselors, and advising specialists also can provide students with further information.

Honors courses differ from regular sections as they incorporate REAL components: Research, Enrichment, Academic rigor, and Leadership, which go beyond the basic course material. Within these courses, students are encouraged to think independently and critically, to participate actively in discussions, and to collaborate with their fellow Honors students, building a community of highly engaged peers. These courses stimulate broader and deeper consideration of the subject matter and encourage the exploration of the interrelationships of ideas across disciplines.

Each Honors course has a special transcript indicator. Universities and employers often favor students who seek the greater challenge offered through Honors courses.

Honors course offerings may vary from campus to campus. Typically, Honors courses are offered as follows:

- **Honors Courses:** special sections are designated as full Honors courses with an average of 16-18

students in a seminar-style setting, restricted to Honors students only, and

- **Honors Options:** regular sections in which Honors students complete the REAL Honors components.

Eligibility

Eligibility for Honors Courses

Students must complete all course prerequisites AND meet at least ONE of the criteria listed below:

- score at least 1200 out of 1600 on the SAT Evidence-Based Reading and Writing, and Math sections with a score of at least 600 on each section; OR
- demonstrate a combined ACT score of 25 or higher, OR
- document a cumulative GPA of at least 3.5 at the last academic institution attended (high school, college, or university); OR
- Present recommendations from two high school teachers (if currently a high school student) or from two college teaching faculty or counselors based on courses taken at a college or university.

Once a student completes 6 credits of college coursework, the GPA requirement (3.5+) takes precedence over all other criteria.

Eligibility for the Honors Program

Students who meet at least one of the criteria listed above are invited to apply for admittance into the Honors Program. Depending upon other factors, students may be required to have successfully completed at least 3 credits of Honors courses in order to be admitted to the Program.

1. To be eligible for the Honors Interdisciplinary Experience requirement, students must have completed a minimum of 3-6 semester hours in Honors courses.
2. Elective credits may come from any discipline offering an Honors course.
3. At least 9 credits of full Honors courses must be applied toward the total Honors Core Curriculum credits. Other courses may be Honors option or full Honors courses.
4. NOVA Online Honors courses will be considered on a case by case basis (contact a campus Honors Lead Faculty for more guidance).

The Honors Program

The Honors Program provides a comprehensive, educational experience for Honors students and allows them to interact as a community of learners. The Honors Program is designed to provide motivated students with an enriched program of study that includes, but is not limited, to:

- academic scholarships
- presenting at Honors symposia and conferences
- field trips
- campus and community service projects
- internships
- leadership opportunities
- campus- and College-wide honors events
- exemplary guest speakers
- letters of recommendation
- Campus Honors Club
- special transfer opportunities to selective institutions

The Honors Curriculum

The Honors Program is distinguished by its Honors Core Curriculum, comprised of specific courses within the categories listed in the following chart:

Requirement	Credits
English	3
Humanities/Fine Arts	3
Social/Behavioral Sciences	3
Physical and Life Sciences/Mathematics	3-5
[1] Elective 1	3-4
[1] Elective 2	3-4
[2] Honors Interdisciplinary Experience	0
[3] Total	18-21

[1] At least 9 credits of full Honors courses must be applied toward the total Honors Core Curriculum credits. Other courses may be Honors option or full Honors courses. Only 9 credits of Honors option courses can be used toward the total Honors Core Curriculum credits. Elective credits may come from any discipline offering an Honors course.
[2] To be eligible for the Honors Interdisciplinary Experience requirement, students must have completed a minimum of 3-6 semester hours in Honors courses. To satisfy this requirement, a student must submit to their campus Honors Lead Faculty member a proposal for how they're going to meet this requirement. This proposal is due by end of semester before the beginning of the term in which the experience will take place. The student will also submit a reflection or report describing how they grew from this experience. This report is to be submitted before the end of the term during which the experience was undertaken. The Interdisciplinary Honors Experience requirement may be satisfied by engaging in one of the activities listed below or an equivalent as determined by the honors faculty:

- the student will complete a supervised, reflective interdisciplinary research paper produced separately from an Honors course; or
- a presentation at Honors symposium or approved Honors conference of which NOVA is a member; or
- at least twenty hours of supervised, verifiable community service; or completion of a credit-bearing

internship* (3-credit minimum) to be taken in the place of an Honors elective; or

- non-credit internship* of at least 20+ working hours; or credit-bearing study abroad to be taken in place of an Honors elective; or
- completion of an Honors Portfolio, which reflects upon or summarizes their Honors experience at NOVA.

*Additional specific guidelines may apply for both credit-bearing and non-credit Interdisciplinary Experience opportunities. Please confirm with the Honors Lead Faculty on your campus for additional details.

[3] Only 9 credits of Honors option courses can be used toward the total Honors Core Curriculum credits. NOVA Online Honors courses will be considered on a case-by-case basis (contact a campus Honors Lead Faculty for more guidance).

Honors Program Completion

Students may satisfy the requirements of both the Honors Program and their degree program by enrolling in the Honors or Honors options courses within the degree program requirements. However, only 9 credits of Honors option courses may be used for the Honors Core Curriculum Credits. Campus Honors Lead Faculty, advisors, and counselors can assist students with course selection.

Continuation in the Honors Program is contingent upon a student maintaining good academic standing and adhering to the Student Code of Conduct. Receiving more than one grade lower than a "C" in an Honors course will result in dismissal from the Program or probation based on GPA status. To graduate with Honors, a student must maintain a cumulative GPA of 3.0 or higher AND an Honors GPA of 3.275 or higher with no Honors course grade below a "C."

Completion of the Honors Program will be designated on the student's official transcript and diploma. Students will also receive the Honors Certificate of Completion. This represents a significant enhancement of one's academic credentials.

Learning Communities

Learning Communities are part of an innovative program for enriching student success. NOVA offers selected pairs of courses that form learning communities by linking developmental studies, Honors courses, or courses related to a particular major. A common cohort of students enrolls in the linked classes and works together with faculty on shared assignments and learning opportunities. Learning Communities will focus on helping students become a better learner, while learning more about themselves and how they learn. This is an opportunity for students to get to know their professors and classmates better, to build a supportive academic network, and to improve their study skills to become a successful college student. The Student Services Center on each campus has more information about Learning Communities at NOVA.

Military-Related Programs

ROTC (Army/Air Force)

NOVA, the Air Force ROTC, and the University of Maryland have established an agreement to make the Air Force ROTC General Military Course and/or Professional Officer Course available to qualified NOVA students who wish to earn an appointment as a commissioned officer in the U.S. Air Force. For more information, contact the University of Maryland Air Force ROTC office.

Professional Studies Coursework

Some individuals may wish to prepare for study leading to advanced professional degrees in such fields as dentistry, law, medicine, occupational therapy, optometry, pharmacy, physical therapy, and veterinary medicine. Through NOVA, students can pursue some foundation coursework to facilitate this goal.

NOVA does offer a number of programs in the allied health professions; however, these programs have restricted admission. Visit *www.nvcc.edu/medical* to learn about admission to these programs.

Students who wish to meet professional goals by enrolling in non-restricted foundation coursework should consult an advisor or counselor.

Study Abroad

NOVA offers occasional study abroad opportunities under a variety of disciplines. They are treated as regular credit courses, requiring registration for the course, satisfaction of prerequisites, and assignments completed for a final grade. Study abroad courses count toward the residency requirement for program completion. The related travel expenses are the responsibility of the student. Contact the instructor or academic dean for information about study abroad.

Weekend Courses and Programs

Weekend courses and programs provide students with additional opportunities to pursue their education. Weekend courses are offered at all campuses. Students may accelerate work toward a degree or seek professional enrichment and growth in a time frame conducive to their professional and personal lives through weekend courses. Any student can register for weekend classes; there is no special permission required.

Some campuses offer programs leading to a degree or certificate entirely through weekend coursework. The Annandale Campus offers a Weekend Express Program and a Weekend Studies Degree Program. For further information about these programs, go to *www.nvcc.edu/annandale/special-programs/index.html*. The Woodbridge Campus offers weekend programs in

Business Administration and Information Technology. Weekend courses and programs may be found in the regular course listings in the Schedule of Classes.

Workforce Development, Continuing Education, and Community Education Services

The Workforce Development Division helps to plan and provide many types of programs to meet special interests within the community. The topics vary from job skills to personal enrichment interests. Various community education programs and seminars focus attention on social issues. Workforce development services for business, industry, and professional organizations provide special courses at NOVA for their employees. These programs can be taught at the College or in the workplace.

Many noncredit programs are offered each semester to serve special community service needs. A listing of the continuing and community education courses offered at each campus can be found online at *www.nvcc.edu/workforce*.

Courses and workshops often result from requests by individuals or groups within the community. The programs pay for themselves through fees charged to participants. State funds are not used for setting up or offering a course or paying the instructor. Fees for community education courses vary depending upon the actual cost of each course.

Community education course information and registration instructions are available at *www.nvcc.edu/workforce*.

Payment for courses may be made by cash, check, money order, contract, Visa, MasterCard, or American Express. Checks and money orders (payable to NVCC or NOVA) can only be accepted for the exact amount due. A fee is charged for any check that is dishonored, except when the bank is at fault. Requests for refunds must be made at least four calendar days before the date of the first class meeting.

To qualify as a community education College course, the following standards must be met:

- The noncredit activity is planned in response to an assessment of educational needs for a specific target population.
- There is a statement of objectives and rationale.
- Content is selected and organized in a sequential manner.
- There is evidence of preplanning.
- The activity is instructional and is approved by an academic or administrative unit of the institution best qualified to affect the quality of the program content and to approve the resource personnel utilized.
- There is provision for enrollment for individual participants.
- Evaluation procedures are utilized.
- Criteria are established for awarding Continuing Education Units to individual students prior to the beginning of the activity.

Continuing Education Units (CEU) for Noncredit Courses

The College awards Continuing Education Units (CEU) upon completion of most noncredit courses. One CEU represents 10 hours of participation in workforce development and continuing education courses. CEUs are a nationally recognized standard unit of measurement that has been adopted for postsecondary courses not carrying academic credit. Permanent CEU records are maintained by NOVA. CEUs are increasingly accepted as evidence of educational accomplishment and for professional certification.

Academic Programs and Requirements

- Degrees and Certificates
- Degree Requirements

Degrees and Certificates

Northern Virginia Community College offers two-year associate degrees, one-year certificates, and short career studies certificates. The requirements for completion of these awards are determined by the College faculty and are intended to meet the requirements specified by the Commonwealth of Virginia, the Southern Association of Colleges and Schools Commission on Colleges, and certain specialized accrediting agencies.

Terminology

Unless otherwise noted, the term *program* refers to an associate degree with its own curriculum code and all related specializations, certificates, and career studies certificates. The Virginia Community College System defines a *major* as a grouping of 100- and 200-level courses that define a discipline or interdisciplinary specialty. A *degree program* is a broadly structured curriculum leading to the award of an associate degree and is listed on a student's diploma. A *specialization* is an area of concentration within an approved major that varies from the parent major by 9-15 credits. A *certificate* is awarded for the completion of an approved non-degree curriculum consisting of 30-59 semester credit hours, usually in a career area; a minimum of 15 percent of a certificate's credit hour requirement will be in general education including one three-credit-hour English course. A *career studies certificate* is awarded for the completion of an approved non-degree curriculum of 9-29 semester credit hours in length.

Associate of Arts Degree (A.A.)

Awarded for the completion of two-year curricula in liberal arts and music. The A.A. degree is designed for those who plan to transfer to a four-year, degree-granting institution to complete a bachelor of arts (B.A.). A complete list of NOVA's A.A. degree programs can be found at the end of this *Catalog*.

Associate of Science Degree (A.S.)

Awarded for the completion of two-year curricula in a variety of preprofessional programs. The A.S. degree is designed for those who plan to transfer to a four-year, degree-granting institution to complete a Bachelor of Science (B.S.). A complete list of NOVA's A.S. degree programs can be found at the end of this *Catalog*.

Associate of Fine Arts Degree (A.F.A.)

Awarded for the completion of two-year curricula in the fine and performing arts. The A.F.A. degree is designed for those who plan to transfer to a four-year degree-granting institution to complete a Bachelor of Fine Arts or similar degree in fine arts and/or visual or performing arts. A significant portion of the A.F.A is in general education that is typical of the first two years at a four-year institution. A complete list of NOVA's A.F.A. degree programs can be found at the end of this *Catalog*.

Associate of Applied Arts Degree (A.A.A.)

Awarded for completion of two-year curricula primarily designed to prepare a student for employment in jobs in fine arts, music, and photography. These curricula are not designed for transfer to a four-year college or university. However, in some limited cases, the A.A.A. degree or selected career courses may transfer, and there may be articulation arrangements with senior institutions to facilitate such transfer. A complete list of NOVA's A.A.A. degree programs can be found at the end of this *Catalog*.

Associate of Applied Science Degree (A.A.S.)

Awarded for completion of two-year curricula designed to prepare students for employment in a technical field immediately following graduation. In some A.A.S. degree programs, one or more Summer Sessions may be required. These curricula are not designed for transfer to a four-year college or university. However, in some limited cases, the A.A.S. degree or selected career courses may transfer, and there may be articulation arrangements with senior institutions to facilitate such transfer. A complete list of NOVA's A.A.S. degree programs can be found at the end of this *Catalog*.

Certificate (C.)

Awarded for the completion of various curricula of study less than two years in length, totaling between 30 and 59 credits, at least 15 percent of the credits must be in general education, including at least 3 semester credits of English (ENG). Certificates must also include at least 1 semester credit in a Student Development (SDV) course.

Most certificates prepare students for a specific job or aspect of a job. Some certificates are part of an associate degree program, in which case the credit earned in the certificate may be used toward the degree. These curricula typically are not designed for transfer to a four-year college or university. The Uniform Certificate of General Studies is an exception; it does not prepare students for employment but is designed to transfer. A complete list of NOVA's certificate programs can be found at the end of this *Catalog*.

Career Studies Certificate (C.S.C.)

Awarded for a specific group of career-related courses totaling between 9 and 29 credits. Career studies programs are designed for enhancement of job/life skills, retraining for career changes, and/or investigating new career possibilities. Credit earned in most career studies certificates may be used to meet the requirements in related certificate and degree programs, although a few are not

closely related to a degree or certificate. A complete list of NOVA's career studies certificate programs can be found at the end of this *Catalog*.

Degree Requirements

The following grid shows the number of credit hours required for each component of a degree.

Components	Degree				
	A.A.	A.S.	A.A.A.	A.A.S.	A.F.A.
[1] Written and Oral Communication	6-9	6-9	6	3	6
[2] Humanities/Fine Arts/Literature	6	6	3	3	3-9
[3] World Language (Intermediate)	6	-	-	-	-
[4] Social/Behavioral Sciences	6	6	3	3	3-9
[5] Mathematics	3	3-6	3	3	3
[6] Physical and Life Science	4	4-8			4
Minimum Total General Education Requirements	31-34	25-35	15	15	22-28
[7] SDV Elective	1	1	1	1	1
[8] Elective and Major Area Requirements	25-31	24-37	44-53	44-53	31-37
[9] Total Credits*	**60-63**	**60-63**	**60-69**	**60-69**	**60-63**

*Minimum credits required for each degree program as specified by the Virginia Community College System.

[1] Written and Oral Communication

A.A., A.S. and A.F.A. degrees require ENG 111 - College Composition I and ENG 112 - College Composition II. A 3-credit oral communication course is also required. For the A.S. degree, a 3-credit oral communication course is required except when it conflicts with the VCCS common curriculum.

A.A.A. degrees require 3 credits in English composition (ENG 111 - College Composition I, or ENG 115 - Technical Writing) and an oral communication course.

A.A.S. degrees require 3 credits in English composition (ENG 111 - College Composition I, or ENG 115 - Technical Writing).

See the "General Education Electives" section for a list of approved general education courses.

[2] Humanities/Fine Arts

Humanities requirements may be met by selecting courses in art (ART), 200-level literature (ENG), humanities (HUM), music (MUS), philosophy (PHI), religion (REL), American Sign Language (ASL), and 200-level foreign language courses. See the "General Education Electives" section for a list of approved general education humanities/fine arts courses. **Must be from two different categories.**

AFA programs cannot require both 9 credits of humanities/fine arts courses and 9 credits of social/behavioral science courses. AFA programs must include a 200-level literature course as one of the humanities/ fine arts requirements.

[3] World Language

Students who are in an A.A. program must demonstrate proficiency in a world language through the intermediate (201-202) level, which is consistent with the lower division requirements for most B.A. degrees. Waivers or credit by exam (for example CLEP, AP, or NYU exam) for previous experience may be available for some languages. SPA 205, SPA 206 also meets this requirement. When this requirement is waived due to a placement test, the credits must be replaced using General Education Electives courses.

[4] Social/Behavioral Sciences

One Social/Behavioral Science course must be a General Education History course.

AFA programs cannot require both 9 credits of social/behavioral science and 9 credits of humanities/fine arts electives.

See the "General Education Electives" section for a list of approved general education social/behavioral science courses.

[5] Mathematics

A.A. and A.S. degrees require a minimum of 6 credits in mathematics at or above MTH 154. The A.S. in General Studies requires only 3 credits of mathematics.

A.A.A., A.F.A., and A.A.S. degrees require a minimum of 3 credits in mathematics or 4 credits of physical/life sciences.

Note that the mathematics courses offered by NOVA changed completely in Fall 2018. Please see an advisor if you have questions about how the old math courses can be applied to new degree programs and how the new math courses can be applied to programs begun prior to Fall 2018.

See the "General Education Electives" section for a list of approved general education math courses.

[6] Physical and Life Sciences

A.A. and A.S. degrees require 4-8 credits in courses in physical and life sciences that include laboratories. Courses may be chosen from biology (BIO), chemistry (CHM), environmental science (ENV), geology (GOL), natural science (NAS) (non-science majors only), or physics (PHY).

A.A.A. and A.A.S. degrees may or may not require a physical/life science, depending on the curriculum, but they must require a math or science course.

A.F.A. degrees require a minimum of 4 credits of physical/life sciences.

See the "General Education Electives" section for a list of approved general education science courses.

[7] SDV Elective
All degrees require a one-credit Student Development course, either SDV 100 - College Success Skills, SDV 101 - Orientation to (a Specific Discipline). All Student Development courses cover topics related to academic success, responsible decision-making, and College information. Some sections address additional topics. First-time NOVA students are required to take an SDV course within their first 15 semester hours at the College.

[8] Open Elective and Major Area Requirements
Not all courses will transfer to all senior institutions or meet the requirements of a given four-year degree. Students who plan to transfer should refer to transfer pathways posted to the NOVA website or the Transfer VA Portal. If no pathway is available for the desired senior institution, students should see a counselor or academic advisor prior to registering for general electives. Students who plan to transfer to a four-year degree program should become familiar with the requirements of the intended transfer institution and select electives that meet that institution's requirements.

[9] Total Credits
A.S. degrees typically require between 60 and 63 credits. However, VCCS policy allows Engineering programs to require as many as 72 credits.

A.A.S. degrees require between 65 and 69 credits, with the exception of Health Science programs, which may require as many as 72 credits.

General Education Electives

General education is that portion of the collegiate experience that addresses the knowledge, skills, attitudes, and values characteristic of educated persons. It is unbounded by disciplines and honors the connections among bodies of knowledge. NOVA degree graduates will demonstrate competency in the following general education areas: civic engagement, critical thinking, professional readiness, quantitative literacy, scientific literacy, and written communication.

Consequently, the College, in accord with the general education guidelines of the Virginia Community College System, has determined the following list of general education electives.

It is highly recommended that students consult with an academic advisor or counselor in order to select the most appropriate course for their curriculum and/or transferability to another college.

NOVA offers Passport Courses, which are typically taken in the first semester of many degree programs. These courses will transfer to most Virginia public colleges and universities. Exceptions may exist for specific baccalaureate programs.

Certain programs of study may require specific types of electives. Each type of elective is listed below.

Open Electives may be filled by any course offered by the College.

General Education Electives may be filled by any course on the General Education list below.

Transfer Electives may be filled by any General Education elective or other transferable courses from an approved, limited listing. Each degree program that uses this elective has its own list of approved courses.

Technical Electives may be filled only by the specific courses allowed by the program.

Humanities/Fine Arts Electives

Select two courses chosen from different categories i.e., the two courses CANNOT be from the same category.

ART

*UCGS course (Uniform Certificate of General Studies)

△Passport course.

- ART 100 - Art Appreciation (3 CR.) * △
- ART 101 - History of Art: Prehistoric to Gothic (3 CR.) * △
- ART 102 - History of Art: Renaissance to Modern (3 CR.) * △
- ART 150 - History of Film and Animation (3 CR.)
- ART 215 - History of Modern Art (3 CR.)
- ART 250 - History of Design (3 CR.)
- CST 130 - Introduction to the Theatre (3 CR.) * △
- CST 141 - Theatre Appreciation I (3 CR.)
- CST 151 - Film Appreciation I (3 CR.) * △
- MUS 121 - Music in Society (3 CR.) * △
- MUS 221 - History of Western Music Pre-1750 (3 CR.) * △
- MUS 222 - History of Western Music 1750 to Present (3 CR.) * △
- MUS 225 - The History of Jazz (3 CR.)
- PHT 110 - History of Photography (3 CR.)

Humanities

***Check with your advisor to see if ASL meets the foreign language requirement at your transfer school.*

- ARC 200 - History of Architecture (4 CR.)
- ASL 201 - Intermediate American Sign Language I (3 CR.) **
- ASL 202 - Intermediate American Sign Language II (3 CR.) **
- HUM 201 - Early Humanities (3 CR.) * △
- HUM 202 - Modern Humanities (3 CR.) * △
- HUM 210 - Introduction to Women and Gender Studies (3 CR.) * △
- HUM 220 - Introduction to African-American Studies (3 CR.) * △
- HUM 256 - Comparative Mythology (3 CR.) * △
- HUM 259 - The Greek and Roman Tradition (3 CR.) * △
- PHI 100 - Introduction to Philosophy (3 CR.) * △
- PHI 111 - Logic (3 CR.) * △
- PHI 220 - Ethics and Society (3 CR.) * △
- PHI 227 - Biomedical Ethics (3 CR.)
- REL 100 - Introduction to the Study of Religion (3 CR.) * △
- REL 233 - Introduction to Islam (3 CR.)
- REL 237 - Religions of the East (3 CR.) * △
- REL 238 - Religions of the West (3 CR.)
- ARA 201 - Intermediate Arabic I (4 CR.)
- ARA 202 - Intermediate Arabic II (4 CR.)
- CHI 201 - Intermediate Chinese I (4 CR.)
- CHI 202 - Intermediate Chinese II (4 CR.)
- FRE 201 - Intermediate French I (3 CR.)
- FRE 202 - Intermediate French II (3 CR.)
- GER 201 - Intermediate German I (3 CR.)
- GER 202 - Intermediate German II (3 CR.)
- JPN 201 - Intermediate Japanese I (4 CR.)
- JPN 202 - Intermediate Japanese II (4 CR.)
- LAT 201 - Intermediate Latin I (3 CR.)
- LAT 202 - Intermediate Latin II (3 CR.)
- RUS 201 - Intermediate Russian I (4 CR.)
- RUS 202 - Intermediate Russian II (4 CR.)
- SPA 202 - Intermediate Spanish II (3 CR.)
- SPA 201 - Intermediate Spanish I (3 CR.)
- SPA 205 - Spanish for Heritage Speakers I (3 CR.)

- SPA 206 - Spanish for Heritage Speakers II (3 CR.)

Literature

- ENG 225 - Reading Literature: Culture and Ideas (3 CR.) *
- ENG 230 - Mystery in Literature and Film (3 CR.)
- ENG 236 - Introduction to the Short Story (3 CR.)
- ENG 237 - Introduction to Poetry (3 CR.)
- ENG 245 - British Literature (3 CR.) *
- ENG 246 - American Literature (3 CR.) *
- ENG 250 - Children's Literature (3 CR.) *
- ENG 255 - World Literature (3 CR.) *
- ENG 256 - Literature of Scientific Fiction (3 CR.)
- ENG 257 - Mythological Literature (3 CR.)
- ENG 258 - African American Literature (3 CR.) *
- ENG 271 - The Works of Shakespeare I (3 CR.)
- ENG 275 - Women in Literature (3 CR.) *
- ENG 279 - Film and Literature (3 CR.)

Physical and Life Sciences/Mathematics Electives

*UCGS course.
△Passport course.

- BIO 101 - General Biology I (4 CR.) * △
- BIO 102 - General Biology II (4 CR.) *
- CHM 101 - Introductory Chemistry I (4 CR.) * △
- CHM 111 - General Chemistry I (4 CR.) * △
- CHM 112 - General Chemistry II (4 CR.) *
- ENV 121 - General Environmental Science I (4 CR.) * △
- ENV 122 - General Environmental Science II (4 CR.) *
- GOL 105 - Physical Geology (4 CR.) * △
- GOL 106 - Historical Geology (4 CR.) * △
- GOL 111 - Oceanography I (4 CR.)
- GOL 112 - Oceanography II (4 CR.)
- NAS 125 - Meteorology (4 CR.)
- PHY 100 - Elements of Physics (4 CR.) * △
- PHY 150 - Elements of Astronomy (4 CR.)
- PHY 201 - General College Physics I (4 CR.) *
- PHY 202 - General College Physics II (4 CR.) *
- PHY 241 - University Physics I (4 CR.) *
- PHY 242 - University Physics II (4 CR.) *

Mathematics Electives

*UCGS course.

- MTH 154 - Quantitative Reasoning (3 CR.) * △
- MTH 245 - Statistics I (3 CR.) * △
- MTH 161 - PreCalculus I (3 CR.) * △
- MTH 162 - PreCalculus II (3 CR.) * △
- MTH 167 - PreCalculus with Trigonometry (5 CR.) * △
- MTH 246 - Statistics II (3 CR.)
- MTH 261 - Applied Calculus I (3 CR.) * △
- MTH 262 - Applied Calculus II (3 CR.)
- MTH 263 - Calculus I (4 CR.) * △
- MTH 264 - Calculus II (4 CR.) * △

Social/Behavioral Sciences Electives

History Electives

*UCGS course.
△Passport course.

- HIS 101 - Western Civilizations Pre-1600 CE (3 CR.) * △
- HIS 102 - Western Civilizations Post 1600 CE (3 CR.) * △
- HIS 111 - World Civilizations Pre-1500 CE (3 CR.) * △
- HIS 112 - History of World Civilization Post-1500 CE (3 CR.) * △
- HIS 121 - United States History to 1877 (3 CR.) * △
- HIS 122 - United States History Since 1865 (3 CR.) * △
- HIS 203 - History of African Civilizations (3 CR.)
- HIS 231 - Introduction to Latin American History (3 CR.)
- HIS 254 - History of Modern East Asian Civilizations (3 CR.)

Other Social/Behavioral Sciences Electives

*UCGS course.
△Passport course.

- ECO 150 - Economic Essentials: Theory and Application (3 CR.) * △
- ECO 201 - Principles of Macroeconomics (3 CR.) * △
- ECO 202 - Principles of Microeconomics (3 CR.) * △
- GEO 200 - Introduction to Physical Geography (3 CR.) *
- GEO 210 - People and the Land: An Introduction to Cultural Geography (3 CR.) * △
- GEO 220 - World Regional Geography (3 CR.) * △
- PLS 135 - U.S. Government and Politics (3 CR.) * △
- PLS 140 - Introduction to Comparative Politics (3 CR.) * △
- PLS 200 - Introduction to Political and Democratic Theory (3 CR.)
- PLS 241 - Introduction to International Relations (3 CR.) *
- PSY 200 - Principles of Psychology (3 CR.) * △
- PSY 216 - Social Psychology (3 CR.)
- PSY 219 - Cross-Cultural Psychology (3 CR.)
- PSY 230 - Developmental Psychology (3 CR.)
- SOC 200 - Introduction to Sociology (3 CR.) * △
- SOC 211 - Cultural Anthropology (3 CR.) * △
- SOC 268 - Social Problems (3 CR.) * △
- SSC 115 - Introduction to Global Affairs (3 CR.)

Communication, Languages, Studio Art, and Technology Electives

*UCGS Course.
Students should align this selection with their intended transfer destination's specific general education or programmatic requirements.

- ART 121 - Foundations of Drawing (3 CR.) *
- ART 131 - Two-Dimensional Design (3 CR.) *
- ART 132 - Three-Dimensional Design (3 CR.) *
- ART 223 - Life Drawing (3 CR.) *

- ASL 101 - Beginning American Sign Language I (4 CR.) *
- ASL 102 - Beginning American Sign Language II (4 CR.) *
- CSC 110 - Principles of Computer Science (3 CR.) *
- CST 100 - Principles of Public Speaking (3 CR.) *
- CST 110 - Introduction to Human Communication (3 CR.) *
- CST 126 - Interpersonal Communication (3 CR.)
- CST 229 - Intercultural Communication (3 CR.)
- ITE 152 - Introduction to Digital and Information Literacy and Computer Applications (3 CR.) *
- MUS 101 - Fundamentals of Music (3 CR.) *
- ARA 102 - Beginning Arabic II (4 CR.) *
- ARA 101 - Beginning Arabic I (4 CR.) *
- CHI 101 - Beginning Chinese I (4 CR.) *
- CHI 102 - Beginning Chinese II (4 CR.) *
- FRE 101 - Beginning French I (4 CR.) *
- FRE 102 - Beginning French II (4 CR.) *
- GER 101 - Beginning German I (4 CR.) *
- GER 102 - Beginning German II (4 CR.) *
- JPN 101 - Beginning Japanese I (4 CR.) *
- JPN 102 - Beginning Japanese II (4 CR.) *
- LAT 101 - Elementary Latin I (3 CR.) *
- LAT 102 - Elementary Latin II (3 CR.) *
- RUS 101 - Beginning Russian I (4 CR.) *
- RUS 102 - Beginning Russian II (4 CR.) *
- SPA 101 - Beginning Spanish I (4 CR.) *
- SPA 102 - Beginning Spanish II (4 CR.) *

Passport Courses

The following courses are transferable to most Virginia public institutions of higher education and will, with a few exceptions, satisfy a lower-division general education requirement. These courses should be considered if you are not sure of your transfer major or transfer school. If you are following transfer pathways, these courses are already used in those guides.

Select one course from Blocks I, III, IV, and V. One additional course must be selected from either Blocks II or VI.

Block I - Written Communication

- ENG 111 - College Composition I

Block II -(Humanities/Arts)

- Art

- ART 100 - Art Appreciation
- ART 101 - History of Art: Prehistoric to Gothic
- ART 102 - History of Art: Renaissance to Modern
- CST 130 - Introduction to the Theatre
- CST 151 - Film Appreciation I
- MUS 121 - Music in Society
- MUS 221 - History of Western Music Pre-1750
- MUS 222 - History of Western Music 1750 to Present

- Humanities

- HUM 201 - Early Humanities
- HUM 202 - Modern Humanities
- HUM 210 - Introduction to Women and Gender Studies
- HUM 220 - Introduction to African-American Studies
  HUM 256 - Comparative Mythology
- HUM 259 - The Greek and Roman Tradition
- PHI 100 - Introduction to Philosophy
- PHI 111 - Logic
- PHI 220 - Ethics and Society
- REL 100 - Introduction to the Study of Religion
- REL 237 - Religions of the East

Block III- Social and Behavioral Sciences

- ECO 150 - Economic Essentials: Theory and Application
- ECO 201 - Principles of Macroeconomics
- ECO 202 - Principles of Microeconomics
- GEO 210 - People and the Land: An Introduction to Cultural Geography
- GEO 220 - World Regional Geography
- PLS 135 - U.S. Government and Politics
- PLS 140 - Introduction to Comparative Politics
- PSY 200 - Principles of Psychology
- SOC 200 - Introduction to Sociology
- SOC 211 - Cultural Anthropology
- SOC 268 - Social Problems

Block IV - Natural Sciences

- BIO 101 - General Biology I
- CHM 101 - Introductory Chemistry I
- CHM 111 - General Chemistry I
- ENV 121 - General Environmental Science I
- GOL 105 - Physical Geology
- GOL 106 - Historical Geology
- PHY 100 - Elements of Physics

Block V - Mathematics

Quantitative/Statistics Pathway:

- MTH 154 - Quantitative Reasoning
- MTH 245 - Statistics I

Calculus Pathway:

- MTH 161 - PreCalculus I and MTH 162 - PreCalculus II
- MTH 167 - PreCalculus with Trigonometry
- MTH 261 - Applied Calculus I
- MTH 263 - Calculus I

***** MTH 161/162 and 167 should only be taken by students preparing for calculus or for four-year degree programs that require study in College Algebra/PreCalc. Precalculus may not satisfy general education and may not receive transfer credit.

Block VI - History

- HIS 101 - Western Civilizations Pre-1600 CE
- HIS 102 - Western Civilizations Post 1600 CE
- HIS 111 - World Civilizations Pre-1500 CE
- HIS 112 - History of World Civilization post-1500 CE
- HIS 121 - United States History to 1877
- HIS 122 - United States History Since 1865

Accounting, A.A.S.

NOVA Code: 2030
Offered through AL, AN, LO, MA, NOL, WO

Purpose: The curriculum is designed for persons who seek employment in the accounting field or for those presently in accounting who wish to increase their knowledge and update their skills. Job opportunities include accounting trainee, accounting technician, junior accountant, and accountant.
NOVA's A.A.S. in Accounting is excellent for those interested in the organization and reporting of financial data. Upon completion of the program, students can take an additional three courses for the Accounting Career Studies Certificate, and then are eligible to proceed to the CPA exam (if other education requirements are satisfied). Contact the Virginia Board of Accountancy for all education requirements.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.
Recommended Preparation: The student should possess a proficiency in high school English and a strong background in basic arithmetic.

Two Years

1st Semester	Credits
ACC 211 - Principles of Accounting I	3
BUS 100 - Introduction to Business	3
ENG 111 - College Composition I	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
MTH 154 - Quantitative Reasoning **OR** Higher	3
SDV 100 - College Success Skills **OR** SDV 101 - Orientation to (a Specific Discipline)	1
Total 16	

2nd Semester	Credits
ACC 212 - Principles of Accounting II	3
ACC 215 - Computerized Accounting	3
CST 110 - Introduction to Human Communication **OR** CST 227 - Business and Professional Communication	3
ECO 150 - Economic Essentials: Theory and Application	3
ITE 140 - Spreadsheeting for Business	3
Total 15	

3rd Semester	Credits
ACC 221 - Intermediate Accounting I	3
ACC 231 - Cost Accounting I	3
ACC 261 - Principles of Federal Taxation I	3
BUS 240 - Introduction to Business Law	3
ENG 112 - College Composition II	3
Total 15	

4th Semester	Credits
ACC 222 - Intermediate Accounting II	3
ACC 241 - Auditing I	3
BUS 200 - Principles of Management	3
BUS 220 - Introduction to Business Statistics	3
FIN 215 - Financial Management	3
PHI 220 - Ethics and Society	3
Total 18	

Total credits for the A.A.S. Degree in Accounting: 64

Upon the completion of this program, students may consider the Accounting Career Studies Certificate. Additional courses needed are as follows: ACC 219, ACC 262, and ACC 230.

Accounting, C.S.C.

NOVA Code: 221-203-02
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This curriculum will provide students with the accounting courses needed to meet the requirements of the Virginia Board for Accountancy to sit for the Certified Public Accountancy (C.P.A.) examination. To meet the educational requirements to sit for the Virginia CPA exam, a candidate must obtain from one or more accredited institutions or from the National College the following:

- at least 120 semester hours of education;
- baccalaureate or higher degree; and
- accounting concentration or equivalent*

Requirements include:

- a minimum of 24 semester hours of accounting courses, to include courses in auditing, financial accounting, management accounting, and taxation; and
- a minimum of 24 semester hours of business courses. As many as 6 hours of accounting courses (not included in the 24 hours of accounting courses) may be considered for the business course requirement.

*Principles or introductory accounting courses cannot be considered in determining whether a person has obtained the 48 minimum number of semester hours required for an accounting concentration or equivalent.

Admission Requirements: Successful completion of ACC 211 and ACC 212 or equivalent as demonstrated through transcript evaluation.
These accounting courses may also meet accounting requirements of various government and private sector positions.
Students on Financial Aid should consider the AAS in Accounting Degree to get financial aid coverage of ACC 211 and ACC 212.
Students who do not have the required business courses may find the AAS in Accounting Degree a good alternative for covering all CPA requirements.

One Year

1st Semester	Credits
ACC 219 - Governmental and Not-for-Profit Accounting	3
ACC 221 - Intermediate Accounting I	3
ACC 231 - Cost Accounting I	3
ACC 261 - Principles of Federal Taxation I	3
ENG 111 - College Composition I	3
Total 15	

2nd Semester	Credits
ACC 222 - Intermediate Accounting II	3
ACC 230 - Advanced Accounting	3
ACC 241 - Auditing I	3
ACC 262 - Principles of Federal Taxation II	3
Total 12	

Total credits for the Accounting Career Studies Certificate: 27

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17-24 must complete an SDV course within their first year at NOVA.
Since the CPA exam is a computer-based test, students should be proficient with computers, including the ability to work with Windows, Word, and Excel.

Accounting: Accounting Information Security with Data Analytics, C.S.C.

NOVA Code: 221-203-10
Offered through AL, AN, LO, MA, WO

Purpose: This program is designed to provide knowledge in accounting, information security, and analytics to working business professionals. This program enables students to bridge the gap between accounting and technology. This program helps prepare students for the highly in demand Certified Information Systems Auditor (CISA) exam and/or registered CPA's for the Certified Information Technology Professional (CITP) exam.

One Year

1st Semester	Credits
ACC 211 - Principles of Accounting I	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
SDV 100 - College Success Skills **OR** SDV 101 - Orientation to (a Specific Discipline)	1
Total 7	

2nd Semester	Credits
ACC 212 - Principles of Accounting II	3
ACC 215 - Computerized Accounting	3
ITN 100 - Introduction to Telecommunications **OR**	
ITN 101 - Introduction to Network Concepts	3
Total 9	

3rd Semester	Credits
ACC 241 - Auditing I	3
ACC 263 - Data Analytics and Statistics in Accounting	3
ITD 256 - Advanced Database Management	3
ITN 260 - Network Security Basics	3
Total 12	

Total credits for the Accounting Information Security Career Studies Certificate: 28

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

Accounting: Bookkeeping, Certificate

NOVA Code: 2040
Offered through AL, AN, LO, MA, NOL, WO

Purpose: The program is designed to provide the student with sufficient knowledge to keep a simple set of accounting books and/or to qualify for entry-level positions in bookkeeping and accounting.
Recommended Preparation: The student should possess a proficiency in high school English and a good background in basic arithmetic operations.

One Year

1st Semester	Credits
ACC 211 - Principles of Accounting I	3
BUS 100 - Introduction to Business	3
ENG 111 - College Composition I	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
MTH 154 - Quantitative Reasoning **OR Higher**	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 16	

2nd Semester	Credits
ACC 212 - Principles of Accounting II	3
ACC 215 - Computerized Accounting	3
CST 227 - Business and Professional Communication **OR**	
CST 110 - Introduction to Human Communication	3
ECO 150 - Economic Essentials: Theory and Application	3
ITE 140 - Spreadsheeting for Business	3
Total 15	

Total credits for the Bookkeeping Certificate: 31

Students may consider the AAS in Accounting at this point. All classes would apply to the AAS.

Administration of Justice, A.A.S.

NOVA Code: 4000
Offered through AL, AN, MA, WO

Purpose: The curriculum is designed to provide a broad foundation that will prepare students to enter any of the varied fields in criminal justice or to prepare for professional advancement. Job opportunities for students include local, state, and federal enforcement officers, police officers, private or government investigators, adult/juvenile correction officers, probation/parole officers and counselors, security directors (managers), loss prevention directors, classification managers, and personnel clearance administrators. Most of the ADJ courses in this curriculum are "core courses" that provide a basic entry-level foundation in both criminal justice and security administration. These courses must be taken by ALL STUDENTS in this program. At several points in the curriculum, "course options" are provided for selection by the students.

Special Curriculum Admission Requirements: Students are advised that many criminal justice and private/government security agencies require excellent moral character and a written record of conduct prior to consideration for employment.

Two Years

1st Semester	Credits
ADJ 100 - Survey of Criminal Justice	3
ADJ 140 - Introduction to Corrections	3
ADJ 164 - Case Studies in Murder/Violent Crime **OR**	
ADJ --- - Elective [1]	3
ENG 111 - College Composition I	3
--- --- - Social/Behavioral Sciences Elective [2]	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 16	

2nd Semester	Credits
ADJ 105 - The Juvenile Justice System	3
ADJ 107 - Survey of Criminology	3
ADJ 159 - Physical Security **OR**	
ADJ --- - Elective [1]	3
MTH 154 - Quantitative Reasoning **OR** Higher	
--- --- - Physical or Life Science Elective w/Lab[3]	3-4
--- --- - Social/Behavioral Sciences Elective [2]	3
Total 15-16	

3rd Semester	Credits
ADJ 211 - Criminal Law, Evidence, and Procedures I	3
ADJ 216 - Organized Crime and Corruption **OR**	
ADJ --- - Elective [1]	3
ADJ 236 - Principles of Criminal Investigation **OR**	
ADJ 234 - Terrorism and Counter-Terrorism	3
CST 100 - Principles of Public Speaking **OR**	
CST 110 - Introduction to Human Communication	3
--- --- - Humanities/Fine Arts Elective [4]	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
Total 18	

4th Semester	Credits
ADJ 248 - Probation, Parole, and Treatment **OR**	
ADJ --- - Elective [1]	3
ADJ 133 - Ethics and the Criminal Justice Professional	3
ADJ 212 - Criminal Law, Evidence, and Procedures II	3
ADJ 228 - Narcotics and Dangerous Drugs **OR**	
ADJ --- - Elective [1]	3
HIS --- - Elective [5]	3
Total 15	

Total credits for the A.A.S. Degree in Administration of Justice: 64-65

[1] Select any ADJ course.
[2] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[3] Students who wish to substitute a laboratory science for MTH 154 MUST meet with their ADJ academic advisor first. The science elective may be selected from physical and life science courses with a lab component, listed under General Education Electives.
[4] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[5] Select any HIS courses listed under social/behavioral sciences in General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

Administration of Justice, Certificate

NOVA Code: 4060
Offered through AL, AN, MA, NOL, WO

Purpose: This curriculum is designed for those students who wish to take only those courses that relate directly to the law enforcement field. The occupational objectives are to provide a foundation for individuals entering some area of the criminal justice field that does not require an A.A.S. or higher degree in criminal justice, or for persons already in the criminal justice field who wish to extend their knowledge/skill, or for those exploring the criminal justice field as a career alternative. Courses taken in the certificate program can be applied to the A.A.S. degree.

Special Curriculum Admission Requirements: Students are advised that many criminal justice and private/government security

agencies require excellent moral character and a written record of conduct prior to consideration for employment.

One Year

1st Semester	Credits
ADJ 100 - Survey of Criminal Justice	3
ADJ 211 - Criminal Law, Evidence, and Procedures I	3
ENG 111 - College Composition I	3
--- --- - Social/Behavioral Sciences Elective [1]	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 13

2nd Semester	Credits
ADJ --- - Elective [2]	3
ADJ 105 - The Juvenile Justice System **OR**	
ADJ 140 - Introduction to Corrections	3
ADJ 133 - Ethics and the Criminal Justice Professional	3
ADJ 212 - Criminal Law, Evidence, and Procedures II	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
--- --- - Social/Behavioral Sciences Elective [1]	3
	Total 18

Total credits for the Administration of Justice Certificate: 31

[1] See social/behavioral science courses listed under General Education Electives.
[2] Consult with an advisor for ADJ course options.

Administration of Justice: Advanced Forensic Investigation, C.S.C.

NOVA Code: 221-405-45
Offered through AL, AN, MA, WO

Purpose: This curriculum is designed as an advanced program in forensic investigation intended to provide training beyond the General Forensic Career Studies Certificate, or to provide continuing training for private investigators, individuals in law enforcement, or persons licensed in various security and/or investigative-related areas.
Admission Requirement: Successful completion of the General Forensic Career Studies Certificate or approval from the program director.

One Year

1st Semester	Credits
ADJ --- - Forensic Elective [1]	3-4
ADJ --- - Forensic Elective [1]	3-4
ADJ 172 - Forensic Science II	4
ENG 111 - College Composition I	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 14-16

2nd Semester	Credits
ADJ --- - Forensic Elective [1]	3-4
ADJ --- - Elective [2]	3
ADJ --- - Elective [2]	3
	Total 9-10

Total credits for the Advanced Forensic Investigation Career Studies Certificate: 23-26

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17-24 must complete an SDV course within their first year at NOVA.
[1] May be ADJ forensic elective, BIO, or CHM. ADJ forensic electives are the following: ADJ 127, ADJ 164, ADJ 186, ADJ 236, ADJ 237 and ADJ 275, as well as ADJ faculty approved ADJ 295 Topics or ADJ 295 Seminar courses.
[2] Choose any ADJ course.

Administration of Justice: General Forensic Investigation, C.S.C.

NOVA Code: 221-405-43
Offered through AL, AN, MA, WO

Purpose: This curriculum is designed to provide an introduction to the forensic investigation aspect of law enforcement and investigation. It provides an overview of forensic evidence, investigation methods, and procedures suitable for persons exploring the field as a career option or in need of training for promotion. The curriculum can be applied toward program electives in the Associate of Applied Science in Administration of Justice.

One Year

1st Semester	Credits
ADJ 171 - Forensic Science I	4
ENG 111 - College Composition I	3
MTH 154 - Quantitative Reasoning **OR** Higher	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 11

2nd Semester	Credits
ADJ 212 - Criminal Law, Evidence, and Procedures II	3
ADJ 275 - Forensic Pathology [1] **OR**	
ADJ 298 - Homicide Seminar **OR**	
BIO 101 - General Biology I **OR**	
CHM 101 - Introductory Chemistry I	3-4
ADJ --- - Forensic Elective [2]	3
	Total 9-10

Total credits for the General Forensic Investigation Career Studies Certificate: 20-21

[1] Homicide Seminar must be three-credit option.
[2] Approved forensic elective courses include the following: ADJ 127, ADJ 164, ADJ 172, ADJ 186, ADJ 236, ADJ 275 as well as ADJ faculty approved electives including ADJ 295 Topics in or ADJ 298 Seminar courses.

Administration of Justice: Homeland Security Specialization, A.A.S.

NOVA Code: 4001
Offered through AN, MA, WO

Purpose: This program prepares students for entry-level opportunities as a local, state, or federal law enforcement officer; commercial and industrial security officer; police officer; or private or government investigator, particularly in the areas of homeland security.
Admission Requirements and Special Conditions: A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. Students should consult with academic advisors during course selection. Persons entering the public or private sectors of criminal justice employment will be subject to intensive physical agility tests, background investigations, psychological testing, personal interviews, physical examinations, and polygraph examinations.

Two Years

1st Semester	Credits
ADJ 100 - Survey of Criminal Justice	3
ADJ 234 - Terrorism and Counter-Terrorism	3
ENG 111 - College Composition I	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
MTH 154 - Quantitative Reasoning [1] **OR**	
--- --- - Physical or Life Science Elective w/Lab	3-4
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 16-17

2nd Semester	Credits
ADJ 163 - Crime Analysis and Intelligence	3
ADJ --- - Homeland Security Elective [2] **OR**	
ADJ 111 - Law Enforcement Organization and Administration I	3
CST 100 - Principles of Public Speaking **OR**	
CST 110 - Introduction to Human Communication	3
GEO 230 - Political Geography **OR**	
ADJ 250 - Global Security Concepts for Law Enforcement and National Security [3]	3
SOC 200 - Introduction to Sociology	3
	Total 15

3rd Semester	Credits
ADJ 212 - Criminal Law, Evidence, and Procedures II	3
ADJ 228 - Narcotics and Dangerous Drugs	3
ADJ 236 - Principles of Criminal Investigation	3

ADJ 211 - Criminal Law, Evidence, and Procedures I **OR** ADJ 243 - Homeland Security and Law [4]	3
ADJ 247 - Criminal Behavior	3
Total 15	

4th Semester	Credits
ADJ 133 - Ethics and the Criminal Justice Professional	3
ADJ 227 - Constitutional Law for Justice	3
ADJ 240 - Techniques of Interviewing	3
ADJ --- - Homeland Security Elective [2]	3
ADJ --- - Homeland Security Elective [2]	3
REL 237 - Religions of the East	3
Total 18	

Total credits for the A.A.S. Degree in Administration of Justice with a Specialization in Homeland Security: 64-65

[1] Students may take any higher-lever MTH. The science elective may be selected from physical and life science courses with a lab component, listed under General Education Electives.
[2] Students may choose from any of the following homeland security electives: ADJ 127, ADJ 140, ADJ 159, ADJ 160, ADJ 163, ADJ 164, ADJ 169, ADJ 211, ADJ 216, ADJ 250, ADJ 252, as well as ADJ faculty approved ADJ 295 Topics or ADJ 298 Seminar courses.
[3] Some instructors may incorporate FEMA IS-100LE and FEMA IS-340 for students in the process of obtaining their Certified Emergency Manager (CEM) certification, FEMA PDS (Professional Development Series) certificate, as well as state emergency management certifications.
[4] Some instructors may incorporate FEMA IS-230.b, FEMA IS-700, and FEMA IS-800 for students in the process of obtaining their Certified Emergency Manager (CEM) certification, FEMA PDS (Professional Development Series) certificate, as well as state emergency management certifications. Students enrolling in ADJ 243 Homeland Security and Law must complete ADJ 111 Law Enforcement Organization and Administration I prior to taking the course due to the prerequisite requirement.

Administration of Justice: National Security, C.S.C.

NOVA Code: 221-405-45
Offered through AL, AN, MA, WO

Purpose: This program is designed for students interested in a career in national security or furthering a career that requires knowledge of national security issues. Upon successful completion of the program, students will understand the contemporary local, national, and global security issues, operations, and investigations affecting the United States. Students will study the hostile behaviors and activities directed against the United States from various ethnic, cultural, organizational, age, institutional, and social aspects. Graduates will be able to identify the threats facing the United States and describe the various options available to U.S. government agencies to thwart or neutralize these hostile activities. It must be noted that students completing this program must still pass a lengthy background investigation in order to obtain a security clearance required for employment in national security organizations. This program also is designed to meet the needs of employers in public and private industry, as well as the 18 federal agencies that comprise the intelligence community.

One Year

1st Semester	Credits
ADJ 100 - Survey of Criminal Justice	3
ADJ 133 - Ethics and the Criminal Justice Professional	3
ADJ 234 - Terrorism and Counter-Terrorism	3
ENG 111 - College Composition I	3
SDV 100 - College Success Skills **OR** SDV 101 - Orientation to (a Specific Discipline)	1
Total 13	

2nd Semester	Credits
ADJ 163 - Crime Analysis and Intelligence	3
ADJ 250 - Global Security Concepts for Law Enforcement and National Security	3
ADJ 252 - Counterintelligence Concepts for Law Enforcement and National Security	3
Total 9	

Total credits for the National Security Career Studies Certificate: 22

Air Conditioning and Refrigeration, A.A.S.

NOVA Code: 9040
Offered through WO

Purpose: This curriculum is designed to prepare students for jobs in the air conditioning and refrigeration field. The second year provides students with skills that lead to leadership positions in the HVACR industry. Occupational objectives include industry licensing, advanced critical thinking skills, and state tradesman licenses in HVACR. Occupational objective includes preparing graduates with the knowledge and skills to become industry certified technicians, as well as meeting the educational requirements to be licensed as a HVACR Tradesman in Virginia.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning and will be evaluated on a case-by-case basis by the program head.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.
Special Accreditation Status: The Air Conditioning and Refrigeration Associate of Applied Science is accredited by HVAC Excellence (Benchmark of Academic Excellence). The date of the last review was 2010.

Two Years

1st Semester	Credits
AIR 111 - Air Conditioning and Refrigeration Controls I	3
AIR 121 - Air Conditioning and Refrigeration I	4
ENG 111 - College Composition I **OR** ENG 115 - Technical Writing	3
--- --- - Humanities/Fine Arts Elective [1]	3
PHY 100 - Elements of Physics **OR** MTH 111 - Basic Technical Mathematics	3-4
SDV 100 - College Success Skills	1
Total 17-18	

2nd Semester	Credits
AIR 122 - Air Conditioning and Refrigeration II	4
AIR 134 - Circuits and Controls I	3
AIR 154 - Heating Systems I	4
AIR 257 - Gas-Fired Warm Air Furnaces	4
AIR 276 - Refrigerant Usage EPA Certification	1
Total 16	

3rd Semester	Credits
AIR 205 - Hydronics and Zoning	4
AIR 213 - Air Conditioning and Refrigeration Controls III	4
AIR 251 - Air Conditioning Systems I	4
CST 110 - Introduction to Human Communication	3
--- --- - Social/Behavioral Sciences Elective [2]	3
Total 18	

4th Semester	Credits
AIR 207 - Heat Loads and Psychrometrics	4
AIR 235 - Heat Pumps	4
AIR 238 - Advanced Troubleshooting and Service	4
AIR 252 - Air Conditioning Systems II	4
Total 16	

Total credits for the A.A.S. Degree in Air Conditioning and Refrigeration: 67-68

[1] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[2] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

Air Conditioning and Refrigeration, Certificate

NOVA Code: 9030
Offered through WO

Purpose: This program is intended to prepare students for jobs in the air conditioning and refrigeration field. Upon successful completion of the program, the student is prepared for full-time employment. The occupational objectives include service, maintenance, repair, and installation of air conditioning and refrigeration equipment.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning and will be evaluated on a case-by-case basis by the program head.

One Year

1st Semester	Credits
AIR 111 - Air Conditioning and Refrigeration Controls I	3
AIR 121 - Air Conditioning and Refrigeration I	4
AIR 154 - Heating Systems I	4
AIR 276 - Refrigerant Usage EPA Certification	1
ENG 111 - College Composition I	3
SDV 100 - College Success Skills	1
Total 16	

2nd Semester	Credits
AIR 122 - Air Conditioning and Refrigeration II	4
AIR 134 - Circuits and Controls I	3
AIR 213 - Air Conditioning and Refrigeration Controls III	4
PHY 100 - Elements of Physics **OR**	
MTH 111 - Basic Technical Mathematics	3-4
--- --- - Social/Behavioral Sciences Elective [1]	3
Total 17-18	

Total credits for the Air Conditioning and Refrigeration Certificate: 33-34

[1] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

Air Conditioning and Refrigeration: HVAC-R and Facilities Services Technology, C.S.C.

NOVA Code: 221-903-10
Offered through WO

Purpose: This program is designed to prepare the student for entry-level positions in the air conditioning, refrigeration, and facilities maintenance industry. Students receive entry-level instruction in the principles, service, maintenance, repair, and installation of air conditioning, refrigeration, heating, plumbing, and electrical systems.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning and will be evaluated on a case-by-case basis by the program head.

One Year

1st Semester	Credits
AIR 111 - Air Conditioning and Refrigeration Controls I	3
AIR 121 - Air Conditioning and Refrigeration I	4
AIR 154 - Heating Systems I	4
SDV 106 - Preparation for Employment **OR**	
SDV 100 - College Success Skills	1
Total 12	

2nd Semester	Credits
AIR 122 - Air Conditioning and Refrigeration II	4
AIR 134 - Circuits and Controls I	3
AIR 276 - Refrigerant Usage EPA Certification	1
ENG 111 - College Composition I [2] **OR**	
CST --- - Elective [1]	3
Total 11	

Total credits for the HVAC-R and Facilities Services Technology Career Studies Certificate: 23

[1] CST Elective may be met by CST 100, CST 110, CST 126, or CST 229.

American Sign Language (ASL), C.S.C.

NOVA Code: 221-640-01
Offered through AN

Purpose: This program prepares students to communicate proficiently in American Sign Language, including both expressive and receptive skills. The ASL Career Studies Certificate will improve the students' marketability in a wide range of positions where it is necessary to possess effective communication between hearing and Deaf persons. These fields include careers such as teaching, health and social service occupations, and public safety positions. Many people already holding positions in these areas would enhance their ability to perform their current jobs by expanding the range of people with whom they can communicate. The ASL Career Studies Certificate also fulfils all the prerequisite requirements for our other programs of study. Many students complete the ASL CSC and then go on to enroll in either the Interpreting A.A.S. or Deaf Studies A.S. curriculum.

Admission Requirements: Successful completion of ASL 101 Beginning American Sign Language I or consent of instructor based on demonstrably equivalent skill level.

One Year

1st Semester	Credits
ASL 100 - Orientation to Acquisition of ASL as an Adult	2
ASL 101 - Beginning American Sign Language I	4
Total 6	

2nd Semester	Credits
ASL 102 - Beginning American Sign Language II	4
ASL 125 - History of the U.S. Deaf Community	3
SDV 100 - College Success Skills [1]	1
Total 8	

3rd Semester	Credits
ASL 115 - Fingerspelling and Number Use in ASL	2
ASL 201 - Intermediate American Sign Language I	3
Total 5	

4th Semester	Credits
ASL 202 - Intermediate American Sign Language II	3
ASL 220 - Comparative Linguistics: ASL and English	3
Total 6	

Total credits for the American Sign Language (ASL) Career Studies Certificate: 25

[1] Students may substitute the SDV 101 Orientation section related to this program.

American Sign Language to English Interpretation, A.A.S.

NOVA Code: 6400
Offered through AN

Purpose: Designed for students who have limited, if any, previous experience with interpreting for Deaf people, this degree program provides the comprehensive training in theory and practical interpreting skills necessary for employment as an educational or community interpreter. Successful completion of this program prepares the student to pursue either a Virginia Quality Assurance Screening Level, national certification through the Registry of Interpreters for the Deaf, or a level on the Educational Interpreter's Performance Assessment. These credentials qualify the student to interpret in either educational or community settings.

Admission Requirements: The prerequisite for admission to the program is fluency in both English and American Sign Language. This is demonstrated by placement into ENG 111 and completion of the ASL Career Studies Certificate with a grade of "C" or better.

Two Years

1st Semester	Credits
ASL 261 - Advanced American Sign Language I	4
ENG 111 - College Composition I	3
INT 105 - Interpreting Foundations I	3
INT 142 - Discourse Analysis	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 14	

2nd Semester	Credits
ASL 262 - Advanced American Sign Language II	4
CST 110 - Introduction to Human Communication	3
--- --- - Humanities/Fine Arts Elective [1]	3
INT 106 - Interpreting Foundations II	3
INT 107 - Translation Skills	3
Total 16	

3rd Semester	Credits
INT 141 - Transliterating I	3
	Total 3

4th Semester	Credits
INT 130 - Interpreting: Introduction to Profession	3
INT 133 - ASL-to-English Interpretation I	3
INT 134 - English-to-ASL Interpretation I	3
Math Elective or Science Elective [2]	3-4
	Total 12-13

5th Semester	Credits
INT 233 - ASL-to-English Interpretation II	3
INT 234 - English-to-ASL Interpretation II	3
INT 237 - Interpreting ASL in Safe Settings	2
--- --- - Social/Behavioral Sciences Elective [3]	3
	Total 11

6th Semester	Credits
INT 250 - Dialogic Interpretation I	3
INT 290 Coordinated Internship	3
	Total 6

Total credits for the American Sign Language to English Interpretation A.A.S. Degree: 62-63

[1] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[2] May choose MTH 154 or higher or the science elective may be selected from biology, chemistry, physics, geology, or natural science courses with a lab component, listed under General Education Electives.
[3] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Architecture Technology, A.A.S.

NOVA Code: 9010
Offered through AL, AN

Purpose: This curriculum is designed to prepare students for employment. Students must see their Architecture Technology advisor to satisfy individual goals. The graduates may find employment in the field of architecture, construction, and urban design utilizing their construction knowledge, graphic communication, and problem-solving skills.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.
Recommended Preparation: Two Years of high school algebra and geometry.

Two Years

1st Semester	Credits
ARC 123 - Architectural Graphics I	3
ARC 133 - Construction Methodology and Procedures I	3
ARC 200 - History of Architecture	4
CAD 201 - Computer Aided Drafting and Design I	4
ENG 111 - College Composition I	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 18

2nd Semester	Credits
ARC 124 - Architectural Graphics II	3
ARC 134 - Construction Methodology and Procedures II	3
ARC 138 - Structures for Architects	3
ARC 298 - Seminar and Project [1] **OR**	
ARC --- - Technical Elective	2-3
MTH 161 - PreCalculus I [2] **OR** Higher	3
	Total 14-15

3rd Semester	Credits
ARC 225 - Site Planning and Technology	3
ARC 231 - Architectural Design and Graphics I	4
ARC 243 - Environmental Systems	4
CAD 202 - Computer Aided Drafting and Design II	4
--- --- - Social/Behavioral Sciences Elective [3]	3
	Total 18

4th Semester	Credits
CAD 203 - Computer Aided Drafting and Design III	3
ARC 232 - Architectural Design and Graphics II	4
ARC 240 - Designing Sustainable Built Environments **OR**	
--- --- - Technical Elective 1 [4]	3
CST --- - Elective [5]	3
--- --- - Humanities/Fine Arts Elective [6]	3
PED 116 - Lifetime Fitness and Wellness	1
	Total 17

Total credits for the A.A.S. Degree in Architecture Technology: 67-68

Colleges and universities offering the Bachelor of Science in Architecture and Master of Architecture may accept NOVA graduates as transfer students. See ARC faculty for details.
[1] ARC 298 is recommended for the students who are planning to transfer to four-year colleges.
[2] MTH 167 (5 cr.) is recommended for students who wish to transfer.
[3] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[4] Courses may be selected from ARC, BLD, and CAD.
[5] Select from the following: CST 100, CST 110, CST 126, or CST 229.
[6] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

Architecture Technology: Architecture, C.S.C

NOVA Code: 221-901-01
Offered through AL, AN

Purpose: This curriculum is designed to prepare students with the skills and knowledge needed for paid internship in architecture and associated fields. The foundation courses preparing students with drafting, modeling, materials, construction methodology and building code are accompanied by two electives which are selected based on employment opportunities. The program would assist students with exploring career pathways while providing students the opportunity to continue the Architecture AAS program with the possibility of a paid internship.

One Year

1st Semester	Credits
ARC 123 - Architectural Graphics I	3
ARC 133 - Construction Methodology and Procedures I	3
SDV 101 - Orientation to (a Specific Discipline) **OR**	
SDV 100 - College Success Skills	1
	Total 7

2nd Semester	Credits
ARC 124 - Architectural Graphics II	3
ARC 134 - Construction Methodology and Procedures II	3
--- --- - Elective [1]	3-4
--- --- - Elective [1]	3-4
	Total 12-14

Total credits for the Architecture Career Studies Certificate: 19-21

[1] The two technical electives may be selected from the AAS Architecture Technology program: ARC 138, ARC 225, ARC 240, ARC 298, CAD 201, CAD 202, CAD 203. Topics for ARC 298 will be offered based on employment opportunities and employment prediction. With the approval of the Dean, Co-op (ARC 197) and other classes may be approved for electives.

Architecture Technology: Computer Aided Drafting and Design, C.S.C.

NOVA Code: 221-729-01
Offered through AL, AN

Purpose: This program of study is structured to enable students to improve their skills in computer application for drafting and design in their respective fields. It is important that students confer with

your drafting advisor or counselor to better acquaint themselves with the selection of classes in the curriculum.

One Year

1st Semester	Credits
CAD 201 - Computer Aided Drafting and Design I	4
ENG 111 - College Composition I **OR**	
ENG 115 - Technical Writing	3
	Total 7

2nd Semester	Credits
CAD 202 - Computer Aided Drafting and Design II	4
--- --- - Technical Elective [1]	2-3
--- --- - Technical Elective [1]	3
	Total 9-10

Total credits for the Computer Aided Drafting and Design Career Studies Certificate: 16-17

[1] Technical elective must be approved by department.

Automotive Technology, A.A.S.

NOVA Code: 9090
Offered through AL, MA

Purpose: This curriculum is designed to train technicians for the automotive field. Students completing this program will be ready for full-time employment as automotive technicians. Job opportunities include line technician, new car make-ready, and customer service representative.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Two Years

1st Semester	Credits
AUT 100 - Introduction to Automotive Shop Practice **OR**	
AUT 197 - Automotive Cooperative Education [1]	2
AUT 111 - Automotive Engines I	4
AUT 241 - Automotive Electricity I	4
ENG 111 - College Composition I **OR**	
ENG 115 - Technical Writing	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 14

2nd Semester	Credits
AUT 242 - Automotive Electricity II	4
AUT 265 - Automotive Braking Systems	4
AUT 266 - Auto Alignment, Suspension, and Steering	4
PHY 100 - Elements of Physics **OR** Higher-level Physics **OR**	
MTH 111 - Basic Technical Mathematics **OR** Higher	3-4
	Total 15-16

3rd Semester	Credits
AUT 121 - Automotive Fuel Systems I	4
AUT 236 - Automotive Climate Control	4
	Total 8

4th Semester	Credits
AUT 112 - Automotive Engines II	4
AUT 122 - Automotive Fuel Systems II	4
AUT 141 - Auto Power Trains I	4
--- --- - Humanities/Fine Arts Elective [2]	3
	Total 15

5th Semester	Credits
AUT 142 - Auto Power Trains II	4
AUT 245 - Automotive Electronics [3]	4
CST 110 - Introduction to Human Communication	3
--- --- - Social/Behavioral Sciences Elective [4]	3
	Total 14

Total credits for the A.A.S. Degree in Automotive Technology: 66-67

[1] Available to students in cooperative internship programs only.
[2] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[3] May substitute AUT 233.
[4] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

Automotive Technology: Automotive Diagnosis and Repair, C.S.C.

NOVA Code: 221-909-02
Offered through AL, MA

Purpose: This program will provide an opportunity for student success by offering a Career Studies Certificate which will lead to a credential and gainful employment. It will create a seamless informed pathway for students to achieve their career goal, or, as an exit point to employment.
It will fill a demand in the automotive repair field by graduating a larger number of local, qualified apprentice and entry-level technicians to fill the shortage gap. It will also allow the involvement of multiple industry partners to support our program and meet the new advisory board requirements.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning and will be evaluated on a case-by-case basis. Please check the Credit for Prior Learning Manual for more information.

One Year

1st Semester	Credits
AUT 100 - Introduction to Automotive Shop Practice	2
AUT 111 - Automotive Engines I	4
AUT 241 – Automotive Electricity I [1]	4
AUT 265 - Automotive Braking Systems	4
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 15

2nd Semester	Credits
AUT 136 - Automotive Vehicle Inspection **OR**	
AUT 197 - Automotive Cooperative Education [2]	2
AUT 236 - Automotive Climate Control	4
AUT 242 - Automotive Electricity II	4
AUT 266 - Auto Alignment, Suspension, and Steering	4
	Total 14

Total credits for the Automotive Diagnosis and Repair Career Studies Certificate: 29

[1] May substitute DSL 141 plus DSL 143. Both courses must be taken in order to make this substitution.
[2] May substitute with two (2) AUT 297 (1 CR.) courses. Both courses must be taken to equal to two credits to make this substitution.

Automotive Technology: Collision Repair Technology, C.S.C.

NOVA Code: 221-909-10
Offered through AL

Purpose: This program prepares students for entry-level positions as collision repair technicians. The curriculum provides experience in evaluation, repair, and refinishing of automotive body damage.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.
Recommended Preparation: It is important that the student talk with their advisor about selecting classes in the curriculum.

One Year

1st Semester	Credits
AUB 106 - Basic Sheet Metal Operations	4
AUB 118 - Automotive Paint Preparation	4
AUB 127 - Introduction to Collision Repair Technology	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 12

2nd Semester	Credits
AUB 125 - Auto Body Welding	4

AUB 119 - Automotive Painting	4
AUB 116 - Auto Body Repair	4
	Total 12

Total credits for the Collision Repair Technology Career Studies Certificate: 24

Automotive Technology: Diesel Basic Repair, C.S.C.

NOVA Code: 221-920-01
Offered through MA

Purpose: This program is designed to introduce the fundamentals of diesel equipment repair and provide instruction in hydraulic systems, diesel engine overhaul and tune-up, hydraulic and braking systems. The curriculum provides practical training and the option of on-the-job experience through cooperative education. Graduates will gain a basic background in diesel equipment technology principles. Graduates will be prepared for employment as an entry-level diesel technician in the following areas: diesel equipment repair, diesel truck repair, supervisor, shop foreman, heavy duty repair, purchasing agent, salesperson, power train repair, fuel injection repair, diesel engine repair, automotive diesel repair, and marine diesel repair.

One Semester

1st Semester	Credits
DSL 137 - Basic Diesel Engine Systems	5
DSL 150 - Mobile Hydraulics and Pneumatics	3
DSL 155 - Heavy Duty Suspension and Service	3
DSL 161 - Air Brake Systems I	2
DSL 162 - Air Brake Systems II	2
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 16

Total credits for the Automotive Technology: Diesel Repair Technology Career Studies Certificate: 16

Automotive Technology: Diesel Preventative Maintenance, C.S.C.

NOVA Code: 221-920-04
Offered through MA

Purpose: This certificate is designed to enhance the skills necessary to service and repair diesel equipment. The courses included in this program will train students in the servicing and repair of diesel engines, electrical systems, transmissions, and preventative maintenance inspection (PMI). The curriculum provides practical training and the option of on-the-job experience through cooperative education. Graduates will have a background in advanced diesel equipment technology principles and some business skills. The program prepares graduates for employment in the following areas: diesel equipment repair, diesel truck repair, supervisor, shop foreman, heavy duty repair, purchasing agent, salesperson, power train repair, fuel injection repair, diesel engine repair, automotive diesel repair, and marine diesel repair. Students should ideally complete the Diesel Repair Technology career studies certificate prior to enrolling in this program.

One Semester

1st Semester	Credits
BUS 100 - Introduction to Business	3
DSL 135 - Introduction to Diesel Technology	3
DSL 143 - Diesel Truck Electrical Systems	4
DSL 145 - Medium/Heavy Duty Truck Preventative Maintenance Inspection	3
DSL 153 - Power Trains I	3
	Total 16

Total credits for the Automotive Technology: Diesel Preventative Maintenance Career Studies Certificate: 16

Automotive Technology: Maintenance and Light Repair, C.S.C.

NOVA Code: 221-909-01
Offered through AL, MA

Purpose: This program is designed to prepare students for entry-level employment as light repair technicians in new car dealerships and after-market service outlets.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year

1st Semester	Credits
AUT 100 - Introduction to Automotive Shop Practice **OR**	
AUT 197 - Automotive Cooperative Education [1]	2
AUT 241 - Automotive Electricity I	4
AUT 265 - Automotive Braking Systems	4
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 11

2nd Semester	Credits
AUT 111 - Automotive Engines I	4
AUT 266 - Auto Alignment, Suspension, and Steering	4
	Total 8

Total credits for the Automotive Maintenance and Light Repair Career Studies Certificate: 19

[1] Available to students in cooperative internship programs only.

Biology, A.S.

NOVA Code: 6550
Offered through AL, AN, LO, MA, NOL, WO

The curriculum is designed to prepare students to transfer to a four-year college or university to complete a baccalaureate degree program with a major in one of the following fields: agriculture, biology, botany, pre-dentistry, forestry, genetics, microbiology, molecular biology, neuroscience, pre-pharmacy, pre-physical therapy, pre-medicine, science education, pre-veterinary, or zoology.

Two Years

1st Semester	Credits
CHM 111 - General Chemistry I	4
ENG 111 - College Composition I	3
HIS --- - Elective [1]	3
MTH 167 - PreCalculus with Trigonometry [2] **OR**	
MTH 263 - Calculus I	4-5
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 15-16

2nd Semester	Credits
BIO 101 - General Biology I	4
CHM 112 - General Chemistry II	4
ENG 112 - College Composition II	3
--- --- - Humanities/Fine Arts Elective [3]	3
MTH 263 - Calculus I [2] **OR**	
MTH 264 - Calculus II **OR**	
MTH 245 - Statistics I	3-4
	Total 17-18

3rd Semester	Credits
BIO 102 - General Biology II [4, 5] **OR**	
BIO 120 - General Zoology	4
CST 100 - Principles of Public Speaking **OR**	
CST 110 - Introduction to Human Communication **OR**	
CST 126 - Interpersonal Communication	3
MTH 264 - Calculus II [2] **OR**	
MTH 245 - Statistics I **OR**	
--- --- - Physical or Life Science Elective w/Lab	3-4
--- --- - Social/Behavioral Sciences Elective [7]	3
	Total 13-14

4th Semester	Credits
BIO 206 - Cell Biology	4
MTH 245 - Statistics I **OR**	
--- --- - Physical or Life Science Elective w/Lab [6]	3-4
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Social/Behavioral Sciences Elective [7]	3
	Total 13-14

Total credits for the A.S. Degree in Biology: 60-61

(62 credits if students decide to take MTH 161+162 instead of MTH 167)

[1] Select any HIS courses listed under social/behavioral sciences in General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

[2] Students may begin the Biology AS with different levels of math preparation and so may start with Precalculus or Calculus. The following are possible sets of options for mathematics courses in the program:

- Option 1- MTH 263 Calculus I + MTH 264 Calculus II + MTH 245 Statistics + lab science elective, for a total of 60-degree credits. Some universities do not require Calculus II; in this case students should take an additional lab science instead.
- Option 2- MTH 167 Precalculus with Trigonometry + MTH 263 Calculus I + MTH 264 Calculus II + MTH 245 Statistics. Students who begin with MTH 167 will take a total of 61-degree credits.
- Option 3- MTH 161 Precalculus I and MTH 162 Precalculus II + MTH 263 Calculus I + MTH 264 Calculus II + MTH 245 Statistics. Students who take MTH 161-162 will have to take MTH 264 and MTH 245 in the last semester, for a total of 62-degree credits.

[3] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

[4] Students transferring to George Mason University who take BIO 120 must also take BIO 110. BIO 110 will fulfill the physical or life science elective with lab (footnote #6).

[5] May substitute PHY 201, or GOL 105 only if advisable by your transfer institution.

[6] See physical and life science courses listed under General Education Electives. Student may also select BIO 110, BIO 205, or BIO 256. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[7] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

Regardless of the combination of math and science courses, students must complete at least 60 credits applicable to this program.

Biotechnology, A.A.S.

NOVA Code: 1490
Offered through MA

Purpose: This program is designed to prepare graduates for employment in entry-level positions at biotechnology and pharmaceutical companies as laboratory, research, or manufacturing technicians. Coursework will develop an understanding of basic scientific principles in biology and chemistry and will emphasize laboratory techniques and procedures such as solution and media preparation, DNA purification and analysis, electrophoresis, chromatography, maintenance of cells in culture, and quality control techniques.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Many of the courses within the program are accepted for transfer to almost any senior institution. Students interested in transfer should contact their academic advisor early in their program.

Application Process: Individuals wishing to enroll in the A.A.S. in Biotechnology should follow these steps for admission, starting at least one semester prior to when they wish to enroll in the program:

1. Attend an information session or schedule an advising appointment with a Biotechnology academic advisor.
   - This can be completed prior to or after steps 2-4. Students are encouraged to seek information very early in the process.
2. Apply to NOVA.
   - Students may choose to enroll in the A.S. in General Studies prior to their acceptance into the program.
3. Take the College placement test for English and Mathematics in one of the College's Testing Centers (located on each campus).
4. Complete pre-admission requirements for the program. Students applying to the A.A.S. program must have documentation of the following:
   - placement into college-level English (ENG 111),
   - placement into MTH 161 or higher, and
   - completion of BIO 101 with a "C" or better.

   Students who are currently enrolled in BIO 101 may apply to the program and be admitted on a provisional basis after meeting with and if recommended by a biotechnology faculty advisor until their final grade is submitted. If a student has taken BIO 101 or any of the course requirements at another institution, he/she must submit official transcripts and if applicable, foreign transcripts, and submit a formal evaluation of the courses/degree, along with a Request for Evaluation of Transcripts Form (125-049), for each institution.
5. Apply to the program.

Apply to the program by emailing the Biotechnology application form to Dr. Xin Zhou at xzhou@nvcc.edu. An advising session will be scheduled if not already completed. Students will be notified within 2 - 4 weeks as to whether they have been accepted or not.

- Receive the *Biotechnology Program Handbook* and register for core biotechnology classes, BIO 250 and BIO 253.

Two Years

1st Semester	Credits
BIO 101 - General Biology I [1]	4
ENG 111 - College Composition I	3
MTH 161 - PreCalculus I **OR** Higher	3
SDV 100 - College Success Skills **OR** SDV 101 - Orientation to (a Specific Discipline)	1
--- --- - Social/Behavioral Sciences Elective [2]	3
	Total 14

2nd Semester	Credits
Biotechnology/Science Elective [3]	4
CHM 111 - General Chemistry I	4
ENG 112 - College Composition II	3
--- --- - Humanities/Fine Arts Elective [4]	3
	Total 14

3rd Semester	Credits
CHM 112 - General Chemistry II	4
CST --- - Elective [5]	3
	Total 7

4th Semester	Credits
BIO 147 - Basic Laboratory Calculations for Biotechnology	1
BIO 165 - Principles in Regulatory and Quality Environments for Biotechnology	2
BIO 205 - General Microbiology 4	
BIO 250 - Biotechnology Research Methods and Skills	3
BIO 253 - Biotechnology Concepts	3
	Total 13

5th Semester	Credits
BIO 180 - Introduction to Careers in Biotechnology	1
BIO 206 - Cell Biology	4
BIO 251 - Protein Applications in Biotechnology **OR** BIO 252 - Nucleic Acid Methods	4
BIO 254 - Capstone Seminar in Biotechnology	2
BIO 255 - Bioinformatics and Computer Applications in Biotechnology	2
	Total 13

6th Semester	Credits
BIO 296 - On-site training in Biotechnology [6]	3
	Total 3

Total credits for the A.A.S. Degree in Biotechnology: 64

[1] Must complete with a "C" or better.

[2] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[3] Biotechnology elective in the science category may be selected from the following 4-credit courses: BIO 102, BIO 251, BIO 252, and BIO 256. Consult with an advisor for transfer options.
4 See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[5] Select from the following: CST 100, CST 110, CST 126, or CST 229.
[6] Students must be approved by the Biotechnology program coordinator(s) for an internship. Criteria for approval include successful completion of biotechnology courses (including a demonstrated proficiency of basic lab skills), a professional work ethic, and an ability to work well with others. Please see a Biotechnology academic advisor for assistance in determining and placement or for approval of a topic for a Project or Supervised Study.

Biotechnology Lab Technician, C.S.C.

NOVA Code: 221-149-01
Offered through MA

Purpose: This program is designed for persons wishing to enhance their employment options or retrain for a career as a laboratory technician in various biotechnology disciplines. Students interested in this certificate may include career changers who already have a bachelor's degree, scientists who were trained in foreign countries who need updated training, current A.S. in Science students who want to obtain a core of biotechnology courses and/or find a job in local industry while they complete their undergraduate degrees, and high school teachers who wish to refine their own biotechnology skills and obtain the required retraining necessary for continued teacher certification.
Application Process: Students applying to the Biotechnology Lab Technician Career Studies Certificate must complete all of the pre-admission requirements as outlined for the A.A.S. in Biotechnology with the exception that applications will only be accepted for students enrolling in the Fall Semester (August 1). In addition, a student must have completed a college degree (associate of science or higher). Foreign students must document the U.S. equivalent to an associate degree. Students without a science degree are strongly advised to complete the A.A.S. in Biotechnology instead of the career studies certificate.
Prerequisites: Because jobs in biotechnology generally require at least an associate degree, in a science field, students must already have a 2-year or 4-year college degree, be enrolled in the A.S. in Science, or obtain permission from the Biotechnology program coordinator in order to be placed into this program. BIO 101 General Biology I is a prerequisite of all of the biotechnology courses in this program.
Students who have degrees in non-science fields are strongly encouraged to complete the A.A.S. in Biotechnology.

One Year

1st Semester	Credits
BIO 147 - Basic Laboratory Calculations for Biotechnology	1
BIO 165 - Principles in Regulatory and Quality Environments for Biotechnology	2
BIO 250 - Biotechnology Research Methods and Skills	3
BIO 253 - Biotechnology Concepts	3
ENG --- - Elective [1] **OR** CST --- - Elective	3
Total 12	

2nd Semester	Credits
BIO 180 - Introduction to Careers in Biotechnology	1
BIO 251 - Protein Applications in Biotechnology **OR** BIO 252 - Nucleic Acid Methods	4
BIO 254 - Capstone Seminar in Biotechnology	2
BIO 255 - Bioinformatics and Computer App. in Biotechnology	2
Total 9	

3rd Semester	Credits
BIO 296 - On-site training in Biotechnology [2]	3
Total 3	

Total credits for the Biotechnology Lab Technician Career Studies Certificate: 24

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17-24 must complete an SDV course within their first year at NOVA.
[1] Choose from the following courses: CST 100, CST 110, CST 126, CST 229, ENG 111, ENG 115.
[2] Students must be approved by the Biotechnology program coordinator(s) for an internship. Criteria for approval include successful completion of biotechnology courses (including a demonstrated proficiency of basic lab skills), a professional work ethic, and an ability to work well with others. Please see a Biotechnology academic advisor for assistance in determining eligibility and placement or for approval of a topic for a Project or Supervised Study.

Business Administration, A.S.

NOVA Code: 2130
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This curriculum is designed for individuals who plan to transfer to a four-year college or university to complete a baccalaureate degree program in business administration with a major in accounting, business management, decision science and management, information systems, finance, marketing, etc.

Transfer Information: Since four-year colleges can vary in their course and GPA requirements for the business major, please consult a counselor or an academic advisor regarding specific requirements and course selection.
Recommended Preparation: Satisfactory completion of the following high school units or equivalent: 4 units of English; 2 units of mathematics (algebra and geometry); 1 unit of laboratory science; and 1 unit of social studies.

Two Years

1st Semester	Credits
CST --- - Elective [1]	3
ENG 111 - College Composition I	3
HIS --- - Elective [2]	3
ITE 140 - Spreadsheeting for Business **OR** BUS 240 - Introduction to Business Law [3]	3
MTH 161 - PreCalculus I **OR** Higher SDV 100 - College Success Skills **OR** SDV 101 - Orientation to (a Specific Discipline)	3 1
Total 16	

2nd Semester	Credits
BUS 100 - Introduction to Business	3
ENG 112 - College Composition II	3
MTH 261 - Applied Calculus I **OR** Higher	3
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Physical or Life Science Elective w/Lab [5]	4
Total 16	

3rd Semester	Credits
ACC 211 - Principles of Accounting I	3
BUS 224 - Business Statistics	3
ECO 201 - Principles of Macroeconomics	3
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Physical or Life Science Elective w/Lab [5] **OR** --- --- - Approved Elective [6]	3-4
Total 15-16	

4th Semester	Credits
ACC 212 - Principles of Accounting II	3
ECO 202 - Principles of Microeconomics	3
BUS 270 - Interpersonal Dynamics **OR** --- --- - Approved Elective [6]	3
BUS 280 - Introduction to International Business **OR** --- --- - Approved Elective [6]	3
--- --- - Approved Elective [6,7]	3
Total 12-15	

Total credits for the A.S. Degree in Business Administration: 60-62

[1] May be selected from the following: CST 100 and CST 110.
[2] Select any HIS course listed under the social/behavioral science courses in General Education Electives. Elective should be

selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[3] Elective should be selected with the advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[4] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
5 See physical and life science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[6] Approved Business Elective options include: BUS 200, ITE 140, MKT 201, BUS 227, and BUS 240. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
7 This course is not needed if selections for all other requirements total 60 credits or more.

Business Management, A.A.S.

NOVA Code: 6550
Offered through AL, AN, LO, MA, NOL, WO

Purpose: The curriculum is designed for individuals who seek employment in business management or for those presently in management who are seeking promotion. Job opportunities include office manager, program manager and project manager, business owner.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.
Recommended Preparation: The student should possess a proficiency in high school English and a strong background in basic arithmetic operations.

Two Years

1st Semester	Credits
BUS 100 - Introduction to Business	3
ENG 111 - College Composition I	3
--- --- - Humanities/Fine Arts Elective [1]	3
MTH 154 - Quantitative Reasoning [2]	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 13	

2nd Semester	Credits
BUS --- - Elective [3]	3
BUS 125 - Applied Business Mathematics [4]	3
BUS 200 - Principles of Management	3
ENG 112 - College Composition II	3
MKT 201 - Introduction to Marketing	3
Total 15	

3rd Semester	Credits
ACC 211 - Principles of Accounting I	3
BUS 240 - Introduction to Business Law	3
BUS --- - Elective [3]	3
BUS --- - Elective [3]	3
CST --- - Elective [5]	3
ECO 201 - Principles of Macroeconomics **OR**	
ECO 202 - Principles of Microeconomics	3
Total 18	

4th Semester	Credits
ACC 212 - Principles of Accounting II	3
BUS --- - Elective [3]	3
BUS 220 - Introduction to Business Statistics	3
BUS 226 - Computer Business Applications **OR**	
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
FIN 215 - Financial Management	3
BUS --- - Elective	3
Total 18	

Total credits for the A.A.S. Degree in Business Management: 64

Check course descriptions in this *Catalog* for requirements regarding placement tests and/or Prerequisites.
[1] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[2] May substitute a higher-level mathematics course. If considering transfer, consult an academic advisor for appropriate selection.
[3] May be selected from ACC, BUS, CON, ECO, FIN, HRI, IT, MKT 215, MKT 221, MKT 228, and MKT 284, or REA. Students considering transfer should consult an academic advisor for appropriate choices.
[4] Students considering transfer should consult an academic advisor.
[5] May be selected from the following: CST 100, CST 110, CST 126, or CST 229.
6 BUS 224 is recommended for those who qualify and want to transfer.

Business Management: Business Information Technology, C.S.C.

NOVA Code: 221-212-15
Offered through AL, AN, LO, MA, NOL, WO

Purpose: The curriculum is designed to teach the student the basics of business information technology and the first award for persons who intend to pursue certificate and/or associate degree programs in business-related fields. The courses in this career studies program provide foundations in basic business practices that can be applied to a variety of certificate and degree programs.

One Semester

1st Semester	Credits
BUS 100 - Introduction to Business **OR**	
BUS 204 - Project Management	3
BUS --- - Elective **OR**	
IT --- - Elective	3
ENG --- - Elective [1] **OR**	
CST --- - Elective	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications [2]	3
--- --- - Social/Behavioral Sciences Elective [3] **OR**	
BUS 201 - Organizational Behavior	3
SDV 100 - College Success Skills	1
Total 16	

Total credits for the Business Information Technology Career Studies Certificate: 16

[1] The ENG/CST requirement may be met by ENG 111 or other ENG courses approved by the student's advisor, or by CST 100, CST 110, CST 126, or CST 229.
[2] May substitute BUS 226.
[3] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

Business Management: Entrepreneurship, C.S.C.

NOVA Code: 221-212-10
Offered through AL

Purpose: This program is designed to prepare students to start and grow a successful small business by providing instruction in entrepreneurial culture, strategy, operations, financial management, marketing, and leadership.
Recommended Preparation: The student should possess a proficiency in high school English, strong background in basic arithmetic operations and basic computer/software skills.

One Year

1st Semester	Credits
ACC 220 - Accounting for Small Business **OR**	
ACC 211 - Principles of Accounting I [1]	3
BUS 116 - Entrepreneurship	3
BUS 165 - Small Business Management	3
BUS 200 - Principles of Management	3
SDV 100 - College Success Skills [2]	1
Total 13	

2nd Semester	Credits
BUS 240 - Introduction to Business Law	3
BUS 260 - Planning for Small Business	3
FIN 260 - Financial Management for Small Business	2
MKT 201 - Introduction to Marketing	3
Total 11	

Total credits for the Entrepreneurship Career Studies Certificate: 24

[1] ACC 211 is recommended for students who plan to transfer.
[2] May substitute the SDV 101 Orientation section related to this program.

Business Management: Leadership Development, C.S.C.

NOVA Code: 221-212-10
Offered through AL

Purpose: This program combines communication and human relations competencies with specialized business courses. It is designed for individuals who are currently, or hope to be, in leadership, human resource, or supervisory managerial positions in the private/not-for-profit sector or governmental organizations. The certificate is especially appropriate for individuals who have a degree related to their field of employment, but who lack training in team leadership or management skills. The program emphasizes practical application of leadership concepts and theories to prepare students for team leadership positions.

One Year

1st Semester	Credits
BUS 100 - Introduction to Business [1] **OR**	
BUS 200 - Principles of Management	3
BUS 111 - Principles of Supervision I [1] **OR**	
BUS 201 - Organizational Behavior	3
BUS 270 - Interpersonal Dynamics **OR**	
ENG 116 - Writing for Business	3
Total 9	

2nd Semester	Credits
BUS 117 - Leadership Development **OR**	
BUS 297 - Cooperative Education	3
BUS 205 - Human Resource Management	3
SDV 100 - College Success Skills [2]	1
Total 7	

Total credits for the Leadership Development Career Studies Certificate: 16

[1] For students with minimal work experience, BUS 100 and BUS 111 are recommended. Consult an academic advisor to make the appropriate choices.
[2] Students may substitute the SDV 101 Orientation section related to this program.

Cinema, A.F.A.

NOVA Code: 5630
Offered through AL, WO

Purpose: This curriculum is designed for individuals who plan to transfer to a four-year college or university to complete a baccalaureate degree program in the Visual Arts with a major in cinema, film, or media production.

Transfer Information: Since four-year colleges can vary in their course and GPA requirements for the business major, please consult your Cinema, AFA Academic Advisor regarding specific requirements and course selection.
Recommended Preparation: Satisfactory completion of the following high school units or equivalent: 4 units of English; 2 units of mathematics (algebra and geometry); 1 unit of laboratory science; and 1 unit of social studies.

Two Years

1st Semester	Credits
ART 160 - Film Production I	3
CST 115 - Small Group Communication **OR**	
CST 126 - Interpersonal Communication	3
CST 151 - Film Appreciation I	3
ENG 111 - College Composition I	3
SDV 101 - Orientation to (a Specific Discipline)	1
--- --- - Social/Behavioral Sciences Elective [1]	3
Total 16	

2nd Semester	Credits
ENG 112 - College Composition II	3
CST 120 - Screenwriting	3
CST 140 - Acting for the Camera	3
CST 152 - Film Appreciation II	3
CST 198 - Seminar and Project: Portfolio	1
MTH 154 - Quantitative Reasoning [2]	3
Total 16	

3rd Semester	Credits
ART --- - Elective [3]	3
ART 161 - Film Production II	3
CST 250 - The Art of the Film	3
PHT 274 - Digital Film Editing and Post Production	3
--- --- - Physical or Life Science Elective w/Lab [4]	4
Total 16	

4th Semester	Credits
ART --- - Elective [5] **OR**	
CST --- - Elective [5]	3
ENG 2-- - Literature Elective [6]	3
CST 270 - Film Directing	3
CST 290 - Coordinated Internship	3
CST 298 - Seminar and Project [Portfolio]	3
Total 15	

Total credits for the Cinema A.F.A.: 63

[1] May choose Social/Behavioral Science Elective with Advisor approval from the following courses: 3 from this list-strongly recommended: ECO 201, ECO 202, GEO 200, GEO 210, GEO 220, HIS 101, HIS 102, HIS 112, HIS 121, HIS 122, PLS 135, PLS 200, PLS 241, PSY 200, PSY 230, SOC 200, SOC 211, or SOC 212.
[2] May substitute any higher-level mathematics course. See transfer institution requirements.
[3] May choose ART Elective with Advisor approval for maximum transferability.
[4] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[5] May choose ART or CST Elective with Advisor approval. Select from ART 140, ART 150, CST 110, or CST 114.
[6] May choose ENG Literature Elective with Advisor approval for maximum transferability.

Computer Science, A.S.

NOVA Code: 2460
Offered through AL, AN, LO, MA, NOL, WO

Purpose: The curriculum is designed primarily for students who wish to transfer to a four-year college or university to complete a baccalaureate degree in computer science. The curriculum emphasizes the study of the science of computing and the use of computing in a scientific setting.

Transfer Information: Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet the requirements of the transfer institution. The responsibility for proper course selection rests with the student.
This program is aligned with the Transfer Virginia common curriculum. Students are strongly encouraged to consult their academic advisor and review transfer options using the Transfer Virginia Portal, Where Can This Degree Transfer.
Recommended Preparation: Satisfactory completion of the following high school units or equivalent: 4 units of English and 4 units of college preparatory mathematics.

Two Years

1st Semester	Credits
CSC 221 - Introduction to Problem Solving and Programming	3
HIS --- - Elective [1]	3
MTH 167 - PreCalculus with Trigonometry [2,3]	5
ENG 111 - College Composition I	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 15	

2nd Semester	Credits
CSC 222 - Object Oriented Programming	4
ENG 112 - College Composition II	3
MTH 263 - Calculus I	4
--- --- - Humanities/Fine Arts Elective [4]	3
Total 14	

3rd Semester	Credits
CSC 223 - Data Structures and Analysis of Algorithms	4
CSC 208 - Introduction to Discrete Structures **OR**	
MTH 288 - Discrete Mathematics	3
MTH 264 - Calculus II [5]	4
--- --- - Physical or Life Science Elective w/Lab [6]	4
Total 15	

4th Semester	Credits
CSC 205 - Computer Organization **OR**	
CSC 215 - Computer Systems **OR**	
MTH 265 - Calculus III	3-4
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Physical or Life Science Elective w/Lab [7]	4
--- --- - Social/Behavioral Sciences Elective [8]	3
--- --- - Approved Elective [9]	3-4
Total 16-18	

Total credits for the A.S. Degree in Computer Science: 60-62

Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses used for this program may not be more than 10 years old as of the first day of the fall semester of the academic year in which a student graduates, unless approved by the pathway dean.

[1] Select any HIS course listed under the social/behavioral science courses in General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

[2] Students will come to this program with different levels of preparation. If precalculus is needed, begin with MTH 167 (or MTH 161 and MTH 162). If placed out of precalculus, begin with MTH 263, and replace the precalculus credits with two electives from footnote #3 that total five credits or more.

[3] May choose from the following list: CSC 205, CSC 208, CSC 215, MTH 265, MTH 266, MTH 288, PHY 201 or any science listed on footnote #6 and #7. Students should consult a faculty advisor and their transfer institution to select appropriate courses.

[4] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

[5] MTH 245 may be used for this requirement if the student's transfer institution requires it.

[6] Physical and life science elective must be selected from the following: BIO 101, CHM 111, PHY 241, GOL 105, or GOL 106. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[7] Physical and life science elective must be selected from the following: BIO 102, CHM 112, PHY 242, GOL 105, or GOL 106. Electives should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

[8] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

[9] Approved elective courses: PHY 201, CSC 205, EGR 121, EGR 122, EGR 270, CST 100, CST 110, MTH 265, or MTH 266. Any science listed on footnote #6 and #7.

Construction Management Technology, A.A.S.

NOVA Code: 9170
Offered through AL

Purpose: The curriculum is designed to qualify personnel in both engineering technology and management for employment in many areas of a construction firm. Job opportunities include engineering aide, construction project manager, construction supervisor, estimator, and facilities planning and supervision.

Two Years

1st Semester	Credits
ARC 133 - Construction Methodology and Procedures I	3
ARC 243 - Environmental Systems [1] **OR**	
--- --- - Technical Elective	3-4
BLD 101 - Construction Management I	3
CAD 165 - Architectural Blueprint Reading	3
MTH 111 - Basic Technical Mathematics **OR**	
MTH 161 - PreCalculus I [2]	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 16-17	

2nd Semester	Credits
ARC 225 - Site Planning and Technology	3
BLD 215 - OSHA 30 Construction Safety	2
BLD 231 - Construction Estimating I	3
CIV 171 - Surveying I	3
ENG 111 - College Composition I **OR**	
ENG 115 - Technical Writing	3
--- --- - Humanities/Fine Arts Elective [3]	3
Total 17	

3rd Semester	Credits
BLD 165 - Construction Field Operations	2
BLD 200 - Sustainable Construction	2
BLD 241 - Construction Management III	3
BLD 247 - Construction Planning and Scheduling	3
FIN 215 - Financial Management	3
--- --- - Technical Elective [1]	3-4
Total 16-17	

4th Semester	Credits
ARC 134 - Construction Methodology and Procedures II	3
BLD 232 - Construction Estimating II	3
BLD 242 - Construction Management IV	3
CST --- - Elective [4]	3
--- --- - Social/Behavioral Sciences Elective [5]	3
--- --- - Technical Elective [1]	3
Total 18	

Total credits for the A.A.S. Degree in Construction Management Technology: 67-69

[1] Technical elective course must be approved by the program academic advisor. May be selected from the following: CAD 201, CAD 202, CAD 203, CIV 172, CIV 225, or CIV 228 and CIV 229.

[2] Students transferring to a four-year college or university should consider taking MTH 161 or Higher.

[3] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

[4] Select from the following: CST 100, CST 110, CST 126, or CST 229.

[5] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

Construction Management Technology: Construction Supervision, C.S.C.

NOVA Code: 221-917-01
Offered through AL

Purpose: The curriculum is designed to qualify personnel in both building construction and engineering technologies. Job opportunities include employment within construction companies, assisting project managers and general contractors in preparing estimates, contract document interpretation, and construction administration. Independent employment may include construction site supervision and facilities management.

One Year

1st Semester	Credits
ARC 133 - Construction Methodology and Procedures I	3
BLD 101 - Construction Management I	3
BLD 165 - Construction Field Operations	2
CAD 165 - Architectural Blueprint Reading	3
Total 11	

2nd Semester	Credits
BLD 215 - OSHA 30 Construction Safety	2
BLD 231 - Construction Estimating I	3
CIV 171 - Surveying I	3
--- --- - Technical Elective [1]	3
Total 11	

Total credits for the Construction Supervision Career Studies Certificate: 22

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.
[1] Technical elective course must be approved by the program academic advisor. May be selected from the following: CAD 201, CAD 202, CAD 203, CIV 225, or CIV 228 and CIV 229.

Construction Management Technology: Site Development, C.S.C.

NOVA Code: 221-915-01
Offered through AL

Purpose: The curriculum is designed to prepare students for either employment in civil engineering or the construction industry, or to prepare for continuing education in civil engineering technology, urban and landscape planning, or construction management. Job opportunities may include CAD operation, entry-level land planning or land development technician, and civil or construction engineering technician.

One Year

1st Semester	Credits
BLD 165 - Construction Field Operations	2
CAD 201 - Computer Aided Drafting and Design I	4
CIV 225 - Soil Mechanics	3
CIV 226 - Soil Mechanics Laboratory	1
CIV 171 - Surveying I	3
CAD 165 - Architectural Blueprint Reading	3
Total 16	

2nd Semester	Credits
ARC 225 - Site Planning and Technology	3
CAD 260 - Computer Applications for Surveyors and Tech.	3
CIV 280 - Introduction to Environmental Engineering	3
--- --- - Technical Elective 1 [1]	3
Total 12	

Total credits for the Site Development Career Studies Certificate: 28

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17-24 must complete an SDV course within their first year at NOVA.
[1] Technical elective must be approved by the program academic advisor. Technical electives may be selected from the following: BLD 101, BLD 200, BLD 231, CIV 228 and CIV 229, or HRT 246.

Contract Management, A.A.S.

NOVA Code: 2480
Offered through WO

Purpose: This curriculum is designed for individuals who plan to seek employment in contract management positions and for those presently in contract management positions who seek career advancement. The program is designed to create opportunities for positions in contract management for both government agencies and private industry. Instruction includes both the theoretical concepts and the practical applications needed for future success in the contract management field. This will provide a greater understanding of acquisition, life cycle management, and contracting processes. Job opportunities include project manager, procurement analyst, contract administrator, contract specialist, contract negotiator, contract price analyst, and contract termination specialist.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Admission Requirements: In addition to the general admission requirements of the College, entry into the program requires proficiency in high school English and mathematics. Students with deficiencies will require developmental studies.

Two Years

1st Semester	Credits
CON 100 - Shaping Business Arrangements	3
CON 104 – Fed. Acquisition Regulation (FAR) Fundamentals I	3
ENG 111 - College Composition I	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
MTH 154 - Quantitative Reasoning **OR** Higher	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 16	

2nd Semester	Credits
CON 105 – Fed. Acquisition Regulation (FAR) Fundamentals II	3
CON 121 - Strategic Focused Contracting II	3
CST 110 - Introduction to Human Communication	3
ECO 201 - Principles of Macroeconomics	3
ENG 112 - College Composition II	3
Total 15	

3rd Semester	Credits
ACC 211 - Principles of Accounting I	3
BUS 200 - Principles of Management	3
CON 170 - Fundamentals of Cost and Price Analysis	3
CON 214 - Business Decisions for Contracting	3
--- --- - Humanities/Fine Arts Elective [1]	3
Total 15	

4th Semester	Credits
ACC 212 - Principles of Accounting II	3
BUS 220 - Introduction to Business Statistics	3
CON 124 - Contract Execution	3
CON 127 - Contract Administration	3
CON 216 - Legal Considerations in Contracting	3
CON 217 - Cost Analysis and Negotiation Techniques	3
Total 18	

Total credits for the A.A.S. Degree in Contract Management: 64

[1] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

Criminology and Criminal Justice, A.S.

NOVA Code: 4710
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This program is designed to prepare students to transfer to a four-year college or university to complete a baccalaureate degree program in criminal justice, criminology, or related fields.

Transfer Information: Since four-year colleges can vary in their course and GPA requirements, please consult an advisor regarding specific requirements and course selection. The program is designed to transfer especially well to George Mason University. Recommended Preparation: Satisfactory completion of the following high school units or equivalent: 4 units of English; 4 units of mathematics (algebra I-II, geometry and pre-calc); 1 unit of laboratory science; and 1 unit of social studies.

Two Years

1st Semester	Credits
ADJ 100 - Survey of Criminal Justice	3
ENG 111 - College Composition I	3
HIS --- - Elective [1]	1
MTH 154 - Quantitative Reasoning **OR** Higher	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 13	

2nd Semester	Credits
ADJ 107 - Survey of Criminology	3
CST 100 - Principles of Public Speaking **OR**	
CST 110 - Introduction to Human Communication	3
ENG 112 - College Composition II	3

ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
PSY 200 - Principles of Psychology	3
Total 15	

3rd Semester	Credits
ADJ 211 - Criminal Law, Evidence, and Procedures I	3
ADJ 234 - Terrorism and Counter-Terrorism **OR**	
ADJ 236 - Principles of Criminal Investigation	3
BIO 101 - General Biology I [2]	4
SOC 200 - Introduction to Sociology	3
MTH 245 - Statistics I **OR** Higher **OR**	3
--- --- - General Education Elective [3]	3
Total 16	

4th Semester	Credits
ADJ 105 - The Juvenile Justice System **OR**	
ADJ 140 - Introduction to Corrections	3
ADJ 133 - Ethics and the Criminal Justice Professional	3
BIO 102 - General Biology II [2]	4
--- --- - Humanities/Fine Arts Elective [4]	3
REL 100 - Introduction to the Study of Religion **OR**	
REL 237 - Religions of the East **OR**	
ENG 2-- - Literature Elective [5]	3
Total 16	

Total credits for the A.S. Degree in Criminology and Criminal Justice: 60

[1] Select any HIS course listed under the social/behavioral science courses in General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[2] Students may substitute CHM 101, CHM 111, or CHM 112 if they also meet the mathematics Prerequisites for these courses.
[3] Select any course listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution. Students planning to attend George Mason University are encouraged to take CST 229, PLS 241, or REL 100.
[4] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[5]Any 200-level literature course with an ENG prefix satisfies this requirement. Students planning to attend George Mason University are encouraged to take an approved ENG 200 level Literature Elective.

Cybersecurity, A.A.S.

NOVA Code: 3450
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This curriculum is designed for those who seek employment in the field of Cybersecurity (information assurance), for those who are presently in IT or a security field and who desire to increase their knowledge and update their skills, and for those who must augment their abilities in other fields with knowledge and skills in information security. The curriculum is mapped to the NSA/DHS Knowledge Units necessary for NOVA's designation as a Center of Academic Excellence.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements and arrangements that facilitate the transfer of this degree to selected senior institutions. Students interested in transfer should contact their academic advisor early in the program for specific course requirements.
Recommended Preparation: The student should possess a proficiency in high school English, high school algebra and geometry, and computer keyboarding skills.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
ITN 101 - Introduction to Network Concepts **OR**	
ITN 100 - Introduction to Telecommunications	3
ITN 106 - Microcomputer Operating Systems	3
MTH 154 - Quantitative Reasoning [1] **OR** Higher	3
SDV 101 - Orientation to Information Technology	1
Total 16	

2nd Semester	Credits
CST --- - Elective [2]	3
ITP 100 - Software Design	3
ITN 107 - Pers. Computer Hardware and Troubleshooting **OR**	
ITE 221 - Pers. Computer Hardware and OS Architecture	3
ITN 170 - Linux System Administration **OR**	
ITN 171 - UNIX I	3
ITN 260 - Network Security Basics	3
Total 15	

3rd Semester	Credits
ITP --- - Programming Elective [3]	4
ITN 200 - Administration of Network Resources	3
ITN 262 - Network Communication, Security, & Authentication	4
ITN 261 - Network Attacks, Computer Crime, and Hacking	4
--- --- - Social/Behavioral Sciences Elective [4]	3
Total 18	

3rd Semester	Credits
--- --- - Humanities/Fine Arts Elective [5]	3
--- --- - Approved Elective [6]	3
ITN 263 - Internet/Intranet Firewalls and E-Commerce Security	4
ITN 266 - Network Security Layers	3
ITN 276 - Computer Forensics I	3
Total 16	

Total credits for the A.A.S. Degree in Applied Science in Cybersecurity: 65

Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses used for this program may not be more than 10 years old as of the first day of the fall semester of the academic year in which a student graduates, unless approved by the pathway dean.
[1] May substitute a higher-level mathematics course. Consult with an academic advisor for appropriate selection.
[2] Select from the following: CST 100, CST 110, CST 126, and CST 229.
[3] Select from the following: ITP 120, ITP 132, ITP 150, ITP 225, or ITP 270.
[4] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[5] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[6] Select from the following: ITN 264, ITN 267, ITN 277, ITN 290, or ITN 295, or ENG 112.

Cybersecurity, C.S.C.

NOVA Code: 221-732-09
Offered through AL, MA, NOL, WO

Purpose: This program 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 program also helps prepare students for the Security+ and the CISSP certification exams.

One Year

1st Semester	Credits
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
ITN 101 - Introduction to Network Concepts **OR**	
ITN 100 - Introduction to Telecommunications	3
ITN 260 - Network Security Basics	3
ITN --- - Elective [1]	3
Total 12	

2nd Semester	Credits
ITN 261 - Network Attacks, Computer Crime, and Hacking	4
ITN 262 - Network Communication, Security, and Authentication	4

ITN 263 - Internet/Intranet Firewalls and E-Commerce Security	4
ITN 266 - Network Security Layers	3
Total	**15**

Total credits for the Career Studies Certificate in Cybersecurity: 27

Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses used for this program may not be more than 10 years old as of the first day of the fall semester of the academic year in which a student graduates, unless approved by the pathway dean. All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

[1] Approved elective may be selected from: ITN 264, ITN 267, ITN 290 or ITN 295.

Dental Hygiene, A.A.S.

NOVA Code: 1180
Offered through MEC

Purpose: The program is designed to prepare students to serve in a dynamic and growing health profession as members of the dental health team. After successful completion of the program, the student will be eligible to take the National Board Dental Hygiene Examination and professional licensure examinations. Upon successful completion of the licensing process, the title "Registered Dental Hygienist" (R.D.H.) is awarded.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Admission Requirements: Applicants must do the following:

- Comply with all general admission requirements for Health Sciences Programs.
- Be eligible to sit for the licensure exam, which will require the student to present documentation of legal status in the U.S.
- Pass BIO 141-BIO 142, with a grade of "B" or higher prior to being admitted to the program (Please note: BIO 141 requires the completion of BIO 101, or NAS 2 or a placement test as noted at: https://www.nvcc.edu/academics/divisions/health-sciences/).
- Pass BIO 150 with a grade of "B" or higher prior to being admitted to the program.
- Pass ENG 111 and SDV 101 Orientation to Healthcare with a "C" or higher prior to being admitted to the program.
- Be willing to repeat courses or to complete evaluative testing for credits earned more than ten years ago.
- Review the competitive admission and deadlines for applications on the dental hygiene website at *www.nvcc.edu/medical/divisions/allied/dental-hygiene.html*.

Completion Requirements: All courses (including General Education courses) must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements (note: some prerequisite requirements may require a higher grade).

Special Program Requirements: The Virginia Board of Dentistry reserves the right to deny licensure to any candidate who has been convicted of a crime involving moral turpitude or the use of drugs or alcohol to the extent that such use renders him/her unsafe to practice dental hygiene. Any applicant who has been found guilty of a misdemeanor or felony must consult with the Dental Hygiene program director prior to admission.

Special Accreditation Status: The Dental Hygiene Program is accredited by the American Dental Association's Commission on Dental Accreditation and has been granted the accreditation status of approval without reporting requirements. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678. The Commission's web address is *https://coda.ada.org*.

Bloodborne Pathogens and Infectious Diseases Statement: By nature of the profession, students accepted into the Dental Hygiene Program may be exposed to blood and body fluids while practicing dental hygiene skills or providing services during clinical, preclinical, and laboratory sessions. Policies and procedures have been established to ensure the working environment is safe in order to minimize disease transmission. Prospective students may request a copy of the policy on bloodborne infectious diseases by calling 703-822-6627.

Prerequisites	Credits
BIO 141 - Human Anatomy and Physiology I	4
BIO 142 – Human Anatomy and Physiology II	4
BIO 150 - Microbiology for Health Sciences	4
ENG 111 - College Composition I	3
SDV 101 - Orientation to (a Specific Discipline)	1
Total	**16**

Two Years

1st Semester	Credits
DNH 111 - Oral Anatomy	2
DNH 115 - Histology/Head and Neck Anatomy	3
DNH 130 - Oral Radiography for the Dental Hygienist	2
DNH 141 - Dental Hygiene I	5
CST 229 - Intercultural Communication	3
Total	**15**

2nd Semester	Credits
DNH 120 - Management of Emergencies	1
DNH 142 - Dental Hygiene II	5
DNH 145 - General and Oral Pathology	2
DNH 146 - Periodontics for the Dental Hygienist	2
DNH 216 - Pharmacology	2
Total	**12**

3rd Semester	Credits
DNH 143 - Dental Hygiene III	3
DNH 214 - Practical Materials for Dental Hygiene	2
Total	**5**

4th Semester	Credits
DNH 150 - Nutrition	2
DNH 226 - Public Health Dental Hygiene I	2
DNH 235 - Management of Dental Pain and Anxiety in the Dental Office	2
DNH 244 - Dental Hygiene IV	5
PSY 200 - Principles of Psychology	3
Total	**14**

4th Semester	Credits
DNH 227 - Public Health Dental Hygiene II	1
DNH 230 - Office Practice and Ethics	1
DNH 245 - Dental Hygiene V	5
--- --- - Humanities/Fine Arts Elective [1]	3
Total	**10**

Total credits for the A.A.S. Degree in Dental Hygiene: 72 (includes 16 prerequisite credits)

BIO 141, BIO 142, and BIO 150 must be completed within 10 years at time of admission.

[1] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

Dental Assisting, Certificate

NOVA Code: 1200
Offered through MEC

Purpose: This curriculum is designed to prepare students to perform chairside assisting, minor laboratory, and basic office procedures. Students learn the theory and skills to assist in the dental operatory through course work in the areas of chairside assisting, radiology, dental materials, dental and biomedical sciences, as well as clinical practice. Graduates can perform certain additional tasks allowing them to become productive and valued members of the dental health team. Upon successful completion of this program, students are eligible to sit for the Dental Assisting National Board Examination (DANB). After successful completion of this examination, the credential Certified Dental Assistant (CDA) is awarded.

Admission Requirements: Students must:

- Comply with all General Admission Requirements for Allied Health Programs.

- Have a high school diploma or GED.
- Take or self-place into MTH 133 or Math Unit 3 or higher: https://www.nvcc.edu/academics/placement/index.html.
- Pass ENG 111, and SDV 101 with a grade of "B" or higher prior to admission into the program.
- BIO 145 or BIO 141 and BIO 142 with a grade of "B" or higher prior to admission into the program (Please note: BIO 141 requires the completion of BIO 101, or NAS 2 or a placement test as noted at: https://www.nvcc.edu/academics/divisions/health-sciences/).
- Be willing to repeat courses or to complete evaluative testing for credits earned more than ten years ago.
- View an information session located on the Dental Assisting web site https://www.nvcc.edu/academics/pathways/health-sciences/dental-assisting.html.

Continuation Requirements: All courses (including General Education courses) program must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements (note: some prerequisite requirements may require a higher grade).
Special Accreditation Status: The Dental Assisting program maintains their status of accreditation by the Commission on Dental Accreditation. Students who successfully complete the program are considered to be graduates of an accredited program for purposes of certification and regulations as set forth by state licensing boards. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678. The Commission's web address is: *https://coda.ada.org.*
Bloodborne Pathogens and Infectious Diseases Statement: By nature of the profession, students accepted into the Dental Assisting program may be exposed to blood and body fluids while practicing dental skills or providing services during clinical, preclinical, and laboratory sessions. Policies and procedures have been established to ensure the working environment is safe in order to minimize disease transmission. Prospective students may request a copy of the policy on bloodborne infectious diseases by calling 703-822-6627.

Prerequisites	Credits
ENG 111 - College Composition I	3
BIO 145 - Basic Anatomy and Physiology [1]	4
SDV 101 - Orientation to (a Specific Discipline) **OR** SDV 100 - College Success Skills	1
Total 8	

One Year

1st Semester	Credits
DNA 100 - Introduction to Oral Health Professions	1
DNA 108 - Dental Science	3
DNA 110 - Dental Materials	3
DNA 113 - Chairside Assisting I	3
DNA 134 - Dental Radiology and Practicum	3
PSY 200 - Principles of Psychology	3
Total 16	

2nd Semester	Credits
CST 229 - Intercultural Communication	3
DNA 114 - Chairside Assisting II	4
DNA 119 - Dental Therapeutics	1
DNA 120 - Community Health	1
DNA 130 - Dental Office Management	2
DNA 140 - Externship	5
Total 16	

3rd Semester	Credits
DNA 190 - Coordinated Internship	3
Total 3	

Total credits for the Certificate in Dental Assisting: 43 (Includes 8 prerequisite credits)

BIO 145 **OR** BIO 141 and BIO 142 must be completed within 10 years at time of admission.
[1] May substitute BIO 145 by taking BIO 141 and BIO 142.

Diagnostic Medical Sonography: Abdominal Sonography-Extended and Obstetrics and Gynecology Sonography Specialization, A.A.S.

NOVA Code: 1090
Offered through MEC

Purpose: To prepare competent entry-level abdominal sonographers and obstetrics and gynecology sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains for Abdominal Sonography - Extended and Obstetrics and Gynecology Sonography. This curriculum is designed to prepare students to produce diagnostic images of the human body using special equipment to direct high frequency sound waves into different anatomic structures in a patient's body. The sonographer is a central member of the healthcare team and assists the radiologist in gathering diagnostic data for interpretation. NOVA's program emphasizes didactic and "hands-on" practice of sonographic techniques in a well-equipped scanning laboratory at the Medical Education Campus in Springfield, Virginia. Clinical experience is acquired at numerous area hospitals and private medical affiliates.
Students in the Diagnostic Medical Sonography degree program learn to perform an ultrasound of the Abdomen and Small Parts as well as Obstetric and Gynecologic sonography. Upon successful completion of the degree requirements, the student will be eligible to apply to take the American Registry for Diagnostic Medical Sonography (ARDMS) examination(s) leading to credentials as a Registered Diagnostic Medical Sonographer (RDMS®).

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Admission Requirements: Admission to the Diagnostic Medical Sonography program is competitive. Applicants must do the following:

- Comply with all general admission requirements for Health Sciences Programs.
- Review an online Diagnostic Medical Sonography information session at https://www.nvcc.edu/academics/pathways/health-sciences/diagnostic-medical-sonography.html.
- Attend a mandatory DMS Prospective Student Workshop prior to application.
- Complete BIO 141 Human Anatomy and Physiology I and BIO 142 Human Anatomy and Physiology II with a "B" or higher and completed within 5 years of application.
- Complete ENG 111 College Composition I with a grade of "B" or higher.
- Complete MTH 154 Quantitative Reasoning or higher-level math with a "B" or higher.
    - (For those intending to apply for the program in May 2024, MTH 161 PreCalculus I or higher-level math with a “B” or higher will be required for admission instead of MTH 154.)
- Complete PHY 100 - Elements of Physics with a "B" or higher and completed within 5 years of application.
- Complete SDV 101 Orientation to Healthcare with a "B" or higher.
- Successfully complete and achieve satisfactory scores on the TEAS (Test of Essential Academic Skills) test. Students may only take the test three times per year. The latest result must be within three years of application to the DMS Program.
- Have a minimum 2.5 cumulative GPA.
- (For those intending to apply for the program in May 2024, DMS 100 with a “B” or higher will also be required for admission.)

Completion Requirements: All DMS program courses must be completed with a grade of "79.5%" or better before taking the next semester course sequence and to satisfy graduation requirements. A program placed student not achieving a "79.5%" or higher will be automatically academically dismissed from the DMS program. Prerequisite courses BIO 141, BIO 142, PHY 101,

MTH 161, and DMS 100 require a B or higher. General Education courses require a C or higher grade and may be completed prior to admission to the DMS program.

Special Program Requirements: The American Registry of Diagnostic Medical Sonography (ARDMS) applicants, candidates, and registrants are required to report their involvement in any incident that constitutes a violation of ARDMS discipline policies. First-time applicants must disclose information regarding all previous violations of ARDMS discipline policies to the ARDMS with their initial application for examination. Upon disclosing a violation of ARDMS discipline policies, all ARDMS applicants, candidates, and registrants are required to submit official documentation from the presiding court system or disciplinary body. Individuals must provide documentation that either verifies that all sentencing requirements were completed in full, or a letter from the presiding court system/disciplinary body verifying that this case is closed, and all of the requirements have been satisfied. AARDMS conducts a "pre-application review" for individuals who wish to determine the impact of a previous violation of ARDMS discipline policies on their eligibility to apply for ARDMS certification. The Pre-Application Review Process is recommended for individuals who are not yet ready to apply for an examination. Individuals may obtain additional information regarding the pre-application process along with the appropriate forms by visiting *www.ardms.org*.

Special Accreditation Status: The Diagnostic Medical Sonography program maintains their status of accreditation by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

Prerequisites	Credits
BIO 141 – Human Anatomy and Physiology I	4
BIO 142 - Human Anatomy and Physiology II	4
ENG 111 - College Composition I	3
MTH 154 - Quantitative Reasoning	3
PHY 100 - Elements of Physics	4
SDV 101 - Orientation to (a Specific Discipline) **OR** SDV 100 - College Success Skills	1
Total 19	

Two Years

1st Semester	Credits
DMS 190 - Clinical Education I/Coordinated Internship	2
DMS 206 - Introduction to Sonography	3
DMS 207 - Sectional Anatomy	2
DMS 208 - Ultrasound Physics and Instrumentation I	2
DMS 217 - Sectional Anatomy Laboratory	1
DMS 218 - Ultrasound Physics and Instrumental Laboratory I	1
HLT 141 - Introduction to Medical Terminology	1
HLT 220 - Concepts of Disease	3
Total 15	

2nd Semester	Credits
DMS 196 - Clinical Education/Coordinated Internship II	3
DMS 209 - Ultrasound Physics and Instrumentation II	2
DMS 211 - Abdominal Sonography	4
DMS 212 - Obstetrical and Gynecological Sonography	4
DMS 219 - Ultrasound Physics and Instrumental Laboratory II	1
Total 14	

3rd Semester	Credits
DMS 231 - Clinical Education I	3
DMS 241 - Advanced Abdominal Sonography	3
DMS 242 – Adv. Obstetrical and Gynecological Sonography	3
--- --- - Humanities/Fine Arts Elective [1]	3
Total 12	

4th Semester	Credits
DMS 222 - Sonography Registry Review	2
DMS 223 - Introduction to Vascular Ultrasound	3
DMS 232 - Clinical Education II	4
PSY 200 - Principles of Psychology	3
Total 12	

Total credits for the Diagnostic Medical Sonography A.A.S.: 72 (includes 19 prerequisite credits)

BIO 141 and BIO 142 and PHY 100 must be completed within 5 years at time of admission.

[1] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

Diagnostic Medical Sonography: Echocardiography Specialization, A.A.S.

NOVA Code: 1091
Offered through MEC

Purpose: To prepare competent entry-level adult cardiac sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains. The curriculum prepares students to produce diagnostic images of the heart structures and motion to diagnose cardiovascular changes. The echocardiographer uses special equipment to direct high frequency sound waves into areas of the patient's body. The echocardiographer is a central member of the health care team and assists the radiologist in body image interpretation. Upon successful completion of degree requirements, the student will be eligible to apply to take the American Registry of Diagnostic Medical Sonography examinations leading to credentials as a Registered Diagnostic Cardiac Sonographer (RDCS®).

Admission Requirements: Students must:

- Comply with all general admission requirements for Health Sciences Programs.
- Review an online Diagnostic Medical Sonography information session at https://www.nvcc.edu/academics/pathways/health-sciences/diagnostic-medical-sonography.html.
- Attend a mandatory DMS Prospective Student Workshop prior to application.
- Complete BIO 141 and BIO 142 with a "B" or higher and completed within 5 years of application.
- Complete ENG 111 with a grade of "B" or higher.
- Complete MTH 154 or higher-level math with a "B" or higher.
    - (For those intending to apply for the program in May 2024, MTH 161 PreCalculus I or higher-level math with a “B” or higher will be required for admission instead of MTH 154.)
- Complete PHY 100 with a "B" or higher and completed within 5 years of application.
- Complete SDV 101 Orientation to Healthcare with a "B" or higher.
- Successfully complete and achieve satisfactory scores on the TEAS (Test of Essential Academic Skills) test. Students may only take the test three times per year. The latest result must be within three years of application to the DMS Program.
- Have a minimum 2.5 cumulative GPA.
- (For those intending to apply for the program in May 2024, DMS 100 with a “B” or higher will also be required for admission.)

Completion Requirements: All DMS program courses must be completed with a grade of "79.5%" or better before taking the next semester course sequence and to satisfy graduation requirements. A program placed student not achieving a "79.5%" or higher will be automatically academically dismissed from the DMS program. Prerequisite courses BIO 141, BIO 142, PHY 101, MTH 161, and DMS 100 require a B or higher. General Education courses require a C or higher grade and may be completed prior to admission to the DMS program.

Prerequisites	Credits
BIO 141 - Human Anatomy and Physiology I	4
BIO 142 - Human Anatomy and Physiology II	4
ENG 111 - College Composition I	3
MTH 154 - Quantitative Reasoning **OR** higher	3
PHY 100 - Elements of Physics	3-4
SDV 101 - Orientation to (a Specific Discipline) **OR** SDV 100 - College Success Skills	1
Total 19	

Two Years

1st Semester	Credits
DMS 190 - Clinical Education I/Coordinated Internship	2
DMS 206 - Introduction to Sonography	3
DMS 207 - Sectional Anatomy	2
DMS 208 - Ultrasound Physics and Instrumentation I	2
DMS 217 - Sectional Anatomy Laboratory	1
DMS 218 - Ultrasound Physics and Instrumental Laboratory I	1
HLT 141 - Introduction to Medical Terminology	1
HLT 220 - Concepts of Disease	3
Total 15	

2nd Semester	Credits
DMS 150 - Echocardiography I	4
DMS 196 - Clinical Education/Coordinated Internship II	3
DMS 209 - Ultrasound Physics and Instrumentation II	2
DMS 219 - Ultrasound Physics and Instrumental Laboratory II	1
PSY 200 - Principles of Psychology	3
Total 13	

3rd Semester	Credits
DMS 231 - Clinical Education I	3
DMS 250 - Echocardiography II	4
DMS 256 - Echocardiography Case Study Review	1
Total 8	

4th Semester	Credits
DMS 223 - Introduction to Vascular Ultrasound	3
DMS 232 - Clinical Education II	4
DMS 255 - Echocardiography Registry Review	2
--- --- - Humanities/Fine Arts Elective [1]	3
Total 12	

Total credits for the Echocardiography Specialization: 67 (includes 19 prerequisite credits)

BIO 141 and BIO 142 and PHY 100 must be completed within 5 years at time of admission.

[1] See humanities/fine arts courses listed under General Education Electives.

Diagnostic Medical Sonography: Vascular Sonography Specialization, A.A.S.

NOVA Code: 1092
Offered through MEC

Purpose: To prepare competent entry-level vascular technologists in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains. The curriculum is designed to prepare students to produce diagnostic images of the blood and blood flow. The vascular sonographer uses special equipment to direct high frequency sound waves into areas of the patient's body. The vascular sonographer is a central member of the health care team and assists the radiologist in body image interpretation. Upon successful completion of degree requirements, the student will be eligible to apply to take the American Registry of Diagnostic Medical Sonography examinations leading to credentials as a Registered Diagnostic Medical Sonographer (RDMS®), Registered Diagnostic Cardiac Sonographer (RDCS®) and Registered Vascular Technologist (RVT®).

Admission Requirements: Students must:

- Comply with all general admission requirements for Health Sciences Programs.
- Review an online Diagnostic Medical Sonography information session at https://www.nvcc.edu/academics/pathways/health-sciences/diagnostic-medical-sonography.html.
- Attend a mandatory DMS Prospective Student Workshop prior to application.
- Complete BIO 141 and BIO 142 with a "B" or higher and completed within 5 years of application.
- Complete ENG 111 with a grade of "B" or higher.
- Complete MTH 154 or higher-level math with a "B" or higher.
    - (For those intending to apply for the program in May 2024, MTH 161 PreCalculus I or higher-level math with a “B” or higher will be required for admission instead of MTH 154.)
- Complete PHY 100 Introduction to Physics I with a "B" or higher and completed within 5 years of application.
- Complete SDV 101 Orientation to Healthcare with a "B" or higher.
- Successfully complete and achieve satisfactory scores on the TEAS (Test of Essential Academic Skills) test. Students may only take the test three times per year. The latest result must be within three years of application to the DMS Program.
- Have a minimum 2.5 cumulative GPA.
- (For those intending to apply for the program in May 2024, DMS 100 with a “B” or higher will also be required for admission.)

Completion Requirements: All DMS program courses must be completed with a grade of "79.5%" or better before taking the next semester course sequence and to satisfy graduation requirements. A program placed student not achieving a "79.5%" or higher will be automatically academically dismissed from the DMS program. Prerequisite courses BIO 141, BIO 142, PHY 101, MTH 161, and DMS 100 require a B or higher. General Education courses require a C or higher grade and may be completed prior to admission to the DMS program.

Prerequisites	Credits
BIO 141 - Human Anatomy and Physiology I	4
BIO 142 - Human Anatomy and Physiology II	4
ENG 111 - College Composition I	3
MTH 154 - Quantitative Reasoning	3
PHY 100 - Elements of Physics	4
SDV 101 - Orientation to (a Specific Discipline) **OR** SDV 100 - College Success Skills	1
Total 19	

Two Years

1st Semester	Credits
DMS 190 - Clinical Education I/Coordinated Internship	2
DMS 206 - Introduction to Sonography	3
DMS 207 - Sectional Anatomy	2
DMS 208 - Ultrasound Physics and Instrumentation I	2
DMS 217 - Sectional Anatomy Laboratory	1
DMS 218 - Ultrasound Physics and Instrumental Laboratory I	1
HLT 141 - Introduction to Medical Terminology	1
HLT 220 - Concepts of Disease	3
Total 15	

2nd Semester	Credits
DMS 196 - Clinical Education/Coordinated Internship II	3
DMS 209 - Ultrasound Physics and Instrumentation II	2
DMS 219 - Ultrasound Physics and Instrumental Laboratory II	1
DMS 260 - Vascular Sonography II	4
PSY 200 - Principles of Psychology	3
Total 13	

3rd Semester	Credits
DMS 160 - Vascular Sonography I	4
DMS 231 - Clinical Education I	3
DMS 265 - Vascular Case Study Review	1
Total 8	

4th Semester	Credits
DMS 204 - Introduction to General Sonography	3
DMS 232 - Clinical Education II	4
DMS 266 - Vascular Ultrasound Registry Review	2
--- --- - Humanities/Fine Arts Elective [1]	3
Total 12	

Total credits for the Vascular Sonography Specialization: 67 (includes 19 prerequisite credits)

BIO 141 and BIO 142 and PHY 100 must be completed within 5 years at time of admission.

[1] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

Driver Education Instructor, C.S.C.

NOVA Code: 221-882-01
Offered through MA

Purpose: This program is designed for students who wish to become qualified teachers of driver education or maintain qualifications in the state of Virginia.

One Semester

1st Semester	Credits
CST/ENG Elective [1]	3
EDU 114 - Driver Task Analysis [2]	3
EDU 214 - Instructional Principles of Driver Education [2]	3
Total 9	

Total credits for the Driver Education Instructor Career Studies Certificate: 9

[1] May be met by ENG 111 or other ENG courses approved by a student's advisor, or by CST 100 or CST 110.
[2] These classes are taught in eight-week sessions.

Early Childhood Development, A.A.S.

NOVA Code: 6360
Offered through AL, LO, MA

Purpose: The curriculum is designed to prepare Early Childhood Professionals. This includes people presently employed in early learning settings, and those seeking employment in the field. It also provides seamless articulation for those who wish to continue their education at some four-year institutions in VA.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor with the Early Childhood Programs for further information.
Special Accreditation Status: The A.A.S. Early Childhood Development degree at Northern Virginia Community College *is accredited by the Commission on the Accreditation of Early Childhood Higher Education Programs of the National Association for the Education of Young Children.* The current accreditation term runs from March 2018 through March 2025.

Two Years

1st Semester	Credits
EDU 235 - Health, Safety, and Nutrition Education	3
CHD 120 - Introduction to Early Childhood Education	3
CHD 145 - Teaching Art, Music, and Movement to Children	3
CHD 205 - Guiding the Behavior of Children	3
ENG 111 - College Composition I	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 16	

2nd Semester	Credits
CHD 118 - Language Arts for Young Children	3
CHD 146 - Math, Science, and Social Studies for Children	3
CHD 165 - Observation and Participation in Early Childhood/Primary Settings	3
CHD 216 - Early Childhood Programs, Schools, and Social Change	3
PSY 230 - Developmental Psychology	3
Total 15	

3rd Semester	Credits
EDU 200 - Foundations of Education	3
ENG 112 - College Composition II	3
CHD 166 - Infant and Toddler Programs	3
CHD 210 - Introduction to Exceptional Children	3
MTH 154 - Quantitative Reasoning **OR** Higher	3
Total 15	

4th Semester	Credits
BIO 101 - General Biology I	4
CHD 265 - Advanced Observation and Participation in Early Childhood/Primary Settings	3
CHD 270 - Administration of Childcare Programs	3
ENG 250 - Children's Literature **OR**	
ENG 246 - American Literature	3
HIS 121 - United States History to 1877 **OR**	
HIS 122 - United States History Since 1865	3
Total 16	

Total credits for the A.A.S. Degree in Early Childhood Development: 62

Early Childhood Development, C.S.C.

NOVA Code: 221-636-04
Offered through AL, LO, MA, NOL

Purpose: This curriculum is designed to prepare individuals to work with young children in safe and healthy environments that are supportive of children's individual physical, cognitive, and social-emotional development. Job opportunities include employment as assistant teachers, teachers, group leaders, or family childcare providers in programs for young children.

One Year

1st Semester	Credits
CHD 120 - Introduction to Early Childhood Education	3
CHD 145 - Teaching Art, Music, and Movement to Children	3
CHD 205 - Guiding the Behavior of Children	3
SDV 100 - College Success Skills [1]	3
Total 10	

2nd Semester	Credits
CHD 165 - Observation and Participation in Early Childhood/Primary Settings	3
EDU 235 - Health, Safety, and Nutrition Education	3
Total 6	

Total credits for the Early Childhood Development Career Studies Certificate: 16

[1] Students may substitute the SDV 101 Orientation section related to this program.

Early Childhood Development, Certificate

NOVA Code: 6320
Offered through AL, LO, MA, NOL

Purpose: The curriculum is designed to prepare individuals for employment in environments where the care and education of young children is the primary focus. Job opportunities include employment in child development programs and family childcare homes and before and after school-age programs.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor with the Early Childhood Programs for further information.

One Year

1st Semester	Credits
CHD 118 - Language Arts for Young Children	3
CHD 120 - Introduction to Early Childhood Education	3
CHD 205 - Guiding the Behavior of Children	3
EDU 235 - Health, Safety, and Nutrition Education	3
ENG 111 - College Composition I	3
SDV 100 - College Success Skills [1]	1
Total 16	

2nd Semester	Credits
CHD 145 - Teaching Art, Music, and Movement to Children	3
CHD 146 - Math, Science, and Social Studies for Children	3
CHD 165 - Observation and Participation in Early Childhood/Primary Settings	3
CHD 216 - Early Childhood Programs, Schools, and Social Change	3
PSY 230 - Developmental Psychology	3
Total 15	

Total credits for the Early Childhood Development Certificate: 31

[1] May substitute the SDV 101 Orientation section related to this program.

Early Childhood Development: Infant and Toddler Care, C.S.C.

NOVA Code: 221-636-06
Offered through AL, LO, MA, NOL

Purpose: The curriculum is designed to prepare individuals to create developmentally appropriate learning environments for infants and toddlers. Job opportunities include employment in child development programs and family childcare homes.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor with the Early Childhood Programs for further information.

One Year

1st Semester	Credits
CHD 120 - Introduction to Early Childhood Education	3
CHD 166 - Infant and Toddler Programs	3
EDU 235 - Health, Safety, and Nutrition Education	3

SDV 100 - College Success Skills 1[1]	1
	Total 10

2nd Semester	Credits
CHD 164 - Working w/Infants and Toddlers in Inclusive Settings	3
CHD 165 - Observation and Participation in Early Childhood/Primary Settings	3
	Total 6

Total credits for the Infant and Toddler Care Career Studies Certificate: 16

[1] May substitute the SDV 101 Orientation section related to this program.

Education, A.S.

NOVA Code: 625
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This curriculum prepares students to transfer to any four-year college or university teacher preparation program. Courses in this degree are designed to satisfy some of the endorsement and professional course requirements of a Virginia teaching license. In EDU 200, students will identify the endorsement (content) courses they need to earn a teaching license. Students should meet with a Teacher Education faculty member or Education Field Placement Coordinator and Advising Specialist to select the correct courses for their area of licensure. EDU 200 and EDU 204 both require 20-hour field placements in a K-12 public school. Students will be required to complete a background check before being placed in the schools. Students with criminal records should consult with the Teacher Education Field Placement Coordinator before enrolling in the courses. Students are strongly encouraged to take the VCLA after completing ENG 111, ENG 112, ENG-literature course, and CST 100 or 110.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
EDU 200 - Foundations of Education	3
MTH 154 - Quantitative Reasoning [1] **OR** MTH 161 - PreCalculus I **OR** Higher	3
--- --- - Physical or Life Science Elective w/Lab [2]	4
SDV 101 - Orientation to Teaching **OR** SDV 100 - College Success Skills	1
	Total 14

2nd Semester	Credits
ENG 112 - College Composition II	3
HIS 121 - United States History to 1877 **OR** HIS 122 - United States History Since 1865	3
MTH 245 - Statistics I [1] **OR** Higher	3
--- --- - Physical or Life Science Elective w/Lab [2]	4
PSY 230 - Developmental Psychology **OR** EDU 207 - Human Growth and Development	3
	Total 16

3rd Semester	Credits
CST --- - Elective [3]	3
EDU 204 - Teaching in a Diverse Society	3
ENG 2-- - Literature Elective [4]	3
--- --- - Education Elective [5]	3
--- --- - Social/Behavioral Sciences Elective [6]	3
	Total 15

4th Semester	Credits
EDU 250 - Foundations of Exceptional Education	3
--- --- - Education Elective [5]	3
--- --- - Education Elective [5]	3
--- --- - Education Elective [5]	3
--- --- - Humanities/Fine Arts Elective [7]	3
	Total 15

Total credits for the A.S. Degree in Education: 60

1 MTH 154 or MTH 161 are preferred to meet the algebra requirement for elementary licensure in Virginia. Students should make choices after consulting with the Teacher Education Specialization academic advisor/counselor on the specific requirements at the four-year Virginia institution to which they plan to transfer. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
2 Choose from BIO 101, ENV 121, GOL 105, GOL 106, CHM 101, PHY 100, or PHY 150. The second science should be a different discipline than the first.
[3] Select from the following: CST 100 and CST 110.
[4] 200-Level Literature Elective may be chosen from: ENG 245, ENG 246, ENG 250, ENG 255, or ENG 258.
[5] Select the education elective (table below) based upon the requirements of the senior institution to which you plan to transfer. Please consult the list of electives in the table below and schedule a meeting with a Teacher Education Advisor.
[6] See social/behavioral science courses listed under General Education Electives. Students may select from: ECO 150, ECO 201, ECO 202, GEO 200, GEO 210, GEO 220, PLS 135.
[7] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from the Art or Humanities section.

Education Options	Elective Options
Elementary Education	HIS 101, 102, 111, 112, 121, 122, 141, 281, World Languages 101, 102, 201, 202, EDU 206, 270, 280, a third Science or a third Math
Special Education	ASL 125, EDU 206, EDU 270, EDU 280
Secondary Education Math	MTH 245, 263, 264, 265, 266, 280, 288, CSC 221
Secondary Education English	1 World Lit (ENG 255), 1 British (ENG 245), 1 American (ENG 246), ENG 200, ENG 210, Creative Writing (ENG 211, 212, 215, 217, 219)
Secondary Education Science	BIO 101-102, CHM 111-112, CHM 241-243, CHM 242-246, MTH 161-162-167, MTH 263, 264, 265, MTH 155/245, PHY 201-202, PHY 241-242, GOL 110, GOL 105, 106, ENV 121-122, GEO 200
Secondary Education Social Science	HIS 121-122, HIS 101-102, HIS 111-112, PLS 135-136, PLS 140, GEO 210, ECO 150, ECO 201, ECO 202, REL 230, PSY 200
Secondary Education Engineering	EGR 125 Programming, EGR 121+122 Foundation & Design, EGR 240 Statics CHM 111-112, MTH 263-264, PHY 201, BIO 101-102, MTH 245
K-12 Teaching Art	ART 101, 102 121, 223, 131, 132
K-12 Teaching World Language	FL 101, 102, 201, 202
K-12 Teaching Physical Education	HLT 206, 230, 110, BIO 101, 102, 141, 142
K-12 Teaching Music	MUS 111, 112, 221, 222, 145, 155, 165, 185, 211, 212, 241
K-12 Teaching Theatre	CST 131, 136, 145

Education: Teaching Professional, C.S.C.

NOVA Code: 221-625-01
Offered through AL, AN, LO, MA, NOL, WO

Purpose: The purpose of this certificate is to allow for exploration of teaching as a career while providing the skills necessary for entry-level employment and meet some professional coursework required for provisionally licensed teachers in Virginia. In this certificate, students may receive Credit for Prior Learning for their work experiences. Students who would benefit from the program include career switchers, provisionally licensed educators, and undergraduates seeking to learn more about the field of education. Upon completion, job opportunities include Substitute Teachers and Instructional Assistants.

One Year

1st Semester	Credits
EDU 200 - Foundations of Education	3
ENG 111 - College Composition I	3

SDV 100 - College Success Skills	1
	Total 7

2nd Semester	Credits
EDU 204 - Teaching in a Diverse Society	3
EDU 206 - Classroom and Behavioral Management	3
EDU 290 - Coordinated Internship	1
	Total 7

3rd Semester	Credits
EDU 207 - Human Growth and Development	3
EDU 250 - Foundations of Exceptional Education	3
	Total 6

Total credits for the Teaching Professional Career Studies Certificate: 20

Emergency Medical Services, A.A.S.

NOVA Code: 1460
Offered through MEC

Purpose: The curriculum is designed to develop the competencies needed to prepare the student to achieve National Registry Paramedic Certification (NRP).

Credit for Prior Learning: Students in this program who hold current EMS certification may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Admission Requirements: Applicants must do the following:

- Comply with all general admission requirements for Health Sciences Programs.
- View a mandatory EMS department information session. Contact Program Administrative Assistant or check the website for further details.
- Be 16 years of age for the EMT-Basic training (first semester); must be 18 years of age or older for Paramedic training.
- Hold, at a minimum, a high school or general equivalency diploma. Students may apply for dual enrollment for attendance during the first semester.
- During the 1st semester of the program, students must qualify for ENG 111 or higher.
- Have attained a 2.0 GPA at the last school attended. Dual enrollment students must maintain 2.0 GPA during concurrent high school courses.
- Have no physical or mental impairment that would render the student unable to perform all skills required for EMS training at any level.
- Undergo a national background check, including urine drug screening, with no record of any sexual crime and be at least five years past final release of any felony or drug-related convictions. Go to https://portal.castlebranch.com/NG36, put in code "**OR**21," and select the items needed for your level (EMT or Paramedic). This must be repeated annually.

Completion Requirements:

- All courses (including General Education courses) must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements and in-order to be eligible for any Virginia and/or National Registry certifying examination(s).
- After successful completion of the first semester, the following additional requirements must be achieved and maintained throughout attendance in the second through fifth semesters:
    - Present proof of personal liability insurance, with a minimum of $1,000,000 coverage.
    - Proof of insurance must remain with the student at all times, while on campus and clinical properties.
    - Provide health history and physical, including annual flu shot. Must be repeated annually.

Special Program Completion Requirements:

- Before progressing to the Paramedic level (starting with their second semester) students must successfully attain their EMT-Basic certification.
- All EMS courses must be taken in sequence, general studies courses may be taken in any order except for BIO 141 which is required, with a grade of "C" or better, prior to beginning of Paramedic level studies (semester two). (Please note: BIO 141 requires the completion of BIO 101, or NAS 2 or a placement test as noted at: https://www.nvcc.edu/academics/divisions/health-sciences/)
- Students who receive an "I" (incomplete) grade in any of the courses in the EMS sequence must resolve the incomplete before continuing in the EMS sequence.
- All clinical and internship requirements must be met prior to taking any Virginia and/or National Registry certifying examination(s).

Reenrollment: Students must follow the reenrollment requirements for all Health Sciences students.

Special Accreditation Status: The Northern Virginia Community College EMS Program is accredited by the Commission on Accreditation of Allied Health Education Programs (*www.caahep.org*) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP).

Commission on Accreditation of Allied Health Education Programs.

Two Years

1st Semester	Credits
BIO 141 - Human Anatomy and Physiology I	4
EMS 111 - Emergency Medical Technician: Basic	7
EMS 120 - Emergency Medical Technician: Basic Clinical	1
ENG 111 - College Composition I	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 16

2nd Semester	Credits
EMS 121 - Preparatory Foundations	2
EMS 123 - EMS Clinical Preparation	1
EMS 125 - Basic Pharmacology	1
EMS 126 - Basic Pharmacology Lab	1
EMS 127 - Airway, Shock, and Resuscitation	1
EMS 128 - Airway, Shock, and Resuscitation Lab	1
EMS 135 - Emergency Medical Care	2
EMS 136 - Emergency Medical Care Lab	1
EMS 137 - Trauma Care	1
EMS 138 - Trauma Care Lab	1
	Total 12

3rd Semester	Credits
BIO 142 - Human Anatomy and Physiology II	4
EMS 175 - Paramedic Clinical Experience I	1
EMS 139 - Special Populations	1
EMS 140 - Special Populations Lab	1
EMS 141 - Cardiovascular Care	2
EMS 142 - Cardiovascular Care Lab	1
PSY 230 - Developmental Psychology [1]	3
	Total 13

4th Semester	Credits
EMS 202 - Paramedic Pharmacology	2
EMS 203 - Advanced Patient Care	2
EMS 204 - Advanced Patient Care Lab	2
EMS 206 - Pathophysiology for the Health Professions	3
EMS 247 - Paramedic Clinical Experience II	1
EMS 248 - Paramedic Comprehensive Field Experience	2
	Total 12

5th Semester	Credits
EMS 163 - Prehospital Trauma Life Support (PHTLS)	1
EMS 164 - Advanced Medical Life Support (AMLS)	1
EMS 165 - Advanced Cardiac Life Support (ACLS)	1
EMS 167 - Emergency Pediatrics Course (EPC)	1
EMS 210 - EMS Operations	1
EMS 212 - Leadership and Professional Development	1
EMS 216 - Paramedic Review	1

EMS 249 - Paramedic Capstone Internship	2
PHI 220 - Ethics and Society	3
Total	**12**

Total credits for the A.A.S. Degree in Emergency Medical Services: 65

Students must have completed BIO 141 or equivalent as a prerequisite for the Paramedic portion of this program within 10 years at the time of admission to the Paramedic portion (semester two). If BIO 142 is completed prior to Paramedic portion enrollment, then BIO 142 must also be completed within 10 years at the time of admission to the Paramedic portion (semester two).
[1] PSY 200 and SOC 268 are approved substitutes for PSY 230.

Engineering Technology, A.A.S.

NOVA Code: 9680
Offered through LO, MA

Purpose: This program is designed to prepare students for employment as a technician, operator, and/or technologist in the fields of engineering technology, electrical technology, industrial technology, operational technology, sensor technology, automation technology, robotics and mechatronics.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Two Years

1st Semester	Credits
ELE 150 - A.C. and D.C. Circuit Fundamentals	3
ENG 115 - Technical Writing	3
IND 123 - Intro to Lean Manufacturing and Six Sigma	1
IND 137 - Team Concepts in Problem Solving	3
MEC 140 - Introduction to Mechatronics [1]	3
SAF 130 - Industrial Safety - OSHA 10	1
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total	**15**

2nd Semester	Credits
CAD 175 - Schematics and Mechanical Diagrams	2
ELE 146 - Electric Motor Control	4
ELE 233 - Programmable Logic Controller Systems I	3
MTH 111 - Basic Technical Mathematics	3
MEC 230 - Mechatronics Process Control [1]	3
Total	**15**

3rd Semester	Credits
CST 126 - Interpersonal Communication	3
ETR 281 - Digital Systems	3
INS 233 - Process Control Integration	4
MEC 270 - Computation for Engineering Technology	3
--- --- - Technical Elective [1,2]	3
Total	**16**

4th Semester	Credits
ELE 211 - Electrical Machines I	3
MEC 266 - Application of Fluid Mechanics	3
--- --- - Humanities/Fine Arts Elective [3]	3
--- --- - Social/Behavioral Sciences Elective [4]	3
--- --- - Technical Elective [1,2]	3
Total	**15**

Total credits for the A.A.S. Degree in Engineering Technology: 61

[1] MEC 140, MEC 230, MEC 266, INS 233 and ETR 281 are only offered on the Manassas Campus.
[2] Approved Technical Electives: INS 230, ETR 286, BUS 204, ELE 189, or ELE 250.
[3] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[4] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Engineering Technology: Data Center Operations Specialization, A.A.S.

NOVA Code: 9684
Offered through LO

Purpose: This program is designed to prepare students for employment in data centers or companies that support data center function as a technician, operator and/or technologist. Coursework will prepare students to earn BICSI Installer 1, Installer 2 (Copper) and Installer 2 (Fiber Optic) industry credentials.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Two Years

1st Semester	Credits
ELE 150 - A.C. and D.C. Circuit Fundamentals	3
ENG 115 - Technical Writing	3
IND 123 - Intro to Lean Manufacturing and Six Sigma	1
IND 137 - Team Concepts in Problem Solving	3
MTH 111 - Basic Technical Mathematics	3
SAF 130 - Industrial Safety - OSHA 10	1
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total	**15**

2nd Semester	Credits
CAD 175 - Schematics and Mechanical Diagrams	2
ELE 146 - Electric Motor Control	4
ELE 148 - Power Distribution Systems [1]	3
ELE 233 - Programmable Logic Controller Systems I	3
ENE 195 - Topics in: Introduction to Data Center Operations	3
Total	**15**

3rd Semester	Credits
ELE 189 - Data Cabling Communication	3
ENE 228 - Building Automation & Energy Management Systems [1]	3
ETR 281 - Digital Systems	3
CST 126 - Interpersonal Communication	3
MEC 270 - Computation for Engineering Technology	3
Total	**15**

4th Semester	Credits
ELE 211 - Electrical Machines I	3
ELE 250 - Fiber Optic Technology [2] **OR**	
AIR 121 - Air Conditioning and Refrigeration I [2]	3-4
ENE 208 - Critical Site Operations	3
--- --- - Humanities/Fine Arts Elective [3]	3
--- --- - Social/Behavioral Sciences Elective 3 [4]	4
Total	**15-16**

Total credits for the A.A.S. Degree in Data Center Operations Specialization: 60-61

[1] ENE 195, ENE 228, ENE 295, and ELE 148 are only offered on the Manassas and Loudoun campuses.
[2] AIR 121 is offered on the Loudoun and Woodbridge campuses. ELE 250 is offered on the Loudoun and Manassas campuses.
[3] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet
the requirements of the transfer institution.
[4] See social/behavioral sciences courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet
the requirements of the transfer institution.

Engineering Technology: Data Center Operations, C.S.C.

NOVA Code: 221-299-16
Offered through LO

Purpose: This program is designed to prepare students for entry-level employment in data centers or companies that support data center function as a technician, operator and/or technologist. Coursework will prepare students to earn the DICSI Installer 2 (Fiber Optic) and OSHA 10 industry credentials.

One Year

1st Semester	Credits
CAD 175 - Schematics and Mechanical Diagrams	2
ELE 150 - A.C. and D.C. Circuit Fundamentals	3
IND 137 - Team Concepts in Problem Solving	3
MTH 111 - Basic Technical Mathematics **OR** Higher	3
SAF 130 - Industrial Safety - OSHA 10	1
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 13

2nd Semester	Credits
ELE 146 - Electric Motor Control	4
ELE 148 - Power Distribution Systems	3
ELE 250 - Fiber Optic Technology	3
ENE 195 - Topics in: Introduction to Data Center Operations	3
	Total 13

Total credits for the Career Studies Certificate Degree in Data Center Operations: 26

Engineering Technology: Engineering Technology Technician, C.S.C.

NOVA Code: 221-968-80
Offered through MA

Purpose: This program is designed to prepare students for entry-level employment in technology companies and related industries that require technicians/technologists trained in engineering technology, mechatronics, automation, electronics, and robotics. Coursework will prepare students to earn the BICSI Installer 2 (Fiber Optic) and OSHA 10 industry credentials.

One Year

1st Semester	Credits
CAD 175 - Schematics and Mechanical Diagrams	2
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
ELE 150 - A.C. and D.C. Circuit Fundamentals	3
MTH 111 - Basic Technical Mathematics OR Higher	3
SAF 130 - Industrial Safety - OSHA 10	1
SDV 100 - College Success Skills OR	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 13

2nd Semester	Credits
ELE 146 - Electric Motor Control	4
ELE 250 - Fiber Optic Technology	3
IND 123 - Intro to Lean Manufacturing and Six Sigma	1
IND 137 - Team Concepts in Problem Solving	3
MEC 140 - Introduction to Mechatronics	3
	Total 14

Total credits for the Engineering Technology Technician Career Studies Certificate: 27

Engineering, A.S.

NOVA Code: 8310
Offered through AL, AN, LO, MA

Purpose: The curriculum is designed to prepare the student to transfer to a bachelor's degree program in an Engineering discipline. Some of the Engineering disciplines are aerospace engineering, biomedical engineering, chemical engineering, civil engineering, computer engineering, electrical engineering, mechanical engineering, and systems engineering. It is highly recommended that students consult with an Engineering faculty advisor prior to selecting their courses to ensure maximum transferability.

Transfer Information: Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.
This program is aligned with the Transfer Virginia common curriculum. Students are strongly encouraged to consult their academic advisor and review transfer options using the Transfer Virginia Portal, Where Can This Degree Transfer.

Recommended Preparation: High school courses: 4 units of English, 2 units of algebra, 1 unit of geometry, 1 unit of trigonometry, 1 unit of laboratory science (chemistry or physics).
Completion Requirements: Grades of "C" and above are required in courses intended to be transferred for credit to a baccalaureate degree-granting college/university.

Two Years

1st Semester	Credits
ECO 202 - Principles of Microeconomics	3
EGR 121 - Foundations of Engineering	2
ENG 111 - College Composition I	3
MTH 263 - Calculus I **OR** Higher	4
--- --- - Physical or Life Science Elective w/Lab [1]	4
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 17

2nd Semester	Credits
ENG 112 - College Composition II	3
MTH 264 - Calculus II	4
--- --- - Humanities/Fine Arts Elective [2]	3
--- --- - Physical or Life Science Elective w/Lab 4 [1]	
--- --- - Engineering/Technical Elective [3]	3-4
	Total 17-18

3rd Semester	Credits
MTH 267 - Differential Equations	3
HIS --- - Elective 4	3
--- --- - Engineering/Technical Elective [3]	4
--- --- - Engineering/Technical Elective [3]	3-4
--- --- - Engineering/Technical Elective [3]	3-4
	Total 16-18

4th Semester	Credits
MTH 265 - Calculus III **OR**	
MTH 266 - Linear Algebra **OR**	
MTH 288 - Discrete Mathematics [5]	3-4
--- --- - Humanities/Fine Arts Elective [2]	3
--- --- - Engineering/Technical Elective [3]	3-4
--- --- - Engineering/Technical Elective [3]	3-4
--- --- - Engineering/Technical Elective [6]	3-4
	Total 15-18

Total credits for the A.S. Degree in Engineering: 65-70

[1] Plan to take two courses out of these three (CHM 111, PHY 241, PHY 242). For most engineering disciplines, all three are required. The third science will be taken as part of the Engineering/Technical Electives. If your engineering discipline does not require CHM 111, then take PHY 241 in the second semester. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[2] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[3] There should be 22 to 26 credits of Engineering/Technical electives which results in six or seven classes. These Engineering/Technical Electives should be chosen carefully in conjunction with an advisor. Consult the requirements of the transfer institution. Engineering/Technical Electives: BIO 101, BIO 206, CHM 111 CHM 112, CHM 241, CHM 242, CHM 245, CHM 246, CIV 240,CIV 225, CIV 226, CIV 280, CSC 221, CSC 222, CSC 223, CST 100, CST 110, EGR 122, EGR 125, EGR 206, EGR 240, EGR 245, EGR 246, EGR 248, EGR 270, EGR 271, EGR 272, GOL 105, MTH 265, MTH 266, MTH 288,PHY 242, PHY 243.
[4] Select any HIS course listed under the social/behavioral science courses in General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[5] Math course should be chosen based on engineering discipline and transfer institution. For most engineering disciplines, more than one course will be required. The additional math courses needed will fall under the Engineering/Technical Elective. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

[6] Select any course listed under footnote #3. This elective is not needed if selections for all other requirements total 65 credits or more.

General Studies, A.S.

NOVA Code: 6990
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This program is a flexible associate degree. For students who plan to transfer, the degree can parallel the first **Two Years** of a four-year Bachelor of Science program if they choose courses that match the transfer institution's requirements. For those students who do not plan to transfer, the degree allows them to structure a program to suit their needs using accumulated credits from a variety of formal and experiential sources.

Transfer Information: Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student. Students are encouraged to complete the A.S. degree before transferring. Some Virginia colleges and universities exclude General Studies graduates from participating in guaranteed admission programs.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications **OR**	
CSC 110 - Principles of Computer Science	3
MTH 154 - Quantitative Reasoning **OR** Higher	
--- --- - Physical or Life Science Elective w/Lab 1	3-4
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 14	

2nd Semester	Credits
CST --- - Elective [2]	3
ENG 112 - College Composition II	3
HIS --- - Elective [3]	3
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Physical or Life Science Elective w/Lab [1]	4
Total 16	

3rd Semester	Credits
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Open Electives [5]	9
--- --- - Social/Behavioral Sciences Elective [6]	3
Total 15	

4th Semester	Credits
--- --- - Open Electives [5]	12
--- --- - Social/Behavioral Sciences Elective [6]	6
Total 15	

Total credits for the A.S. Degree in General Studies: 60

[1] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[2] Select from the following: CST 100, CST 110, CST 126, or CST 229.
3 Select any HIS course listed under social/behavioral sciences under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[4] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[5] See the list of Open Electives. If transfer to another college is planned, the elective courses should be selected based on the requirements of the transfer institution.
[6] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Geographic Information Systems (GIS), C.S.C.

NOVA Code: 221–719–71
Offered through LO

Purpose: This program is designed to help students develop both the theoretical knowledge and a practical facility with GIS. Students who already hold a baccalaureate or master's degree will acquire the requisite skills and knowledge to switch careers, or to apply spatial analysis in their present workplaces. Students will be positioned to pursue additional coursework toward an associate degree and/or transfer to a four-year institution for further study in the geospatial, environmental, or physical sciences; in civil engineering; in information technology; or in business/marketing at a four-year institution.
Preparation: Students are expected to understand fundamental computer applications and concepts before enrolling in GIS courses.

One Year

1st Semester	Credits
ENG/CST Elective [1]	3
GEO 220 - World Regional Geography	3
GIS 200 - Geographical Information Systems I	4
Total 10	

2nd Semester	Credits
GIS 201 - Geographical Information Systems II	4
GIS 255 - Exploring Our Earth: Introduction to Remote Sensing	3
--- - --- - Elective [2]	3-4
Total 10-11	

3rd Semester	Credits
GIS 203 - Cartography for GIS	3
GIS 205 - Geographical Information Systems: 3-Dimensional Analysis	4
GIS 290 - Internship	1
Total 8	

Total credits for the Career Studies Certificate in Geographic Information Systems (GIS): 28-29

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17-24 must complete an SDV course within their first year at NOVA.
To be credited toward the certificate, a minimum grade of "C" for each class is required.
[1] May be met by ENG 111 or other ENG courses approved by a student's advisor, or by CST 100, CST 110, CST 126, or CST 229.
[2] Must be chosen from the following disciplines: GIS 200-level course not specified, BIO, CHM, EGR, ENV, GEO, GOL, HIS, ITD, ITN, ITP, MKT, MTH, or PHY.

Graphic Design, A.A.S.

NOVA Code: 5110
Offered through AL, LO

Purpose: The curriculum is designed for individuals who seek full-time employment in the graphic design field. Job opportunities include graphic designer, art director, illustrator, production artist, package designer and web content developer, among others in the graphic design marketplace.
Recommended Preparation: Proficiency in high school English and a satisfactory aptitude for drawing.
Equipment and Supplies: Graphic Design students are required to purchase certain basic equipment and materials necessary to achieve professionally oriented objectives. Most of the equipment is purchased in the beginning class, ART 140 Introduction to Graphic Skills, and can be used throughout the two-year program.

Two Years

1st Semester	Credits
ART 121 - Foundations of Drawing	3
ART 131 - Two-Dimensional Design	3
ART 140 - Introduction to Graphic Skills	3
ENG 111 - College Composition I	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
--- --- - Social/Behavioral Sciences Elective [1]	3
Total 16	

2nd Semester	Credits
ART --- - Elective [2]	3
ART 116 - Design for the Web I	3
ART 135 - Visual Communications	3
ART 141 - Typography I	3
ART 251 - Communication Design I [3] **OR**	
PHT 270 - Digital Imaging I [3]	3
Total 15	

3rd Semester	Credits
ART 142 - Typography II	3
ART 217 - Graphic Design I	3
ART 265 - Graphic Techniques	3
ART 281 - Illustration for Designers	3
MTH 154 - Quantitative Reasoning **OR** Higher [4] **OR**	
--- --- - Physical or Life Science Elective w/Lab	3-4
Total 15-16	

4th Semester	Credits
ART 218 - Graphic Design II	3
ART 250 - History of Design	3
ART 268 - Professional Practices in Communication Design	3
ART 287 - Portfolio and Resume	3
CST 110 - Introduction to Human Communication	3
--- --- - Humanities/Fine Arts Elective (non-Art) [5]	3
Total 18	

Total credits for the A.A.S. Degree in Graphic Design: 64-65

[1] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[2] Approved ART Electives: ART 209 is recommended. May also take ART 132, or ART 223 or division approval for other ART courses. For students double majoring in both the Graphic Design and Graphic Design Interactive Specialization A.A.S. degrees there must be a total of 25% difference in ART credits between the degrees.
[3] PHT 270 will teach digital imaging from a photography perspective, whereas ART 251 provides a design perspective.
[4] Division approval required for substitution. The science elective may be selected from biology, chemistry, ENV 121-ENV 122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
[5] See humanities/fine arts courses other than ART listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Graphic Design: Interactive Design Specialization, A.A.S.

NOVA Code: 5133
Offered through AL, LO

Purpose: The curriculum is designed for individuals who seek full-time employment in the communication design profession. Upon completion, an individual would be prepared to work in the field of web-based interactive design including multimedia techniques specific to the web. Job opportunities include web designer, UX designer, web content developer and motion graphic designer, among others in the graphic design marketplace.
Recommended Preparation: Proficiency in high school English and a satisfactory aptitude for drawing.
Equipment and Supplies: Graphic Design students are required to purchase certain basic equipment and materials necessary to achieve professionally oriented objectives. Most of the equipment is purchased in the beginning class, ART 140 Introduction to Graphic Skills, and can be used throughout the two-year program.

Two Years

1st Semester	Credits
ART 121 - Foundations of Drawing	3
ART 131 - Two-Dimensional Design	3
ART 140 - Introduction to Graphic Skills	3
ENG 111 - College Composition I	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
--- --- - Social/Behavioral Sciences Elective [1]	3
Total 16	

2nd Semester	Credits
ART --- - Elective [2]	3
ART 116 - Design for the Web I	3
ART 130 - Introduction to Multimedia	3
ART 135 - Visual Communications	3
ART 251 - Communication Design I **OR** [3]	
PHT 270 - Digital Imaging I [3]	3
--- --- - Humanities/Fine Arts Elective [4]	3
Total 18	

3rd Semester	Credits
ART 141 - Typography I	3
ART 250 - History of Design	3
ART 263 - Interactive Design I	3
ART 270 - Motion Graphics I	3
MTH 154 - Quantitative Reasoning **OR** Higher **OR**	
--- --- - Physical or Life Science Elective w/Lab [5]	4-5
Total 15-16	

4th Semester	Credits
ART 142 - Typography II	3
ART 203 - Animation I	3
ART 264 - Interactive Design II	3
ART 287 - Portfolio and Resume	3
CST 110 - Introduction to Human Communication	3
Total 15	

Total credits for the A.A.S. Degree in Graphic Design with a Specialization in Interactive Design: 64-65

[1] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[2] Approved ART Electives: ART 150 or ART 204 or division approval for other ART courses. For students double majoring in both the Graphic Design and Graphic Design Interactive Specialization A.A.S. degrees, there must be a total of 25% difference in ART between the degrees.
[3] PHT 270 will teach digital imaging from a photography perspective, whereas ART 251 provides a design perspective.
[4] See humanities/fine arts courses other than ART listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[5] Division approval required for substitution. The science elective may be selected from biology, chemistry, ENV 121-ENV 122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.

Health Information Management, A.A.S.

NOVA Code: 1520
Offered through MEC

Purpose: The curriculum is designed to provide training in the management of systems to collect, store, process, retrieve, analyze, disseminate, and communicate information related to the research, planning, provision, and evaluation of healthcare services. It provides students with a unique blend of courses in information technology, business management, and clinical knowledge. Students who possess an interest in studying diseases and therapies but who prefer not to work in a direct patient care setting find this career very rewarding. An interest in using computers to manage data is also important. Health information management professionals are experts on patient data that doctors, nurses, and other providers rely on to perform their jobs. Employment opportunities exist in all types of healthcare delivery organizations (hospitals, ambulatory care centers, home health services, and long-term care facilities) plus managed care, consulting firms, claims and reimbursement companies, and research firms. Graduates of the program are eligible to take a national certifying examination. The Registered Health Information Technician (RHIT) Certification is recognized nationwide as proof of proficiency in health information management.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should

contact a counselor or their academic advisor early in their program.
Mode of Delivery: For students' program-placed into the NOVA Health Information Management Program, course content will be delivered 100% online. Some courses will be delivered asynchronous through NOVA Online and other courses will be delivered virtually via a synchronous Zoom format.

Admission Requirements: Applicants must do the following:

- Comply with all general admission requirements for Health Sciences Programs.
- Complete the prerequisite courses with a grade of "C" or higher in each course.
- Complete the Health Information Management online information session at https://www.nvcc.edu/academics/pathways/health-sciences/health-information-management.html.
- Complete or self-place into MTH 154 or higher or completion of unit 5 in a developmental math: https://www.nvcc.edu/academics/placement/index.html
- Complete ENG 111 with a grade of "C" or higher.
- Provide evidence of good physical and mental health by submitting a physical exam form. The form must be completed before the start of clinical experience.

Continuation Requirements: All courses (including General Education courses) must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements.
Special Accreditation Status: The Health Information Management Program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).
Clinical Requirements: Students are required to complete one nonpaid professional practice experiences (PPEs)/Clinical prior to graduation. Students will be assigned a site for each clinical and will not be allowed to complete a clinical at a hospital where they are employed if they work within the HIM Department. For additional information on completion of clinicals, please see the HIM Program Office.

Prerequisites	Credits
BIO 141 - Human Anatomy and Physiology I	4
CST 229 - Intercultural Communication	3
ENG 111 - College Composition I	3
HIM 111 - Medical Terminology I	3
SDV 101 - Orientation to (a Specific Discipline)	1
Total 14	

Two Years

1st Semester	Credits
BIO 142 - Human Anatomy and Physiology II	4
HIM 110 - Introduction to Human Pathology	3
HIM 141 - Fundamentals of Health Information Systems I	3
HIM 260 - Pharmacology for Health Information Management	3
Total 13	

2nd Semester	Credits
HIM 130 - Healthcare Information Systems	3
HIM 142 - Fundamentals of Health Information Systems II	3
HIM 220 - Health Statistics	3
HIM 226 - Legal Aspects of Health Record Documentation	2
--- --- - Humanities/Fine Arts Elective [1]	3
Total 14	

3rd Semester	Credits
HIM 251 - Clinical Practice I	3
PED 116 - Lifetime Fitness and Wellness	1
--- --- - Social/Behavioral Sciences Elective [2]	3
Total 7	

4th Semester	Credits
HIM 229 - Performance Improvement in Healthcare Settings	2
HIM 230 - Information Systems and Technology in Healthcare	3
HIM 249 - Supervision and Management Practices for HIM	3
HIM 250 - Health Data Classification Systems I	4
Total 12	

5th Semester	Credits
HIM 233 - Electronic Health Records Management	3
HIM 252 - Clinical Practice II	3
HIM 254 - Advanced Coding and Reimbursement	3
HIM 255 - Health Data Classification Systems II: CPT	2
HIM 280 - HIM Capstone	1
Total 12	

Total credits for the A.A.S. Degree in Health Information Management: 72 (includes 14 prerequisite credits)

BIO 141 must be completed within 10 years at time of admission. If BIO 142 is completed prior to admission, then BIO 142 must also be completed within 10 years at the time of admission.
[1] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[2] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Health Information Management: Clinical Data Coding, C.S.C.

NOVA Code: 221-152-01
Offered through MEC

Purpose: The curriculum is designed for persons who seek entry-level employment as clinical data coding specialists in healthcare organizations by providing them with knowledge in anatomy and medical terminology, skill development in ICD-10-CM/PCS and CPT coding classification systems, database management, and clinical data abstracting processes, prospective payment systems, and reimbursement strategies. Clinical data coding specialists are in demand across the spectrum of healthcare organizations including hospitals, physician offices, insurance companies, managed care organizations, contracting groups, and accounting firms. Graduates of the certificate program are eligible to take one of two national certifying examinations administered by the American Health Information Management Association (AHIMA) to become a Certified Coding Associate (CCA), Certified Coding Specialist (CCS), or Certified Coding Specialist-Physician Office setting (CCS-P).
Mode of Delivery: For students' program-placed into the NOVA Clinical Data Coding Program, course content will be delivered 100% online. Some courses will be delivered asynchronous through NOVA Online and other courses will be delivered virtually via a synchronous Zoom format.

Admission Requirements: Applicants must do the following:

- Comply with all general admission requirements for Health Sciences Programs.
- View a Clinical Data Coding information session online at https://www.nvcc.edu/academics/pathways/health-sciences/clinical-data-coding.html
- Have a NOVA application on file
- Present evidence of a high school diploma or GED
- For those intending to apply for the program in April 2024, students must complete BIO 145 Human Anatomy and Physiology for the Health Sciences or BIO 141 Human Anatomy and Physiology I and BIO 142 Human Anatomy and Physiology II as a prerequisite for admission.)

Continuation Requirements: All courses (including General Education courses) must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements.
The curriculum includes one coordinated practice course. Students are expected to complete the courses in the sequence outlined below.

One Year

1st Semester	Credits
BIO 145 - Basic Anatomy and Physiology	4
ENG 111 - College Composition I	3
HIM 111 - Medical Terminology I	3
HIM 141 - Fundamentals of Health Information Systems I	3
HIM 250 - Health Data Classification Systems I	4
Total 17	

2nd Semester	Credits
HIM 110 - Introduction to Human Pathology	3
HIM 196 - On-site training	1
HIM 254 - Advanced Coding and Reimbursement	3
HIM 255 - Health Data Classification Systems II: CPT	2
HIM 260 - Pharmacology for Health Information Management	3
Total	**12**

Total credits for the Clinical Data Coding Career Studies Certificate: 29 (includes 3 prerequisite credits)

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17-24 must complete an SDV course within their first year at NOVA.

[1] Students must complete BIO 145 with a "C" or higher.

Health Information Technology, C.S.C.

NOVA Code: 221-152-02
Offered through MEC

Purpose: This curriculum is designed to produce students competent in all aspects of workflow process analysis and redesign, as it relates to the adoption, implementation, maintenance, and optimization phases of the transition to the use of an electronic health records system.

Admission Requirements: Prior to starting the program, the applicant must do the following:

- Comply with the College's general admission requirements.

Watch the online version of the program's information session and adhere to the Prerequisites outlined therein.

- Have satisfactory scores on the English placement test.
- Apply to the program and be accepted.

Academic Requirements: Students must complete each course with a grade of "C" or better in order to continue in the HIT sequence. Students who receive a "D" or "F" in a course must repeat that course before continuing in the HIT course sequence. If students receive two such grades, they will be removed from the program.

One Year

1st Semester	Credits
HIT 100 - Introduction to the Healthcare Delivery System	1
HIT 130 - Introduction to Computers in Healthcare	3
HIT 141 - Introduction to Healthcare and Health-IT in the U.S.	3
HIT 132 - Health-IT Infrastructure Development	3
HLT 141 - Introduction to Medical Terminology [1]	1
SDV 101 - Orientation to (a Specific Discipline)	1
Total	**12**

2nd Semester	Credits
HIT 229 - Performance Improvement and Data Usage in Healthcare	3
HIT 230 - Computer Applications in Healthcare	3
HIT 233 - Working with Electronic Health Records	3
HIT 235 - Emerging Technologies in Health-IT	3
Total	**11**

Total credits for the Health Information Technology Career Studies Certificate: 23

[1] Licensed healthcare providers wishing to challenge this course must work with their academic advisor.

Health Sciences, A.S.

NOVA Code: 620
Offered through AL, AN, LO, MA, MEC, NOL, WO

Purpose: The academic foundation in this degree will allow students to continue their education by applying to a competitive program at the Medical Education Campus or prepare for entry to a variety of allied health or health sciences baccalaureate programs. Students should consult an academic advisor in selecting electives to this curriculum.

Transfer Information: Since four-year colleges can vary in their course and GPA requirements for a health science major, please consult a counselor or an academic advisor regarding specific requirements and course selection.

Recommended Preparation: Satisfactory completion of the following high school units or equivalent: 4 units of English; 2 units of mathematics (algebra and geometry); 1 unit of laboratory science; and 1 unit of social studies.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
BIO 101 - General Biology I **OR** BIO 141 - Human Anatomy and Physiology I	4
MTH 154 - Quantitative Reasoning **OR** Higher	
PSY 200 - Principles of Psychology **OR** PSY 230 - Developmental Psychology	3
SDV 101 - Orientation to (a Specific Discipline) **OR** SDV 100 - College Success Skills	1
Total	**14**

2nd Semester	Credits
HIM 111 - Medical Terminology I [1]	3
BIO 102 - General Biology II **OR** BIO 142 - Human Anatomy and Physiology II	4
ENG 112 - College Composition II	3
CST 229 - Intercultural Communication [2]	3
--- --- - Transfer Elective [3]	2-4
Total	**15-17**

3rd Semester	Credits
MTH 245 - Statistics I **OR** Higher	3
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Social/Behavioral Sciences Elective [4]	3
--- --- - Transfer Elective [3]	3
--- --- - Transfer Elective [3]	3
Total	**15**

4th Semester	Credits
HIS --- - Elective [4]	3
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Physical or Life Science Elective w/Lab [4]	4
--- --- - Transfer Elective [3]	3
--- --- - Transfer Elective [3]	3
Total	**16**

Total credits for A.S. Health Sciences: 60-62

[1] May substitute HLT 141 or HLT 143. However, transfer elective should be added if total degree credits do not equal at least 60.
[2] May substitute CST 100, CST 110, CST 126, if it is advisable to do so.
[3] Requirement may be met by a General Education course or the following: BIO 150, BIO 206, CHM 241, CHM 245, CST 229, DIT 121, HLT 110, HLT 230, ITE 152, PSY 240, RAD 105, or RTH 120,
[4] Requirement may be met by an appropriate course from the General Education Electives.

Horticulture Technology, A.A.S.

NOVA Code: 3350
Offered through LO

Purpose: The curriculum is designed to prepare students for full-time employment within the field of commercial horticulture as well as for those presently working who seek further knowledge and advancement.

Graduates of the program are prepared for managerial/supervisory level positions in areas which include landscape design and installation, grounds maintenance, floristry, greenhouse and nursery management, garden center operation, and sales and marketing in related industries.

Students in this program have an opportunity to gain career-related work experience through Cooperative Education or an internship in their area of emphasis.

Related Specialization: Landscape Design

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
HRT 100 - Introduction to Horticulture	3
HRT 127 - Horticultural Botany	3
HRT 160 - Applied Mathematics for the Green Industry	2
HRT 201 - Landscape Plants I	3
SDV 100 - College Success Skills **OR** SDV 101 - Orientation to (a Specific Discipline)	1
Total	**15**

2nd Semester	Credits
BUS --- - Elective [1]	3
CST --- - Elective [2]	2

HRT 115 - Plant Propagation	3
HRT 120 - History of Garden Design	3
HRT 202 - Landscape Plants II	3
--- --- - Humanities/Fine Arts Elective [3]	3
Total 18	

3rd Semester	Credits
CHM 101 - Introductory Chemistry I	4
HRT 231 - Planting Design I	3
HRT 245 - Woody Plants	3
HRT 259 - Arboriculture	3
HRT 269 - Professional Turf Care	3
Total 16	

4th Semester	Credits
HRT --- - Elective [4]	3
HRT 205 - Soils	3
HRT 207 - Plant Pest Management	3
HRT 275 - Landscape Construction and Maintenance	3
HRT 290 - Coordinated Internship **OR**	
HRT 297 - Cooperative Education	1
--- --- - Social/Behavioral Sciences Elective [5]	3
Total 16	

Total credits for the A.A.S. Degree in Horticulture Technology: 65

[1] Students may choose from any of the following business electives: BUS 116, BUS 117, BUS 165.
[2] Students may choose from any of the following communication electives: CST 100, CST 110, CST 115, CST 126, or CST 227.
[3] Students may choose from any of the following humanities/fine arts courses: ART 100, ART 101, ART 102, or ART 250.
[4] Course chosen must align with Coordinated Internship or Cooperative Education focus.
[5] Students may choose from any of the following electives: ECO 150, ECO 202, or GEO 200.

Horticulture Technology: Landscape Design Specialization, A.A.S.

NOVA Code: 3353
Offered through LO

Purpose: This program is designed to prepare the student for full-time employment within the field of landscape design as well as assisting those who are presently working and who wish to further their knowledge and upgrade their skills.
Graduates of this degree are prepared to work in the field of landscape design, in nurseries and garden centers, and as institutional horticultural staff. Students in this degree could gain career-related work experience through a Coordinated Internship, Cooperative Education, or Special Studio Project in the area of design.

Two Years

1st Semester	Credits
CST --- - Elective [1]	3
ENG 111 - College Composition I	3
HRT 100 - Introduction to Horticulture	3
HRT 160 - Applied Mathematics for the Green Industry	2
HRT 201 - Landscape Plants I	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 15	

2nd Semester	Credits
--- --- - Humanities/Fine Arts Elective [2]	3
HRT 120 - History of Garden Design	3
HRT 202 - Landscape Plants II	3
HRT 230 - Site Analysis	2
MTH 154 - Quantitative Reasoning [3] **OR** Higher **OR**	
--- --- - Physical or Life Science Elective w/Lab	3-4
Total 14-15	

3rd Semester	Credits
BUS --- - Elective [4]	3
HRT --- - Elective [5]	3
HRT 231 - Planting Design I	3
HRT 259 - Arboriculture	3
--- --- - Social/Behavioral Sciences Elective [6]	3
Total 15	

4th Semester	Credits
HRT --- - Elective [5]	3
HRT 232 - Planting Design II	3
HRT 244 - Computer Aided Drafting and Design (CADD) for Landscape Designers	3
HRT 250 - Plant Composition	2
HRT 275 - Landscape Construction and Maintenance	3
HRT 290 - Coordinated Internship **OR**	
HRT 297 - Cooperative Education/Special Studio Project **OR**	
HRT 298 - Seminar and Project	2
Total 16	

Total credits for the A.A.S. Degree in Horticulture Technology with a Specialization in Landscape Design: 60-61

[1] Students may choose from any of the following communication electives: CST 100, CST 110, CST 115, CST 126, or CST 227.
[2] Students may choose from any of the following humanities/fine arts courses: ART 100, ART 101, ART 102, or ART 250.
[3] Students may choose from any of the following electives: BIO 101, ENV 121, GOL 105, NAS 125, or another course approved by the academic advisor.
[4] Students may choose from any of the following business electives: BUS 116, BUS 117, BUS 165, BUS 200, or BUS 260.
[5] Course chosen must align with Coordinated Internship or Cooperative Education focus.
[6] Students may choose from any of the following electives: ECO 150, ECO 202, or GEO 200.

Information Systems Technology, A.A.S.

NOVA Code: 2990
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This curriculum is designed for those who seek employment in the field of information technology, for those who are presently in that field and who wish to increase their knowledge and update their skills, and for those who must augment their abilities in other fields with knowledge and skills in information technology.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.
Recommended Preparation: The student should possess a proficiency in high school English, high school algebra and geometry, and computer keyboarding skills.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
ITD 110 - Web Page Design I	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
ITN 100 - Introduction to Telecommunications **OR**	
ITN 101 - Introduction to Network Concepts	3
MTH 154 - Quantitative Reasoning **OR** Higher	3
SDV 101 - Orientation to Information Technology	1
Total 16	

2nd Semester	Credits
ITE 170 - Multimedia Software	3
ITN 170 - Linux System Administration	3
ITN 260 - Network Security Basics	3
ITP 100 - Software Design	3
--- --- - IT Elective [1]	6
Total 18	

3rd Semester	Credits
ITD 256 - Advanced Database Management	3
ITN 107 - Personal Computer Hardware and Troubleshooting **OR**	
ITE 221 - Personal PC Hardware and OS Architecture	3
ITP --- - Programming Elective [2]	4
--- --- - IT Elective [1]	6
Total 16	

4th Semester	Credits
CST --- - Elective [3]	3
--- --- - Approved Elective [1]	3
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Social/Behavioral Sciences Electives [5]	6
Total 15	

Total credits for the A.A.S. Degree in Information Systems Technology: 65

Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses used for this program may not be more than 10 years old as of the first day of the fall semester of the academic year in which a student graduates, unless approved by the pathway dean.

[1] The total of 15 credit hours of IT Electives and Approved Elective must be met through any combination of IT courses (ITD, ITE, ITN, ITP) that are not already included in the degree and or ENG 112.

[2] Select from the following: ITP 120, ITP 132, ITP 150, or ITP 225.

[3] Select from the following: CST 100, CST 110, CST 126, or CST 229.

[4] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[5] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Information Systems Technology: Application Programming, C.S.C.

NOVA Code: 221-299-06
Offered through LO, NOL

Purpose: This program prepares the student to design and implement traditional/legacy stand-alone and client-server applications using procedural and object-oriented development techniques. Upon completion, graduates are prepared to study for one of the following industry certifications: MCP-Programming or the Sun Certified Programming for Java 2.

One Year

1st Semester	Credits
ITP 100 - Software Design	3
MTH 154 - Quantitative Reasoning **OR** Higher [1]	3
Total 6	

2nd Semester	Credits
ITP 120 - Java Programming I **OR**	
ITP 150 - Python Programming	4
Total 4	

3rd Semester	Credits
ITP 220 - Java Programing **OR**	
ITP 250 - Advanced Python Programming	4
Total 4	

Total credits for the Career Studies Certificate in Application Programming: 14

Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses used for this program may not be more than 10 years old as of the first day of the fall semester of the academic year in which a student graduates, unless approved by the pathway dean.

[1] May substitute any higher-level mathematics course.

Information Systems Technology: Cloud Computing Specialization, A.A.S.

NOVA Code: 2995
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This curriculum is designed for those who seek employment in the field of cloud computing, for those who are presently in that field and who desire to increase their knowledge and update their skills, and for those who must augment their abilities in other fields with knowledge and skills in cloud computing.

Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

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

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
ITN 100 - Introduction to Telecommunications **OR**	
ITN 101 - Introduction to Network Concepts	3
ITN 257 - Cloud Computing: Infrastructure and Services	3
MTH 154 - Quantitative Reasoning **OR** Higher	3
SDV 101 - Orientation to (a Specific Discipline)	1
Total 16	

2nd Semester	Credits
ITD 256 - Advanced Database Management	3
ITN 107 - Personal Computer Hardware and Troubleshooting	3
ITN 200 - Administration of Network Resources	3
ITN 260 - Network Security Basics	3
ITP 100 - Software Design	3
Total 15	

3rd Semester	Credits
--- --- - Approved Elective [1]	3
ITD 110 - Web Page Design I	3
ITN 170 - Linux System Administration	3
ITN 213 - Information Storage and Management	3
ITP --- - Elective [2]	4
Total 16	

4th Semester	Credits
CST --- - Elective [3]	3
ITN 254 - Virtual Infrastructure: Installation and Configuration	4
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Social/Behavioral Sciences Electives [5]	6
Total 16	

Total credits for the A.A.S. Degree in Information Systems Technology; Cloud Computing Specialization: 63

Students in Information Technology, Computer Science, or Information Systems Technology programs must have Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses no more than ten years old, as of the first day of the fall semester of the academic year in which they graduate, unless approved by the pathway dean.

[1] The total of 3 credit hours of IT Electives may be selected from the following: ITN 106, or ITN 290 - Coordinated Internship, or ITN 295, or ENG 112. Students should discuss ITN 295 options with their academic advisor.

[2] IT Programming elective must be chosen from the following: ITP 120, ITP 132, ITP 150, or ITP 225.

[3] The CST elective must be selected from the following: CST 100, CST 110, CST 115, CST 126, CST 227, and CST 229.

[4] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[5] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Information Systems Technology: Cloud Computing, C.S.C.

NOVA Code: 221-299-50
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This curriculum is designed for those who seek employment in the field of cloud computing, for those who are

presently in that field and who desire to increase their knowledge and update their skills, and for those who must augment their abilities in other fields with knowledge and skills in cloud computing.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.
Recommended Preparation: The student should possess a proficiency in high school English, familiarity with computer functions and hardware, and possess computer keyboarding skills. It is recommended that students be placed into MTH 154 or higher although this program includes no math courses.

One Year

1st Semester	Credits
ITD 256 - Advanced Database Management	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
ITN 101 - Introduction to Network Concepts	3
ITN 257 - Cloud Computing: Infrastructure and Services	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to Information Technology	1
Total 13	

2nd Semester	Credits
ITN 170 - Linux System Administration	3
ITN 213 - Information Storage and Management	3
ITN 254 - Virtual Infrastructure: Installation and Configuration	4
ITN 260 - Network Security Basics	3
Total 13	

Total credits for the Cloud Computing Career Studies Certificate: 26

A total of 26 credits is required for graduation with the Cloud Computing Career Studies Certificate. Individuals who believe they might qualify for credit for prior learning must submit their requests for credit prior to applying for graduation.
Students with active industry certifications may qualify for credit for prior learning. Please contact an advisor or review section 2 of the credit for prior learning manual to see if you qualify.
Students in Information Technology, Computer Science, or Information Systems Technology programs must have Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses no more than ten years old, as of the first day of the fall semester of the academic year in which they graduate, unless approved by the pathway dean.

Information Systems Technology: Data Analytics, C.S.C.

NOVA Code: 221-299-34
Offered through AN

Purpose: This program is designed to provide students with skills that support the newest capabilities and advances in digital data analytics. These new features in digital data analytics technology enable the data analyst to collect, analyze and make data accessible for making business decisions. This program focuses on training data analytics specialists who can provide these advantages to their employers and stay on the leading edge of technology. Upon completion, graduates are prepared to study for data analytics exams such as CompTIA Data+, Microsoft Certified: Data Analyst Associate and Google Data Analytics Certificate.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year

1st Semester	Credits
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
ITP 150 - Python Programming	4
ITD 132 - Structured Query Language	3
ITD 145 - Applied Data Science Techniques	3
Total 13	

2nd Semester	Credits
ITD 245 - Advanced Applied Data Science Techniques	3
ITD 140 - Machine Learning I	3
ITD 256 - Advanced Database Management	3
Total 9	

Total credits for the Data Analytics Career Studies Certificate: 22

Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses used for this program may not be more than 10 years old as of the first day of the fall semester of the academic year in which a student graduates, unless approved by the pathway dean.

Information Systems Technology: Database Specialist, C.S.C.

NOVA Code: 221-299-11
Offered through AL, MA, NOL

Purpose: This program is designed to provide students with skills that support the newest capabilities and advances in database technology. These new features in database technology enable databases to increase in scale and provide higher security and greater reliability. This program focuses on training database technologists who can provide these advantages to their employers and stay on the leading edge of database technology. Upon completion, graduates are prepared to study for some of the exams for the Oracle Database Administrator Certified Associate.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year

1st Semester	Credits
ITD 132 - Structured Query Language	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
ITP --- - Programming Elective [1]	4
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to Information Technology	1
Total 11	

2nd Semester	Credits
ITD 134 - PL/SQL Programming	3
ITD 260 - Data Modeling and Design **OR**	
ITD 256 - Advanced Database Management	3
Total 6	

Total credits for the Career Studies Certificate in Database Specialist: 17

Students in Information Technology, Computer Science, or Information Systems Technology programs must have Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses no more than ten years old, as of the first day of the fall semester of the academic year in which they graduate, unless approved by the pathway dean.
[1] Programming elective classes can be selected from: ITP 120, ITP 132, ITP 137, ITP 140, ITP 150, ITP 160, ITP 165, ITP 225, or ITP 226.

Information Systems Technology: IT Technical Support, C.S.C.

NOVA Code: 221-299-09
Offered through AL, LO, MA, WO

Purpose: This program is designed for individuals seeking employment in a technical support center and for those persons employed who wish to update their skills in the help desk field. This curriculum will prepare students for employment as help desk specialists/technicians, desktop support specialists, and technical support specialists. Upon completion, graduates are prepared to study for the A+ Software, A+ Hardware, Network+, Security+ and AWS Certified Cloud Practitioner exams.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year

1st Semester	Credits
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
ITN 101 - Introduction to Network Concepts	3

ITN 106 - Microcomputer Operating Systems	3
SDV 101 - Orientation to (a Specific Discipline)	1
Total 10	

2nd Semester	Credits
ITN 107 - Personal Computer Hardware and Troubleshooting	3
ITN 257 - Cloud Computing: Infrastructure and Services	3
ITN 260 - Network Security Basics	3
Total 9	

Total credits for the Career Studies Certificate in IT Technical Support: 19

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. Students in Information Technology, Computer Science, or Information Systems Technology programs must have Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses no more than ten years old, as of the first day of the fall semester of the academic year in which they graduate, unless approved by the pathway dean.

Information Systems Technology: Mobile Application Development, C.S.C.

NOVA Code: 221-299-45
Offered through AL, LO, MA

Purpose: This program is designed for individuals seeking employment in either a mobile application software development firm or large organization with a mobile application development team as well as for those persons already employed who wish to update their skills in mobile application development and testing. This curriculum will prepare students for employment as junior mobile application developers as well as quality assurance test engineers for native mobile applications. Upon completion, graduates are prepared to study for the Google Associate Android Developer certification.
Recommended Preparation: The student should possess a proficiency in high school English, high school algebra and geometry, and computer keyboarding skills.

One Year

1st Semester	Credits
ITP 100 - Software Design	3
Total 3	

2nd Semester	Credits
ITP 137 - Programming IOS Devices	4
ITP 226 - Mobile Java Development	4
Total 8	

3rd Semester	Credits
ITP 150 - Python Programming	4
ITP 227 - Advanced Android Application Development	4
SDV 101 - Orientation to (a Specific Discipline)	1
Total 9	

Total credits for Mobile Application Development Career Studies Certificate: 20

Students in Information Technology, Computer Science, or Information Systems Technology programs must have Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses no more than ten years old, as of the first day of the fall semester of the academic year in which they graduate, unless approved by the pathway dean.

Information Systems Technology: Network Administration, C.S.C.

NOVA Code: 221-732-01
Offered through AN, LO, MA, NOL, WO

Purpose: This program provides the student with a broad background in networking technologies, administration, and support. The material presented in the certificate provides the basic knowledge covered in the Windows Server, Security+, Linux+ and Network+ Certification. It is recommended that students complete the A+ Certification before the Network+ Certification.

Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year

1st Semester	Credits
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
ITN 100 - Introduction to Telecommunications **OR** ITN 101 - Introduction to Network Concepts	3
Total 6	

2nd Semester	Credits
ITN 170 - Linux System Administration **OR** ITN 171 - UNIX I	3
ITN 200 - Administration of Network Resources	3
ITN 260 - Network Security Basics	3
Total 9	

Total credits for the Career Studies Certificate in Network Administration: 15

Students in Information Technology, Computer Science, or Information Systems Technology programs must have Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses no more than ten years old, as of the first day of the fall semester of the academic year in which they graduate, unless approved by the pathway dean.
All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

Information Systems Technology: Network Engineering (Specialist), C.S.C.

NOVA Code: 221-732-04
Offered through AL, AN, MA, NOL, WO

Purpose: This program is designed to provide the student with the training necessary to obtain several different CISCO certifications as outlined below. These certifications prepare the student to install and/or configure networks, including wide area networks (WANs) and local area networks (LANs). They prepare students to optimize WANs through internet access solutions that reduce bandwidth and lower WAN costs and provide remote access by integrating remote dial-up access with remote LAN to LAN access, as well as supporting higher levels of performance required for new applications such as internet commerce and multimedia. This career studies certificate also prepares the student to sit for the CISCO Certified Networking Associate (CCNA) certification exam.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year

1st Semester	Credits
ITN 154 - Introduction to Networks - Cisco	4
ITN 155 - Switching, Wireless, And Wireless Essentials - Cisco	4
Total 8	

2nd Semester	Credits
ITN 156 - Enterprise Networking, Security and Automation - Cisco	4
ITN 157 - WAN Technologies: Cisco **OR** ITN 295 - Cyber Operations and Analysis	4
Total 8	

Total credits for the Career Studies Certificate in Network Engineering (Specialist): 16

Students in Information Technology, Computer Science, or Information Systems Technology programs must have Information Technology (ITD, ITE, ITN, ITP) and or Computer Science (CSC) courses no more than ten years old, as of the first day of the fall semester of the academic year in which they graduate, unless approved by the pathway dean.
All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

Information Systems Technology: Web Design and Development, C.S.C.

NOVA Code: 221-352-03
Offered through AL, AN, LO, WO

Purpose: This program provides the student with the aesthetic, technical, and management knowledge required for the creation and management of well-designed and well-organized websites. This career studies certificate also prepares the student for the CIW Associate Certification and the CIW Associate Design Specialist Certification.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning. See an academic advisor or counselor for further information.

One Year

1st Semester	Credits
ITD 110 - Web Page Design I	3
ITP 100 - Software Design	3
ITE 170 - Multimedia Software	3
SDV 101 - Orientation to (a Specific Discipline)	1
Total 10	

2nd Semester	Credits
ITD 210 - Web Page Design II	3
ITE 270 - Advanced Multimedia Development	3
ITP 140 – Client-Side Scripting **OR**	
ITP 225 - Web Scripting Languages	4
Total 10	

Total credits for the Web Design and Development Career Studies Certificate: 20

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.
All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17-24 must complete an SDV course within their first year at NOVA.

Information Technology, A.S.

NOVA Code: 3400
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This curriculum is designed for persons who plan to transfer to a four-year college or university to complete a baccalaureate degree program in information technology.

Transfer Information: Since four-year colleges can vary in their course and GPA requirements, please consult a counselor or academic advisor regarding specific requirements and course selection.
Recommended Preparation: Satisfactory completion of the following high school units or equivalent: 4 units of English; 4 units of mathematics (Algebra I-II, geometry and precalculus); 1 unit of laboratory science; and 1 unit of social studies.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
HIS --- - Elective [1]	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
MTH 161 - PreCalculus I [2] **OR** Higher	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to Information Technology	1
--- --- - Social/Behavioral Sciences Elective [3]	3
Total 16	

2nd Semester	Credits
ENG 112 - College Composition II	3
MTH 261 - Applied Calculus I **OR** Higher [2]	
--- --- - Technical Elective 1 [4]	3
--- --- - Technical Elective 2 [4]	3
--- --- - Technical Elective 3 [4]	3
Total 15	

3rd Semester	Credits
CST 110 - Introduction to Human Communication [5]	5
--- --- - Programming Elective [4]	4
--- --- - Humanities/Fine Arts Elective [6]	3
--- --- - Physical or Life Science Elective w/Lab [7]	4
Total 14	

4th Semester	Credits
--- --- - Humanities/Fine Arts Elective [6]	3
--- --- - Physical or Life Science Elective w/Lab [7]	4
--- --- - Social/Behavioral Sciences Elective [3]	3
--- --- - Technical Elective 4 [4]	3
--- --- - Technical Elective 5 [4]	3
Total 16	

Total credits for the A.S. Degree in Information Technology: 61

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.
[1] Select from HIS 101, HIS 102, HIS 111, HIS 112, HIS 121, or HIS 122.
[2] Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
[3] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[4] Choose Technical Electives based on your target transfer school. Please work with an advisor to determine the most appropriate electives.
Technical Electives 1-5: ACC 211, ACC 212, BUS 100, BUS 224, ITD 256, ITE 140, ITE 170, ITE 221, ITN 100, ITN 101, ITN 106, ITN 107, ITN 171, ITN 257, ITN 260, ITN 261, ITN 262, ITN 266, MTH 245, MTH 262. Programming Elective: ITP 120, ITP 220, ITP 132, ITP 150.
[5] Students should consult an academic advisor to select the CST appropriate course, CST 100, CST 110, CST 126, and CST 229.
[6] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[7] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Interior Design, A.A.S.

NOVA Code: 5200
Offered through LO

Purpose: The Interior Design program provides quality education to prepare students for entry level employment in the interior design field or to transfer to an accredited university for further education. The curriculum provides a foundation education covering a broad range of topics in interior design, art history, furniture history, and basic design. Computer aided drafting, rendering and business practices round out the curriculum. Career opportunities exist in a diverse array of fields including retail marketing, residential design, commercial design, space planning, kitchen and bath design and design support for designers specializing in these fields. The curriculum can be completed in Two Years; however, students may enroll on a part-time basis. There are no entry requirements, but many Interior Design courses have Prerequisites to ensure that students are properly prepared for advanced coursework.

Two Years

1st Semester	Credits
ART 101 - History of Art: Prehistoric to Gothic	3
ART 131 - Two-Dimensional Design	3
ENG 111 - College Composition I	3
IDS 100 - Theory and Techniques of Interior Design	3
IDS 105 - Architectural Drafting for Interior Design	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 16	

2nd Semester	Credits
ART 102 - History of Art: Renaissance to Modern	3
ART --- - Elective [1]	3
CST 110 - Introduction to Human Communication	3
IDS 106 - Three-Dimensional Drawing and Rendering	3
IDS 245 - Computer Aided Drafting for Interior Designers	3
Total 15	

3rd Semester	Credits
IDS 109 - Styles of Furniture and Interiors	3
IDS 205 - Materials and Sources	3
IDS 215 - Theory and Research in Commercial Design	3

MTH 154 - Quantitative Reasoning **OR** Higher	3
PSY 200 - Principles of Psychology	3
	Total 15

4th Semester	Credits
IDS 206 - Lighting and Furnishings	3
IDS 221 - Designing Commercial Interiors I **OR**	
IDS 285 - Portfolio and Resume Preparation for Interior Designers	3-4
IDS 225 - Business Procedures	3
IDS 290 - Coordinated Internship **OR**	
IDS --- - Elective [2]	3
--- --- - Social/Behavioral Sciences Elective [3]	3
	Total 15-16

Total credits for the A.A.S. Degree in Interior Design: 61-62

[1] Select from ART 132, IDS 130, ART 121, ART 140, BUS 100, BUS 116.
[2] Select from IDS 246, IDS 235, ART 217, ART 251, ARC 200, BUS 201, MKT 201, MKT 215, or HRT 260.
[3] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

Liberal Arts, A.A.

NOVA Code: 6480
Offered through AL, AN, LO, MA, NOL, WO

Purpose: An Associate of Arts degree in Liberal Arts is designed to provide an understanding and appreciation for the ideas and ideals that are the basis of human civilization. It offers a foundation in the arts and sciences and prepares students for transfer into a Bachelor of Arts program. Liberal arts BA degrees prepare graduates for careers in a wide array of professions by enabling them to write well, critically analyze issues, place problems in a variety of contexts, and work competently with diverse groups of colleagues.
Recommended Preparation: Satisfactory completion of the following high school units or equivalent: 4 units of English, 2 units of mathematics (algebra and geometry), 2 units of laboratory science, 1 unit of history, and 3 to 4 units of foreign language.

Transfer Information: Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

Two Years

1st Semester	Credits
CST 110 - Introduction to Human Communication [1]	3
ENG 111 - College Composition I	3
--- 101 - World Language or ASL **OR**	
--- --- - General Education Elective [2]	3-4
MTH 154 - Quantitative Reasoning [3]	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 13-16

2nd Semester	Credits
ENG 112 - College Composition II	3
--- 102 - World Language or ASL **OR**	
--- --- - General Education Elective [2]	3-4
MTH 245 - Statistics I [3] **OR** Higher **OR**	
--- --- - Transfer Elective [4]	3
--- --- - Physical or Life Science Elective w/Lab [5]	4
	Total 13-14

3rd Semester	Credits
ENG 2-- - Literature Elective [6]	3
--- 201 - World Language or ASL **OR**	
--- --- - General Education Elective [2]	3-4
HIS --- - Elective [7]	3
--- --- - Physical or Life Science Elective w/Lab [5] **OR**	
--- --- - General Education Elective [8]	3-4
--- --- - Social/Behavioral Sciences Elective [9]	3
	Total 16-17

4th Semester	Credits
--- 202 - World Language or ASL **OR**	
--- --- - General Education Elective [2]	3-4
HIS --- - Elective [10]	3
HUM 298 - Seminar and Project Liberal Arts	1
--- --- - Humanities/Fine Arts Elective [11]	3
--- --- - Open Electives [1]	3-6
--- --- - Social/Behavioral Sciences Elective [9]	3
	Total 16-19

Total credits for the A.A. Degree in Liberal Arts: 60-62

[1] Select from the following: CST 100, CST 110, CST 126, or CST 229.
[2] Placement testing determines initial foreign language level. Students who place directly into intermediate level foreign language or ASL may take any General Education course to meet the required number of credits. Waivers or credit by exam for previous experience is available for some languages. See the 'World Language Credit and Waiver' section of the [Credit for Prior Learning Manual]. Students must take sufficient General Education Electives courses so that they can apply at least 60 credits toward the Liberal Arts degree.
[3] May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
[4] Select any course listed under General Education Electives or any the following: ART 103, ART 200, CST 229, HIS 203, HIS 231, HIS 241, HIS 251, HIS 254, HIS 256, REL 237 or REL 238. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[5]See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[6] Any 200-level literature course with an ENG prefix satisfies this requirement.
[7] Select any HIS courses listed under social/behavioral sciences in General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[8] Select any course listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[9] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[10] Approved HIS course: HIS 101, HIS 102, HIS 111, HIS 112, HIS 121, HIS 122, HIS 203, HIS 231, HIS 251 or HIS 254. Transfer to selected universities with a major in Public History and Historic Preservation should take HIS 183 or HIS 187.
[11] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[12] Consult with an advisor or appropriate transfer pathways for assistance in selecting open electives that will meet the requirements of the transfer institution. In many cases, open electives should be selected from the approved courses listed under General Education Electives. Only three credits of open electives are needed if selected World Languages total more than 15 credits. Students planning to transfer to selected Public History and Historic Preservation program should take HIS 180 and HIS 181.

Liberal Arts: Art History Specialization, A.A.

NOVA Code: 6489
Offered through AL, AN, LO, MA, WO

Purpose: An Associate of Arts degree in Liberal Arts is designed to provide an understanding and appreciation for the ideas and ideals that are the basis of human civilization. It offers a foundation in the arts and sciences and prepares students for transfer into a Bachelor of Arts program. Liberal arts BA degrees prepare graduates for careers in a wide array of professions by enabling them to write well, critically analyze issues, place problems in a variety of contexts, and work competently with diverse groups of colleagues.

Transfer Information: Students are advised to work closely with the faculty and counseling staff for program and course scheduling.

Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

Two Years

1st Semester	Credits
ART 101 - History of Art: Prehistoric to Gothic	3
ENG 111 - College Composition I	3
--- 101 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
MTH 154 - Quantitative Reasoning [2]	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 13-14

2nd Semester	Credits
ART 102 - History of Art: Renaissance to Modern	3
CST 110 - Introduction to Human Communication [3]	3
ENG 112 - College Composition II	3
--- 102 - World Language or ASL **OR**	
--- --- - General Education Elective [1]	3-4
MTH 245 - Statistics I [2] **OR** Higher **OR**	3
--- --- - Transfer Elective [4]	3
	Total 15-16

3rd Semester	Credits
ART 215 - History of Modern Art	3
ENG 2-- - Literature Elective [5]	3
--- 201 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
--- --- - Physical or Life Science Elective w/Lab [6]	4
--- --- - Social/Behavioral Sciences Elective [7]	3
	Total 16-17

4th Semester	Credits
HIS --- - Elective [8]	3
--- 202 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
--- --- - Humanities/Fine Arts Elective [9]	3
HUM 298 - Seminar and Project Liberal Arts	1
--- --- - Physical or Life Science Elective w/Lab [6] **OR**	4
--- --- - General Education Elective [10]	3
--- --- - Social/Behavioral Sciences Elective [7]	3
	Total 16-18

Total credits for the A.A. Degree in Liberal Arts with a Specialization in Art History: 60-62

[1] Placement testing determines initial foreign language level. Students who place directly into intermediate level foreign language or ASL may take any General Education course to meet the required number of credits. Waivers or credit by exam for previous experience is available for some languages. See the 'World Language Credit and Waiver' section of the [Credit for Prior Learning Manual]. Students must take sufficient General Education Electives courses so that they can apply at least 60 credits toward the Liberal Arts degree.
[2] May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 262 and MTH 264.
[3] Select from the following: CST 100, CST 110, CST 126, or CST 229.
[4] Select any course listed under General Education Electives or any ART course. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[5] Any 200-level literature course with an ENG prefix satisfies this requirement.
[6] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[7] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor
or academic advisor to meet requirements of the transfer institution.
[8] Select any HIS courses listed under social/behavioral sciences in General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[9] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution. This elective is not required if World Languages total more than 15 credits.
[10] Select any course listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Liberal Arts: Communication Studies Specialization, A.A.

NOVA Code: 6482
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This program is designed for students who wish to study speech communication at the college level or who wish to transfer to a four-year institution for a baccalaureate degree.

Transfer Information: Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
CST 100 - Principles of Public Speaking **OR**	
CST 110 - Introduction to Human Communication	3
--- 101 - World Language or ASL **OR**	
--- --- - General Education Elective [1]	3-4
MTH 154 - Quantitative Reasoning [2] **OR** Higher	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 13-14

2nd Semester	Credits
ENG 112 - College Composition II	3
--- 102 - World Language or ASL **OR**	
--- --- - General Education Elective [1]	3-4
MTH 245 - Statistics I [2] **OR** Higher **OR**	3
--- --- - Transfer Elective [3]	3
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Social/Behavioral Sciences Elective [5]	3
	Total 15-16

3rd Semester	Credits
CST --- - Elective [6]	3
ENG 2-- - Literature Elective [7]	3
HIS --- - Elective [8]	3
--- 201 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
--- --- - Physical or Life Science Elective w/Lab [9]	4
	Total 16-17

4th Semester	Credits
CST --- - Elective [6]	3
--- 202 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
HIS --- - Elective [8]	3
HUM 298 - Seminar and Project Liberal Arts	1
--- --- - Physical or Life Science Elective w/Lab [9] **OR**	
--- --- - General Education Elective [10]	3-4
--- --- - Social/Behavioral Sciences Elective [5]	3
	Total 16-18

Total credits for the A.A. Degree in Liberal Arts with a Specialization in Communication Studies: 60-62

[1] Placement testing determines initial foreign language level. Students who place directly into intermediate level foreign language or ASL may take any General Education course to meet the required number of credits. Waivers or credit by exam for previous experience is available for some languages. See the 'World Language Credit and Waiver' section of the [Credit for Prior Learning Manual]. Students must take sufficient General Education Elective courses so that they can apply at least 60 credits toward the Liberal Arts degree.

[2] May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
[3] Select any course listed under General Education Electives or any course from footnote #6. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[4] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
5 See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[6] Select from the following: CST 100, CST 110, CST 114, CST 115, CST 126, CST 201, CST 227, or CST 229.
[7] Any 200-level literature course with an ENG prefix satisfies this requirement.
[8] Select any HIS course listed under social/behavioral sciences in General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution. A second HIS elective is not required if selected World Languages total more than 15 credits.
[9] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[10] Select any course listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Liberal Arts: English Specialization, A.A.

NOVA Code: 6484
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This program is designed for students who plan to transfer to a college or university for a Bachelor of Arts or a Bachelor of Science in English, Creative Writing or Writing and/or Rhetoric as an entry-level professional writer.

Transfer Information: Students are advised to work closely with the English faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.
Recommended Preparation: Satisfactory completion of high school units or equivalent: 4 units of English, 2 units of Mathematics (Algebra and Geometry), 2 units of Laboratory Science, 1 unit of History, and 3 to 4 units of World Languages.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
--- 101 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
MTH 154 - Quantitative Reasoning [2]	3
--- --- - Physical or Life Science Elective w/Lab	4
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 14-15

2nd Semester	Credits
ENG 112 - College Composition II	3
--- 102 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
MTH 245 - Statistics I [2] **OR**	
--- --- - Transfer Elective [3]	3
--- --- - Physical or Life Science Elective w/Lab [4] **OR**	
--- --- - General Education Elective	3-4
--- --- - Social/Behavioral Sciences Elective [5]	3
	Total 15-17

3rd Semester	Credits
CST 110 - Introduction to Human Communication [6]	3
ENG 2-- - Elective [7]	3
--- 201 - World Language or ASL [1] **OR**	
--- --- - General Education Elective [3]	3-4
HIS --- - Elective [8]	3
--- --- - Social/Behavioral Sciences Elective [5]	3
	Total 15-16

4th Semester	Credits
ENG 2-- - Elective [9]	3
ENG 2-- - Literature Elective [10]	3
--- 202 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
--- --- - General Education Elective [11]	3
HUM 298 - Seminar and Project Liberal Arts	1
--- --- - Humanities/Fine Arts Elective [12]	3
	Total 16-17

Total credits for the A.A. Degree in Liberal Arts with a Specialization in English: 60-62

[1] Students who do not require a 100-level foreign language or ASL may take any General Education course to meet the required number of credits. Waivers or credit by exam for previous experience is available for some languages. See the 'World Language Credit and Waiver' section of the [Credit for Prior Learning Manual]. Students must take sufficient General Education Electives courses so that they can apply at least 60 credits toward the degree.
[2] May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
[3] Select any course listed under General Education Electives or any 200-level literature course with an ENG prefix. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[4] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[5] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[6] Select from the following: CST 100, CST 110, CST 126, or CST 229.
[7] Students who are interested in Literature: select from ENG 230, ENG 236, ENG 237, ENG 245, ENG 246, ENG 250, ENG 255, ENG 256, ENG 257, ENG 258, ENG 271, ENG 275, and ENG 279. Students who are interested in Creative Writing: select ENG 211. Students who are interested in Writing and Rhetoric: select ENG 210.
[8] Select any HIS course listed under social/behavioral sciences in General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[9] Students who are interested in Literature: select from ENG 230, ENG 236, ENG 237, ENG 245, ENG 246, ENG 250, ENG 255, ENG 256, ENG 257, ENG 258, ENG 271, ENG 275, and ENG 279. Students who are interested in Creative Writing: select ENG 212, ENG 215, ENG 261, or ENG 262. Students who are in Writing and Rhetoric, select from ENG 200, ENG 205, ENG 221, or ENG 222.
[10] Select any ENG course listed under humanities/fine arts listed in General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirement of transfer institution.
[11] Select any course listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution. This General Education elective is not required if selected World languages total more than 15 credits.
[12] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

Liberal Arts: International Studies Specialization, A.A.

NOVA Code: 6486
Offered through AL, AN, LO, MA, NOL, WO

Purpose: This program is designed to prepare students who intend to transfer to a four-year institution to complete a bachelor's degree in international studies. This specialization will broaden the student's education to include more emphasis on other cultures and

countries in recognition of the increasing interdependence of today's world.

Transfer Information: Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
--- 101 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
--- --- - Physical or Life Science Elective w/Lab [2]	4
MTH 154 - Quantitative Reasoning [3] **OR** Higher	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 14-15

2nd Semester	Credits
ENG 112 - College Composition II	3
--- 102 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
HIS --- - Elective [4]	3
MTH 245 - Statistics I [3] **OR** Higher **OR**	
--- --- - Transfer Elective [5]	3
CST 229 - Intercultural Communication [6]	3
	Total 15-16

3rd Semester	Credits
ECO 201 - Principles of Macroeconomics	3
--- 201 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
--- --- - Global Understanding [7]	3
--- --- - Physical or Life Science Elective w/Lab [2] **OR**	
--- --- - General Education Elective	3-4
PLS 241 - Introduction to International Relations	3
	Total 15-16

4th Semester	Credits
ECO 202 - Principles of Microeconomics	3
--- 202 - World Language or ASL [1] **OR**	
--- --- - General Education Elective	3-4
ENG 2-- - Literature Elective [8]	3
--- --- - Global Understanding [7]	3
--- --- - Humanities/Fine Arts Elective [9]	3
HUM 298 - Seminar and Project Liberal Arts	1
	Total 16-17

Total credits for the A.A. Degree in Liberal Arts with a Specialization in International Studies: 60-63

[1] Placement testing determines initial foreign language level.

Students who place directly into intermediate level foreign language or ASL may take any General Education course to meet the required number of credits. Waivers or credit by exam for previous experience is available for some languages. See the 'World Language Credit and Waiver' section of the [Credit for Prior Learning Manual]. Students must take sufficient General Education Electives courses so that they can apply at least 60 credits toward the degree.

[2] See physical and life science courses listed under General

Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[3] May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.

[4] Select any HIS course listed under social/behavioral sciences in General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[5] Select any course listed under General Education Electives or any Global Understanding course from footnote #7. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[6] Select from the following: CST 100, CST 110, CST 126, or CST 229.

[7] Select from ART 103, ART 200, HIS 203, HIS 231, HIS 241, HIS 251, HIS 254, HIS 256, REL 237, REL 238.

[8] Any 200-level literature course with an ENG prefix satisfies this requirement.

[9] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Liberal Arts: Theatre, C.S.C.

NOVA Code: 221-529-02
Offered through AL, MA, WO

Purpose: This program is designed to meet the needs of individuals seeking to further develop skills in acting, directing, arts management, technical theatre, and theatre scholarship. It extends theatre opportunities outside of the classroom and into community, educational, and professional theatres.

One Year

1st Semester	Credits
CST 110 - Introduction to Human Communication **OR**	
CST 100 - Principles of Public Speaking	3
CST 130 - Introduction to the Theatre **OR**	
CST 141 - Theatre Appreciation I	3
CST 131 - Acting I	3
CST 136 - Theatre Workshop	1
	Total 10

2nd Semester	Credits
CST 136 - Theatre Workshop	1
CST --- - Elective [1]	3
CST--- - Elective [1]	3
	Total 7

Total credits for the Theatre Career Studies Certificate: 17

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17-24 must complete an SDV course within their first year at NOVA.

[1] Choose from the following: CST 111, CST 132, CST 195 Topics in: Playwriting/Screenwriting, CST 195 Topics in: Technical Theatre, CST 241, CST 251, CST 299.

Marketing: Digital Marketing, C.S.C.

NOVA Code: 221-251-0 1
Offered through AL, MA, WO

Purpose: This program is designed to offer students already employed in marketing the opportunity to improve and update their skills, allowing for advancement on the job. Interested students will have an opportunity to explore e-commerce as a career and become acquainted with fundamental skills.
Recommended Preparation: Students should possess a proficiency in high school English.

One Year

1st Semester	Credits
ENG 111 - College Composition I	3
MKT 201 - Introduction to Marketing	3
MKT 282 - Principles of E-Commerce	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 10

2nd Semester	Credits
ENG 112 - College Composition II **OR**	
ENG 115 - Technical Writing **OR**	
ENG 116 - Writing for Business	3
MKT 228 - Promotion	3
MKT 284 - Social Media Marketing	3
	Total 9

Total credits for the Digital Marketing, C.S.C.: 19

Marketing: Promotion and Public Relations, C.S.C.

NOVA Code: 221-251-03

Offered through AN, NOL

Purpose: This program is designed to offer students already employed in promotion and public relations the opportunity to improve and update their skills, allowing for advancement on the job. Interested students will have an opportunity to explore this field as a career and become acquainted with fundamental skills.
Recommended Preparation: The student should possess a proficiency in high school English.

One Year

1st Semester	Credits
ENG 111 - College Composition I	3
MKT 201 - Introduction to Marketing	3
MKT 215 - Sales and Marketing Management	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 10	

2nd Semester	Credits
ENG 112 - College Composition II **OR**	
ENG 115 - Technical Writing **OR**	
ENG 116 - Writing for Business	3
MKT 221 - Public Relations	3
MKT 228 - Promotion	3
Total 9	

Total credits for the Promotion and Public Relations Career Studies Certificate: 19

Medical Laboratory Technology, A.A.S.

NOVA Code: 1510
Offered through MEC

Purpose: The curriculum is designed to prepare students to perform essential laboratory testing on blood and body fluids that is critical to the detection, diagnosis, and treatment of disease. In a medical laboratory, the medical laboratory technician (MLT) is part of a team of highly skilled pathologists, technologists, and phlebotomists working together to determine the presence, extent, or absence of disease, and helping to evaluate the effectiveness of treatment. This program emphasizes "hands-on" practice of laboratory methods in a state-of-the-art laboratory at the Medical Education Campus in Springfield, followed by clinical experience at various affiliating healthcare organizations.
Upon completion of the program, graduates will be eligible to take the American Society for Clinical Pathology (ASCP) Board of Certification examination and other national certification examinations offered at the technician level.
Credit for Prior Learning: Students in this program who have completed a military laboratory training program and hold Medical Laboratory Technician (MLT) Certification from the American Society for Clinical Pathology (ASCP) Board of Certification (BOC) are eligible for credit for prior learning in the major coursework. See an academic advisor for further information.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but transfer may be an option for certified MLTs. Students interested in transfer should contact an academic advisor early in their program.
Career Opportunities: Employment for medical laboratory technicians is available in hospital laboratories, private laboratories, physicians' office laboratories, health department laboratories, and industrial medical laboratories.

Admission Requirements: Admission to the Medical Laboratory Technology program is competitive. Applicants must do the following:

- Comply with all general admission program requirements.
- View the online Medical Laboratory Technology information session.
- Be eligible for MTH 161 or higher: See Enrollment and Self-Placement.
- Complete with a grade of "C" or higher: CHM 111 or CHM 241 and CHM 242, ENG 111, and SDV 101.
- Complete BIO 141-BIO 231 with a "C" or higher and completed within 10 years of application. (Please note: BIO 141 requires the completion of BIO 101, or NAS 2 or a placement test as noted at: https://www.nvcc.edu/academics/divisions/health-sciences/)
- Document a GPA of at least 2.0 at the last school attended.

Continuation Requirements: All courses (including General Education courses) must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements.
Special Accreditation Status: The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS); 5600 North River Road, Suite 720, Rosemont, Illinois 60018; Phone: 773-714-8880; Fax: 773-714-8886; *www.naacls.org*.

Prerequisites	Credits
BIO 141 - Human Anatomy and Physiology I [1]	4
CHM 111 - General Chemistry I [2]	4
ENG 111 - College Composition I	3
SDV 101 - Orientation to (a Specific Discipline) **OR**	
SDV 100 - College Success Skills	1
Total 12	

Two Years

1st Semester	Credits
BIO 142 - Human Anatomy and Physiology II [3]	4
MDL 101 - Introduction to Medical Laboratory Techniques	3
MDL 125 - Clinical Hematology I	3
MDL 140 - Clinical Urinalysis	2
MDL 215 - Immunology	2
Total 14	

2nd Semester	Credits
CST 229 - Intercultural Communication [4]	3
MDL 130 - Basic Clinical Microbiology	3
MDL 225 - Clinical Hematology II	3
MDL 260 - Laboratory Instrumentation I	2
MDL 263 - Clinical Chemistry and Instrumentation III	3
Total 14	

3rd Semester	Credits
MDL 266 - Clinical Chemistry Techniques	3
MDL 276 - Clinical Hematology Techniques	3
Total 6	

4th Semester	Credits
MDL 216 - Blood Banking	4
MDL 243 - Introduction to Clinical Molecular Diagnostics	2
MDL 251 - Clinical Microbiology I	3
--- --- - Social/Behavioral Science Elective [5]	3
Total 12	

5th Semester	Credits
Humanities/Fine Arts Elective [6]	3
MDL 277 - Clinical Blood Banking Techniques	4
MDL 278 - Clinical Microbiology Techniques II	4
MDL 281 - Clinical Correlations	1
Total 12	

Total credits for the A.A.S. Degree in Medical Laboratory Technology: 70 (includes 12 prerequisite credits)

[1] May substitute BIO 231.
[2] May substitute CHM 241 and CHM 242.
[3] May substitute BIO 232.
[4] May substitute CST 110 or CST 126.
[5] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[6] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Medical Laboratory Technology: Medical Laboratory Assistant (MLA), C.S.C.

NOVA Code: 221-151-10
Offered through MEC

Purpose: The program is designed to prepare personnel who collect, process, and perform selected tests on samples for medical laboratory analysis. Medical Laboratory Assistants (MLAs) work in hospitals, medical clinics, and reference laboratories. The curriculum includes learning experiences:

on-campus, online, and, in partnership, with affiliated clinical laboratories. Graduates are eligible to sit for the American Society for Clinical Pathologists (ASCP) Board of Certification (BOC) national examination to become certified as a Medical Laboratory Assistant (MLA).

Admission Requirements: Applicants must do the following:

- Comply with all general admission requirements for Health Sciences Programs.
- Attend or view MLA information session.
- Have a NOVA application on file.
- Hold a high school diploma or GED.
- Have completed or qualify for ENG 111.
- Have minimum 2.0 curricular GPA.

Credit for Prior Learning: Students in this program who have been certified as a phlebotomy technician by the American Society for Clinical Pathology (ASCP) Board of Certification (BOC) are eligible for credit for prior learning in MDL 105 and MDL 106. See an academic advisor for further information.

Continuation Requirements: Each course in this program (MDL courses only) must be completed with a grade of "C" or better before taking the next course in the sequence.

1st Semester	Credits
MDL 105 - Phlebotomy	3
	Total 3

2nd Semester	Credits
ENG 111 - College Composition I [1]	3
HLT 141 - Introduction to Medical Terminology [2]	1
MDL 100 - Introduction to Medical Laboratory Technology	2
MDL 106 - Clinical Phlebotomy	4
MDL 140 - Clinical Urinalysis	2
	Total 12

3rd Semester	Credits
HIM 130 - Healthcare Information Systems	3
HLT 145 - Ethics for Healthcare Personnel	2
MDL 130 - Basic Clinical Microbiology	3
MDL 196 - On-Site Training	2
MDL 260 - Laboratory Instrumentation I	2
	Total 12

Total credits for the CSC in Medical Laboratory Assistant: 27

[1] May substitute ENG 112 or higher.
[2] May substitute HIM 111.

Medical Laboratory Technology: Phlebotomy, C.S.C.

NOVA Code: 221-151-02
Offered through MEC

Purpose: The program is designed to prepare personnel who collect and process blood and other samples for medical laboratory analysis. Phlebotomists work in hospitals, medical clinics, commercial laboratories, and in other settings where blood is collected from patients. The curriculum includes learning experiences in both on-campus laboratories and affiliated clinical laboratories. Graduates are eligible to sit for the national examination to become certified as a phlebotomy technician.

Admission Requirements: Applicants must do the following:

- Comply with all general admission requirements for Health Sciences Programs.
- Attend a Phlebotomy information session.
- Have a NOVA application on file.
- Hold a high school diploma or GED.
- Have completed or qualify for ENG 111.
- Have minimum 2.0 curricular GPA.

Credit for Prior Learning: Students in this program who have been certified as a phlebotomy technician by the American Society for Clinical Pathology (ASCP) Board of Certification (BOC) and/or who have documented extensive experience in phlebotomy are eligible for credit for prior learning in the major clinical course. See an academic advisor for further information.

Continuation Requirements: Each course in this program (MDL courses only) must be completed with a grade of "C" or better before taking the next course in the sequence.

1st Semester	Credits
ENG 111 - College Composition I [1]	3
HIM 130 - Healthcare Information Systems	3
HLT 141 - Introduction to Medical Terminology [2]	1
HLT 145 - Ethics for Healthcare Personnel	2
MDL 105 - Phlebotomy	3
MDL 106 - Clinical Phlebotomy	4
	Total 16

Total credits for the Phlebotomy Career Studies Certificate: 16

[1] May substitute ENG 112 or higher.
[2] May substitute HIM 111.

Music A.F.A.

NOVA Code: 560
Offered through AL, AN, LO

Purpose: This program is designed to provide students with the foundational knowledge and skills to make them competitive for admission and transfer to a four-year college or university to pursue a baccalaureate degree in Music. As part of the curriculum, students will study and receive training in performance on a major instrument or voice and take courses that cover topics such as musicianship skills and analysis, music composition and improvisation, and music history and repertory.
Entering students should possess a basic understanding of reading sheet music notation, as determined prior to enrollment in Music Theory I through a content review examination. Students who pursue the Music major must successfully complete a number of performances to meet program learning objectives. During the second semester of the first year, students will perform two musical selections of contrasting style (applied instruction jury). In the second year as students near graduation, they must successfully perform in a recital (capstone recital). Applied Music courses will require additional fees/studio charges.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
MTH 154 - Quantitative Reasoning **OR** Higher	3
MUS 111 - Music Theory I [1]	4
MUS 141 - Class Piano I	2
MUS --- - Ensemble [2]	1
MUS 2-- - Advanced Applied Instruction on Major Instrument[3]	2
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 16

2nd Semester	Credits
ENG 112 - College Composition II	3
MUS 112 - Music Theory II	4
MUS 142 - Class Piano II	2
MUS --- - Ensemble [2]	1
MUS 2-- - Advanced Applied Instruction on Major Instrument [3]	2
--- --- - Physical or Life Science Elective w/Lab [4]	4
	Total 16

3rd Semester	Credits
MUS 211 - Advanced Music Theory I	4
MUS 221 - History of Western Music Pre-1750	3
MUS 241 - Advanced Class Piano I	2
MUS --- - Ensemble [2]	1
MUS 2-- - Adv. Applied Instruction on Major Instrument [3]	2
--- --- - Social/Behavioral Sciences Elective [5]	3
	Total 15

4th Semester	Credits
ENG 2-- - Literature Elective [6]	3
MUS 212 - Advanced Music Theory II	4
MUS 222 - History of Western Music 1750 to Present	3
MUS 242 - Advanced Class Piano II	2
MUS --- - Ensemble [2]	1
MUS 2-- - Adv Applied Instruction on Major Instrument [3]	2
MUS 298 - Seminar and Project: Capstone Recital	1
	Total 16

Total credits for the A.F. A. Degree in Music: 63

[1] Music Theory students are required to have a fundamental comprehension of sheet music notation. A content review exam will be administered during the first week of Music 111. Those who are not prepared for MUS 111 are recommended to take MUS 101.
[2] Select from the following: MUS 135, MUS 137, MUS 144, MUS 148, MUS 237, or MUS 248.
[3] Select from the following: MUS 136, MUS 145, MUS 147, MUS 155, MUS 165, MUS 175, MUS 185, MUS 236, MUS 243, MUS 245, MUS 255, MUS 265, MUS 275, or MUS 285.
[4] See physical and life science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.
[5] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[6] Select from the following: ENG 225, ENG 245, ENG 246, ENG 250, ENG 255, ENG 258, or ENG 275.

Music: Jazz/Popular Music Specialization, A.A.A.

NOVA Code: 5591
Offered through AL, AN, LO

Purpose: This program is designed for students who seek employment performing jazz and popular music.

Transfer Information: Transfer is not the primary purpose of an A.A.A. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.
Recommended Preparation: An interview with the music faculty may be required before beginning the program.

Special Curriculum Completion Requirements: Applied music students: Tuition and studio fees are payable to the College. Applied proficiency requirements must be met in order for students to advance to the 200-level of applied music courses. Piano proficiency skills are required of all music majors.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
MUS Applied Music (major)	2
MUS Applied Music (minor) [1]	1
MUS Chorus/Band/Orchestra/Ensemble	1
MUS 111 - Music Theory I	4
PED 116 - Lifetime Fitness and Wellness [2]	2
--- --- - Social/Behavioral Science Elective [3]	3
SDV 100 - College Success Skills **OR** SDV 101 - Orientation to (a Specific Discipline)	1
Total 16	

2nd Semester	Credits
ENG 112 - College Composition II	3
MTH 154 - Quantitative Reasoning **OR** Higher	3
MUS Applied Music (major)	2
MUS Applied Music (minor) [1]	1
MUS Chorus/Band/Orchestra/Ensemble	1
MUS 112 - Music Theory II	4
PED/RPK Elective [2]	1
--- - --- - Social/Behavioral Science Elective [3]	3
Total 18	

3rd Semester	Credits
CST 110 - Introduction to Human Communication	3
MUS Applied Music (major)	2
MUS Applied Music (minor) [1]	1
MUS Chorus/Band/Orchestra/Ensemble	1
MUS 159 - Improvisational Techniques	3
MUS 213 - Composition I	3
--- - --- - Open Elective	2
Total 15	

4th Semester	Credits
--- - --- - Humanities/Fine Arts Elective [4]	3
MUS Applied Music (major)	2
MUS Applied Music (minor) [1]	1
MUS Chorus/Band/Orchestra/Ensemble	1
MUS 214 - Composition II	3
MUS 225 - The History of Jazz	3
MUS 259 - Advanced Improvisational Techniques	3
Total 16	

Total credits for the A.A.A. Degree in Music with a Specialization in Jazz/Popular Music: 65

[1] Class instruction such as Class Voice or Class Piano may be substituted.
[2] The PED requirement may be met by one of the following options: PED 116, 2 cr.; PED 116, 1 cr. plus a PED activities course, 1 cr.; or PED 116, 1 cr. plus RPK activities course. PED 116 is offered as both a 1-credit and a 2-credit course.
[3] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[4] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

Music Recording Technology, Certificate

NOVA Code: 5570
Offered through LO

Purpose: This curriculum is designed for individuals who wish to set up their own studio or seek employment as music recording technicians. Occupational objectives include development for positions as assistants and aides in recording studios, broadcast studios, myriad other recording enterprises, and countless private studios in the recording industry. Training in digital audio is emphasized using industry standard software.
Recommended Preparation: A personal interview with a program faculty member.

One Year

1st Semester	Credits
ENG 111 - College Composition I	3
MTH 154 - Quantitative Reasoning **OR** Higher	3
MUS 130 - Overview of the Recording Industry	1
MUS 140 - Introduction to Recording Techniques	3
MUS 157 - Sound Studio Design	3
MUS 158 - Recording Studio Electronics: Theory & Maintenance	3
SDV 100 - College Success Skills **OR** SDV 101 - Orientation to (a Specific Discipline)	1
Total 17	

2nd Semester	Credits
BUS 165 - Small Business Management	3
CST --- - Elective [1]	3
MUS 179 - Music Copyright Law	1
MUS 227 - Editing and Mixdown Techniques	3
MUS 235 - Advanced Recording Techniques	3
MUS 288 - Recording Problems Seminar	2
PSY 120 - Human Relations	3
Total 18	

3rd Semester	Credits
MUS 290 - Coordinated Internship	3
Total 3	

Total credits for the Music Recording Technology Certificate: 38

[1] Select from the following: CST 110, CST 115, CST 126, CST 227, and CST 229.

Nursing, A.A.S.

NOVA Code: 1560
Offered through MEC

Purpose: The program is designed to prepare students to participate as contributing members of the healthcare team, rendering direct care to patients in a variety of healthcare facilities and agencies. Upon satisfactory completion of the program, students will be eligible to apply to take the National Council Licensure Examination (NCLEX-RN®) leading to state licensure as

a registered nurse (RN) and are qualified to assume registered nurse positions in hospitals, nursing homes, clinics, physicians' offices, HMOs, and other community-based settings.
NOVA has adopted the VCCS Common Nursing Curriculum which was fully approved by VBON and ACEN in Spring of 2017. The nursing program is a 5-semester program: first semester students take the pre-requisite course work to prepare the student for applying to the program and for the study of the nursing courses. Then there are 4 semesters of nursing course work (LEVELS 1-4).
Information about the nursing program and the application process can be found online. Admission to the Nursing program is competitive.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program; however, NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.
Admission Requirements

- Be admitted to NOVA.
- Be 18 years of age or older.
- Comply with all general admission requirements for Allied Health and Nursing Programs listed for the Medical Education programs section.
- Complete an online Nursing information session.
- Meet the specific requirements for admission to the Nursing Program. The program admission process is competitive. To be considered for admission, applicants must
  - Hold a high school diploma or General Educational Development Test certification (GED®).
  - Have completed one unit of high school-level algebra and two units of science (1 unit of biology and 1 unit of chemistry) with a grade of "C" or higher.
  - Qualify for MTH 154 through acceptable scores on the College math placement test. This requirement must be met prior to the student sitting for the Nursing Pre-Admission Test.
  - Complete PSY 230 with a "C" or higher.
  - Complete BIO 141 with a "C" or higher.
  - Complete ENG 111 with a grade of "C" or higher.
  - Complete SDV 101 Orientation to Healthcare or SDV elective with a grade of "C" or higher. (Grades for these courses must be posted prior to applying)
  - Have minimum 2.5 cumulative GPA.
- Successfully complete and achieve satisfactory scores on the Nursing Pre-Admission Test. Students must take all 4 sections of the ATI-TEAS tests®: Reading, Math, Science and English. See the Nursing Division website for score requirements.
- Successfully complete the American Heart Association Healthcare Provider CPR course prior to registering for the first nursing course.
- Submit a completed health examination/physical form signed by a licensed physician or nurse practitioner with all required immunizations prior to beginning the Nursing Program.

Special Notation for Admission: The state of Virginia may prohibit anyone from sitting for the Nursing Licensing Examination who has been convicted of a felony or of crimes(s) involving theft, drug offenses or physical harm to another, or misdemeanors as designated by VBON, therefore NOVA will not consider persons convicted of the above offenses for admission to the NOVA Nursing program.
Special Program Requirements: Once enrolled in the Nursing program all students must maintain a grade of "C" (80% or higher) in all nursing courses to continue in the program. This includes lecture, nursing lab and clinical components. In addition, students must achieve a "C" or higher in all general education courses.
Accreditation & Approval Status: The NOVA Nursing Curriculum is fully approved by the Virginia Board of Nursing (VBON) Perimeter Center, 9960 Mayland Drive, Suite 300, Henrico, Virginia 23233 and accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road, NE, Suite 850, Atlanta, Georgia, 30326. Telephone 404-975-5020. View NCLEX-RN pass rates for the last five years go to online.
Licensure Requirements: The Virginia Board of Nursing reserves the right to deny licensure to any candidate who has been found guilty of a misdemeanor or felony.
LPN to RN Transition: The NUR 115 LPN Transition and NUR 116 Selected Nursing Concepts: Skills courses will no longer be offered.
Readmission: Students who leave the Nursing program and wish to be re-admitted must meet the current Catalog's requirements for admission. Any developmental studies that were prescribed at the time the student left the program must have been satisfactorily completed. Students wishing to be readmitted to NOVA's nursing program will be required to seek approval of the Dean or their designee. Readmission is competitive and based on space availability.
Transfer from Other Institutions: Nursing credits earned at other institutions are reviewed by the Dean or their designee to determine if the courses in question apply to the curriculum and/or if substitutions may be made within the curriculum. Students who transfer to NOVA with prior nursing courses may be required to demonstrate skills competencies.
Classes are taken on campus and via a combination of synchronous (live) and asynchronous (anytime) online activities including in-person nursing laboratory and clinical practice. Nursing courses must be taken in the order outlined below.

Prerequisite	Credits
BIO 141 - Human Anatomy and Physiology I [1]	4
--- --- - Open Elective	3
ENG 111 - College Composition I	3
PSY 230 - Developmental Psychology	3
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 14

Two Years

1st Semester	Credits
BIO 142 - Human Anatomy and Physiology II [1]	4
NSG 100 - Introduction to Nursing Concepts	4
NSG 106 - Competencies for Nursing Practice	2
NSG 130 - Professional Nursing Concepts	1
NSG 200 - Health Promotion and Assessment	3
	Total 14

2nd Semester	Credits
BIO 150 - Microbiology for Health Sciences	4
NSG 152 - Health Care Participant	3
NSG 170 - Health/Illness Concepts	6
	Total 13

3rd Semester	Credits
CST 229 - Intercultural Communication [2]	3
NSG 210 - Health Care Concepts I	5
NSG 211 - Health Care Concepts II	5
	Total 13

4th Semester	Credits
NSG 230 - Advanced Professional Nursing Concepts	2
NSG 252 - Complex Health Care Concepts	4
NSG 270 - Nursing Capstone	4
--- --- - Humanities/Fine Arts Elective	3
	Total 13

Total credits for the A.A.S. Degree in Nursing: 67 (includes 14 prerequisite credits)

[1] Students may use one of the following course sequences to meet the BIO 141/BIO 142/BIO 150 requirement: BIO 141, BIO 142, and BIO 205, or BIO 231, BIO 232, and BIO 150, or BIO 231, BIO 232, and BIO 205.
[2] Students may select from CST 110, CST 115, or CST 126.

Occupational Therapy Assistant, A.A.S.

NOVA Code: 1260
Offered through MEC

Purpose: The program is designed to provide students with the philosophical, theoretical, and clinical knowledge necessary to provide quality occupational therapy. This curriculum is designed to prepare students to assist and collaborate with occupational therapists in providing occupational therapy treatments and procedures. Students will participate in classroom and fieldwork

experiences in this program. Upon successful completion of the program, graduates must take and pass a national board exam and complete the licensing process in order to begin a career as an Occupational Therapy Assistant. Graduates may, in accordance with state laws, assist in development of treatment plans; carry out routine functions, direct activity programs, and document the progress of treatments.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Admission Requirements: Applicants must do the following:

- Comply with all general admission requirements for Health Science Programs.

Attend an in-person Occupational Therapy Assistant information session within One Year of application. Visit the website at https://www.nvcc.edu/academics/pathways/health-sciences/occupational-therapy-assistant.html.

- Be a high school graduate or have obtained a GED.
- Complete ENG 111, HLT 141, and SDV 101 Orientation to Healthcare with a "C" or higher.
- Complete BIO 141- BIO 142 with a "C" or higher. (Please note: BIO 141 requires the completion of BIO 101, or NAS 2 or a placement test as noted at: https://www.nvcc.edu/academics/divisions/health-sciences/)
- Complete or self-place into MTH 154 or higher: https://www.nvcc.edu/academics/placement/index.html.
- Maintain a curricular GPA of 2.5 or higher at the last school or college attended (with a minimum of 13 credits).
- Complete at least 16 hours of observation time with an occupational therapist (OTR) or a certified occupational therapy assistant (COTA). Observation hours must be documented and signed by the OTR or COTA who is supervising the applying student on a form found on the website at *https://www.nvcc.edu/academics/pathways/health-sciences/occupational-therapy-assistant.html*. Additional accrued observation hours and/or observing at multiple sites will be considered in the competitive admissions process.
- Complete a video statement and writing prompt for review by committee.
- Assure that all previous transcripts are accounted for and are on file at NOVA prior to the program application deadline date. These transfer credits must be evaluated before any transfer credit is granted. Application acceptance dates will be posted on the website once established. Admission will be on a competitive placement basis of fully qualified candidates. Students will also receive special consideration if they have more than 25 hours of observation and/or if documented work experience as a rehabilitation technician or an OT aide is provided.
- Students are notified in writing of acceptance into the program following the timely submission of a completed application. Once accepted, students must have current CPR
- certification; must complete a basic first aid course, a documented medical examination, criminal background check, and a 12-panel drug screen; and must maintain a 2.5 GPA or higher to remain in good standing.

Highly qualified students can apply during the next application period. In the meantime, students interested in the OTA program must attend a face-to-face information session. Dates can be found at *https://www.nvcc.edu/academics/pathways/health-sciences/occupational-therapy-assistant.html*. Follow the steps in preparation for competitive placement into the OTA program. Competitive eligibility for the OTA program does not guarantee admission.

Continuation Requirements: Students must comply with all continuation requirements for Health Sciences and Occupational Therapy Assistant students. All courses (including General Education courses) must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements.

Transfer Placement: OTA credits earned at other institutions will be reviewed by the program director of the OTA program to determine if any course substitutions may be warranted within the curriculum. Students wishing to transfer into the NOVA OTA program will be required to satisfactorily complete a skill competency assessment before being accepted into the OTA program. Transfer students must additionally be in good academic standing and must provide a written reference from the program director of the previous institution as well as from a clinical educator as applicable. All transfer students must meet all of the OTA program application and admission requirements before being considered in the competitive admissions process.

Special Accreditation Status: The Occupational Therapy Assistant Program at Northern Virginia Community College is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE®) of the American Occupational Therapy Association (AOTA), located at 6116 Executive Boulevard, Suite 200, Bethesda, MD20852-4929. ACOTE's telephone number c/o AOTA is 301-652-AOTA. ACOTE can be found online at *www.acoteonline.org*. Upon graduation, students will be eligible to sit for the national certification examination for the occupational therapy assistant administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this exam, the individual will be a Certified Occupational Therapy Assistant (COTA). In addition, all states require licensure in order to practice and one component of licensure generally includes the results of the NBCOT Certification Examination. Note that a felony conviction could affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure.

Prerequisite	Credits
BIO 141 - Human Anatomy and Physiology I	4
BIO 142 - Human Anatomy and Physiology II	4
ENG 111 - College Composition I	3
HLT 141 - Introduction to Medical Terminology	1
SDV 101 - Orientation to (a Specific Discipline)	1
Total 13	

Two Years

1st Semester	Credits
OCT 100 - Introduction to Occupational Therapy	3
OCT 205 - Therapeutic Media	2
OCT 206 - Dyadic and Group Dynamics	3
OCT 225 - Neurological Concepts for Occupational Therapy Assistants	4
PSY 200 - Principles of Psychology	3
Total 15	

2nd Semester	Credits
OCT 190 - Coordinated Internship (Pediatrics)	1
OCT 203 - Occupational Therapy with Developmental Disabilities	4
OCT 207 - Therapeutic Skills	3
PSY 215 - Psychopathology	3
PSY 230 - Developmental Psychology	3
Total 14	

3rd Semester	Credits
OCT 190 - Coordinated Internship in OT (Psychosocial Dysfunction)	1
OCT 195 - Topics in Evidence Based in Practice Occupational Therapy	1
OCT 201 - Occupational Therapy with Psychosocial Dysfunction	3
Total 5	

4th Semester	Credits
OCT 190 - Coordinated Internship in OT (Physical Dysfunction)	1
OCT 202 - Occupational Therapy with Physical Disabilities	4
OCT 208 - Occupational Therapy Service Management	3
OCT 210 - Assistive Technology in Occupational Therapy	2
--- --- - Humanities/Fine Arts Elective [1]	3
Total 13	

5th Semester	Credits
OCT 290 - Coordinated Internship in OT	4
OCT 290 - Coordinated Internship in OT	4

OCT 295 - Trends in Professional Issues in Occupational Therapy Practice	1
Total 9	

Total credits for the A.A.S. Degree in Occupational Therapy Assistant: 69 (includes 13 prerequisite credits)

BIO 141 and BIO 142 must be completed within 5 years at time of admission.
[1] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Paralegal Studies, A.A.S.

NOVA Code: 2600
Offered through AL

Purpose: The curriculum is designed to provide an individual with a sufficient level of knowledge, understanding, and proficiency to perform the tasks associated with meeting a client's needs. These tasks can be performed by a trained, non-lawyer assistant working under the direction and supervision of a lawyer. A paralegal or legal assistant will have a basic understanding of the general processes of American law, along with the knowledge and proficiency required to perform specific tasks under the supervision of a lawyer in the fields of civil and criminal law. Occupational objectives include employment in corporate law firms, government agencies, and any of the varied law-related fields. Paralegals or legal assistants are prohibited by law from offering legal services directly to members of the public.
Advising Note: It is strongly recommended that students meet with an advisor before enrolling in classes or as early as possible in their first semester of enrollment.
Completion Requirements: To remain in the program, students must complete each of the legal specialty (LGL) courses in the program with a "C" or higher. Students must complete LGL 110 Introduction to Law and the Paralegal Assistant during their first semester of enrollment and complete the other legal specialty (LGL) courses in the order outlined. Course substitutions are made on a case-by-case basis. In all cases, the grade for substituted courses must be a "C" or higher.
Special Approval Status: The Paralegal Studies Program is approved by the American Bar Association.
Transfer from Other Institutions: Students must complete 25 percent (17 credits) of their coursework at NOVA. Program guidelines require that at least 50 percent of legal specialty (LGL) credits be completed at NOVA. In addition, ABA guidelines require that at least 10 of those credits be taken in traditional (face-to-face) format. The Paralegal Studies Program accepts the transfer of legal specialty courses completed at other institutions as long as those institutions are regionally accredited, and the program director determines that the course objectives and practical skills are comparable to the courses offered in NOVA's Paralegal Studies Program. In all cases, the grade for transfer courses must be a "C" or higher.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
LGL 110 - Introduction to Law and the Paralegal Assistant	3
LGL 117 - Family Law	3
LGL 125 - Legal Research	3
PHI 111 - Logic [1]	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 16	

2nd Semester	Credits
ENG 112 - College Composition II	3
LGL 126 - Legal Writing	3
LGL 215 - Torts	3
LGL 218 - Criminal Law	3
MTH 154 - Quantitative Reasoning [2]	3
Total 15	

3rd Semester	Credits
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
LGL 115 - Real Estate Law	3
LGL 217 - Trial Practice and the Law of Evidence	3
LGL 235 - Legal Aspects of Business Organizations	3
PSY 200 - Principles of Psychology **OR**	
SOC 200 - Introduction to Sociology	3
Total 15	

4th Semester	Credits
--- --- - Approved Elective [3]	3
CST 110 - Introduction to Human Communication	3
LGL 225 - Estate Planning and Probate	3
LGL 230 - Legal Transactions	3
--- --- - Social/Behavioral Sciences Elective [4]	3
Total 15	

Total credits for the A.A.S. Degree in Paralegal Studies: 61 (includes 3 prerequisite credits)

[1] See humanities/fine arts courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor.
[2] May substitute any higher-level mathematics course or a science course (BIO, CHM, ENV, GOL, NAS, PHY).
[3] Students may choose from the following approved electives: LGL 200, LGL 250, LGL 295 Constitutional Law, Seminar & Project Capstone in Paralegal Studies LGL 298, and LGL 290 Coordinated Internship. Students may also consider the following non-program electives: ADJ 105 or ITN 267.
[4] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or faculty advisor.

Personal Training, C.S.C.

NOVA Code: 221-460-01
Offered through AL, AN, LO, MA, WO

Purpose: This program is based on the standards of the American Council on Exercise (ACE) and prepares students to become knowledgeable fitness professionals in health clubs, recreation departments, and fitness facilities in private, commercial, corporate, or government settings. Emphasis is placed on preparing students to sit for a nationally recognized certification exam in Personal Training.
Recommended Preparation: Students are expected to attain high levels of fitness during this program and, consequently, should be in good health to participate in vigorous workouts.
Special Admission Information: No classes will be waived without permission of a Personal Training advisor.
Completion Requirements: The following must be met to obtain the Personal Training Studies Certificate:

- achieve a grade of "C" or better in all certificate courses
- score 80% or higher on the exit exam
- hold a current CPR certification

One Year

1st Semester	Credits
HLT 105 - Cardiopulmonary Resuscitation [1]	1
CST 110 - Introduction to Human Communication [2]	3
PED 111 - Weight Training I	1
PED 116 - Lifetime Fitness and Wellness [3] **OR**	
HLT 110 - Personal and Community Health	3
BUS, FIN, or MKT Elective [4]	3
BIO 141 - Human Anatomy and Physiology I [5]	4
Total 14-15	

2nd Semester	Credits
PED Elective [6]	1
HLT 206 - Introduction to Kinesiology	3
DIT 121 - Nutrition I **OR**	
HLT 230 - Principles of Nutrition	3
PED 168 - Basic Personal Trainer Preparation	3
PED 220 - Adult Health and Development [7]	3
Total 12-13	

Total credits for the Personal Training Career Studies Certificate: 26-28

[1] HLT 105 requirement may be met with proof of current certification in CPR through a recognized organization such as the American Heart Association or the American Red Cross.
[2] May substitute CST 126, or CST 229.
[3] HLT 110 is recommended for transfer to George Mason University

[4] Approved Courses: BUS 100, BUS 116, BUS 165, BUS 201, FIN 107, MKT 215
[5] BIO 142 is recommended in addition to BIO 141 for transfer into a 4-year program and for students interested in a more thorough understanding of the systems of the human body.
[6] Approved PED Electives: PED 100, PED 103, PED 107, and PED 109
[7] PED 190 Coordinated Internship (2-3 cr.) may be substituted with approval of a Personal Training advisor.

Photography and Media, A.A.S.

NOVA Code: 5020
Offered through AL, WO

Purpose: The curriculum is designed to prepare students for diverse career options within the field of professional photography and imaging. Students will learn to solve a wide range of visual problems with imagination and originality through the study of technique, history, theory, and aesthetics.
Recommended Preparation: Proficiency in high school English, basic computer skills, and satisfactory aptitude in visual art.
Equipment and Supplies: Photography students are required to purchase certain basic equipment and materials necessary to achieve professionally oriented objectives. Most of the equipment is purchased in the first photography class and can be used throughout the two-year program.

Two Years

1st Semester	Credits
ART 121 - Foundations of Drawing **OR**	
ART 131 - Two-Dimensional Design	3
ENG 111 - College Composition I	3
CST 110 - Introduction to Human Communication	3
PHT 101 - Photography I	3
PHT 110 - History of Photography	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 16	

2nd Semester	Credits
ART 101 - History of Art: Prehistoric to Gothic **OR**	
--- --- - Humanities/Fine Arts Elective [1]	3
PHT --- - Elective [2]	3
PHT 102 - Photography II	3
PHT 130 - Video I	3
PHT 270 - Digital Imaging I	3
Total 15	

3rd Semester	Credits
MTH 154 - Quantitative Reasoning **OR** Higher **OR**	
--- --- - Physical or Life Science Elective w/Lab [4]	3-4
PHT --- - Elective 3 [1,2,3]	3
PHT 201 - Advanced Photography I	3
PHT 221 - Studio Lighting I	3
--- --- - Social/Behavioral Sciences Elective [5]	3
Total 15-16	

4th Semester	Credits
PHT --- - Electives [2]	6
PHT 202 - Advanced Photography II	3
PHT 227 - Careers in Photography and Media	3
--- --- - Humanities/Fine Arts Elective [6]	3
Total 15	

Total credits for the A.A.S. Degree in Photography and Media: 61-62

[1] Approved humanity/fine Arts Electives: ART 102, ART 215, ART 150, ART 250, or division approval for other humanities/fine arts courses listed under General Education Electives.
[2] Approved PHT electives: PHT 103, PHT 131, PHT 206, PHT 211, PHT 222, PHT 231, PHT 235, PHT 247, PHT 249, PHT 271, PHT 274.
[3] Approved ART electives: ART 115, ART 116, ART 121, ART 223, ART 130, ART 131, ART 140, ART 153, or division approval for other ART courses.
[4] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[5] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[6] See humanities/fine arts courses listed under General Education Electives, select any non-ART course. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Physical Therapist Assistant, A.A.S.

NOVA Code: 1800
Offered through MEC

Purpose: The program is designed to prepare students to utilize exercise, specialty equipment, and other treatment procedures to prevent, identify, correct, and alleviate movement dysfunction. The program design provides students with the philosophical, theoretical, and clinical knowledge necessary to deliver high-quality patient care. Ultimately, students are prepared as skilled technical healthcare providers who work under the direction and supervision of a physical therapist to provide selected components of physical therapy treatments. Upon successful completion of the program, students must take and pass a licensing examination to begin their career as a physical therapist assistant (PTA). Students are prepared for employment in a variety of healthcare settings, including acute care hospitals, outpatient clinics, extended care facilities, rehabilitation centers, contract agencies, and schools.

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Admission Requirements: Applicants must do the following:

- Comply with all general admission requirements for Health Sciences Programs.
- Attend a Physical Therapist Assistant information session. Call the program office at 703-822-6570 for scheduled dates or visit *https://www.nvcc.edu/academics/pathways/health-sciences/physical-therapist-assistant.html*.
- Have completed BIO 145 or BIO 141 and BIO 142 with a grade of "B" or higher.
- Have completed HLT 141 with a grade of "B" or higher.
- Have a minimum 2.5 curricular GPA.
- Be 18 years of age.
- Complete ENG 111 or higher with a grade of "B" or higher.
- Complete or self-place into MTH 154: https://www.nvcc.edu/academics/placement/index.html.
- Successfully complete and achieve satisfactory scores on the TEAS (Test of Essential Academic Skills) test. Students may only take the test three times per year. The latest result must be within three years of application to the PTA Program.
- Submit the NOVA PTA Program Clinic Observation Form documenting the minimum requirement of 4 hours of observation in a PT clinic.

Special Accreditation Status: The Physical Therapist Assistant program at Northern Virginia Community College is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 3030 Potomac Ave., Suite 100, Alexandria, Virginia; 22305-3085 telephone: 703-706-3245; email: *accreditation@apta.org*; website: *www.capteonline.org*. If needing to contact the PTA program at NOVA directly, please call 703.822.6570 or email Niveen Badrah at nbadrah@nvcc.edu.
Program Application Requirements: Completion of the above steps constitutes a completed PTA program application. Completed PTA program applications will be accepted electronically to the Medical Education Student Services Center from March 1 through March 15 for the following semester. Students are notified in writing of acceptance into the program following submission of a completed application.
Professional Standards Requirements: Students are expected to consistently demonstrate professional behavior in the classroom, laboratory, and during clinical affiliations. Professional behavior must be consistent with the APTA Standards of Ethical Conduct for the Physical Therapist Assistant, and the Professional Abilities outlined in the *PTA Program Handbook*. Behavior inconsistent

with the Standards of Ethical Conduct for the Physical Therapist Assistant and/or the Professional Abilities will result in dismissal from the program.
Additional Requirements: In addition to the admission requirements for Health Sciences Programs, upon acceptance students must complete a basic first aid course and a CPR for Health Providers course prior to admission into the Physical Therapist Assistant Program.
Transfer Placement: PTA credits earned at another CAPTE accredited PTA program in the last 12 months are reviewed by the program director to determine if any course substitutions may be made within the curriculum. Students who wish to transfer to NOVA's PTA program will be required to satisfactorily complete a skill competency assessment prior to acceptance into the program. Transfer students must be in good academic standing and provide a written reference from the director of their program as well as a clinical instructor. Transfer students must meet all PTA program application and admission requirements.
Laboratory Examination Requirements: Each student must achieve a minimum passing score of 75% on each laboratory practical exam. In the event that a lab practical is failed, a maximum of one reexamination, per examination, will be permitted. A student who does not achieve a 75% or greater on the second attempt will fail the class and be administratively withdrawn from the program.

Continuation Requirements: All courses (including General Education courses) must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements.
Reenrollment:

1. Students in good standing may be permitted to reenroll in the PTA curriculum on a space-available basis, with permission of the program director.
   Students who leave the program for no more than a fall and a Spring Semester Credits for personal, medical, or academic reasons are required to demonstrate proficiency in all previously enrolled skills courses prior to reentering the program. "Practical exams" are administered and scheduled by the program faculty. A written exam will be required.
2. Students who leave the program for any period for medical reasons are required to submit evidence of good physical and mental health, as substantiated by a newly completed Pre-Admission Health History and Physical for NOVA Health Sciences Programs Form (125-007) signed by the primary physician responsible for their healthcare. Students must be able to continue to meet the Technical Standards for the PTA.

Prerequisites	Credits
ENG 111 - College Composition I	3
HLT 141 - Introduction to Medical Terminology	1
BIO 145 - Basic Anatomy and Physiology [1]	4
Total 8	

1st Semester	Credits
PTH 105 - Introduction to Physical Therapy	3
PTH 121 - Therapeutic Procedures I	5
PTH 151 - Musculoskeletal Structure and Function	5
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 14	

2nd Semester	Credits
PED 116 - Lifetime Fitness and Wellness **OR**	
PED 220 - Adult Health and Development	2
PSY 200 - Principles of Psychology	3
PTH 115 - Kinesiology for the Physical Therapist Assistant	5
PTH 122 - Therapeutic Procedures II	5
Total 15	

3rd Semester	Credits
PTH 131 - Clinical Education I	3
MTH --- - Elective [2]	3
Total 6	

4th Semester	Credits
PTH 225 - Rehabilitation Procedures	5
PTH 231 - Clinical Education II	5
--- --- - Humanities/Fine Arts Elective [3]	3
Total 13	

5th Semester	Credits
PTH 210 - Psychological Aspects of Therapy	2
PTH 227 - Pathological Conditions	3
PTH 232 - Clinical Education III	5
PTH 245 - Professional Issues	3
Total 13	

Total credits for the A.A.S. Degree in Physical Therapist Assistant: 69 (includes 8 prerequisite credits)

BIO 145 **OR** BIO 141 and BIO 142 must be completed within 10 years at time of admission.
[1] BIO 141 -BIO 142 may be substituted for BIO 145.
[2] Select from any MTH course 154 or above.
[3] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Psychology, A.S.

NOVA Code: 6520
Offered through AL, AN, LO, MA, WO

Purpose: This curriculum is designed for students who plan to transfer to a college or university for a BS or B.A. degree in psychology.

Transfer Information: Since four-year colleges and universities vary in their course and GPA requirements, students are advised to work closely with their faculty advisors and counseling staff to choose classes. Electives should be chosen carefully to meet the requirements of transfer institutions. The responsibility for proper course selections rests with the student. The program is designed to transfer especially well to George Mason University.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
HIS --- - Elective 3 [1]	3
MTH 154 - Quantitative Reasoning [2] **OR** Higher	3
PSY 200 - Principles of Psychology	
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 13	

2nd Semester	Credits
CST 110 - Introduction to Human Communication [3]	3
ENG 112 - College Composition II	3
--- --- - Humanities/Fine Arts Elective [4]	3
MTH 245 - Statistics I [2]	3
PSY 2-- - Elective [5]	3
Total 15	

3rd Semester	Credits
BIO 101 - General Biology I	4
ENG 2-- - Literature Elective [6]	3
PSY 210 - Statistics for Behavioral Sciences	4
PSY 2-- - Elective [5]	3
--- --- - Social/Behavioral Sciences Elective [7]	3
Total 17	

4th Semester	Credits
BIO 102 - General Biology II	4
PSY 211 - Research Methodology for Behavioral Sciences	4
PSY 2-- - Elective [5]	3
--- --- - General Education Elective [8]	3
--- --- - General Education Elective **OR** [9]	
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
Total 17	

Total credits for the A.S. Degree in Psychology: 62

[1] HIS 101 HIS 102 or HIS 112 are recommended. Other HIS courses may be chosen from the list of approved general education courses.
[2] May substitute two higher level mathematics courses.: Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264. Seek advice of a counselor or academic advisor to meet requirements of other transfer institutions.
[3] CST 100 CST 126 or CST 229 may be substituted.
[4] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor

or academic advisor to meet requirements of the transfer institution.
[5] Choose any 200-level psychology course to fulfill this requirement. Select a course that meets the requirements of the institution to which you plan to transfer. Students cannot take the one semester version course and combine with the two-semester version course. PSY 231 and PSY 232 cannot be combined with PSY 230, and PSY 231 cannot be combined with PSY 235.
[6] Choose from the courses listed as approved 200-level literature courses.
[7] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[8] Select any course listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[9] Students may take another General Education Elective or ITE 152. Students should consult with an advisor prior to choosing to complete a transfer elective.

Public History and Historic Preservation, C.S.C.

NOVA Code: 221-648-03
Offered through LO
for students seeking a solid foundation in the theories, methods, and skills in the complementary fields of public history and historic preservation.

One Year

1st Semester	Credits
HIS 180 - Historical Archaeology	3
HIS 181 - Introduction to Historic Preservation	3
Total 6	

2nd Semester	Credits
HIS 183 - Survey of Museum Practice	3
--- --- - Elective [1]	3
Total 6	

3rd Semester	Credits
HIS 187 - Interpreting Material Culture	3
HIS 190 - Coordinated Internship	3
Total 6	

Total credits for the Public History and Historic Preservation Career Studies Certificate: 18

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA. First-time-to-college students ages 17-24 must complete an SDV course within their first year at NOVA.
[1] Choose elective from the following: GIS 200, HIS 186, HIS 188, HIS 205, HIS 218 or HIS 281.

Radiation Oncology, A.A.S.

Distance degree program offered through Virginia Western Community College.

Through a collaborative arrangement with Virginia Western Community College (VWCC), NOVA students have access to the VWCC Radiation Oncology associate degree. General education and clinical courses are offered through NOVA and clinical affiliations are in Northern Virginia. Didactic classes are offered through distance learning from VWCC on the NOVA Medical Education Campus and online. Students must enroll in the program through VWCC and, upon completion, students will be VWCC graduates. For more information, go to https://www.virginiawestern.edu/academics/health-professions/radiation-oncology/ or call VWCC Health Professions Office at 540-857-7307.

Radiography, A.A.S.

NOVA Code: 1720
Offered through MEC

Purpose: The curriculum is designed to prepare students to produce diagnostic images of the human body through safe application of x-radiation. The radiographer is a central member of the healthcare team and assists the radiologist, a physician specialized in body image interpretation. Upon successful completion of degree requirements, the student will be eligible to take the American Registry of Radiologic Technology (ARRT) examination leading to certification as a Registered Technologist in Radiography: A.S., R.T.(R).

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Admission Requirements: Applicants must do the following:

- Comply with all general admission requirements for Health Sciences Programs.
- Review the online information session at https://www.nvcc.edu/academics/pathways/health-sciences/radiography.html.
- Review competitive admission and application deadlines at https://www.nvcc.edu/academics/pathways/health-sciences/radiography.html.
- Complete or self-place into MTH 154 or higher: https://www.nvcc.edu/academics/placement/index.html.
- Have completed BIO 141 and BIO 142 with a grade of "B" or higher within 10 years of application. (Please note: BIO 141 requires the completion of BIO 101, or NAS 2 or a placement test as noted at: https://www.nvcc.edu/academics/divisions/health-sciences/)
- Have completed ENG 111 with a "B" or higher.
- Have completed SDV 101 with a "B" or higher.
- Have completed RAD 105 with a "B" or higher.

Completion Requirements: All courses (including General Education courses) must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements (note: some prerequisite requirements may require a higher grade).
Special Program Requirements: The American Registry of Radiologic Technologists requires convictions or charges resulting in any of the following be reported: Plea of guilty, plea of nolo contender, withheld or deferred adjudication, suspended or stay of sentence, or military court martial. Misdemeanor speeding violations must be reported if they are related to alcohol or drugs. For more information, please visit the ARRT website or by calling ARRT at (651) 687-0048, ext. 8580.
All incomplete grades ("I") must be resolved prior to taking the next course in the sequence.

Prerequisites	Credits
BIO 141 - Human Anatomy and Physiology I	4
BIO 142 - Human Anatomy and Physiology II	4
ENG 111 - College Composition I	3
RAD 105 - Introduction to Radiology, Protection, and Patient Care	2
SDV 101 - Orientation to (a Specific Discipline)	1
Total 14	

Two Years

1st Semester	Credits
HLT 141 - Introduction to Medical Terminology	1
RAD 121 - Radiographic Procedures I	4
RAD 125 - Patient Care Procedures	3
RAD 141 - Principles of Radiographic Quality I	4
RAD 196 - On-Site Training	2
Total 14	

2nd Semester	Credits
RAD 131 - Elementary Clinical Procedures I	3
RAD 142 - Principles of Radiographic Quality II	4
RAD 221 - Radiographic Procedures II	4
Social/Behavioral Science Elective [1]	3
Total 14	

3rd Semester	Credits
RAD 135 - Elementary Clinical Procedures II [2]	5
Total 5	

4th Semester	Credits
RAD 205 - Radiation Protection and Radiobiology	3
RAD 231 - Advanced Clinical Procedures I	5

RAD 246 - Special Procedures	1
	Total 9

5th Semester	Credits
--- --- - Humanities/Fine Arts Elective [3]	3
RAD 255 - Radiographic Equipment	3
RAD 232 - Advanced Clinical Procedures II	5
RAD 240 - Radiographic Pathology	3
	Total 14

Total credits for the A.A.S. Degree in Radiography: 70 (includes 14 prerequisite credits)

BIO 141 and BIO 142 must be completed within 10 years at time of admission.

[1] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[2] RAD 135 meets for 40 hours a week for ten weeks.

[3] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Respiratory Therapy, A.A.S.

NOVA Code: 1810
Offered through MEC

Purpose: The curriculum is designed to prepare students to be effective members of the healthcare team in assisting with diagnosis, treatment, management, and preventive care of patients with cardiopulmonary problems. Upon successful completion of the program, students are eligible to take the entry-level and advanced practitioner examinations leading to certification as a Certified Respiratory Therapist (CRT) and registration as a Registered Respiratory Therapist (RRT).

Transfer Information: Transfer is not the primary purpose of an A.A.S. program, but NOVA has articulation agreements that facilitate the transfer of this and other career-oriented programs to selected senior institutions. Students interested in transfer should contact a counselor or their academic advisor early in their program.

Advanced Placement Admission: Students seeking advanced placement, or transfer, including military respiratory technicians, or non-associate degree therapists should contact the program director of the RTH program for individual counseling.

Admission Requirements: Applicants must do the following:

- Comply with all general admission requirements for Health Sciences Programs.
- View a Respiratory Therapy information session online.
- Complete or self-place into MTH 154 or higher: https://www.nvcc.edu/academics/placement/index.html.
- Have a minimum 2.5 curricular GPA at the last school/college attended at which at least 15 credits were completed.
- Have completed ENG 111, HLT 141, and SDV 101 Orientation to Healthcare or an SDV elective with a grade of "C" or higher.
- Complete BIO 141 and BIO 142 with a "C" or higher and completed within 10 years of application. (Please note: BIO 141 requires the completion of BIO 101, or NAS 2 or a placement test as noted at: https://www.nvcc.edu/academics/divisions/health-sciences/)
- Have completed RTH 120 with a grade of "B" or higher.

Special Accreditation Status: NOVA's Respiratory Therapy Program at the Medical Education Campus is accredited by the Commission on Accreditation for Respiratory Care (CoARC), *www.coarc.com*. NOVA's CoARC number is 200206.

The Commission on Accreditation for Respiratory Care (CoARC) accredits respiratory therapy education programs in the United States. To achieve this end, it utilizes an 'outcomes based' process. Programmatic outcomes are performance indicators that reflect the extent to which the educational goals of the program are achieved and by which program effectiveness is documented.

Continuation Requirement: All courses (including General Education courses) must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements (note: some prerequisite requirements may require a higher grade).

Special Program **Continuation Requirements:** If general education courses are not completed before acceptance into the Respiratory Therapy Program, then they are to be taken in the corresponding semester as indicated in the curriculum plan. Students may not proceed to the next sequential respiratory therapy course without having completed the appropriate general education coursework.

Reenrollment:

- Students in good standing may be permitted to reenroll in the RTH curriculum on a space-available basis, with permission of the program director.

Students who leave the program for any period up to Two Years for either personal or academic reasons are required to demonstrate proficiency in all previously enrolled skills courses prior to reentering the program. "Practical exams" are administered and scheduled by the program faculty. A written exam will be required.

- Students who leave the program for any period of time for medical reasons are required to submit evidence of good physical and mental health, as substantiated by a newly completed Pre-Admission Health History and Physical for Allied Health and Nursing Form (125-007) signed by the primary physician responsible for their care.

Licensure Requirements: The Virginia Board of Medicine reserves the right to deny licensure to any candidate who has been convicted of a crime or any offense relating to the abuse of alcohol and/or use or sale of controlled substances in Virginia or any other state. Any applicant to the Respiratory Therapy Program who has been found guilty of a misdemeanor or felony must consult with the program director of Respiratory Therapy prior to acceptance into the program.

Prerequisites	Credits
BIO 141 - Human Anatomy and Physiology I	4
BIO 142 - Human Anatomy and Physiology II	4
ENG 111 - College Composition I	3
HLT 141 - Introduction to Medical Terminology	1
RTH 120 - Fundamental Theory for Respiratory Care	2
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 15

Two Years

1st Semester	Credits
Humanities/Fine Arts Elective [1]	3
RTH 102 - Integrated Science for Respiratory Care II	3
RTH 111 - Anatomy and Physiology of the Cardiopulmonary System 3	
RTH 145 - Pharmacology for Respiratory Care I	1
RTH 151 – Fundamental Clinical Procedures I	3
	Total 13

2nd Semester	Credits
CST 229 – Intercultural Communication [2]	3
RTH 121 - Cardiopulmonary Science I	3
RTH 131 - Respiratory Care Theory and Procedures I	4
RTH 196 - On-Site Training in Respiratory Care I	3
RTH 245 - Pharmacology for Respiratory Care II	2
	Total 15

3rd Semester	Credits
RTH 135 - Diagnostic and Therapeutic Procedures I	2
RTH 296 - On-Site Training in Respiratory Care II	2
	Total 4

4th Semester	Credits
RTH 215 - Pulmonary Rehabilitation	1
RTH 222 - Cardiopulmonary Science II	3
RTH 223 - Cardiopulmonary Science III	2
RTH 236 - Critical Care Monitoring	3
RTH 290 - Adult ICU rotation	3
	Total 12

5th Semester	Credits
PED 116 - Lifetime Fitness and Wellness [1]	2
RTH 225 - Neonatal and Pediatric Respiratory Procedures	3
RTH 227 - Integrated Respiratory Therapy Skills II	2
RTH 290 - NEO/PEDS/Precepting	3

--- --- - Social/Behavioral Science Elective [3] 3

Total 12

Total credits for the A.A.S. Degree in Respiratory Therapy: 71 (includes 15 prerequisite credits)

BIO 141 and BIO 142 must be completed within 10 years at time of admission.

[1] See humanities/fine arts courses listed under Social/Behavioral Sciences Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[2] CST 229 is recommended. Students may select CST 110 or CST 126.

[3] See social/behavioral science courses listed under Social/Behavioral Sciences Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Science, A.S.

NOVA Code: 8800
Offered through AL, AN, LO, MA, NOL, WO

Purpose: The curriculum is designed for individuals who are interested in a professional or scientific program and who plan to transfer to a four-year college or university to complete a baccalaureate degree with a major in one of the following fields: agriculture, biology, chemistry, pre-dentistry, forestry, geology, oceanography, pharmacy, physics, physical therapy, pre-medicine, science education, or mathematics.

Transfer Information: Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully after investigation of the requirements of the transfer institution. The responsibility for proper course selection rests with the student. Students are encouraged to complete the A.S. degree before transferring. Recommended Preparation: Satisfactory completion of the following high school units or equivalent as a minimum: 4 units of English, 3 units of college preparatory mathematics, 1 unit of laboratory science, and 1 unit of social science.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications **OR**	
--- --- - General Education Elective [1]	3
--- --- - Physical or Life Science Elective w/Lab [2,3] **OR**	
MTH 167 - PreCalculus with Trigonometry [4]	4-5
MTH 263 - Calculus I	4
SDV 100 - College Success Skills 1 **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 15-16

2nd Semester	Credits
ENG 112 - College Composition II	3
MTH 264 - Calculus II [5]	4
--- --- - Physical or Life Science Elective w/Lab [2,3]	4
--- --- - Social/Behavioral Sciences Elective [6]	3
	Total 14

3rd Semester	Credits
HIS --- - Elective [7]	3
--- --- - Humanities/Fine Arts Elective [8]	3
MTH --- - Elective [9] **OR**	
--- --- - Physical or Life Science Elective w/Lab [2,3]	3-4
MTH --- - Elective [9] **OR**	
--- --- - Physical or Life Science Elective w/Lab [2,3]	3-4
--- --- - Social/Behavioral Sciences Elective [6]	3
	Total 15-17

4th Semester	Credits
CST 110 - Introduction to Human Communication [10]	3
--- --- - General Education Elective [11]	3
--- --- - Humanities/Fine Arts Elective [8]	3
MTH --- - Elective [9] **OR**	
--- --- - Physical or Life Science Elective w/Lab [2,3]	3-4
--- --- - Physical or Life Science Elective w/Lab [2,3]	4-5
	Total 16-18

Total credits for the A.S. Degree in Science: 60-65

[1] Select any course listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution. EDU 200 may be used for those interested in secondary education. ADJ 100 may be used for those interested in forensic science.

[2] All science electives (including General Education sciences) must be selected from the following: BIO 101, BIO 102, BIO 110, BIO 120, CHM 111, CHM 112, GOL 105, GOL 106, or any 200-level biology, chemistry, geology, or physics course.

[3] Students who plan to major in Biology should elect CHM 111-CHM 112, BIO 101-BIO 102 or BIO 110 and BIO 120, and either BIO 206 and PHY 201 or PHY 201-PHY 202. Students who plan to major in Chemistry should elect CHM 111-CHM 112 and CHM 241-CHM 242 and CHM 245-CHM 246 plus 2 semesters of physics (please see transfer school for required physics class). Students who plan to major in Physics should select PHY 241 - PHY 242, MTH 265, MTH 267 and two of the following: CHM 111-CHM 112, PHY 243 or MTH 266. For all intended majors, it is strongly recommended that you contact your counselor or academic advisor to identify courses that meet requirements of your transfer institution.

[4] May substitute any higher-level mathematics course. MTH 161 and MTH 162 may both be taken in place of MTH 167.

[5] For students who plan to major in Biology, MTH 264 may be replaced with MTH 245.

[6] See social/behavioral sciences courses listed under Social/Behavioral Sciences Electives. Base selection on requirements of transfer institution.

[7] Must use General Education HIS courses listed under social/behavioral science courses under Social/Behavioral Sciences Electives.

[8] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

[9] Math electives must be selected from the following: MTH 265, MTH 266, MTH 267, or MTH 288.

[10] May also select from the following: CST 100, CST 126, or CST 229.

[11] Choose from General Education listing. If choosing a science, it must follow footnote #3. This elective is not needed if selections for all other requirements total 60 credits or more.

Science: Mathematics Specialization, A.S.

NOVA Code: 8802
Offered through AL, AN, LO, MA, NOL, WO

Purpose: The curriculum is designed for individuals who plan to transfer to a four-year college or university to complete a baccalaureate degree. This curriculum is designed to prepare students to major in one of the following fields: mathematics, mathematics education, statistics, operations research, applied mathematics, or computer science.

Transfer Information: Students are advised to work closely with the faculty and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.

Recommended Preparation: Satisfactory completion of the following high school units or equivalent as a minimum: 4 units of English, 4 units of college preparatory mathematics, 1 unit of laboratory science, and 1 unit of social science.

Two Years

1st Semester	Credits
CSC 221 - Introduction to Problem Solving and Programming	3
ENG 111 - College Composition I	3
HIS --- - Elective [1]	3
MTH 167 - PreCalculus with Trigonometry [2]	5
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 15

2nd Semester	Credits
CST 110 - Introduction to Human Communication [3]	3

ENG 112 - College Composition II	3
MTH 263 - Calculus I	4
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Social/Behavioral Sciences Elective [5]	3
Total 16	

3rd Semester	Credits
MTH 264 - Calculus II	4
MTH --- - Elective [6]	3
--- --- - Humanities/Fine Arts Elective [4]	3
--- --- - Physical or Life Science Elective w/Lab [7]	4
--- --- - Social/Behavioral Sciences Elective [5]	3
Total 17	

4th Semester	Credits
MTH 265 - Calculus III	4
MTH --- - Elective [6]	3-4
--- --- - Physical or Life Science Elective w/Lab [7]	4
--- --- - General Education Elective [8]	3
Total 14-15	

Total credits for the A.S. Degree in Science with a Specialization in Mathematics: 60-62

Twenty of these credits must be taken in MTH courses for transfer to a four-year institution with a major in science.

[1] Select any HIS course listed under the social/behavioral science courses in General Education Electives. Elective should be selected with advice of a counselor or faculty advisor to meet the requirements of the transfer institution.

[2] Students will come to this program with different levels of preparation; If Precalculus is needed, begin with MTH 167 (or MTH 161 and MTH 162). If placed out of Precalculus, begin with MTH 263, and replace the Precalculus credits with one MTH Elective from footnote #6 and one General Education Elective from footnote #8. Please consult with an advisor for the best option.

[3] Select from the following: CST 100, CST 110, CST 126, or CST 229.

[4] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

[5] See social/behavioral science courses listed under General Education Electives. Elective should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

[6] Math electives should be chosen carefully from MTH 266, MTH 267, MTH 288, or CSC 222, after verifying requirements of the transfer institution. MTH 245 and/or MTH 246 should be selected only after careful consideration for transfer purposes and require a course substitution request. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.

[7] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[8] Choose from General Education Electives. This elective is not needed if selections for all other requirements total 60 credits or more.

Social Sciences, A.S.

NOVA Code: 8820

Offered through AL, AN, LO, MA, NOL, WO

Purpose: The Associate of Science degree in Social Sciences focuses on how human beings interact with each other in the past and present. It emphasizes, through quantitative and qualitative research methods, how social scientists develop an understanding of the ways in which humans relate to themselves and each other through beliefs, customs, organizations, and institutions. The Associate of Science degree in Social Sciences prepares students for transfer to a broad range of Bachelor of Science and Bachelor of Arts programs, in fields such as economics, geography, geographic information systems, history, political science, psychology, sociology, teacher education, and more.

Transfer Information: This program provides transfer paths that include the general education courses and introductory major courses that students typically take during the first **Two Years** at a four-year college or university when they are majoring in a social science. Because senior institutions differ in their requirements, students are strongly urged to work with their assigned advisor or a counselor and to acquaint themselves with the requirements of the major department in the college or university to which they plan to transfer. The responsibility for proper course selection rests with the student.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
HIS --- - Elective [1]	3
MTH 154 - Quantitative Reasoning [2] **OR** Higher	3
--- --- - Physical or Life Science Elective w/Lab [3]	4
SDV 100 - College Success Skills 1 **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 14	

2nd Semester	Credits
ENG 112 - College Composition II	
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications **OR**	3
--- --- - General Education Elective [4]	3
MTH 245 - Statistics I [2] **OR** Higher	3
--- --- - Physical or Life Science Elective w/Lab [3]	4
--- --- - Social/Behavioral Sciences Elective [5]	3
Total 16	

3rd Semester	Credits
CST 110 - Introduction to Human Communication [6]	3
--- --- - Humanities/Fine Arts Elective [7]	3
PSY 200 - Principles of Psychology **OR**	
SOC 200 - Introduction to Sociology	3
--- --- - Social/Behavioral Sciences Elective [5]	3
--- --- - Social/Behavioral Sciences Elective [5]	3
Total 15	

4th Semester	Credits
--- --- - General Education Elective [4]	3
--- --- - Humanities/Fine Arts Elective [7]	3
--- --- - Social/Behavioral Sciences Elective [8]	3
--- --- - Transfer Electives [9]	6
Total 15	

Total credits for the A.S. Degree in Social Sciences: 60

[1] Select any HIS course listed under social/behavioral sciences in General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[2] Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.

[3] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[4] Select any course listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[5] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[6] Select from the following: CST 100, CST 110, CST 126, or CST 229.

[7] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.

[8] For this elective only student may select a social/behavioral science course from either the general education electives or transfer electives in footnote #9. This elective is not needed if selections for all other requirements total 60 credits or more.

[9] Students can take another General Education Electives or select a course from the following transfer elective list. In consultation with an advisor, students may select from any beginning world languages (101 or 102), BUS 240, CST 126, CST 229, ECO

230, EDU 200, HIS 203, HIS 231, HIS 251, HIS 254, ITE 100, ITE 152, PLS 136, PLS 250, PSY 215, PSY 225, SOC 215, SOC 225, SOC 236, SOC 266, choosing the course that best meets the requirements of your intended transfer institution.

Social Sciences: Deaf Studies Specialization, A.S.

NOVA Code: 8823
Offered through AN

Purpose: This program is designed for individuals who plan to transfer to a four-year college or university to complete a Bachelor of Science in a program that requires a background in American Sign Language and the Deaf community. Graduates may use their skills to work in human service fields such as daycare settings and as teacher assistants. Graduates from the program can also transfer to 4-year institutions and major in a wide variety of fields, including ASL instruction, Deaf education, linguistics, Deaf studies (e.g. history, literature, research, etc.), speech-language pathology and audiology, human services, communication sciences and disorders, and social work.
Transfer Information: This program provides transfer paths that include the general education courses and introductory major courses that students typically take during the first Two Years at a four-year college or university when they are majoring in a social science that deals with the Deaf community. Because senior institutions differ in their requirements, students are strongly urged to work with their assigned advisor or a counselor and to acquaint themselves with the requirements of the major department in the college or university to which they plan to transfer. The responsibility for proper course selection rests with the student.

Special **Admission Requirements:** Admission to this program requires that a student demonstrate an intermediate level of ASL fluency. A grade of "C" or better in ASL 202 will satisfy this requirement.
Students may be able to waive the ASL requirement if they have prior experience in ASL. To demonstrate ASL competency, students must receive a score on the Sign Communication Proficiency Interview (SCPI) or the Gallaudet University American Sign Language Proficiency Interview (GU-ASLPI) of "Intermediate" or higher.

Two Years

1st Semester	Credits
ASL 261 - Advanced American Sign Language I	4
CST 110 - Introduction to Human Communication [1]	3
ENG 111 - College Composition I	3
MTH 154 - Quantitative Reasoning [2]	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 14	

2nd Semester	Credits
ASL 125 - History of the U.S. Deaf Community	3
ASL 262 - Advanced American Sign Language II	4
ENG 112 - College Composition II	3
MTH 245 - Statistics I [2]	3
--- --- - Social/Behavioral Sciences Elective [3]	3
Total 16	

3rd Semester	Credits
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
HIS --- - Elective [4]	3
--- --- - Humanities/Fine Arts Elective [5]	3
--- --- - Physical or Life Science Elective w/Lab [6]	4
SOC --- - Elective [7]	3
Total 16	

4th Semester	Credits
ASL 220 - Comparative Linguistics: ASL and English	3
--- --- - General Education Elective [8]	3
--- --- - Physical or Life Science Elective w/Lab [6]	4
--- --- - Social/Behavioral Sciences Electives [3]	6
Total 16	

Total credits for the A.S. Degree in Social Sciences with a Specialization in Deaf Studies: 62

[1] Select from the following: CST 100, CST 110, CST 126, or CST 229.
[2] Many universities require MTH 154 or higher while others require MTH 161 or MTH 162 or higher, often including a statistics course, for majors in the social sciences. It is, therefore, important that students confer with a counselor to determine the appropriate mathematics courses for their intended transfer university. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
[3] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[4] Select any HIS course listed under social/behavioral sciences in General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[5] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[6] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[7] Select any SOC course listed under social/behavioral sciences in General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[8] Select any course from General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution. This elective is not needed if selections for all other requirements total 60 credits or more.

Social Sciences: Geospatial Specialization, A.S.

NOVA Code: 8825
Offered through LO

Purpose: This program is designed to prepare students to transfer into baccalaureate programs in the geospatial or social sciences at a four-year institution. Students will learn theory about geospatial systems and how they are used.

Transfer Information: Since four-year colleges can vary their course and GPA requirements, please consult a counselor or academic advisor regarding specific requirements and course selection.
Preparation: Satisfactory completion of the following high school units or equivalent: 4 units of English; 3 units of mathematics (Algebra I-II and geometry); 1 unit of laboratory science; and 1 unit of social studies.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
GIS 101 - Introduction to Geospatial Technology	3
MTH 154 - Quantitative Reasoning [1]	3
--- --- - Physical or Life Science Elective w/Lab [2]	4
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 14	

2nd Semester	Credits
ENG 112 - College Composition II	3
GIS 200 - Geographical Information Systems I	4
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
MTH 245 - Statistics I [1] **OR** Higher	
--- --- - Physical or Life Science Elective w/Lab [2]	4
Total 17	

3rd Semester	Credits
CST 110 - Introduction to Human Communication [4]	3
GEO 200 - Introduction to Physical Geography	3
GIS 201 - Geographical Information Systems II	4
HIS --- - Elective [5]	3
--- --- - Humanities/Fine Arts Elective [3]	3
Total 16	

4th Semester	Credits
ENG 2-- - Literature Elective [6]	3

GIS 203 - Cartography for GIS **OR**	
GIS 205 - Geographical Information Systems: 3-Dimensional Analysis	4
PSY 200 - Principles of Psychology **OR**	
SOC 200 - Introduction to Sociology	3
--- --- - Social/Behavioral Sciences Electives [7]	6
	Total 15-16

Total credits for the A.S. Degree in Social Sciences with a Specialization in Geospatial: 62-63

[1] Many universities require MTH 154 or higher while others require MTH 161 or MTH 162 or higher, often including a statistics course for majors in the social sciences. It is, therefore, important that students confer with a counselor to determine the appropriate mathematics courses for their intended transfer university. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 263.
[2] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution. Consult GIS faculty advisor for details.
[3] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[4] Select from the following: CST 100, CST 126, or CST 229.
[5] Select any HIS course listed under social/behavioral science in General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[6] Please consult with your advisor before selecting any 200-level literature.
[7] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Social Sciences: Political Science Specialization, A.S.

NOVA Code: 8824
Offered through AL, LO

Purpose: This program is designed for individuals who plan to transfer to a four-year college or university to complete a baccalaureate degree. Graduates will have the knowledge, skills, and abilities equivalent to students entering the junior level at four-year colleges and universities.
Transfer Information: This program provides transfer paths that include the general education courses and introductory major courses that students typically take during the first **Two Years** at a four-year college or university when they are majoring in a social science. Because senior institutions differ in their requirements, students are strongly urged to work with their assigned advisor or a counselor and to acquaint themselves with the requirements of the major department in the college or university to which they plan to transfer. The responsibility for proper course selection rests with the student.

Two Years

1st Semester	Credits
ENG 111 - College Composition I	3
HIS --- - Elective [1]	3
MTH 154 - Quantitative Reasoning [2] **OR** Higher	3
PLS 135 - U.S. Government and Politics	3
PLS 241 - Introduction to International Relations	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
	Total 16

2nd Semester	Credits
ENG 112 - College Composition II	3
ITE 152 - Introduction to Digital and Information Literacy and Computer Applications	3
MTH 245 - Statistics I [2]	3
PLS 136 - State and Local Government and Politics	3
--- --- - Physical or Life Science Elective w/Lab [3]	4
	Total 16

3rd Semester	Credits
CST 110 - Introduction to Human Communication [4]	3
--- --- - Humanities/Fine Arts Elective [5]	3
PLS 140 - Introduction to Comparative Politics	3
--- --- - Physical or Life Science Elective w/Lab [3]	4
SOC --- - Elective [6]	3
	Total 16

4th Semester	Credits
PLS 200 - Introduction to Political and Democratic Theory	3
--- --- - General Education Elective [7]	3
--- --- - Humanities/Fine Arts Elective [5]	3
--- --- - Social/Behavioral Sciences Elective [8]	3
	Total 12

Total credits for the A.S. Degree in Social Sciences with a Specialization in Political Science: 60

[1] Select any HIS course listed under social/behavioral sciences in General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[2] Many universities require MTH 154 or higher while others require MTH 161 or MTH 162 or higher, often including a statistics course for majors in the social sciences. It is, therefore, important that students confer with a counselor to determine the appropriate mathematics courses for their intended transfer university. Credit will not be awarded for both MTH 261 and MTH 263. Credit will not be awarded for both MTH 262 and MTH 264.
3 See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[4] Select from the following: CST 100, CST 110, CST 126, or CST 229.
[5] See humanities/fine arts courses listed under General Education Electives. Students must choose courses from two of the three areas listed. Credit will not be applied if student takes two courses from the same area. Electives should be selected with advice of a counselor or academic advisor to meet requirements of the transfer institution.
[6] Select any SOC course listed under social/behavioral sciences in General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[7] See any course listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[8] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Substance Abuse Rehabilitation Counselor, Certificate

NOVA Code: 4030
Offered through: AL

Purpose: This curriculum is designed to fulfill the Virginia state educational requirements for the certification of substance abuse counselors. To meet substance abuse counselor certification requirements, the applicant is expected to meet specific education requirements including didactic and experiential learning with a supervised internship required.
Individuals seeking skills and knowledge in this career field, but not seeking state certification may also enroll.
Cooperative Education: Students in this curriculum will participate in at least 3 semester hours of Cooperative Education unless they already have equivalent experience.

One Year

1st Semester	Credits
ENG 111 - College Composition I **OR**	
CST 110 - Introduction to Human Communication	3
HMS 121 - Basic Counseling Skills I	3
HMS 141 - Group Dynamics I	3
HMS 251 - Substance Abuse I	3
HMS 266 - Counseling Psychology	3
PSY 230 - Developmental Psychology	3
SDV 100 - College Success Skills **OR**	

SDV 101 - Orientation to (a Specific Discipline)	1
Total 19	

2nd Semester	Credits
HMS 142 - Group Dynamics II	3
HMS 145 - Effects of Psychoactive Drugs	3
HMS 252 - Substance Abuse II	3
HMS 258 - Case Management and Substance Abuse	3
HMS 290 - Coordinated Internship	3
--- - --- - Social/Behavioral Science Elective [1]	3
Total 18	

Total credits for the Substance Abuse Rehabilitation Counselor Certificate: 37

[1] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Technical and Professional Writing, C.S.C

NOVA Code: 221-265-01
Offered through AL, AN, LO, MA, WO

Purpose: This 16-credit Technical and Professional Writing Career Studies Certificate is a writing credential focused on various workplace writing genres. Students will gain expertise in writing and editing technical reports, documenting processes, and in writing/responding to proposals. Students will also gain a solid foundation in the vocabulary of technical and proposal writing and professional communication.
The Technical and Professional Writing CSC is credential comprised of five required courses.
Completion Requirements: 16 total credits. All students must complete ENG 111 (or its equivalent) in the first semester of certificate study. Students must next complete a core of 13 credits of technical writing, editing and proposal writing courses.
Credit for Prior Learning: Students in this program may be eligible for credit for prior learning and will be evaluated on a case-by-case basis.

One Year

1st Semester	Credits
ENG 111 - College Composition I	3
ENG 113 - Technical-Professional Writing	3
ENG 205 - Technical Editing	3
Total 9	

2nd Semester	Credits
ENG 210 - Advanced Composition **OR**	
ENG 295 - Topics in	3
ENG 298 - Seminar and Portfolio	4
Total 7	

Total credits for the Technical and Professional Writing Career Studies Certificate: 16

[1] Students must complete ENG 111 and (or its equivalent) in the first semester of their registration.

Uniform Certificate of General Studies (UCGS)

NOVA Code: 695
Offered through: AL, AN, LO, MA, NOL, WO

Purpose: This program provides a solid foundation in the VCCS and NOVA general education core competency areas. Essentially the first year of an associate of science degree, this certificate is awarded to students placed in A.A. and A.S. degree programs who complete the requirements listed.

Transfer Virginia has developed 32 credits of transferable coursework (including Passport courses) that students can complete. This replaces the General Education Certificate beginning in Fall 2022. Only classes completed after May 1, 2020, will apply, and students must have earned a C or higher. NOVA cannot accept course substitutions, as this is a VCCS program. Students must be program-placed in the UCGS and apply for graduation to earn the credential. See a summary of UCGS courses.

One Year

1st Semester	Credits
ENG 111 - College Composition I	3
MTH 154 - Quantitative Reasoning **OR** Higher	3
--- --- - Humanities/Fine Arts Elective [1]	3
--- --- - Physical or Life Science Elective w/Lab [2]	4
--- --- - Social/Behavioral Sciences Elective [3]	3
SDV 100 - College Success Skills **OR**	
SDV 101 - Orientation to (a Specific Discipline)	1
Total 17	

2nd Semester	Credits
ENG 112 - College Composition II **OR**	
ENG 113 - Technical-Professional Writing	3
--- --- - Communication, Languages, Studio Art, and Technology Elective [4]	6
HIS --- - Elective [5]	3
--- --- - Humanities/Fine Arts Elective [1]	3
Total 15	

Total credits for the Uniform Certificate of General Studies: 32

Students who are placed in A.A.A. and A.A.S. programs may work with a counselor to be placed in this program under certain circumstances. See a counselor for more information.
[1] Select any UCGS course from the humanities/fine arts courses listed under General Education Electives. UCGS courses are denoted with an asterisk (*). Must be from two different categories. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[2] Select any UCGS course from the physical and life science courses listed under General Education Electives. UCGS courses are denoted with an asterisk (*). Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[3] Select any UCGS course from the social/behavioral science courses listed under General Education Electives. UCGS courses are denoted with an asterisk (*). Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

[4] Select any UCGS course from the communication, languages, studio art, and technology courses listed under General Education Electives. UCGS courses are denoted with an asterisk (*). Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[5] Select any UCGS HIS course listed under social/behavioral sciences in General Education Electives. UCGS courses are denoted with an asterisk (*). Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Veterinary Technology, A.A.S.

NOVA Code: 1880
Offered through: LO

Purpose: Our program is accredited by the American Veterinary Medical Association (AVMA) Committee on Veterinary Technician Education and Activities (CVTEA). We award an Associate of Applied Science (A.A.S.) degree and prepare you for the Veterinary Technician National Examination (VTNE), an entry-level national licensing exam.

Admission Requirements: Completion of the following units with a "C" or better:
Complete the following **Prerequisites** with a "C" or better: SDV 101 Orientation to Veterinary Technology or SDV 100, VET 111, ENG 111, MTH 133, CHM 101 or CHM 111.

1. 18-years of age at time of application
2. Letter of Intent
3. One professional letter of recommendation
4. Current resume
5. Full-time (2-year) Program: working an average minimum of 10 hours per week at a veterinary facility

Part-time (2-year) Program: working an average minimum of 20 hours per week at a veterinary facility

Those with a Student Visa are not required to work and must take all VET specific courses on-campus.

7. Official college transcripts

Responsibilities of Veterinary Technology Students:

1. Students in the Veterinary Technology Program incur a variety of additional expenses. These include, but are

not limited to, the cost of uniforms (such as lab coat with name tag), human vaccinations, a preadmissions physical examination, lab fees, lab supplies, accessories, and travel to and from clinical assignments, including program field trips. Students are also responsible for individual state licensure and national accreditation application and testing fees.

2. A strict dress code is required in the clinical setting. Students may be dismissed if they fail to comply with this dress code.
3. Students are required to complete learning experiences at local hospitals and/or other agencies. Students may be required to attend day, evening, night, or weekend clinical assignments.
4. Students must provide their own transportation to clinical assignments. Strict attendance is required at clinical sites.
5. While enrolled in clinical courses, students may not replace or take the responsibility of "qualified" staff in affiliated facilities. However, after demonstrating proficiency, students may be permitted to perform specified procedures under careful supervision.

Veterinary Technology Program **Continuation Requirements:**

1. All courses (including General Education courses) must be completed with a grade of "C" or better before taking the next course in the sequence and to satisfy graduation requirements.
2. All courses in the major must be taken in the sequence prescribed in the NOVA *Catalog*.
3. Students must pass both the theoretical and the clinical/lab portions in order to pass a course with grade of "C" or better.
4. Program faculty and clinical affiliates reserve the right to recommend, through appropriate channels, withdrawal of any student who either fails to exhibit safe performance or fails to adhere to required clinical affiliate policies and procedures.
5. Students must be able to perform all essential functions of the Veterinary Technology Program, with or without reasonable accommodation. Visit the Student Section on the Veterinary Technology website for the Technical Standards & Essential Functions for the Veterinary Technology Program.

Program Reenrollment Requirements: Any student who has voluntarily withdrawn or who has been withdrawn due to unsatisfactory academic or clinical performance may apply for readmission the following academic year. However, acceptance will be based upon space availability, successful fulfillment of any contingencies agreed to in writing at the time of withdrawal, and program director approval. A readmissions interview, medical examination, and human rabies vaccine may be required.
Special Accreditation Status: Both the on-campus and online programs are fully accredited by the American Veterinary Medical Association (AVMA) Committee on Veterinary Technician Education and Activities (CVTEA). *www.avma.org/ProfessionalDevelopment/Education/Accreditation/Programs/Pages/vettechprograms.aspx*.
Delivery Method Options: The program is completed at Loudoun Campus and offers two options to complete the Veterinary Technology degree: full-time (2-years) or part-time (3-years). When applying to the Program, you may only choose one option.
Veterinary Technology Program Online Courses: Special rules apply to online courses offered to students living outside of Virginia. For further information visit *https://eli.nvcc.edu/state-authorization.htm*. Courses are administered online using Canvas and are offered through NOVA Online. Students use class notes from the online course site and textbooks to study and complete course assignments. Students participate in online class discussions and communicate regularly with faculty. Laboratory review and practical examinations are held at NOVA's Loudoun Campus. Formal written examinations are taken at testing centers at the student's local community college or any NOVA campus Testing Center. Many methods of evaluation of clinical skills are employed including video, product evaluation such as radiographs and blood smear slides done by the student, assignments, as well as testing on campus.

Two Years and a Half

Prerequisites	Credits
CHM 101 - Introductory Chemistry I **OR**	4
CHM 111 - General Chemistry I	4
ENG 111 - College Composition I	3
MTH 133 - Mathematics for Health Professions	3
SDV 101 - Orientation to (a Specific Discipline) [1]	1
VET 111 - Anatomy and Physiology of Domestic Animals	4
Total 15	

1st Semester	Credits
VET 105 - Introduction to Veterinary Technology	3
VET 116 - Animal Breeds and Behavior	3
VET 121 - Clinical Practices I	3
VET 211 - Animal Diseases I	2
Total 11	

2nd Semester	Credits
VET 131 - Clinical Pathology I	3
VET 135 - Anesthesia of Domestic Animals	2
VET 214 - Animal Dentistry	2
VET 216 - Animal Pharmacology	2
VET 217 - Introduction to Laboratory, Zoo, and Wildlife Medicine	2
Total 11	

3rd Semester	Credits
CST 110 - Introduction to Human Communication **OR**	
CST 126 - Interpersonal Communication	3
--- --- - Humanities/Fine Arts Elective [2]	3
--- --- - Social/Behavioral Sciences Elective [3]	3
Total 9	

4th Semester	Credits
VET 122 - Clinical Practices II	3
VET 132 - Clinical Pathology II	3
VET 212 - Animal Diseases II	2
VET 221 - Advanced Clinical Practices III	4
Total 12	

5th Semester	Credits
VET 133 - Clinical Pathology III	3
VET 235 - Animal Hospital Management and Client Relations	3
VET 290 - Coordinated Internship: A Preceptorship in Veterinary Technology	4
Total 10	

Total credits for the A.A.S. Degree in Veterinary Technology: 68

[1] Students may substitute with SDV 100.
[2] See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[3] See social/behavioral science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.

Visual Art, A.F.A.

NOVA Code: 5610
Offered through: AL, AN, LO, MA, WO

Purpose: This studio-arts, portfolio-intensive curriculum is designed for students who seek transfer into a competitive Bachelor of Fine Arts (BFA) program or similar baccalaureate program in either fine arts, graphic design, or photography at a college or university. Students work on a common foundation year of studio art courses and then select their concentration in either fine arts, graphic design, or photography for their second year of study. NOTE that the graphic design concentration is offered at the AL and LO campuses and the photography concentration is offered at AL and WO.

Transfer Information: Since four-year colleges can vary in their course, GPA, and portfolio requirements, students are required to work with their AFA faculty advisor for course scheduling and portfolio preparation. Electives should be chosen carefully to meet requirements of the transfer institution. The responsibility for proper course selection rests with the student.
Recommended Preparation: Satisfactory aptitude in visual art.

Two Years

1st Semester	Credits
ART 101 - History of Art: Prehistoric to Gothic	3
ART 121 - Foundations of Drawing	3

ART 131 - Two-Dimensional Design	3
ART 140 - Introduction to Graphic Skills **OR**	
PHT 101 - Photography I	3
ENG 111 - College Composition I	3
SDV 101 - Orientation to (a Specific Discipline)	1
Total 16	

2nd Semester	Credits
ART 102 - History of Art: Renaissance to Modern	3
ART 223 - Life Drawing	3
ART 132 - Three-Dimensional Design	3
ART 199 - Supervised Study: Portfolio Review	1
ENG 112 - College Composition II	3
MTH 154 – Quantitative Reasoning [1]	3
Total 16	

3rd Semester	Credits
ART or PHT --- - Elective [2]	3
ART or PHT --- - Elective [2]	3
ART or PHT --- - Elective [2] **OR**	3
--- --- - General Education Elective [2,3]	3
ART 299 - Supervised Study: Portfolio Review	2
--- --- - Physical or Life Science Elective w/Lab [4]	4
Total 15	

4th Semester	Credits
ART or PHT --- - Elective **OR**	
--- --- - General Education Elective [2,3]	3
ART 215 - History of Modern Art **OR**	
ART 250 - History of Design **OR**	
PHT 110 - History of Photography **OR**	
--- --- - General Education Elective [3]	3
--- --- - Social/Behavioral Sciences Elective [5]	3
CST 100 - Principles of Public Speaking [6]	3
ENG 2-- - Literture Elective	3
Total 15	

Total credits for the Visual Art A.F.A.: 62

[1] May substitute any higher-level mathematics course. See transfer institution requirements.
[2] Courses may be selected from the following electives with the advice of a counselor or academic advisor according to the requirements of the transfer institution. Students who are interested in Graphic Design, select from ART 116, ART 141, ART 142, and ART 217. Students interested in Fine Arts select from ART 130, ART 153, ART 154, ART 231, ART 236, ART 241, or ART 242. Students interested in Photography, select from PHT 101, PHT 102, PHT 103, PHT 104, PHT 110, PHT 130, PHT 131, PHT 201, PHT 221, PHT 270.
[3] Select any course listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[4] See physical and life science courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[5] See social/behavioral science course listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor to meet the requirements of the transfer institution.
[6] CST 100 or CST 110 will fulfill this elective depending on the requirements of the transfer institution. Seek advice of a counselor or academic advisor.

Welding: Basic Techniques, C.S.C.

NOVA Code: 221-995-01
Offered through: MA

Purpose: This curriculum is designed for individuals wishing to obtain fundamental skills for immediate entry-level positions in the welding trade as welding apprentices or welding laboratory assistants.
Its structure allows students to pursue these courses on a part-time basis. All courses will apply to the Welding Certificate.

One Year

1st Semester	Credits
ENG/CST Elective [1]	3
WEL 120 - Introduction to Welding	2
WEL 121 - Arc Welding	2
Total 7	

2nd Semester	Credits
WEL 122 - Welding II (Electric Arc)	3
WEL 150 - Welding Drawing and Interpretation	2
Total 5	

3rd Semester	Credits
WEL 130 - Inert Gas Welding	3
WEL 160 - Semi-Automatic Welding	3
Total 6	

Total credits for the Welding: Basic Techniques Career Studies Certificate: 18

All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.
[1] May be met by ENG 111 or other ENG courses approved by a student's advisor, or by CST 100, CST 110, CST 126, or CST 229.

Course Descriptions

Accounting

ACC 211 **(3 CR.)**
Principles of Accounting I
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 in the operation of organizations, as well as methods of analysis and interpretation of accounting information. Lecture 3 hours per week.

ACC 212 **(3 CR.)**
Principles of Accounting II
Prerequisite(s): ACC 211. 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. Lecture 3 hours per week.

ACC 213 **(1 CR.)**
Principles of Accounting Laboratory I
Corequisite(s): ACC 211 may be required. Provides problem-solving experience to supplement instruction in ACC 211. Laboratory 2 hours per week.

ACC 214 **(1 CR.)**
Principles of Accounting Laboratory II
Corequisite(s): ACC 212 may be required. Provides problem-solving experience to supplement instruction in ACC 212. Laboratory 2 hours per week.

ACC 215 **(3 CR.)**
Computerized Accounting
Prerequisite(s): ACC 211. 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 219 **(3 CR.)**
Governmental and Not-for-Profit Accounting
Prerequisite(s): ACC 212 or equivalent. Introduces fund accounting as used by governmental and nonprofit entities. Stresses differences between accounting principles of for-profit and not-for-profit organizations. Lecture 3 hours per week.

ACC 220 **(3 CR.)**
Accounting for Small Business
Presents practical accounting procedures for small business operations including service occupations, retail stores, and manufacturing operations. Covers the accounting cycle, journals, ledgers, preparation of financial statements and payrolls, and checking account management. Includes regulations applicable to payroll, self-employment, Social Security, and other taxes. Lecture 3 hours per week.

ACC 221 **(3 CR.)**
Intermediate Accounting I
Prerequisite(s): ACC 212 or equivalent. Covers accounting principles and theory, including a review of the accounting cycle and accounting for current assets, current liabilities, and investments. Introduces various accounting approaches and demonstrates the effect of these approaches on the financial statement users. Lecture 3 hours per week.

ACC 222 **(3 CR.)**
Intermediate Accounting II
Prerequisite(s): ACC 221. Continues accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long-term liabilities, and investments. Lecture 3 hours per week.

ACC 230 **(3 CR.)**
Advanced Accounting
Prerequisite or Corequisite: ACC 222 or equivalent. Develops the skills necessary to prepare financial statements for complex business organizations. Includes the preparation of consolidated financial statements focusing on business combinations, multinational corporations, and foreign currency translation. Covers accounting for partnerships, state and local governments, and nonprofit organizations. Lecture 3 hours per week.

ACC 231 **(3 CR.)**
Cost Accounting I
Prerequisite(s): ACC 212 or equivalent. Studies cost accounting methods and reporting as applied to job order, process, and standard cost accounting systems. Includes cost control and other topics. Lecture 3 hours per week.

ACC 232 **(3 CR.)**
Cost Accounting II
Prerequisite(s): ACC 231 or equivalent. Studies profit analysis and other topics. Lecture 3 hours per week.

ACC 240 **(3 CR.)**
Fraud Examination
Covers the principles and methodology of fraud detection and deterrence. Introduces the various ways fraud and occupational abuses occur, methods to identify the risk of exposure to loss from fraud, and appropriate prevention, detection, and investigation approaches. Lecture 3 hours per week.

ACC 241 **(3 CR.)**
Auditing I
Prerequisite(s): ACC 212. Presents techniques of investigating, interpreting, and appraising accounting records and assertions. Studies internal control design and evaluation, evidence-gathering techniques, and other topics. Lecture 3 hours per week.

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

ACC 262 **(3 CR.)**
Principles of Federal Taxation II
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.

ACC 263 **(3 CR.)**
Data Analytics and Statistics in Accounting
Prerequisite(s): ACC 212. Introduces the field of business analytics in accounting, finance, and business management. Focuses on the way in which enterprises such as corporations, non-profits, and governments can use data to gain insights and make better decisions. Presents the application of selected data mining techniques to support business analytics. Lecture 3 hours.

Administration of Justice

ADJ 100 **(3 CR.)**
Survey of Criminal Justice
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 **(3 CR.)**
The Juvenile Justice System
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 **(3 CR.)**
Survey of Criminology
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 110 - Introduction to Law Enforcement **(3 CR.)**
Studies the philosophy and history of law enforcement, presenting an overview of the crime problem and policy response issues. Surveys the jurisdictions of local, state, and federal law enforcement agencies. Examines the qualification requirements and career opportunities in the law enforcement profession. Lecture 3 hours per week.

ADJ 111 **(3 CR.)**
Law Enforcement Organization and Administration I
Teaches the principles of organization and administration of law enforcement agencies. Studies the management of line operations, staff and auxiliary services, investigative and juvenile units. Introduces the concept of data processing; examines policies, procedures, rules, and regulations pertaining to crime prevention. Surveys concepts of protection of life and property, detection of offenses, and apprehension of offenders. Lecture 3 hours per week.

ADJ 116 **(3 CR.)**
Special Enforcement Topics
Considers contemporary issues, problems, and controversies in modern law enforcement. Lecture 3 hours per week.

ADJ 127 **(3 CR.)**
Firearms and Marksmanship
Prerequisite(s): permission of instructor. Surveys lethal weapons in current use and current views on weapon types and ammunition design. Examines the legal guidelines as to use of deadly force, safety in handling of weaponry, and weapon care and cleaning; marksmanship instruction under standard range conditions. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ADJ 133 **(3 CR.)**
Ethics and the Criminal Justice Professional
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 139 **(4 CR.)**
Private Detectives/Investigators
Instructs the student in investigative techniques, criminal law and procedure, rules of evidence, and the techniques and mechanics of arrest. Meets state certification requirements for private investigators licensing. Lecture 4 hours per week.

ADJ 140 **(3 CR.)**
Introduction to Corrections
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 150 **(3 CR.)**
Introduction to Security Administration
Introduces the student to the field of private security: its history, structures, functions, and personnel; surveys the principles and practices of security administration. Lecture 3 hours per week.

ADJ 159 **(3 CR.)**
Physical Security
Studies the various forms of perimeter barriers which impact upon security operations; examines insurance considerations, underwriters licensing certification, fire prevention and fire code regulations, and the general health and safety requirements for all employees and contact persons within the organization. Lecture 3 hours per week.

ADJ 160 **(3 CR.)**
Police Response to Critical Incidents
The course introduces incident command and emerging trends. It addresses short- and long-term situations involving bomb threats, hostage and barricade situations, attacks on government and commercial buildings, hazardous materials threats, domestic violence, and active shooter incidents. General discussions are held concerning crime scene evidence collection, agency response coordination, and working with the media during high visibility situations. Lecture 3 hours per week.

ADJ 163 **(3 CR.)**
Crime Analysis and Intelligence
Provides a basic introduction to crime analysis and criminal intelligence. Covers the need, structure, and function within the law enforcement agency, relevant law, and future trends. Lecture 3 hours per week.

ADJ 164 **(3 CR.)**
Case Studies in Murder/Violent Crime
Introduces the student to the investigation of murder and other violent crimes by means of classic case studies and, to the extent feasible, local case files. Includes methodology, strategy and tactics, analysis, relevant law, and future trends. Covers evidentiary techniques and technologies with a primary focus on how critical thinking is applied to serious violent crime. Lecture 3 hours per week.

ADJ 169 **(3 CR.)**
Transportation and Border Security
Discusses substantive issues regarding transportation security within the role of homeland security measures implemented by the United States. Introduces the student to and examines global preparedness from a transportation perspective. Considers the interrelationship among natural disasters and sustainable infrastructure. Describes intermodal and integrated transportation and physical models of movement and discusses mobility as a cultural lifeline. Lecture 3 hours per week.

ADJ 171 **(4 CR.)**
Forensic Science I
Introduces student 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. Laboratory 3 hours. Total 6 hours per week.

ADJ 172 **(4 CR.)**
Forensic Science II
Introduces student 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. Laboratory 3 hours. Total 6 hours per week.

ADJ 186 **(3 CR.)**
Forensic Psychology (3 CR.)
Introduces student to the constructs of criminal psychology. Introduces the student to the exploration of criminal investigative analysis, VI-CAP, mental disorders, and the etiology of certain criminal behaviors. Lecture 3 hours per week.

ADJ 211 **(3 CR.)**
Criminal Law, Evidence, and Procedures I
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 deposition in the various American court systems with focus on the Virginia jurisdiction. Lecture 3 hours per week.

ADJ 212 **(3 CR.)**
Criminal Law, Evidence, and Procedures II
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 deposition in the various American court systems with focus on the Virginia jurisdiction. Lecture 3 hours per week.

ADJ 216 **(3 CR.)**
Organized Crime and Corruption (3 CR.)
Addresses judicial efforts against and involvement in corruption, drug, vice, and white-collar crimes, both individual and organized. Lecture 3 hours per week.

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

ADJ 228 **(3 CR.)**
Narcotics and Dangerous Drugs
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 **(3 CR.)**
Community Policing in Modern Society
Examines the process through which community problems are identified and addressed by police departments in cooperation with the community. Considers current efforts by law enforcement officers to achieve an effective working relationship with the community. Lecture 3 hours per week.

ADJ 233 **(3 CR.)**
Multiculturalism in Policing
Prerequisite(s): permission of the instructor. Examines the impacts of historical events and social changes on law enforcement; evaluates the complexity of providing police services to multicultural communities; develops sensitivity and understanding of diverse populations and communities of color. Lecture 3 hours per week.

ADJ 234 **(3 CR.)**
Terrorism and Counter-Terrorism
Surveys the historical and current practices of terrorism that are national, transnational, or domestic in origin. Includes biological, chemical, nuclear, and cyber-terrorism. Teaches the identification and classification of terrorist organizations, violent political groups, and issue-oriented militant movements. Examines investigative methods and procedures utilized in counter-terrorist efforts domestically and internationally. Lecture 3 hours per week.

ADJ 236 **(3 CR.)**
Principles of Criminal Investigation
Surveys the fundamentals of criminal investigation procedures and techniques. Examines crime scene search, collecting, handling, and preserving of evidence. Lecture 3 hours per week.

ADJ 237 **(3 CR.)**
Advanced Criminal Investigation
Introduces specialized tools and scientific aids used in criminal investigation. Applies investigative techniques to specific situations and preparation of trial evidence. Lecture 3 hours per week.

ADJ 240 **(3 CR.)**
Techniques of Interviewing
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 243 **(3 CR.)**
Homeland Security and Law
Prerequisite(s): ADJ 111 or division approval. Covers relationships abroad, the mission of federal, state, and local government at home, and the best way to provide for the common defense. Examines HLS and emergency management; FEMA's place in public policy, law, and management; HLS initiatives and new partnerships for HLS covering the government, private sector, and higher education. Discusses civil rights issues; the U.S.A. Patriot Act; future challenges and roles of intelligence agencies; and foreign policy aspects and views. Lecture 3 hours per week.

ADJ 247 **(3 CR.)**
Criminal Behavior
Introduces and evaluates the concepts of normal and abnormal behavior. Focuses on the psychological and sociological aspects of criminal and other deviant behavior patterns. Lecture 3 hours per week.

ADJ 248 **(3 CR.)**
Probation, Parole, and Treatment
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.

ADJ 250 **(3 CR.)**
Global Security Concepts for Law Enforcement and National Security
Identifies and examines the interrelationship of significant global issues and events that affect local and national crime and security interests of the United States. Emphasizes the economic dimensions of international events and the transnational ripple effect they have on the security and well-being of others residing in distant localities and lands. Explores issues of cooperation and coordination of investigative and prosecutive activities in a global environment. Lecture 3 hours per week.

ADJ 252 **(3 CR.)**
Counterintelligence Concepts for Law Enforcement and National Security
Studies the role national security agencies and law enforcement play in counterintelligence programs to identify and thwart hostile criminal activities against United States citizens, businesses, corporations, and U.S. national interests by foreign governments, organizations, and individuals. Focuses on the role of ethical and moral counterintelligence activities and investigations in a democratic society. Lecture 3 hours per week.

ADJ 255 **(3 CR.)**
Security Management
Examines the major management operations of planning, organizing, staffing, directing, and controlling the private security unit. Reviews the functions of management, implementation of institutional programs, and development of staff. Lecture 3 hours per week.

ADJ 275 **(3 CR.)**
Forensic Pathology
Introduces the pathology and physiology of the human body with emphasis on scientific name and technique used in medicolegal investigations of death. Studies types of death, the mechanisms of death and death reflex, and the determining of the cause of death by postmortem examination. Lecture 3 hours per week.

Air Conditioning and Refrigeration

AIR 111 **(3 CR.)**
Air Conditioning and Refrigeration Controls I
Prerequisite or Corequisite: SDV 100 or SDV 106. Presents electron theory, magnetism, Ohm's Law, resistance, current flow, instruments for electrical measurement, A.C. motors, power distribution controls, and their application. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 121 **(4 CR.)**
Air Conditioning and Refrigeration I
Prerequisite or Corequisite: SDV 100 or SDV 106. Studies refrigeration theory, characteristics of refrigerants, temperature and pressure, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, and 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 3 hours. Laboratory 3 hours. Total 6 hours per week.

AIR 122 **(4 CR.)**
Air Conditioning and Refrigeration II
Prerequisite(s): AIR 121. Studies refrigeration theory, characteristics of refrigerants, temperature and pressure, tools and equipment, soldering, brazing, refrigeration systems, system components, compressors, evaporators, and 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 3 hours. Laboratory 3 hours. Total 6 hours per week.

AIR 134 **(3 CR.)**
Circuits and Controls I
Prerequisite(s): AIR 111. Presents circuit diagrams for air conditioning units, reading, and drawing of circuit diagrams, types of electrical controls, and house wiring circuits. Includes analysis of air conditioning circuits, components, analysis and characteristics of circuits and controls, testing, and servicing. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 154 **(4 CR.)**
Heating Systems I
Prerequisite or Corequisite: AIR 111. 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 3 hours. Laboratory 3 hours. Total 6 hours per week.

AIR 205 **(4 CR.)**
Hydronics and Zoning
Prerequisite(s): AIR 154. 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 3 hours. Laboratory 3 hours. Total 6hours per week.

AIR 207
Heat Loads and Psychrometrics (4 CR.)
Prerequisite(s): AIR 121. Studies air and its properties, characteristics, and measurements as applied to human comfort. Considers control of temperature, humidity, and distribution of air and air mixtures. Studies heat loss and heat gain factors. Considers the effect, the selection, and layout of residential air conditioning and refrigeration systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AIR 213 **(4 CR.)**
Air Conditioning and Refrigeration Controls III
Prerequisite(s): AIR 134. Introduces electrical, pneumatic, and electronic control circuits as applied to year-round air conditioning systems. Includes reading wiring and schematic diagrams, troubleshooting, and designing high and low voltage control systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AIR 235 **(4 CR.)**
Heat Pumps
Prerequisite(s): AIR 122 and AIR 134. Studies theory and operation of reverse cycle refrigeration including supplementary heat as applied to heat pump systems, including service, installation, and maintenance. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AIR 238 **(4 CR.)**
Advanced Troubleshooting and Service
Presents advanced service techniques on a wide variety of equipment used in refrigeration, air conditioning, and phases of heating and

ventilation and controls. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AIR 251 **(4 CR.)**
Air Conditioning Systems I
Prerequisite(s): AIR 122 and AIR 134. Studies equipment used in air component sizing, selection, and application; servicing and repairing of coils and compressors. Includes troubleshooting the cooling system. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AIR 252 **(4 CR.)**
Air Conditioning Systems II
Studies piping design and sizing, installation, condensers, and water towers. Includes valves, strainers, and accessories; duct systems and air distribution design and their relationship with volume, static pressure, and velocity. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AIR 257 **(4 CR.)**
Gas-Fired Warm Air Furnaces
Prerequisite(s): AIR 154. Covers the study of mid- and high-efficiency gas-fired warm air furnaces and their components. Includes equipment components, installation, servicing, and maintenance. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AIR 276 **(1 CR.)**
Refrigerant Usage EPA Certification
Prerequisite or Corequisite: AIR 121 or students should have previous training and/or working knowledge of vapor-compression, common service equipment and procedures in HVAC/R. 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. Lecture 1 hour. Total 1 hour per week.

American Sign Language

Additional sign language courses are listed under Interpreter Education (INT).

ASL 100 **(2 CR.)**
Orientation to Acquisition of ASL as an Adult
Presents a brief introduction to the U.S. Deaf community, focusing on the differences in language and literature. Introduces many common pitfalls experienced by adults when acquiring ASL as a second language. Provides students with an experience bridging spoken English and ASL via use of visual-gestural, nonverbal communication. Lecture 2 hours per week.

ASL 101 **(4 CR.)**
Beginning American Sign Language I
Introduces cultural awareness, comprehension and production skills, and emphasizes basic sentence structure in American Sign Language with a focus on interactive communicative competence. Part I of II. Lecture 4 hours per week. **This is a UCGS transfer course.**

ASL 102 **(4 CR.)**
Beginning American Sign Language II
Prerequisite(s): ASL 101 or equivalent. Introduces cultural awareness, comprehension and production skills, and emphasizes basic sentence structure in American Sign Language with a focus on interactive communicative competence. Part II of II. Lecture 4 hours per week. **This is a UCGS transfer course.**

ASL 115 **(2 CR.)**
Fingerspelling and Number Use in ASL
Prerequisite(s): ASL 101 or permission of instructor. Provides intensive practice in comprehension and production of finger-spelled words and numbers with emphasis on clarity and accuracy. Focuses on lexicalized fingerspelling and numeral incorporation as used by native users of American Sign Language. Lecture 2 hours per week.

ASL 125 **(3 CR.)**
History of the U.S. Deaf Community
Examines the history of the Deaf Community. Presents an overview of various aspects of Deaf culture, including educational and legal issues in American history. Lecture 3 hours per week.

ASL 150 **(2 CR.)**
Working with Deaf and Hard-of-Hearing People
Explores career options for serving Deaf/hard-of-hearing people and/or for using American Sign Language skills in a career. Examines interests, skills, and educational assessments. Investigates job market viability via the Internet and professional periodicals. Develops opportunities for students to network with professionals in the field of deafness. Lecture 2 hours per week.

ASL 201 **(3 CR.)**
Intermediate American Sign Language I
Prerequisite(s): ASL 102 or permission of instructor. Continues to develop cultural awareness, comprehension and production skills, and emphasizes a variety of sentence structures in American Sign Language with a continued focus on interactive communicative competence. Part I of II. Lecture 3 hours per week. **This is a UCGS transfer course.**

ASL 202 **(3 CR.)**
Intermediate American Sign Language II
Prerequisite(s): ASL 201 or permission of instructor. Continues to develop cultural awareness, comprehension and production skills, and emphasizes a variety of sentence structures in American Sign Language with a continued focus on interactive communicative competence. Part II of II. Lecture 3 hours per week. **This is a UCGS transfer course.**

ASL 208 **(3 CR.)**
ASL for Classroom Settings
Prerequisite(s): ASL 262. Provides extensive instruction of vocabulary and concepts used in content areas covered in elementary and high school classrooms. Focuses on comprehension and production of content-related information in American Sign Language with emphasis on sign production clarity and conceptual accuracy. Lecture 3 hours per week.

ASL 210 **(3 CR.)**
ASL Storytelling
Prerequisite(s): ASL 262. Focuses on the elements of storytelling in ASL and the techniques that Deaf Americans utilize to pass on the histories and traditions of the Deaf community. Emphasizes comprehension and production of short stories in American Sign Language with emphasis on sign production clarity and conceptual accuracy. Lecture 3 hours per week.

ASL 220 **(3 CR.)**
Comparative Linguistics: ASL and English
Prerequisite(s): ASL 102. Describes spoken English and ASL (American Sign Language) on five levels: phonological, morphological, lexical, syntactic, and discourse. Compares and

contrasts the two languages on all five levels using real-world examples. Documents similarities between signed languages and spoken languages in general. Describes the major linguistic components and processes of English and ASL. Introduces basic theories regarding ASL structure. Emphasizes ASL's status as a natural language by comparing and contrasting similarities and unique differences between the two languages. Lecture 3 hours per week.

ASL 225 **(3 CR.)**
Literature of the U.S. Deaf Community
Prerequisite(s): ASL 125, ASL 202, and ASL 220 or equivalent. Presents an overview of literary aspects common in the U.S. Deaf Community, including those forms written in English and those forms signed in ASL. Incorporates the recurring themes and metaphors in the context of the history of the U.S. Deaf Community. Lecture 3 hours per week.

ASL 261 **(4 CR.)**
Advanced American Sign Language I
Prerequisite(s): ASL 202 or permission of instructor. Develops cultural awareness, comprehension and production skills, and emphasizes a variety of sentence structures in American Sign Language with a continued focus on advanced communicative competence. Part I of II. Lecture 4 hours per week.

ASL 262 **(4 CR.)**
Advanced American Sign Language II
Prerequisite(s): ASL 202 or permission of instructor. Develops cultural awareness, comprehension and production skills, and emphasizes a variety of sentence structures in American Sign Language with a continued focus on advanced communicative competence. Lecture 4 hours per week.

Arabic

ARA 101 **(4 CR.)**
Beginning Arabic I
Introduces understanding, speaking, reading, and writing skills and emphasizes basic Arabic sentence structure. Discusses the diversity of cultures in the Arab world. Lecture 4 hours per week. **This is a UCGS transfer course.**

ARA 102 **(4 CR.)**
Beginning Arabic II
Prerequisite(s): ARA 101. Introduces understanding, speaking, reading, and writing skills and emphasizes basic Arabic sentence structure. Discusses the diversity of cultures in the Arab world. Lecture 4 hours per week. **This is a UCGS transfer course.**

ARA 201 **(4 CR.)**
Intermediate Arabic I
Prerequisite(s): ARA 102. Continues to develop understanding, speaking, reading, and writing skills and emphasizes basic Arabic sentence structure. Discusses the diversity of cultures in the Arab world. Classes conducted in Arabic. Lecture 4 hours per week.

ARA 202 **(4 CR.)**
Intermediate Arabic II
Prerequisite(s): ARA 201. Continues to develop understanding, speaking, reading, and writing skills and emphasizes basic Arabic sentence structure. Discusses the diversity of cultures in the Arab world. Classes conducted in Arabic. Lecture 4 hours per week.

Architecture

ARC 123 **(3 CR.)**
Architectural Graphics I
Introduces techniques of architectural communication including orthographic projection and sketching as well as 3D views and modeling. Requires the manual production of plans, sections, elevations, and 3D views and models of a simple building. Includes dimensioning and detailing. Part I of II. (Credit cannot be awarded for both ARC 121 and 123.) Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ARC 124 **(3 CR.)**
Architectural Graphics II
Prerequisite(s): ARC 123. A continuation of Architectural Graphics I. Introduces techniques of architectural communication including orthographic projection and sketching as well as 3D views and modeling. Requires the production of plans, sections, elevations, and 3D views and models of a simple building using computer technology. Includes dimensioning and detailing. Part II of II. (Credit cannot be awarded for both ARC 122 and 124.) Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ARC 133 **(3 CR.)**
Construction Methodology and Procedures I
Studies materials used in construction of buildings, covering foundations to structural framing systems. Includes appropriate use of materials for various construction types. Lecture 3 hours per week.

ARC 134 **(3 CR.)**
Construction Methodology and Procedures II
Prerequisite(s): ARC 133. Studies materials and systems for building construction. Includes specification of materials and installation procedures; types of specifications and writing procedures; bidding procedures; and contract documents. Lecture 3 hours per week.

ARC 138 **(3 CR.)**
Structures for Architects
Prerequisite(s): ARC 133 and MTH 111. Analyzes the various forces acting on a building and surveys the structural elements used to resist them. Uses case studies of ordinary and unusual structures to illustrate concepts of structural design. Provides a conceptual overview of structural systems for students interested in the design and construction of buildings. Requires some elementary algebra. Includes exercises in reading structural drawings and tables. Lecture 3 hours per week.

ARC 200 **(4 CR.)**
History of Architecture
Surveys architecture from ancient times to the 19th century with emphasis on philosophy of design, form, and structure. Lecture 4 hours per week.

ARC 201 **(3 CR.)**
History of Modern Architecture
Surveys architecture from 19th century to present, with emphasis on philosophy of design, form, and structure. Lecture 3 hours per week.

ARC 220 **(3 CR.)**
Introduction to Landscape Architecture and Site Planning
Introduces the basics of landscape design and development concepts through architectural construction and plantings. Shows relationship between design and environment, including objectives of design elements and materials, facilities. Lecture 3 hours per week.

ARC 225 **(3 CR.)**
Site Planning and Technology
Studies the impact of building codes and zoning ordinances on site design; storm drainage, grading design, erosion, and flood control; site materials for paving and retaining walls; and site utilities. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ARC 231 **(4 CR.)**
Architectural Design and Graphics I
Prerequisite(s): ARC 124. Familiarizes students with a range of criteria and intentions in architectural design including the role of building systems. Helps students develop their design presentation graphics, design development, and modeling skills used in a professional architectural office. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

ARC 232 **(4 CR.)**
Architectural Design and Graphics II
Prerequisite(s): ARC 231. Serves as a capstone course which requires the development of a comprehensive set of architectural communications for a complex building. Requires students to demonstrate competence in all aspects of architectural technology including site planning, building systems, construction documents, design principles, and computer aided graphics. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

ARC 240 **(3 CR.)**
Designing Sustainable Built Environments
Prerequisite(s): ARC 123 and ARC 133. Introduces students to ethics, ideas, technologies, methods, and current practices in designing sustainable environments. Lecture 3 hours per week.

ARC 243 **(4 CR.)**
Environmental Systems
Studies energy sources and strategies for use in buildings; heat loss and heat gain; heating and cooling equipment and system; water supply, distribution, and waste systems and equipment; and principles of electricity, electrical systems, and equipment. Lecture 4 hours per week.

ARC 298 **(3 CR.)**
Seminar and Project
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.

Arts

ART 100 **(3 CR.)**
Art Appreciation
Introduces art from prehistoric times to the present day. Describes architectural styles, sculpture, photography, printmaking, and painting techniques. Highlights major artists and key contributions from global and Western culture. Covers content chronologically and/or thematically. Lecture 3 hours per week.

ART 101 **(3 CR.)**
History of Art: Prehistoric to Gothic
Surveys the history and interpretation of architecture, painting and sculpture from the prehistoric era through the Gothic. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

ART 102 **(3 CR.)**
History of Art: Renaissance to Modern
Surveys the history and interpretation of architecture, painting and sculpture from the Renaissance through the modern era. Lecture 3 hours per week. **This is a Passport transfer course.**

ART 103 **(3 CR.)**
History of Far Eastern Art I
Surveys the history of Far Eastern art from the prehistoric period to the present. Part I focuses on the art of India and Southeast Asia. Part II focuses on the art of China, Japan, and Korea. Emphasizes architecture, painting, and sculpture with some instruction in printmaking and decorative arts. Lecture 3 hours per week.

ART 115 **(1 CR.)**
Current Issues in Web Design
Explores contemporary subjects and current trends pertaining to web design. Emphasizes the roles of design and production techniques fundamental to web development. Lecture 1 hour per week.

ART 116 **(3 CR.)**
Design for the Web I
Introduces the basic elements of web page design: typography, imagery, and color; and examines how they are combined to create effective layouts. Teaches organization of materials, sketching and concept development, site planning, and various methods of construction. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 117 **(3 CR.)**
Design for the Web II
Prerequisite(s): ART 116. Continues to study design concepts introduced in ART 116; concentrates on the addition of animation, sound, and interactivity to the web page. Explores advanced design problems. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 121 **(3 CR.)**
Foundations of Drawing
Develops basic drawing skills and understanding of visual language through studio instruction/lecture. Introduces concepts such as line, proportion, space, perspective, value and composition as applied to still life, landscape and figure. Uses drawing media such as pencil, charcoal and ink wash. Includes field trips and gallery assignments as appropriate. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 130 **(3 CR.)**
Introduction to Multimedia
Introduces the student to the basic components of multimedia: text, graphics, animation, sound, and video, and explores how they combine to create a multimedia product. Emphasizes the design aspects of multimedia projects and teaches the techniques required to develop a presentation. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 131 **(3 CR.)**
Two-Dimensional Design
Introduces the elements and principles of design as applied to two-dimensional studio projects. Introduces two-dimensional media, techniques, compositional strategies, and color concepts and interactions. Supports conceptual development through introduction to historical and contemporary practices and critical analysis. May include field trips as required. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week. **This is a UCGS transfer course.**

ART 132 **(3 CR.)**
Three-Dimensional Design
Introduces the elements and principles of design as applied to three-dimensional studio projects. Introduces three-dimensional media, techniques, compositional strategies, and color concepts and interactions. Supports conceptual development through introduction to historical and contemporary practices and critical analysis. May include field trips as required. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week. **This is a UCGS transfer course.**

ART 134 **(4 CR.)**
Three-Dimensional Design
Explores the concepts of three-dimensional design applicable to all fields of visual art. Covers tools and techniques. Uses computers as appropriate for research. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

ART 135 **(3 CR.)**
Visual Communications
Studies intermediate design concepts applicable to all fields of communication arts. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 140 **(3 CR.)**
Introduction to Graphic Skills
Teaches basic studio skills and concepts. Emphasizes concept development and problem solving using traditional art materials and computer techniques. Uses current graphic software applications. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 141 **(3 CR.)**
Typography I
Prerequisite(s): ART 140 or division approval. 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. Part I of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 142 **(3 CR.)**
Typography II
Prerequisite(s): ART 140 and ART 141 or division approval. Examines advanced applications of the studies completed in Typography I. Explores the use of typography in layout and design. Requires projects based on professional-level problems designed to test the student's practical knowledge as well as his or her creative ability. Applies computer techniques for working with type. Part II of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 150 **(3 CR.)**
History of Film and Animation
Exposes the student to the rich history of temporal imagery from the invention of the zoetrope and kinetoscope through the rise of the moving picture industry and the development of the first animated films to present-day television. Chronicles the impact of the moving image in the twentieth century. Discusses the design and concept of influential works as well as the relationship between these earlier forms of moving graphics and today's innovative video technology. Lecture 3 hours per week.

ART 153 **(3 CR.)**
Ceramics I
Presents problems in the design and production of functional and nonfunctional ceramic works. Includes hand-building and the use of the potter's wheel, clays, and glazes. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 154 **(3 CR.)**
Ceramics II
Presents problems in the design and production of functional and nonfunctional ceramic works. Includes hand-building and the use of the potter's wheel, clays, and glazes. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 160 **(3 CR.)**
Film Production I
Introduces students to the basic techniques and procedures involved in motion picture production. Emphasizes aspects of filmmaking from scripting and preproduction through editing and postproduction. Includes the exploration of professional film crew roles in grip, lighting, production management, directing, sound, and editing. Part I of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ART 161 **(3 CR.)**
Film Production II
Reinforces techniques covered in Film Production I emphasizing technical and theoretical aspects of the filmmaking process. Requires student collaboration on film assignments from scripting and preproduction through editing and postproduction, and roles in grip, lighting, production management, directing, sound, and editing. Part II of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ART 200 **(3 CR.)**
History of Non-Western Art
Explores art as an integral aspect of cultures from Africa, Asia, Islamic groups, Oceania, Native America, and pre-Columbian Central and South America. Increases understanding of the formal and iconographic properties of these works by examining the philosophies, social customs, and ritual practices of their cultures. The assignments in the course require the reading of scholarly articles and researched-based writing. Lecture 3 hours per week.

ART 203 **(3 CR.)**
Animation I
Prerequisite(s): ART 121 and ART 140. Introduces the student to the basic techniques of animation, combining traditional and computer-generated skills. Teaches theoretical elements of the aesthetics of sequential imagery. Provides practical experience in two-dimensional and/or three-dimensional animation. Exposes students to a variety of animation techniques through lectures, presentations, classroom work, and outside assignments. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 204 **(3 CR.)**
Animation II
Prerequisite(s): ART 121, ART 140, and ART 203. Corequisite(s): ART 207. Builds on the student's skills in the techniques of animation developed in ART 203. Emphasizes computer-generated, high-quality animations. Teaches the advanced techniques of two- and three-dimensional computer animation. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 207 **(3 CR.)**
3D Model Rendering
Prerequisite(s): ART 130 and ART 131. Provides the student with an advanced understanding of the principles of building three-dimensional objects, characters, and interior and exterior environments with current industry software. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 208 **(3 CR.)**
Video Techniques
Addresses the fundamentals of video technology and non-linear video editing. Focuses on the aesthetics of time-code editing using current industry software. Teaches student to shoot and capture video and record and edit sound; and combine artwork, animation, video, and sound in the creation of professional-quality original video projects. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 209 **(3 CR.)**
Creative Concepts and Writing
Focuses on the generation of creative verbal/visual concepts and the techniques of effective written communication necessary for success in the graphic design industry. Lecture 3 hours per week.

ART 215 **(3 CR.)**
History of Modern Art
Surveys the history of modern architecture, sculpture, painting, and graphic arts in representational and non-representational forms. Focuses on the periods and movements that influenced the arts of the twentieth century. Emphasizes contemporary art forms, particularly the interaction between art and society, industry, and design. Lecture 3 hours per week.

ART 217 **(3 CR.)**
Graphic Design I
Prerequisite(s): ART 140. Focuses on creative concepts and skills necessary for graphic design problem solving using current technology. Includes techniques specific to computer applications for the production of print design using text and image. Part I of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 218 **(3 CR.)**
Graphic Design II
Prerequisite(s): ART 140, ART 141, and ART 217. Builds on the studies completed in Graphic Design I. Teaches advanced problem-solving skills, concept development, and project management. Applies intermediate-level production techniques to 2D and 3D graphic design using current technologies and principles of prepress production. Part II of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 220 **(3 CR.)**
Advanced Design for the Web
Prerequisite(s): ART 116 and ART 117 or division approval. Presents advanced features of web design and technology used by designers. Explores advanced design problems. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 221 **(3 CR.)**
Drawing III
Prerequisite(s): ART 223. Introduces advanced concepts and techniques of drawing as applied to the figure, still life, and landscape. Gives additional instruction in composition, modeling, space, and perspective. Encourages individual approaches to drawing. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 222 **(3 CR.)**
Drawing IV
Prerequisite(s): ART 221. Introduces advanced concepts and techniques of drawing as applied to the figure, still life, and landscape. Gives additional instruction in composition, modeling, space, and perspective. Encourages individual approaches to drawing. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 223 **(3 CR.)**
Life Drawing
Prerequisite(s): ART 121. Advances skills and exploration in drawing through studio practice. Continues investigation of elements and principles of design emphasizing perceptual figure drawing. Introduces a variety of media and techniques including color media and theory. Supports conceptual development through introduction to historical and contemporary practices and critical analysis. May include field trips. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week. **This is a UCGS transfer course.**

ART 230 **(3 CR.)**
Multimedia II
Prerequisite(s): ART 130 and ART 131. Extends the student's knowledge base and skills concerning multimedia design. Concentrates on the development of well-designed and integrated multimedia portfolio projects. Introduces the students to advanced multimedia techniques. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 231 **(4 CR.)**
Sculpture I
Prerequisite(s): ART 131. Introduces sculptural concepts and methods of production in traditional and contemporary media. Includes clay, plaster, wood, stone, metal, plastics, and terra cotta. May include field trips. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 232 **(4 CR.)**
Sculpture II
Prerequisite(s): ART 131. Introduces sculptural concepts and methods of production in traditional and contemporary media. Includes clay, plaster, wood, stone, metal, plastics, and terra cotta. May include field trips. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 235 **(3 CR.)**
Functional Ceramics
Prerequisite(s): ART 154. Explores the design and production of functional ceramics, including handbuilding and use of the wheel. Lecture 1 hour. Studio instruction 5 hours. Total 6 hours per week.

ART 236 **(3 CR.)**
Sculptural Ceramics
Prerequisite(s): ART 154. Explores the design and production of sculptural ceramics, including handbuilding and use of the wheel. Lecture 1 hour. Studio instruction 5 hours. Total 6 hours per week.

ART 241 **(3 CR.)**
Painting I
Prerequisite(s): ART 223 or division approval. Introduces abstract and representational painting in acrylic and/or oil with emphasis on color, composition, and value. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 242 **(3 CR.)**
Painting II
Prerequisite(s): ART 223 or division approval. Introduces abstract and representational painting in acrylic and/or oil with emphasis on color, composition, and value. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 243 **(3 CR.)**
Watercolor I
Prerequisite(s): ART 131 or division approval. Presents abstract and representational painting in watercolor with emphasis on design,

color, composition, technique, and value. Lecture 1 hour. Studio instruction 3 hours. Total 4 hours per week.

ART 244 **(3 CR.)**
Watercolor II
Prerequisite(s): ART 131 or division approval. Presents abstract and representational painting in watercolor with emphasis on design, color, composition, technique, and value. Lecture 1 hour. Studio instruction 3 hours. Total 4 hours per week.

ART 247 **(3 CR.)**
Painting Techniques for Illustrators
Prerequisite(s): ART 231 and ART 232. The development of graphic design and illustration with emphasis on the nineteenth and twentieth centuries. Analyzes the work of outstanding designers and illustrators. Lecture 1 hour. Lab 4 hours. Total 5 hours per week.

ART 250 **(3 CR.)**
History of Design
Surveys the development of graphic design and illustration with emphasis on the nineteenth and twentieth centuries. Analyzes the work of outstanding designers and illustrators. Lecture 3 hours per week.

ART 251 **(3 CR.)**
Communication Design I
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. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 252 **(3 CR.)**
Communication Design II
Prerequisite(s): ART 131 and ART 140. 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. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 263 **(3 CR.)**
Interactive Design I
Prerequisite(s): ART 116, and ART 140. Focuses on creative concepts of design problem solving for interactive design. Instructs students in techniques specific to web, multimedia for the web, and other interactive design projects using current technology and standards. Interactive functionality and usability are covered. Part I of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 264 **(3 CR.)**
Interactive Design II
Prerequisite(s): ART 263. Corequisite(s): ART 142. Builds on the studies completed in Interactive Design I. Focuses on conceptualization and problem solving for interactive design. Instructs students in intermediate techniques specific to web, multimedia for the web, and other interactive design projects using current technology and standards. Includes interactive documents and experiences. Part II of II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 265 **(3 CR.)**
Graphic Techniques
Prerequisite(s): ART 140. Corequisite(s): ART 141. Applies the study of printing processes to the preparation of design files for professional printing. Teaches printing production, terminology, image, and typography specifications, as well as technical skills using current technology and software. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 268 **(3 CR.)**
Professional Practices in Communication Design
Prerequisite(s): ART 140. Focuses on the business practices, ethical issues, and design issues present within the professional world of communication design. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 270 **(3 CR.)**
Motion Graphics I
Prerequisite(s): ART 140. Introduces fundamental concepts for motion graphics, including graphics and promos for television networks and film titles and logos for advertising. Focuses on design presentation and development, screen composition, graphic transitions, and content. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 271 **(3 CR.)**
Printmaking I
Introduces the student to the full range of printmaking techniques. Includes woodcut, silkscreen, etching, and lithography. Provides historical perspective on printmaking. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.

ART 272 **(3 CR.)**
Printmaking II
Introduces the student to the full range of printmaking techniques. Includes woodcut, silkscreen, etching, and lithography. Provides historical perspective on printmaking. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.

ART 277 **(4 CR.)**
Advanced Printmaking
Provides additional opportunity for individual exploration in selected printmaking processes. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.

ART 280 **(3 CR.)**
Graphic Design for Studio Arts
Prerequisite(s): ART 131 and PHT 101. Introduces digital tools, software, and techniques used by visual artists and design professionals to create day-to-day business forms, documents, and self-promotional material. Explores the fundamental principles of layout and design that govern the use of image, type, and color. Presents professional standards and practices used for organizing, archiving, printing, and presenting their work. Lecture 2 hours per week. Laboratory 3 hours per week. Total 5 hours per week.

ART 281 **(3 CR.)**
Illustration for Designers
Prerequisite(s): ART 121, ART 140, or division approval. Explores the professional field of illustration, along with the different ways of producing illustrations for editorial, commercial, and technical clients using traditional and digital techniques. Build skills and knowledge through discussions, projects, and exercises for positioning as an illustrator. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

ART 283 **(4 CR.)**
Computer Graphics I
Utilizes microcomputers and software to produce computer graphics. Employs techniques learned to solve studio projects which reinforce instruction and are appropriate for portfolio use. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 284 **(4 CR.)**
Computer Graphics II
Utilizes microcomputers and software to produce computer graphics. Employs techniques learned to solve studio projects which reinforce instruction and are appropriate for portfolio use. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 287 **(1-4 CR.)**
Portfolio and Resume
Preparation Focuses on portfolio preparation, resume writing, and job interviewing for students. Recommended for final semester program students. Requires instructor's approval. Lecture 1-2 hours. Studio instruction 0-4 hours. Total 1-6 hours per week.

ART 299 **(2 CR.)**
Supervised Study: Portfolio Review

Auto Body

AUB 106 **(4 CR.)**
Basic Sheet Metal Operations
Teaches the use of metal straightening tools, basic straightening operations, shrinking, filling, and sheet metal damage and repair procedures. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUB 116 **(4 CR.)**
Auto Body Repair
Teaches collision straightening procedures and use of equipment, planning repair procedures, disassembly techniques, body fastening systems, glass removal and replacement, and panel repair and alignment. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUB 118 **(4 CR.)**
Automotive Paint Preparation
Teaches auto body preparation for painting, using the materials, processes, and equipment required to prepare metal and old finishes. Includes sanding, cleaning, solvents, special materials, fillers, and primers. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUB 119 **(4 CR.)**
Automotive Painting
Prerequisite(s): AUB 118. Teaches theory and application of painting and the use of painting equipment and materials including paints, thinners, primers, rubbing compounds, and cleaners. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUB 125 **(4 CR.)**
Auto Body Welding
Presents the principles involved in using heat to relieve stress in shrinking metal, as well as the processes used in joining high and low strength steels. Includes oxyacetylene welding, cutting, brazing, and soldering, resistance spot welding, and MIG welding. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUB 127 **(3 CR.)**
Introduction to Collision Repair Technology
Introduces shop practices for auto body laboratory and shop safety, identification and use of hand tools, general power equipment and maintenance of auto body shop. Explains basic operation procedures, careers, terminology, estimating, and cycle time principles. Presents Occupational Safety and Health Act (OSHA) standards and Environmental Protection Agency (EPA) regulations pertaining to the collision repair field. Student will complete the Inter Industry Conference on Auto Collision Repair (I-CAR) modules related to the major course topics. Lecture 2 hours. Lab 2 hours. Total 4 hours per week.

Automotive

AUT 100 **(2 CR.)**
Introduction to Automotive Shop Practice
Prerequisite or Corequisite: Prerequisite or corequisite for all automotive courses. Introduces shop practices for automotive laboratory and shop safety, identification and use of hand tools, general power equipment, and maintenance of automotive shop. Explains basic operation procedures of standard shop equipment. Presents Occupational Safety and Health Act standards pertaining to the automotive field. Lecture 2 hours per week.

AUT 111 **(4 CR.)**
Automotive Engines I
Presents analysis of power, cylinder condition, valves, and bearings in the automotive engine to establish the present condition, repairs, or adjustments. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 112 **(4 CR.)**
Automotive Engines II
Prerequisite(s): AUT 111. Presents analysis of power, cylinder condition, valves, and bearings in the automotive engine to establish the present condition, repairs, or adjustments. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 113 **(3 CR.)**
Cylinder Block Service
Studies basic cylinder block reconditioning, including boring, resleeving, line-boring, and deck resurfacing. Includes repair techniques for damaged block and cylinder head castings to include cold welding, brazing, welding, and epoxy. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

AUT 114 **(3 CR.)**
Cylinder Head Service II
Prerequisite(s): AUT 113. Studies cylinder head reconditioning, including valve seat grinding, refacing valves, servicing valve guides, valve seat inserts, cutting for valve seals and spring, thread repair, and resurfacing mating surfaces. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

AUT 121 **(4 CR.)**
Automotive Fuel Systems I
Analyzes major domestic and foreign automotive fuel systems to include carburetors and fuel injection systems. Includes detailed inspection and discussion of fuel tanks, connecting lines, instruments, filters, fuel pumps, superchargers, and turbo charger. Also includes complete diagnosis, troubleshooting, overhaul, and factory adjustment procedures of all major carbureted and fuel injection systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 122 **(4 CR.)**
Automotive Fuel Systems II
Corequisite(s): AUT 121. Analyzes major domestic and foreign automotive fuel systems to include carburetors and fuel injection systems. Includes detailed inspection and discussion of fuel tanks, connecting lines, instruments, filters, fuel pumps, superchargers, and turbo charger. Also includes complete diagnosis, troubleshooting, overhaul, and factory adjustment procedures of all major carbureted and fuel injection systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 130 **(3 CR.)**
Introduction to Automotive Mechanics
Introduces auto mechanics, covering auto shop safety, tool identification and use. Explains automobile system theory and function. Stresses quality work practices and job opportunities. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

AUT 136 **(2 CR.)**
Automotive Vehicle Inspection
Presents information on methods for performing automotive vehicle safety inspection. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

AUT 141 **(4 CR.)**
Auto Power Trains I
Presents operation, design, construction, and repair of power train components, standard and automatic transmission. Includes clutches, propeller shaft, universal joints, rear axle assemblies, fluid couplings, torque converters, as well as 2-, 3-, and 4-speed standard, overdrive and automatic transmissions. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 142 **(4 CR.)**
Auto Power Trains II
Presents operation, design, construction, and repair of power train components, standard and automatic transmission. Includes clutches, propeller shaft, universal joints, rear axle assemblies, fluid couplings, torque converters, as well as 2-, 3-, and 4-speed standard, overdrive and automatic transmissions. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 215 **(2 CR.)**
Emissions Systems Diagnosis and Repair
Prerequisite(s): AUT 111 or AUT 241 or program approval. Presents logical diagnostic paths to identify vehicle HC-CO, O2, and NOx failure areas. Teaches a progression of failure detection from most likely to more complex causes. Emphasizes use of infrared analyzer and manufacturer's specified adjustments. Lecture 2 hours per week.

AUT 225 **(1 CR.)**
Automotive Emissions Inspection
Provides training for certified inspectors in the Virginia State Emissions Inspection Program. Emphasizes current legislation and inspection techniques using industry standard emission analyzers. Lecture 1 hour per week.

AUT 226 **(2 CR.)**
Advanced ASM Emissions Diagnostics
Presents logical diagnostic strategies to identify and correct vehicle HC, CO, and NOx emissions failures. Specifically addresses the technologies and techniques required for successful diagnosis and repair of vehicles failing Acceleration Simulation Mode (ASM) and Two-Speed Idle Mode Tests. Current ASM diagnostic equipment will be introduced, discussed, and demonstrated. Lecture 2 hours per week.

AUT 233 **(4 CR.)**
Hybrid Electric Vehicle Technology
Prerequisite(s): AUT 241 and AUT 242. Presents technologies used in hybrid electrical vehicles (HEV). Includes safety, theory, diagnosis, and component replacement. Covers automotive electronics: theory, operation, and testing. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 236 **(4 CR.)**
Automotive Climate Control
Prerequisite(s): AUT 241. Introduces principles of refrigeration, air conditioning controls and adjustment, and general servicing of automotive air conditioning systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 241 **(4 CR.)**
Automotive Electricity I
Introduces electricity and magnetism, symbols, and circuitry as applied to the alternators, regulators, starters, lighting systems, instruments, gauges, and accessories. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 242 **(4 CR.)**
Automotive Electricity II
Prerequisite(s): AUT 241. Introduces electricity and magnetism, symbols, and circuitry as applied to the alternators, regulators, starters, lighting systems, instruments, gauges, and accessories. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 245 **(4 CR.)**
Automotive Electronics
Prerequisite(s): AUT 242. Introduces field of electronics as it applies to the modern automobile. Emphasizes basic circuit operation, diagnosis, and repair of digital indicator and warning systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 265 **(4 CR.)**
Automotive Braking Systems
Presents operation, design, construction, repair, and servicing of braking systems, including Anti- Lock Brake Systems (ABS). Explains uses of tools and test equipment, evaluation of test results, and estimation of repair cost for power, standard, and disc brakes. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 266 **(4 CR.)**
Auto Alignment, Suspension, and Steering
Introduces use of alignment equipment in diagnosing, adjusting, and repairing front and rear suspensions. Deals with repair and servicing of power and standard steering systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 285 **(4 CR.)**
Automotive Service and Practical Applications Capstone
Provides practice with technical and workplace skills in an automotive shop environment where diagnosis, repair, quality control, and service learning come together. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 297 **(2 CR.)**
Cooperative Education
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.

Biology

BIO 101 **(4 CR.)**
General Biology I
Prerequisite(s): Eligible for ENG 111 and MTH 154, or completion of EDE 10 and MDE 10. Focuses on biological processes with a chemical foundation, including macromolecules, cellular structure, metabolism, and genetics in an evolutionary context. Explores the core concepts of evolution; structure and function; information flow,

storage and exchange; pathways and transformations of energy and matter; and systems biology. Emphasizes the process of science, interdisciplinary approach, and relevance of biology to society. Part I of a two-course sequence. Assignments require college-level reading fluency, coherent written communication, and basic mathematical skills. Credit toward graduation cannot be awarded for both BIO 101 and BIO 106. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week. **This is a Passport and UCGS transfer course.**

BIO 102 (4 CR.)
General Biology II
Prerequisite(s): BIO 101, or division approval. Focuses on biological processes with a chemical foundation, including macromolecules, cellular structure, metabolism, and genetics in an evolutionary context. Explores the core concepts of evolution; structure and function; information flow, storage and exchange; pathways and transformations of energy and matter; and systems biology. Emphasizes the process of science, interdisciplinary approach, and relevance of biology to society. Part II of a two-course sequence. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week. **This is a UCGS transfer course.**

BIO 110 (4 CR.)
General Botany
Prerequisite(s): Eligible for ENG 111, or completion of EDE 10. Emphasizes plant life cycles, anatomy, morphology, taxonomy, and evolution. Considers the principles of genetics, ecology, and physiology. Lecture 3 hours. Total 6 hours per week.

BIO 120 (4 CR.)
General Zoology
Prerequisite(s): Eligible for ENG 111, or completion of EDE 10. Presents basic biological principles, and emphasizes structure, physiology, and evolutionary relationships of invertebrates and vertebrates. Lecture 3 hours. Total 6 hours per week.

BIO 141 (4 CR.)
Human Anatomy and Physiology I
Prerequisite(s): BIO 101 with a grade of C or higher, or completion of NAS 2, or placement exam with 75% or higher. Presents the study of anatomy & physiology including anatomical terminology, homeostasis, histology, integumentary system, skeletal system, muscular system, and nervous system. Part I of II. Assignments require college-level reading fluency, coherent written communication, and basic mathematical skills. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BIO 142 (4 CR.)
Human Anatomy and Physiology II
Prerequisite(s): Completion of BIO 141 with a grade of C or better. Continues study of anatomy and physiology including endocrine system, blood and cardiovascular system, lymphatic system and immunity, respiratory system, urinary system, fluid, electrolyte, and acid-base balance, digestive system and nutrient metabolism, reproductive system, and prenatal development. Part II of II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BIO 145 (4 CR.)
Basic Anatomy and Physiology
Surveys human anatomy and physiology. Covers basic chemical concepts, cellular physiology, anatomy, and physiology of human organ systems. Assignments require college-level reading fluency, coherent written communication, and basic mathematical skills. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BIO 147 (1 CR.)
Basic Laboratory Calculations for Biotechnology
Prerequisite(s): program placement, co-enrollment in BIO 250, or Biotechnology program head permission. Prepares students to work effectively in a scientific laboratory through instruction of the metric system, scientific notation, exponents, solution making, pH readings, and the creation of standard curves for data analysis. Focus will be on quantitative skills needed to perform most basic laboratory work. Skills will be practiced and reinforced through application-based problems and hands-on activities. Laboratory 2 hours per week.

BIO 150 (4 CR.)
Microbiology for Health Sciences
Prerequisite(s): BIO 101, or BIO 141. Focuses on the general characteristics, cellular structure, and metabolism of microorganisms. Emphasizes microbial relationships with individual and community health. Includes impact of microbes on human health and disease, microbial pathogenicity, identifying and managing infectious diseases and controlling microbial growth, healthcare associated infections and epidemiology. Studies aseptic culturing techniques with hands-on experience in safe microbiology practices. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

BIO 165 (2 CR.)
Principles in Regulatory and Quality Environments for Biotechnology
Prerequisite(s): program placement, BIO 180 with a "C" or better or Biotechnology program head permission. Prepares students to work effectively in a scientific field and explains the basics of the regulatory and quality environments encountered in a biotechnology or pharmaceutical field. Surveys the principles and practices used on a day-to-day basis in regulatory affairs and quality systems. Lecture 2 hours per week.

BIO 180 (1 CR.)
Introduction to Careers in Biotechnology
Prerequisite(s): program placement or Biotechnology program head permission. Exposes the student to the field of biotechnology including possible future employment opportunities. Introduces the requirements to complete training and facilitates the student's need in the construction of a student plan and educational goal. Lecture 1 hour per week.

BIO 205 (4 CR.)
General Microbiology
Prerequisite(s): BIO 101, BIO 102, CHM 111, ENG 111. Corequisite(s): CHM 112 Explores the structure and function of microorganisms and their relationship to the environment and humans. Emphasizes the various groups of microorganisms, their growth and metabolism, roles in the functioning of ecosystems, genetics, their roles in human health, the use of microbes in industrial applications and biotechnology and methods of microbial control. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

BIO 206 (4 CR.)
Cell Biology
Prerequisite(s): BIO 101, and CHM 111. Introduces the ultrastructure and functions of cells. Emphasizes cell metabolism, cell division, and control of gene expression. Lecture 3 hours. Total 6 hours per week.

BIO 231 (4 CR.)
Human Anatomy and Physiology I
Prerequisite(s): Prerequisites: BIO 101-BIO 102 and CHM 111-CHM 112. Integrates the study of gross and microscopic human anatomy with physiology, emphasizing the analysis and interpretation of physiological parameters, as they relate to clinical scenarios. Covers

the integumentary system, skeletal system (including articulations), muscular system, and nervous system. Part I of II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BIO 232 **(4 CR.)**
Human Anatomy and Physiology II
Prerequisite(s): BIO 231 with a grade of C or better. Integrates the study of gross and microscopic human anatomy with physiology, emphasizing the analysis and interpretation of physiological parameters, as they relate to clinical scenarios. Covers the endocrine system, circulatory system, lymphatic system (including immunity), respiratory system, urinary system (including fluid, electrolyte, and acid-base balance), digestive system (including nutrient metabolism), and reproductive system (including prenatal development). Part II of II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BIO 250 **(3 CR.)**
Biotechnology Research Methods and Skills
Prerequisite(s): BIO 101. Corequisite(s): BIO 253. Provides students with knowledge and advanced laboratory skills needed for employment in the biotechnology industry. Focuses on use of basic and specialized lab equipment and techniques such as solution chemistry, cell culture, DNA extraction and analysis, and protein extraction and analysis. Emphasis is on lab safety, documentation, quality control, and use of standard operating procedures. Lecture 1 hour per week. Laboratory 6 hours per week. Total 7 hours per week.

BIO 251 **(4 CR.)**
Protein Applications in Biotechnology
Prerequisite(s): BIO 250 and BIO 253 with a "C" or better. Prepares students to understand protein structure and function and teaches the laboratory skills needed to successfully work with proteins. Focuses on levels of protein structure and protein function. Includes common laboratory assays for protein synthesis, purification, detection, and quantification. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BIO 252 **(4 CR.)**
Nucleic Acid Methods
Prerequisite(s): BIO 250 and BIO 253 with a "C" or better. Provides students with advanced laboratory skills needed for employment in the biotechnology industry. Focuses on use of basic and specialized lab equipment and techniques such as solution chemistry, cell culture, DNA extraction and analysis, and protein extraction and analysis. Emphasizes lab safety, documentation, quality control, and use of standard operating procedures. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BIO 253 **(3 CR.)**
Biotechnology Concepts
Prerequisite(s): program placed, BIO 101 with a "C" or better. Explores the growing field of biotechnology ranging from basic cellular and molecular biology concepts to both basic and advanced laboratory techniques. Emphasizes the application of biotechnology to medicine, agriculture, environmental science, and forensics. Includes discussion of the business, regulatory/legal, ethical, and societal issues of this topic as well as the growing field of bioinformatics. Lecture 3 hours per week.

BIO 254 **(2 CR.)**
Capstone Seminar in Biotechnology
Prerequisite(s): students must have completed 75% of their program requirements including BIO 147, BIO 165, BIO 180, BIO 250, and BIO 253 with a "C" or better, or Biotechnology program head permission. Integrates principles, theories, and methods learned in prior courses in biotechnology. Promotes exposure to real-world experience through completion of group project(s) having a professional focus. Emphasizes collaboration, literature research, proposal development, and communication and presentation skills. Lecture 2 hours per week.

BIO 255 **(2 CR.)**
Bioinformatics and Computer Applications in Biotechnology
Prerequisite(s): program placement, BIO 250 and BIO 253 with a "C" or better, or Biotechnology program head permission. Covers basic computer concepts and Internet skills and uses a software suite, which includes word processing, spreadsheet, database, and presentation software to demonstrate skills. Introduces students to basic online tools and resources to retrieve and analyze biological data, such as DNA, RNA, and protein sequences, structures, functions, pathways, and interactions. Includes hands-on sessions to allow students to become familiar with these resources and their navigation and applications. Lecture 2 hours per week.

BIO 256 **(4 CR.)**
General Genetics
Prerequisite(s): Prerequisites: BIO 101, BIO 102 or equivalent. Explores the principles of genetics ranging from classical Mendelian inheritance to the most recent advances in the biochemical nature and function of the gene. Includes experimental design and statistical analysis. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

BIO 270 **(4 CR.)**
General Ecology
Prerequisite(s): any two of the following courses: BIO 101, BIO 102, BIO 110, BIO 120, or division approval. Studies interrelationships between organisms and their natural and cultural environments with emphasis on populations, communities, and ecosystems. Lecture 3 hours. Lab and recitation 3 hours. Total 6 hours per week.

Building

BLD 101 **(3 CR.)**
Construction Management I
Presents overviews of all phases of construction project management. Introduces students to philosophy, responsibilities, methodology, and techniques of the construction process. Introduces topics related to the construction and design industries, organizations, construction contracts, bidding procedures, insurance, taxes, bonding, cost accounting, and business methods including basic computer usage, safety, and general project management procedures. Lecture 3 hours per week.

BLD 102 **(3 CR.)**
Construction Management II
Emphasizes advanced management techniques and methodology. Includes engineering economics, accounting principles, life cycle costing, value engineering, systems analysis with computer applications, work improvement, quality control, and a broad overview of the construction management profession. Lecture 3 hours per week.

BLD 110 **(3 CR.)**
Introduction to Construction
Covers basic knowledge and requirements needed in the construction trades. Introduces use of tools and equipment, with emphasis on construction safety, including personal and tool safety. Provides a working introduction to basic blueprint reading and fundamentals of construction mathematics. Lecture 3 hours per week.

BLD 115 **(3 CR.)**
Building Codes
Examines the building codes and standards applicable to building construction and inspection processes. Covers how to search, interpret and implement the Virginia Uniform State Wide Building Code. Lecture 3 hours per week.

BLD 165 **(2 CR.)**
Construction Field Operations
Introduces areas of construction field management that relate directly to on-the-job requirements of construction operations viewed from the construction superintendent's standpoint. Includes theories of project management and field supervision; utilization of equipment, labor, and material; construction site development; requirements of field scheduling; management input requirements; job recording and documentation; and supervision responsibility. May include field trips to project sites. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

BLD 200 **(2 CR.)**
Sustainable Construction
Prerequisite(s): BLD 101 plus BLD 165 or instructor's permission. Teaches students the specialized construction management best practices that must be utilized when managing a sustainable project. Course will include industry standards for green construction as identified by popular building rating systems. Lecture 2 hours per week.

BLD 215 **(2 CR.)**
OSHA 30 Construction Safety
Prerequisite(s): OSHA 10 certification or department approval. Covers all topics included in the OSHA 30- hour course. Lecture 2 hours per week.

BLD 231 **(3 CR.)**
Construction Estimating I
Focuses on materials take-off and computing quantities from working drawings and specifications. Includes methods for computing quantities of concrete, steel, masonry, roofing, and excavation. Deals with pricing building components, materials and processes, as well as transportation and handling costs, mark-up discount procedures, equipment cost, and labor rates. Lecture 3 hours per week.

BLD 232 **(3 CR.)**
Construction Estimating II
Prerequisite(s): BLD 231. Presents an introduction to computer programs for construction estimating. Produces a cost estimate for a major project with the aid of a computer program. Lecture 3 hours per week.

BLD 241 **(3 CR.)**
Construction Management III
Presents fundamentals of construction supervision including responsibilities of the construction superintendent, operations manager, general superintendent and project engineer, with factors relating to their work and that of their subordinates, aspects of job leadership, and effective human relations as related to efficient supervision. Lecture 3 hours per week.

BLD 242 **(3 CR.)**
Construction Management IV
Presents a comprehensive overview of all aspects of construction law and labor relations, exposing the students to responsibilities and requirements. Includes history of labor relations in the United States, trade unionism, federal labor laws and their direct effect on construction, OSHA (Occupational Safety and Health Act) laws, and regulations that apply. Lecture 3 hours per week.

BLD 247 **(3 CR.)**
Construction Planning and Scheduling
Introduces principles of planning and scheduling of a construction project. Includes sequence of events and processes on a construction site. Studies scheduling techniques including the critical path method. Lecture 3 hours per week.

Business Management and Administration

BUS 100 **(3 CR.)**
Introduction to Business
A satisfactory placement score for ENG 111 is strongly recommended. Presents a broad introduction to the functioning of business enterprise within the U.S. economic framework. Introduces economic systems, essential elements of business organization, production, human resource management, marketing, finance, and risk management. Develops business vocabulary. Lecture 3 hours per week.

BUS 111 **(3 CR.)**
Principles of Supervision I
Teaches the fundamentals of supervision, including the primary responsibilities of the supervisor. Introduces factors relating to the work of supervisor and subordinates. Covers aspects of leadership, job management, work improvement, training and orientation, performance evaluation, and effective employee/supervisor relationships. Lecture 3 hours per week.

BUS 116 **(3 CR.)**
Entrepreneurship
Presents the various steps considered necessary when going into business. Includes areas such as product-service analysis, market research evaluation, setting up books, ways to finance startup, operations of the business, development of business plans, buyouts versus starting from scratch, and franchising. Uses problems and cases to demonstrate implementation of these techniques. Lecture 3 hours per week.

BUS 117 **(3 CR.)**
Leadership Development
Covers interpersonal relations in hierarchical structures. Examines the dynamics of teamwork, motivation, handling change and conflict, and how to achieve positive results through others. Lecture 3 hours per week.

BUS 121 **(3 CR.)**
Business Mathematics I
Applies mathematical operations to business processes and problems. Reviews operations, equations, percentages, 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 125
Applied Business Mathematics (3 CR.)
Applies mathematical operations to business process and problems such as wages and payroll, sales and property taxes, checkbook records and bank reconciliation, depreciation, overhead, distribution of profit and loss in partnerships, distribution of corporate dividends, commercial discounts, markup, markdown, simple interest, present values, bank discount notes, multiple payment plans, compound interest, annuities, sinking funds, and amortization. Lecture 3 hours per week.

BUS 165 **(3 CR.)**
Small Business Management
Identifies management concerns unique to small business. Introduces the requirements necessary to initiate a small business, and identifies the elements comprising a business plan. Presents information establishing financial and administrative controls, developing a marketing strategy, managing business operations, and the legal and government relationships specific to small businesses. Lecture 3 hours per week.

BUS 200 **(3 CR.)**
Principles of Management
Teaches management and the management functions of planning, organizing, leading, and controlling. Focuses on application of management principles to realistic situations managers encounter as they attempt to achieve organizational objectives. Lecture 3 hours per week.

BUS 201 **(3 CR.)**
Organizational Behavior
Presents a behaviorally oriented course combining the functions of management with the psychology of leading and managing people. Focuses on the effective use of human resources through understanding human motivation and behavior patterns, conflict management and resolution, group functioning and process, the psychology of decision-making, and the importance of recognizing and managing change. Lecture 3 hours per week.

BUS 202 **(3 CR.)**
Applied Management Principles
Prerequisite(s): BUS 200. 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. Lecture 3 hours per week.

BUS 204 **(3 CR.)**
Project Management
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 **(3 CR.)**
Human Resource Management
Introduces employment, recruitment, selection, and placement of personnel, forecasting, job analysis, job descriptions, training methods and programs, employee evaluation systems, compensation, benefits, and labor relations. Lecture 3 hours per week.

BUS 208 **(3 CR.)**
Quality and Productivity Management
Focuses on the key quality improvement concepts regarding products and services, customers and suppliers, and systems and processes that make quality a part of the work life of an organization. Emphasizes the role of teams, including team meeting skills and techniques, and a variety of quality-improvement tools, such as flowcharts, run charts, Pareto diagrams, cause and effect diagrams, evaluation matrices, and implementation roadmaps. Lecture 3 hours per week.

BUS 212 **(3 CR.)**
Disaster Recovery Planning for Managers
Covers developing a plan for an organization to get computer operations back to their pre-existing state as soon as possible after a disaster. Covers documenting existing technology and the complete steps in the disaster recovery process. Emphasis on policies and procedures to prevent the loss of data and elimination of system downtime. Includes the completion of a disaster recovery plan for an organization and/or department. Lecture 3 hours per week.

BUS 220 **(3 CR.)**
Introduction to Business Statistics
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. Lecture 3 hours per week.

BUS 221 **(3 CR.)**
Business Statistics I
Prerequisite(s): MTH 161 or higher. Focuses on statistical methodology in the collection, organization, presentation, and analysis of data; concentrates on measures of central tendency, dispersion, probability concepts and distribution, sampling, statistical estimation, normal and T distribution, and hypotheses for means and proportions. Lecture 3 hours per week.

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

BUS 224 **(3 CR.)**
Business Statistics
Prerequisite(s): Completion of MTH 161 with a C or higher. Introduces methods of probability assessment and statistical inference. Includes data presentation; descriptive statistics; basic probability concepts; discrete and continuous probability distributions; decision theory; estimation and sampling distributions; Central Limit Theorem; simple linear regression and hypothesis testing for a single sample or population. Emphasizes business and economic applications. Utilizes computer software as a tool for problem-solving. Lecture 3 hours.

BUS 226 **(3 CR.)**
Computer Business Applications
Prerequisite(s): keyboarding competence. 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. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

BUS 227 **(3 CR.)**
Business Analytics
Prerequisite(s): BUS 224 or MTH 245. Includes overview of quantitative methods in business decision-making, simple and multiple regression and correlation analysis, time series analysis and business forecasting, decision analysis, linear programming, transportation and assignment methods, and network models. May include computer applications. Lecture 3 hours per week.

BUS 240 **(3 CR.)**
Introduction to Business Law
Introduces the American legal system and the use of law to achieve economic and social goals. Highlights ethical principles and legal reasoning underlying the rights and obligations of business relationships and their effect on business decision-making.

Emphasizes fundamental principles of government regulation and the court system, constitutional law, torts, criminal law, contracts, agency, employment, and property law. Lecture 3 hours per week. Note: Students who take BUS 240 cannot receive credit for either BUS 241 or BUS 242.

BUS 260 **(3 CR.)**
Planning for Small Business
Provides knowledge of the development of a business plan, which can be used to acquire capital and serve as a management guide. Combines knowledge that has been acquired in the areas of planning, management, and finance using pro forma statements and marketing. Covers Internet searching techniques. Recommended as a capstone course. Lecture 3 hours per week.

BUS 265 **(3 CR.)**
Ethical Issues in Management
Examines the legal, ethical, and social responsibilities of management. May use cases to develop the ability to think and act responsibly. Lecture 3 hours per week.

BUS 270 **(3 CR.)**
Interpersonal
Focuses on intra- and interpersonal communication effectiveness in the business organization. Includes topics such as planning and running effective meetings, networking and politicking, coaching and mentoring, making effectual and ethical decisions, developing team-building strategies, and practicing proficient skills in verbal, non-verbal, and written communications. Lecture 3 hours per week.

BUS 280 **(3 CR.)**
Introduction to International Business
Prerequisite(s): BUS 100 or departmental approval. Provides an introduction to the theoretical principles and practices of the global business environment. Examines the functions of international business in the economy, international and transnational marketing, production, and financial operations. Lecture 3 hours. Total 3 hours per week.

BUS 297 **(3 CR.)**
Cooperative Education
Supervised on-the-job training for pay in approved business and government organizations. Applicable to all curricula at the discretion of the College. See eligibility requirements under "Cooperative Education," included with the "Academic Information and Policies" section. Credit/work ratio not to exceed 1:5 hrs. May be repeated for credit. Variable hours.

Chemistry

CHM 101 **(4 CR.)**
Introductory Chemistry I
Prerequisite(s): Eligible for ENG 111 and MTH 154. Explores the experimental and theoretical concepts of general chemistry while emphasizing scientific reasoning, critical and analytical thinking. Designed for the non-science major. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. **This is a Passport and UCGS transfer course.**

CHM 111 **(4 CR.)**
General Chemistry I
Prerequisite(s): Eligible for ENG 111 and MTH 161. Requires a strong background in mathematics. Designed primarily for science and engineering majors. Explores the fundamental laws, theories, and mathematical concepts of chemistry. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. **This is a Passport and UCGS transfer course.**

CHM 112 **(4 CR.)**
General Chemistry II
Prerequisite(s): satisfactory completion of CHM 111 with a grade of C or higher. Requires a strong background in mathematics. Designed primarily for science and engineering majors. Explores the fundamental laws, theories, and mathematical concepts of chemistry. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. **This is a UCGS transfer course.**

CHM 241 **(3 CR.)**
Organic Chemistry I
Prerequisite(s): CHM 112 with a grade of C or higher and a satisfactory placement score for ENG 111. Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses and typical reactions. Emphasizes reaction mechanisms. Part I of II. Lecture 3 hours per week.

CHM 242 **(3 CR.)**
Organic Chemistry II
Prerequisite(s): CHM 241 with grade of C or higher or equivalent and eligible for ENG 111. Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Lecture 3 hours per week.

CHM 245 **(2 CR.)**
Organic Chemistry Laboratory I
Prerequisite(s): CHM 112 with a grade of C or better. Corequisite(s): CHM 241. Introduces various methods and procedures used in present day organic laboratories. Covers the general techniques, organic synthesis, and the use of common spectroscopic instrumentation; synthesizing a variety of compounds; and analyzing the products through physical properties and spectroscopy. Part I of II. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

CHM 246 **(2 CR.)**
Organic Chemistry II Laboratory
Prerequisite(s): CHM 245. Corequisite(s): CHM 242. Introduces various methods and procedures used in present day organic laboratories. Covers the general techniques, organic synthesis, and the use of common spectroscopic instrumentation; synthesizing a variety of compounds; and analyzing the products through physical properties and spectroscopy. Part II of II. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

CHM 260 **(3 CR.)**
Introductory Biochemistry
Prerequisite(s): CHM 112. Explores fundamentals of biological chemistry. Includes study of macromolecules, metabolic pathways, and biochemical genetics. Lecture 3 hours per week.

Childhood Development

CHD 118 **(3 CR.)**
Language Arts for Young Children
Emphasizes the early development of children's language and literacy skills. Presents techniques and methods for supporting all aspects of early literacy. Surveys children's literature, and examines elements of promoting oral literacy, print awareness, phonological awareness, alphabetic principle, quality storytelling, and story reading. Addresses strategies for intervention and support for exceptional children and English Language Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CHD 119 **(3 CR.)**
Introduction to Reading Methods
Corequisite(s): ENG 111 and functional literacy in the English language; reading at the 12th grade level. Focuses on promoting language and literacy skills as the foundation for emergent reading. Emphasizes phonetic awareness and alphabetic principles, print awareness and concepts, comprehension, and early reading and writing. Addresses strategies for intervention and support for exceptional children and English Language Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CHD 120 **(3 CR.)**
Introduction to Early Childhood Education
Introduces early childhood development through activities and experiences in early childhood, prekindergarten, 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 145 **(3 CR.)**
Teaching Art, Music, and Movement to Children
Focuses on children's exploration, play, and creative expression in the areas of art, music, and movement. Emphasis will be on developing strategies for using various open-ended media representing a range of approaches in creative thinking. Addresses strategies for intervention and support for exceptional children and English Language Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CHD 146 **(3 CR.)**
Math, Science, and Social Studies for Children
Provides experiences in content, methods, and materials for the development of math, science, and social studies skills in children. Emphasis will be on developing strategies for using various resources to facilitate children's construction of knowledge. Addresses strategies for intervention and support for children with special needs and English Language Learners. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CHD 164 **(3 CR.)**
Working with Infants and Toddlers in Inclusive Settings
Examines developmental and behavioral principles and practices, and how these provide the most developmentally suitable curriculum and learning environment for very young children. Includes working with very young children with typical development, as well as those who are gifted or have developmental delays or disabilities. Lecture 3 hours per week.

CHD 165 **(3 CR.)**
Observation and Participation in Early Childhood/Primary Settings
Focuses on observation as the primary method for gathering information about children in early childhood settings. Emphasizes development of skills in the implementation of a range of observation techniques. Total 4 hours per week.

CHD 166 **(3 CR.)**
Infant and Toddler Programs
Examines child growth and development from birth to 36 months. Focuses on development in the physical, cognitive, social, emotional, and language domains. Emphasizes the importance of the environment and relationships for healthy brain development during the child's first three years of life. Investigates regulatory standards for infant/toddler care giving. Lecture 3 hours per week.

CHD 205 **(3 CR.)**
Guiding the Behavior of Children
Explores the role of the early childhood educator in supporting emotional and social development of children, and in fostering a sense of community. Presents practical strategies for encouraging prosocial behavior, conflict resolution, and problem solving. Emphasizes basic skills and techniques in child guidance. Lecture 3 hours per week.

CHD 210 **(3 CR.)**
Introduction to Exceptional Children
Reviews the history of and legal requirements for providing intervention and educational services for young children with special needs. Studies the characteristics of children with a diverse array of needs and developmental abilities. Explores concepts of early intervention, inclusion, guiding behavior, and adapting environments to meet children's needs. Lecture 3 hours per week.

CHD 215 **(3 CR.)**
Models of Early Childhood Education Programs
Studies and discusses the various models and theories of early childhood education programs including current trends and issues. Presents state licensing and staff requirements. Lecture 3 hours per week.

CHD 216 **(3 CR.)**
Early Childhood Programs, Schools, and Social Change
Explores methods of developing positive, effective relations with families to enhance their developmental goals for children. Considers culture and other diverse needs, perspectives, and abilities of families and educators. Emphasizes advocacy and public policy awareness as an important role of early childhood educators. Describes risk factors and identifies community resources. Lecture 3 hours per week.

CHD 265 **(3 CR.)**
Advanced Observation and Participation in Early Childhood/Primary Settings
Prerequisite(s): CHD 165. Focuses on implementation of activity planning and observation of children through participation in early childhood settings. Emphasizes responsive teaching practices and assessment of children's development. Reviews legal and ethical implications of working with children. 2 hours seminar, 2 hours field placement. Total 4 hours per week.

CHD 270 **(3 CR.)**
Administration of Childcare Programs
Examines the skills needed for establishing and managing early childhood programs. Emphasizes professionalism and interpersonal skills, program planning, staff selection and development, creating policies, budgeting, and developing forms for record keeping. Lecture 3 hours per week.

SDV 101 **(1 CR.)**
Orientation to Teaching
Specific to your Degree. Lecture 1 hour per week.

Chinese

CHI 101 **(4 CR.)**
Beginning Chinese I
Introduces cultural awareness, listening, speaking, reading, and writing skills and emphasizes basic sentence structure. Part I of II. Lecture 4 hours per week. **This is a UCGS transfer course.**

CHI 102 **(4 CR.)**
Beginning Chinese II
Prerequisite(s): CHI 101, or two years of successful completion of high school Chinese, or demonstrated experiential learning, or by placement test, or equivalent. Introduces cultural awareness, listening, speaking, reading, and writing skills and emphasizes basic sentence structure. Part II of II. Lecture 4 hours per week. **This is a UCGS transfer course.**

CHI 201 **(4 CR.)**
Intermediate Chinese I
Prerequisite(s): CHI 102. Continues to develop cultural awareness, listening, speaking, reading, and writing skills, and introduces complex sentence structures. Classes may be conducted in target language. Part I. Lecture 4 hours per week.

CHI 202 **(4 CR.)**
Intermediate Chinese II
Prerequisite(s): CHI 201. Continues to develop cultural awareness, listening, speaking, reading, and writing skills, and emphasizes complex sentence structures. Classes may be conducted in the target language. Part II of II. Lecture 4 hours per week.

Civil Engineering Technology

CIV 171 **(3 CR.)**
Surveying I
Introduces surveying equipment, procedures, and computations including adjustment of instruments, distance measurement, leveling, angle measurement, traversing, traverse adjustments, area computations, and introduction to topography. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CIV 172 **(3 CR.)**
Surveying II
Prerequisite(s): CIV 171. Introduces surveys for transportation systems including the preparation and analysis of topographic maps, horizontal and vertical curves, earthwork, and other topics related to transportation construction. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CIV 210 **(5 CR.)**
Structural Systems
Prerequisite(s): EGR 130 or equivalent. Introduces the application of the principles of mechanics and strength of materials to the analysis and design of civil engineering structures, specifically in the areas of building and highway construction. Lecture 5 hours per week.

CIV 225 **(3 CR.)**
Soil Mechanics
Prerequisite(s): EGR 130 or EGR 240. Focuses on soil in its relationship to engineering construction. Includes soil composition and structure, weight-volume relationships, sampling procedures, classification systems, water in soil, stresses, strains, bearing capacity, settlement and expansion, compaction, stabilization, and introduction to foundations and retaining walls. Lecture 3 hours per week.

CIV 226 **(1 CR.)**
Soil Mechanics Laboratory
Introduces practical soil sampling; classification of unified, ASTM and ASSHTO specifications; laboratory testing of soils to predict engineering performance. Laboratory 2 hours per week.

CIV 228 **(2 CR.)**
Concrete Technology
Introduces properties of Portland cement concrete, methods of mix design and adjustment, transportation, placement, and curing in accordance with ACI and PCA recommended procedures. Lecture 2 hours per week.

CIV 229 **(1 CR.)**
Concrete Laboratory
Focuses on mixing, curing, testing, and quality control of concrete. Laboratory 2 hours per week.

CIV 240 **(3 CR.)**
Fluid Mechanics and Hydraulics
Prerequisite(s): Statics or divisional approval. 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. Lecture; 3 hours per week.

CIV 256 **(3 CR.)**
Global Positioning Systems for Land Surveying
Introduces principles of satellite-based surveying and presents Global Positioning System (GPS) as it is utilized in land surveying and the various components of the GPS technology and the techniques through which the GPS technology may be used in land surveys. Utilizes field surveys using the GPS equipment as part of the laboratory activities. [This course covers the same content as GIS 256. Credit will not be granted for both courses]. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CIV 265 **(3 CR.)**
Curves & Earthwork
Prerequisite(s): CIV 171. Studies computations of simple, compound and transition curves; grades and vertical curves; earthwork and haul quantities. Lecture 3 hours per week.

CIV 280 **(3 CR.)**
Introduction to Environmental Engineering
Introduces the engineering elements of water and wastewater treatment, water distribution and wastewater collection systems, solid and hazardous waste, erosion control, and storm water management. Lecture 3 hours per week.

Communication Studies and Theatre

CST 100 **(3 CR.)**
Principles of Public Speaking
Applies theory and principles of public address with an emphasis on preparation and on the extemporaneous method of delivery. The assignments in the course require college-level reading and analysis of scholarly studies and coherent communication through written reports, including the production of at least one APA/MLA-formatted individual writing assignment. Lecture 3 hours per week. **This is a UCGS transfer course.**

CST 110 **(3 CR.)**
Introduction to Human Communication
Examines the elements affecting human communication in individual (e.g., intrapersonal, interpersonal), small group, and public communication contexts with an emphasis on the practice of communication skills in each context. The assignments in the course require college-level reading and analysis of scholarly studies and coherent communication through written reports including the production of at least one APA/MLA-formatted individual writing

assignment. Lecture 3 hours per week. **This is a UCGS transfer course.**

CST 111 **(3 CR.)**
Voice and Diction I
Enables students to improve pronunciation, articulation, and vocal quality. Includes applied phonetics. Part I of II. Lecture 3 hours per week.

CST 114 **(3 CR.)**
Introduction to Mass Media
Examines the history and current understanding of mass communication. Covers print media (newspapers, magazines, and books), electronic media (radio, television, film, the Internet), advertising, public relations, and mass media theory, research, and ethics. Lecture 3 hours per week.

CST 115 **(3 CR.)**
Small Group Communication
Emphasizes the development of presentational ability in a group, decision-making, group maintenance, and leadership and participant skills. Incorporates a preliminary study of group dynamics. Lecture 3 hours per week.

CST 120 **(3 CR.)**
Screenwriting
Focuses on the craft of writing for the screen. Examines film and television screenplay structure. Analyzes dramatic strategies in film and television. Learn and apply correct script form and creatively engage in the various stages of original scriptwriting. Lecture 3 hours per week.

CST 125 **(3 CR.)**
Interviewing
Studies theory and practice of interviewing, emphasizing the informational interview, the journalistic interview, the employment interview, and the performance-appraisal interview. Lecture 3 hours per week.

CST 126 **(3 CR.)**
Interpersonal Communication
Teaches interpersonal communication skills for both daily living and the world of work, including perception, self- concept, self-disclosure, listening and feedback, nonverbal communication, attitudes, assertiveness, and other interpersonal skills. The assignments in the course require college-level reading and analysis of scholarly studies and coherent communication through written reports including the production of at least one APA/MLA-formatted individual writing assignment. Lecture 3 hours per week.

CST 127 **(2 CR.)**
Workshop in Interpersonal Skills
Emphasizes practical applications of career-oriented oral communication skills at the interpersonal level. Lecture 2 hours per week.

CST 130 **(3 CR.)**
Introduction to the Theatre
Surveys the principles of drama, the development of theatre production, and selected plays to acquaint the student with various types of theatrical presentations. Lecture 3 hours per week. **This is a Passport transfer course.**

CST 131 **(3 CR.)**
Acting I
Introduces students to the craft of acting. Covers the practice of physical and vocal warm-ups, improvisation exercises, individual and group scenes, and analytical skills. Develops presence and communication skills. Provides students with introductory exposure to a variety of acting concepts. Part I of IV. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CST 132
Acting II (3 CR.)
Prerequisite(s): CST 131. Extends students' understanding of the craft of acting. Builds on Acting I skills through individual and group text work that include practice listening, point-of-view recognition, personalization, and text analysis. Part II of IV. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CST 136 **(1 CR.)**
Theatre Workshop
Prerequisite(s): Previous performance experience is recommended. Provides students with the opportunity to work in various activities of a play, dance or musical production, including, but not limited to, performance, dramaturgy, orchestra, set design, stage carpentry, sound, costuming, lighting, stage managing, props, promotion, or stage crew. Previous performance experience is recommended. May be repeated for credit. Laboratory 2 hours.

CST 137 **(3 CR.)**
Oral Interpretation
Studies the theory and practice of performing various types of literature: prose, poetry, and drama. Emphasizes the relationship among the oral interpreter, the literary work, and the audience. Lecture 3 hours per week.

CST 140 **(3 CR.)**
Acting for the Camera
Explores the practical and artistic elements involved in acting for the camera through such activities as: performance of commercial, film, and television scripts; developing knowledge of the technical side of camera work and the study of the business of acting. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CST 141 **(3 CR.)**
Theatre Appreciation I
Aims to increase knowledge and enjoyment of theatre. Considers process, style, organization, written drama, and performed drama. Part I of II. Lecture 3 hours per week.

CST 145 **(3 CR.)**
Technical Theatre
Introduces students to the fundamental methods, materials and techniques involved in all areas of technical theatre production, such as sound, lighting, costuming, stage management and props, with an emphasis on scenic construction. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CST 151 **(3 CR.)**
Film Appreciation I
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 skills to analyze the shared social, cultural, and historical influences of films and their contexts. Part I of II. Lecture 3 hours per week. **This is a Passport transfer course.**

CST 152 **(3 CR.)**
Film Appreciation II
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 skills to analyze the shared social, cultural, and

historical influences of films and their contexts. Part II of II. Lecture 3 hours per week.

CST 160 **(3 CR.)**
Improvisation I
Explores the basic techniques of improvisation through short and long form exercises and the study of the history of improvisation and improvisation theory and practices. Lecture 3 hours per week.

CST 198 **(1-5 CR.)**
Seminar & Project
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. Please refer to the current *Schedule of Classes* for the specific topics for these titles.

CST 200 **(3 CR.)**
Advanced Public Speaking
Prerequisite(s): CST 100 or division approval. Focuses on preparation and delivery of various advanced forms of public address. Lecture 3 hours per week.

CST 201 **(3 CR.)**
Introduction to Communication Theory and Research
Introduces the field of communication, emphasizing perspectives on theory and research, topical areas within the discipline, basic research methodologies, and a survey of theories in those areas. Covers basic procedures for theory-building, research, and writing about communication.

CST 227 **(3 CR.)**
Business and Professional Communication
Emphasizes principles and practical application to effective professional oral communication behaviors to include speaking, listening, and relating, and rhetorical sensitivity within professional, business, and organizational contexts. Lecture 3 hours per week.

CST 229 **(3 CR.)**
Intercultural Communication
Explores human communication across cultural contexts and introduces the study of intercultural communication. Prepares students to communicate effectively within an increasingly multicultural world and globalized era. Develops understanding and analytical skills regarding communication across cultural contexts. Lecture 3 hours per week.

CST 240 **(3 CR.)**
Basic Set Design
Studies basic techniques and methods of scenic design for the stage. Lecture 3 hours per week.

CST 241 **(3 CR.)**
Introduction to Directing I
Prerequisite(s): CST 131-CST 132 or division approval. Introduces theory and practice of stage direction through the study of directing methods as well as the execution and discussion of directing exercises. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CST 242 **(3 CR.)**
Introduction to Directing II
Prerequisite(s): CST 131-CST 132 or division approval. Introduces theory and practice of stage direction through the study of directing methods as well as the execution and discussion of directing exercises. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CST 245 **(3 CR.)**
Basic Lighting
Studies basic techniques and methods of lighting design for the stage. Lecture 3 hours per week.

CST 250 **(3 CR.)**
The Art of the Film
Introduces the art of the film through a survey of film history; content includes viewing, discussion, and analysis of selected films. Studies film techniques such as composition, shot sequence, lighting, visual symbolism, sound effects, and editing. Lecture 3 hours per week.

CST 251 **(3 CR.)**
Stage Lighting and Sound
Provides students with a basic understanding of the principles of stage lighting and sound. Instructs students in the fundamentals of stage lighting such as: functions of lighting, qualities of light, design, basic electricity, lighting instruments and equipment, board operation, and safety. Instructs students in the functions of sound, equipment, design, and sound operation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CST 253 **(3 CR.)**
Production and Stage Management
Provides students with a working knowledge of theatre management such as theatre organization, budgeting, box office, publicity, house management, and stage management. Offers students an opportunity to work in College theatre productions. Lecture 3 hours per week.

CST 270 **(3 CR.)**
Film Directing
Prerequisite(s): CST 120, ART 160, and ENG 111. Introduces theory and practice of film directing. Explores the roles and responsibilities of the director in development, pre-production, production, postproduction, distribution and exhibition phases of the filmmaking process for Cinema and other media. Covers *mise en scene*, how to interpret a script visually and how to work with actors. Lecture 2 hour per week. Studio 2 hours per week. Total 4 hours per week.

Computer Aided Drafting

CAD 140 **(3 CR.)**
Technical Drawing
Enhances the principles learned that are related to the field of drafting and design. Gives a more in-depth exposure to detail and working drawings, dimensioning, tolerancing, and conventional drafting practices. Teaches CAD modeling, may include parametric modeling. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CAD 152 **(3 CR.)**
Engineering Drawing Fundamentals II
Prerequisite(s): EGR 115 or equivalent. Introduces technical drafting from the fundamentals through advanced drafting practices. Includes lettering, geometric construction, technical sketching, orthographic projection, sections, intersections, development, and fasteners. Teaches theory and application of dimensioning and tolerances, pictorial drawing, and preparation of drawings. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

CAD 165 **(3 CR.)**
Architectural Blueprint Reading
Emphasizes reading, understanding, and interpreting standard types of architectural drawings, including plans, elevation, sections, and details. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CAD 175 **(2 CR.)**
Schematics and Mechanical Diagrams
Covers interpretation of basic shop drawings, conventional symbols, common electrical and electronics symbols, wiring diagrams, hydraulic and pneumatic symbols, schematic drawings, and piping diagrams. Lecture 2 hours per week.

CAD 201 **(4 CR.)**
Computer Aided Drafting and Design I
Corequisite(s): ARC 121, CAD 165, EGR 115, or division approval. Teaches computer aided drafting concepts and equipment designed to develop a general understanding of components of a typical CAD system and its operation. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

CAD 202 **(4 CR.)**
Computer Aided Drafting and Design II
Prerequisite(s): CAD 201. Teaches working drawings and advanced operations in computer aided drafting. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

CAD 203 **(3 CR.)**
Computer Aided Drafting and Design III
Prerequisite(s): CAD 202 or division approval. Teaches advanced CAD applications. Includes customization and/or use of advanced software. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CAD 233 **(3 CR.)**
Computer Aided Drafting III
Prerequisite(s): CAD 202. Introduces programming skills and exposes the student to geometric modeling. Focuses on proficiency in production drawing using a CAD system. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CAD 238 **(3 CR.)**
Computer Aided Modeling and Rendering I
Prerequisite(s): CAD 202. Focuses on training students in the contemporary techniques of 3D modeling, rendering, and animation on the personal computer. Introduces the principles of visualization, sometimes known as photo-realism, which enables the student to create presentation drawings for both architectural and industrial product design. Uses computer animation to produce walk-through that will bring the third dimension to architectural designs. Lecture 3 hours per week.

CAD 239 **(3 CR.)**
Computer Aided Modeling and Rendering II
Prerequisite(s): CAD 238. Focuses on training students in the contemporary techniques of 3D modeling, rendering, and animation on the personal computer. Introduces the principles of visualization, sometimes known as photo-realism, which enables the student to create presentation drawings for both architectural and industrial product design. Uses computer animation to produce walk-through that will bring the third dimension to architectural designs. Lecture 3 hours per week.

CAD 241 **(3 CR.)**
Parametric Solid Modeling I
Focuses on teaching students the design of parts by parametric solid modeling. Topics covered will include, but are not limited to, sketch profiles; geometric and dimensional constraints; 3D features; model generation by extrusion, revolution, and sweep; and the creation of 2D drawing views that include sections, details, and auxiliary. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CAD 260 **(3 CR.)**
Computer Applications for Surveyors and Technicians
Studies and evaluates numerous COGO software and their associated drafting packages. Includes calculations and drafting of traverse adjustment, subdivision, and curves. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CAD 261 **(3 CR.)**
Computer Aided Digital Terrain Modeling and Earthworks
Introduces computer aided design for civil/surveying using digital terrain modeling and extracting earthwork volumes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Computer Science

CSC 110 **(3 CR.)**
Principles of Computer Science
Provides a broad introduction to the field of computer science. Introduces design techniques, development of algorithms, and applications of computer science. Includes the idea of abstraction as a problem-solving technique. Examines the functionality of computing innovations and computing systems. Discusses the potential impacts of these innovations from a social, legal, and ethical perspective. The assignments in this course require mathematical problem-solving skills, algebraic modeling and functions, and use of variables. Lecture 3 hours per week. **This is a UCGS transfer course.**

CSC 205 **(3 CR.)**
Computer Organization
Prerequisite(s): CSC 221. Examines the hierarchical structure of computer architecture. Focuses on multi-level machine organization. Uses assembler programming to complete simple projects. Includes processors, instruction, execution, addressing techniques, data representation and digital logic. Lecture 3 hours per week.

CSC 208 **(3 CR.)**
Introduction to Discrete Structures
Introduces discrete mathematics concepts in relation to computer science. Applies the use of Boolean algebra, analysis of algorithms such as logic, sets and functions, recursive algorithms, and recurrence relations, combinatorics, graphs, and trees. Assignments in this course require a basic understanding of programming concepts, problem solving, basic college algebra and trigonometry skills. Lecture 3 hours per week.

CSC 215 **(3 CR.)**
Computer Systems
Prerequisite(s): CSC 221. Examines the hierarchical structure of computer systems. Explores the representation of instructions and data, memory organization/structure, structure of a CPU, programming hierarchy and operating system interactions. Lecture 3 hours per week.

CSC 221 **(3 CR.)**
Introduction to Problem Solving and Programming
Introduces problem solving and implementation of solutions using a high-level programming language in a structured programming environment. Includes concepts and practice of structured programming, problem-solving, top-down design of algorithms, a high-level programming language syntax, control structures, arrays, and an introduction into object-oriented programming. First course in a three-course sequence. (CSC 221-222-223) The assignments in this course require mathematical problem-solving skills, algebraic modeling and functions, and use of variables. Lecture 3 hours per week.

CSC 222 **(4 CR.)**
Object Oriented Programming
Prerequisite(s): CSC 221or CSC 200 equivalent or departmental consent. Introduces the concepts and techniques of object-oriented programming to students with a background in procedural programming and problem solving. Uses a high-level computer language to illustrate and implement the topics. Second course in a three-course sequence. (CSC 221-222-223). Lecture 4 hours per week.

CSC 223 **(4 CR.)**
Data Structures and Analysis of Algorithms
Prerequisite(s): CSC 222 or CSC 201. Corequisite(s): **CSC 208** or MTH 288 equivalent. Explores and contrasts data structures, algorithms for manipulating data structures, and their use and appropriateness in writing efficient real-world programming applications. Investigates implementations of different data structures for efficient searching, sorting, and other transformer operations. Third course in a three-course sequence. (CSC 221-222-223). Lecture 4 hours per week.

Contracting

CON 100 **(3 CR.)**
Shaping Business Arrangements
Introduces the environment in which contracts function. Develops professional skills for making business decisions and advising other acquisition team members in successfully meeting customers' needs. Introduces students to the different acquisition contracting areas and the types of procurement alternative that may be selected for each. Presents knowledge of management and information systems as well as recent acquisition initiatives. Lecture 3 hours per week.

CON 104 **(3 CR.)**
Federal Acquisition Regulation (FAR) Fundamentals I
Teaches students Federal Acquisition Regulation (FAR) Fundamentals (Parts 1-53) and the Defense Federal Acquisition Regulation Supplement (DFARS). Introduces the following basic principles of government contracting: basic government contracting by using the FAR and DFARS; and contract acquisition planning. Part I of II. Lecture 3 hours per week.

CON 105 **(3 CR.)**
Federal Acquisition Regulation (FAR) Fundamentals II
Prerequisite(s): CON 104. Corequisite(s): CON 100. Teaches students Federal Acquisition Regulation (FAR) Fundamentals (Parts 1-53) and the Defense Federal Acquisition Regulation Supplement (DFARS). Covers contract formation and contract management/administration. Part II of II. Lecture 3 hours per week.

CON 121 **(3 CR.)**
Strategic Focused Contracting II
Prerequisite(s): CON 100. Covers the entire acquisition process from meeting with the customer to completing the contract closeout process. Presents an opportunity to learn and apply leadership, problem-solving, and negotiation skills. Applies the knowledge and skills gained in CON 100 to cover an integrated case study approach. Lecture 3 hours per week**.**

CON 216 **(3 CR.)**
Legal Considerations in Contracting
Teaches the students the legal considerations in the procurement process. Introduces the basic principles and sources of law relative to procurement and fiscal law. Addresses various other legal issues that may develop during the course of a contract including protests, assignment of claims, disputes, fraud, contractor debt, performance issues, and contract termination. Lecture 3 hours per week.

CON 217 **(3 CR.)**
Cost Analysis and Negotiation Techniques
Teaches the students the pricing skills, methods and techniques necessary to analyze a cost proposal. Presents an opportunity to learn and apply leadership, problem-solving, and negotiation skills to develop a government contract negotiation objective. Applies the knowledge and skills gained in this course to cover an integrated case study approach for contract award. Lecture 3 hours per week.

Dental Assisting

DNA 100 **(1 CR.)**
Introduction to Oral Health Professions
Introduces the oral health profession and covers basic terminology, historical perspective, the credentialing process, accreditation, professional organizations, and legal and ethical considerations. Lecture 1 hour per week.

DNA 108 **(3 CR.)**
Dental Science
Studies head and neck anatomy, tooth morphology, pathological conditions of the oral cavity, disease processes, and microbiology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNA 110 **(3 CR.)**
Dental Materials
Studies principles of management of disease producing microorganisms and associated diseases. Emphasis is placed on sterilization, asepsis, and disinfection techniques applicable in the dental office. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNA 113 **(3 CR.)**
Chairside Assisting I
Provides instruction on the principles of clinical chairside dental assisting, dental equipment use and maintenance, safety, instrument identification, tray set-ups by procedures, and patient data collection. Emphasis on patient management during restorative procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNA 114 **(4 CR.)**
Chairside Assisting II
Introduces the student to the various dental specialties including oral surgery, orthodontics, periodontic, prosthodontics, endodontics, and pediatric dentistry. Integrates and applies previous course content to operative dental procedures. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

DNA 119 **(1 CR.)**
Dental Therapeutics
Exposes students to concepts and terminology related to pharmacology, pain control, and dental medicinal agents. Emphasis is placed on the use of materials in patient treatment. Lecture 1 hour per week.

DNA 120 **(1 CR.)**
Community Health
Studies topics related to community health issues including identification of specific diseases, symptoms, causes, and effects. An emphasis is placed on the promotion of oral health in the community through patient education in oral home care techniques, dietary

counseling, plaque control procedures, and application of medicinal agents. Lecture 1 hour per week.

DNA 130 **(2 CR.)**
Dental Office Management
Exposes students to and provides practical experience in the legal aspects of dental office management with regard to ethics, jurisprudence, appointment control, recall systems, reception techniques, telephone techniques, accounts receivable and payable, payroll, insurance claims, inventory control, and professional conduct in a dental office. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

DNA 134 **(3 CR.)**
Dental Radiology and Practicum
Teaches the physics of dental radiation and safety, equipment operation, cone placement for the parallel and bisection techniques, panoramic exposures, mounting, and film processing. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

DNA 140 **(5 CR.)**
Externship
Exposes students to the fast pace of a dental practice while they perform support services with an established team. Lecture 1 hour. Laboratory 12 hours. Total 13 hours per week.

Dental Hygiene

DNH 111 **(2 CR.)**
Oral Anatomy
Studies the morphology and function of the oral structures with emphasis on the primary and permanent dentition, eruption sequence, occlusion, and intra-arch relationships. Lecture 2 hours per week.

DNH 115 **(3 CR.)**
Histology/Head and Neck Anatomy
Presents a study of the microscopic and macroscopic anatomy and physiology of the head, neck, and oral tissues. Includes embryologic development and histologic components of the head, neck, teeth, and periodontium. Lecture 3 hours per week.

DNH 120 **(1 CR.)**
Management of Emergencies
Studies the various medical emergencies and techniques for managing emergencies in the dental setting. Additional practical applications and simulations of emergencies may be conducted to enhance basic knowledge from the lecture component. Lecture 1 hours per week.

DNH 130 **(2 CR.)**
Oral Radiography for the Dental Hygienist
Studies radiation physics, biology, safety, and exposure techniques for intra- and extra-oral radiographic surveys. Laboratory provides practice in exposure, processing methods, mounting, and interpretation of normal findings. Lecture 1 hours. Laboratory 3 hours. Total 4 hours per week.

DNH 141 **(5 CR.)**
Dental Hygiene I
Introduces clinical knowledge and skills for the performance of dental hygiene services that include basic skill components, lab mannequins, and patient practice. Lecture 3 hours. Clinic 6 hours. Total 9 hours per week.

DNH 142 **(5 CR.)**
Dental Hygiene II
Prerequisite(s): DNH 141. Exposes students to instrument sharpening, time management, and patient education techniques and methods. Provides supervised clinical practice in the dental hygiene clinic with emphasis on developing patient treatment and instrument skills. Introduces the student to dental assisting skills. Lecture 2 hours. Clinic 9 hours. Total 11 hours per week.

DNH 143 **(3 CR.)**
Dental Hygiene III
Introduces dental healthcare for patients with special needs. Includes introduction to computer concepts and applications. Provides supervised clinical practice in the dental hygiene clinic with emphasis on refining patient treatment and instrumentation skills, including oral radiographs. Lecture 2 hours. Clinic 3 hours. Total 5 hours per week.

DNH 145 **(2 CR.)**
General and Oral Pathology
Prerequisite(s): DNH 115. Introduces general pathology with consideration of the common diseases affecting the human body. Particular emphasis is given to the study of pathological conditions of the mouth, teeth, and their supporting structures. Lecture 2 hours per week.

DNH 146 **(2 CR.)**
Periodontics for the Dental Hygienist
Introduces the theoretical and practical study of various concepts and methods used in describing, preventing, and controlling periodontal disease. Presents etiology, microbiology, diagnosis, treatment, and prognosis of diseases. Lecture 2 hours per week.

DNH 150 **(2 CR.)**
Nutrition
Studies nutrition as it relates to dentistry and general health. Emphasizes the principles of nutrition as applied to the clinical practice of dental hygiene. Lecture 2 hours per week.

DNH 214 **(2 CR.)**
Practical Materials for Dental Hygiene
Studies the current technologic advances, expanded functions, and clinical/laboratory materials used in dental hygiene practice. Provides laboratory experience for developing skills in the utilization and applications of these technologies and functions. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

DNH 216 **(2 CR.)**
Pharmacology
Studies the chemical and therapeutic agents used in dentistry, including their preparation, effectiveness, and specific application. Lecture 2 hours per week.

DNH 226 **(2 CR.)**
Public Health Dental Hygiene I
Studies and compares concepts of delivery of healthcare, applying the public health delivery model. Utilizes epidemiologic methods, research, and biostatistics as applied to oral health program planning, implementation, and evaluation. Incorporates and applies current health issues and trends. Lecture 2 hours per week.

DNH 227 **(1 CR.)**
Public Health Dental Hygiene II
Prerequisite(s): DNH 226. Applies concepts of public health program planning through student-directed community projects with an emphasis on preventative oral health education. Includes

development of table clinics, bulletin boards, and volunteer service in the community. Laboratory 3 hours per week.

DNH 230 **(1 CR.)**
Office Practice and Ethics
Studies the principles of dental ethics and economics as they relate to the dental hygienist. The course also includes a study of jurisprudence and office procedures. Lecture 1 hour per week.

DNH 235 **(2 CR.)**
Management of Dental Pain and Anxiety in the Dental Office
Prerequisite(s): DNH 115, and DNH 120. Corequisite(s): DNH 216. Provides a study of anxiety and pain management techniques used in dental care. Students will understand the necessary theory to appropriately treat, plan, and successfully administer topical anesthesia, local anesthesia, and nitrous oxide/ oxygen analgesia. Includes the components of pain, pain control mechanisms, topical anesthesia, local anesthesia, and nitrous oxide/oxygen analgesia. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

DNH 244 **(5 CR.)**
Dental Hygiene IV
Prerequisite(s): DNH 143. Introduces advanced skills and the dental hygienist's role in dental specialties. Includes supervised clinical practice in the dental hygiene clinic and/or off-campus clinical rotations at various community facilities. Emphasizes treatment of patients demonstrating periodontal involvement, stressing application and correlation of knowledge and skills from previous semesters. Lecture 1 hour. Clinic 12 hours. Total 13 hours per week.

DNH 245 **(5 CR.)**
Dental Hygiene V
Prerequisite(s): DNH 244. Exposes student to current advances in dentistry. Includes supervised clinical practice in the dental hygiene clinic and/or off-campus clinical rotations at various community facilities. Emphasis is placed on synthesis of knowledge from previous semesters, treatment of patients with moderate to advanced periodontal involvement, and improving clinical speed while maintaining quality in preparation for practice. Lecture 1 hour. Clinic 12 hours. Total 13 hours per week.

Diagnostic Medical Sonography

DMS 100 **(1 CR.)**
Orientation to the Sonography Profession
Presents a brief history of the sonography profession, code of ethics, scope of practice, and technical standards. Lecture 1 hour per week.

DMS 150 **(4 CR.)**
Echocardiography I
Prerequisite(s): Prerequisite: Satisfactory completion of all previous sonography courses with a grade of "C" or better. Presents the fundamentals of adult echocardiography, including basic ultrasound scanning techniques of the heart. Students focus on anatomy, pathophysiology, and echocardiographic pattern recognition with real-time 2D, 3D, and 4D imaging, and Doppler and M-mode echocardiography. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

DMS 160 **(4 CR.)**
Vascular Sonography I
Prerequisite(s): Prerequisite: Satisfactory completion of all previous sonography courses with a grade of "C" or better. Presents the fundamentals of vascular technology including basic ultrasound scanning techniques of the peripheral vascular and abdominal vascular systems. Students focus on anatomy, physiology, pathology, and vascular recognition with real-time 2D and Doppler imaging. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

DMS 190 **(2 CR.)**
Clinical Education I/Coordinated Internship
Develops the students' ultrasonic skills in a diagnostic environment; may include on-campus labs, private office settings, as well as hospital rotations. May include experiences in abdominal, pelvic, obstetrical, and small parts scanning, as well as echocardiography and vascular sonography. Laboratory 10 hours per week.

DMS 196 **(3 CR.)**
Clinical Education/Coordinated Internship II
Prerequisite(s): Students must satisfactorily complete all previous sonography courses with a grade of "C" or better. Develops the students' ultrasonic skills in a diagnostic environment; may include on-campus labs, private office settings, as well as hospital rotations. May include experiences in abdominal, pelvic, obstetrical, and small parts scanning, as well as echocardiography and vascular sonography. Laboratory 15 hours per week.

DMS 204 **(3 CR.)**
Introduction to General Sonography
Prerequisite(s): The student must satisfactorily complete all previous sonography courses with a grade of "C" or better. Discusses the principles of abdominal, pelvic, and small parts sonography through the exploration of related anatomy, sonographic appearances, and common pathologies. Lecture 2 hours per week. Lab 2 hours per week. Lecture 2 hours. Lecture 2 hours. Total 4 hours per week.

DMS 206 **(3 CR.)**
Introduction to Sonography
Introduces the diagnostic foundations of diagnostic medical sonography, including terminology, scan plane orientations, anatomical relationships, departmental administrative operations, hospital organization, and basic patient care principles. Lecture 3 hours per week.

DMS 207 **(2 CR.)**
Sectional Anatomy
Teaches normal sectional anatomy in the transverse, longitudinal, and coronal planes, with correlated sonographic images. Emphasis will be placed on abdominopelvic organs and vasculature. Lecture 2 hours per week.

DMS 208 **(2 CR.)**
Ultrasound Physics and Instrumentation I
Discusses and solves mathematical problems associated with human tissue, basic instrumentation and scanning technology. Focuses on the use of pulse-echo principles as applied to diagnostic sonography. Presents the physics of sound-tissue interactions and explores ultrasound instrumentation controls and functions. Lecture 2 hours per week.

DMS 209 **(2 CR.)**
Ultrasound Physics and Instrumentation II
Prerequisite(s): DMS 208. Focuses on the areas of ultrasonic, instrumentation, image artifacts, biologic effects, quality control, as well as Doppler principles and applications, and basic types of equipment through lecture and laboratory exercises. Lecture 2 hours per week.

DMS 211 **(4 CR.)**
Abdominal Sonography
Examines the clinical applications within the specialty of abdominal sonography including interpretation of normal and abnormal sonographic patterns, pathology, related clinical signs and symptoms, normal variants, and clinical laboratory tests. Includes laboratory sessions on basic scanning techniques and protocols. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

DMS 212 **(4 CR.)**
Obstetrical and Gynecological Sonography
Corequisite(s): DMS 211. Presents the clinical applications within the sonographic specialties of obstetrics and gynecology. Includes topics of discussion on normal and abnormal sonographic patterns, related clinical symptoms, and associated laboratory tests. Includes laboratory sessions on basic scanning techniques. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

DMS 217 **(1 CR.)**
Sectional Anatomy Laboratory
Provides experience with sectional anatomy. Laboratory 2 hours per week.

DMS 218 **(1 CR.)**
Ultrasound Physics and Instrumental Laboratory I
Corequisite(s): DMS 208. Presents practice with basic instrumentation, mathematical calculations, and basic properties of acoustical physics. Laboratory 2 hours per week.

DMS 219 **(1 CR.)**
Ultrasound Physics and Instrumental Laboratory II
Prerequisite(s): DMS 208. Corequisite(s): DMS 209. Presents advanced practice with instrumentation, hemodynamics, Doppler instrumentation, and pulse-echo technology. Laboratory 2 hours per week.

DMS 222 **(2 CR.)**
Sonography Registry Review
Reviews material covered throughout the Sonography Program to prepare the student for the ultrasound registry examination. Lecture 2 hours per week.

DMS 223 **(3 CR.)**
Introduction to Vascular Ultrasound
Discusses the principles of vascular ultrasound, the related anatomy and more common pathologies detected as well as the physiology and hemodynamics detected and evaluated with ultrasound. Provides hands-on practice through vascular scanning in a laboratory setting. Lecture 2 hours. Laboratory 2 hours. Total 3 hours per week.

DMS 231 **(3 CR.)**
Clinical Education I
Develops students' ultrasonic skills in a diagnostic environment; may include on-campus labs and private office settings, as well as hospital rotations. May include experiences in abdominal, pelvic, obstetrical, and small parts scanning, as well as echocardiography and vascular sonography. Laboratory 15 hours per week.

DMS 232 **(4 CR.)**
Clinical Education II
Prerequisite(s): DMS 231. Develops students' ultrasonic skills in a diagnostic environment; may include on-campus labs and private office settings, as well as hospital rotations. May include experiences in abdominal, pelvic, obstetrical, and small parts scanning, as well as echocardiography and vascular sonography. Laboratory 20 hours per week.

DMS 241 **(3 CR.)**
Advanced Abdominal Sonography
Prerequisite(s): DMS 211. Presents advanced study of abdominal sonography with concentration on case study reviews of normal anatomy, physiology, and pathophysiology, including abnormal etiology and diagnostic techniques. Lecture 2 hours. Laboratory 2 hours. Total 5 hours per week.

DMS 242 **(3 CR.)**
Advanced Obstetrical and Gynecological Sonography
Prerequisite(s): DMS 212. Presents advanced study of obstetrics/gynecology with concentration on case study reviews of normal anatomy, physiology, and fetal development, including abnormal etiology and diagnostic techniques. Lecture 2 hours. Laboratory 2 hours. Total 5 hours per week.

DMS 250 **(4 CR.)**
Echocardiography II
Prerequisite(s): Satisfactory completion of all previous sonography courses with a grade of "C" or better. Presents advanced study of echocardiography with concentration on case study reviews of normal anatomy, physiology, and pathologic conditions of the adult heart. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

DMS 255 **(2 CR.)**
Echocardiography Registry Review
Prerequisite(s): Satisfactory completion of all previous sonography courses with a grade of "C" or better. Presents students with registry examination preparation, test-taking strategies, and skills that will facilitate the graduate's entry into the career of sonography. Lecture 2 hours per week.

DMS 256 **(1 CR.)**
Echocardiography Case Study Review
Prerequisite(s): Satisfactory completion of all previous sonography courses with a grade of "C" or better. Presents weekly echocardiography case studies by faculty and students for interpretation and pattern recognition. Lecture 1 hour per week.

DMS 260 **(4 CR.)**
Vascular Sonography II
Presents the fundamentals of vascular technology including basic ultrasound scanning techniques of the cerebrovascular system. Students focus on anatomy, physiology, pathology, and vascular recognition with real-time 2D and Doppler imaging. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

DMS 265 **(1 CR.)**
Vascular Case Study Review
Prerequisite(s): Satisfactory completion of all previous sonography courses with a grade of "C" or better. Presents weekly vascular case studies by faculty and students for interpretation and pattern recognition. Lecture 1 hour per week.

DMS 266 **(2 CR.)**
Vascular Ultrasound Registry Review
Prerequisite(s): Satisfactory completion of all previous sonography courses with a grade of "C" or better. Presents students with registry examination preparation, test-taking strategies, and skills that will facilitate the graduate's entry into the career of sonography. Lecture 2 hours per week.

Diesel

DSL 137 **(5 CR.)**
Basic Diesel Engine Systems
Introduces the theory of operation, design, and components of a modern diesel engine. Provides instruction on modern fuel system components and operation. Presents the design and operation of air induction, lubrication, and cooling systems. Demonstrates basic engine diagnostics. Provides preparation for the Automotive Service Excellence (ASE) T2 Engines certification examination. Lecture 5 hours. laboratory 2 hours. Total 6 hours per week.

DSL 150 **(3 CR.)**
Mobile Hydraulics and Pneumatics
Introduces the theory, operation, and maintenance of hydraulic/pneumatic systems and devices used in mobile applications. Emphasizes the properties of fluid, fluid flow, fluid states, and application of Bernoulli's equation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DSL 155 **(3 CR.)**
Heavy Duty Suspension and Service
Examines suspensions used on heavy-duty trucks and teaches preventative maintenance and service procedures. Includes nomenclature, theory of operation and services, and repair of heavy-duty truck suspension systems including tires and wheels and steering gear and connecting linkage. Provides opportunity for preventative maintenance inspections and service procedures on heavy-duty vehicles. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DSL 161 **(2 CR.)**
Air Brake Systems I
Studies the basic operational theory of pneumatic and air brake systems used in public transportation vehicles. Covers various air control valves, air and test system components, and advanced air system schematics. Part I of II. Lecture 2 hours.

DSL 162 **(2 CR.)**
Air Brake Systems II
Studies the basic operational theory of pneumatic and air brake systems used in public transportation vehicles. Covers various air control valves, air and test system components, and advanced air system schematics. Part II of II. Lecture 2 hours.

Dietetics

DIT 121 **(3 CR.)**
Nutrition I
Studies food composition, dietary guidelines, and nutrients essential to healthy human life. Analyzes nutrient function and metabolism. Lecture 3 hours per week.

DIT 122 **(3 CR.)**
Nutrition II
Prior basic nutrition course is recommended. Applies the principles from DIT 121 to the life cycle. Includes current topics such as fad diets, preventive nutrition, weight control, and exercise. Lecture 3 hours per week.

DIT 125 **(3 CR.)**
Current Concepts in Diet and Nutrition
Studies the importance of diet to health and wellbeing in daily life. Addresses current controversies over food practices and information, food facts and fiction, fad diets, vegetarianism, diet and heart disease, and sound guidelines for maintaining good health with wise food choices. Applies computer technology for nutritional analysis. Intended especially for the non-Dietetics major. Lecture 3 hours per week.

DIT 221 **(4 CR.)**
Therapeutic Nutrition
Prerequisite(s): DIT 121, DIT 122, or approval of instructor. Applies nutrition principles to the treatment of persons with special dietary needs. Lecture 4 hours per week.

Economics

ECO 110 **(3 CR.)**
Consumer Economics
Fosters understanding of American economic system and the individual's role as a consumer. Emphasizes application of economic principles to practical problems encountered. Alerts students to opportunities, dangers, and alternatives of consumers. Lecture 3 hours per week.

ECO 150 **(3 CR.)**
Economic Essentials: Theory and Application
Presents a broad overview of microeconomic and macroeconomic theory with application to current economic situations. Introduces concepts, policies, and theories in addition to models of domestic and global economies. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

ECO 201 **(3 CR.)**
Principles of Macroeconomics
Presents the fundamental macroeconomic concepts, theories, and issues including the study of scarcity and opportunity cost, supply and demand, national economic growth, inflation, recession, unemployment, fiscal and monetary policies, and international trade. Develops an appreciation of how these economic concepts apply to consumer, business, and government decisions, and their effect on the overall economy. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

ECO 202 **(3 CR.)**
Principles of Microeconomics
Presents the fundamental microeconomic concepts, theories, and issues including the study of scarcity and opportunity cost, supply and demand, elasticities, marginal revenues and costs, profits, production and distribution. Develops an appreciation of how these economic concepts apply to consumer and business decisions, and their effect on the individual. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

ECO 210 **(3 CR.)**
International Economics
Analyzes the nature, performance, and problems of market and non-market economic systems with emphasis on post-World War II experience. Lecture 3 hours per week.

ECO 230 **(3 CR.)**
Money and Banking
Reviews history of American banking institutions, principles, and practices. Emphasizes the relationship of finances to business structure, operation, and organization. Examines present financial structures, agents, problems, and institutions. Lecture 3 hours per week.

Education

EDU 100 **(1 CR.)**
Introduction to Education
Provides an overview of teaching as a career with orientation to theories, practices, responsibilities, guidelines, current trends and issues in education. Lecture 1 hour per week. Lecture 1 hour.

EDU 114 **(3 CR.)**
Driver Task Analysis
Prerequisite(s): Eligible for ENG 111. Introduces the "driver task" as related to the highway transportation system and factors that influence performance ability. Prepares students so they may be eligible to take certification exams for driving school instructors in both public and private schools. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EDU 200 **(3 CR.)**
Foundations of Education
Explores the foundational topics related to education. Emphasizes the historical, philosophical, social, legal, ethical, and professional aspects of teaching. This course requires a practicum with a minimum of 20 hours of observation in a K-12 setting. Lecture 3 hours per week.

EDU 204 **(3 CR.)**
Teaching in a Diverse Society
Prerequisite(s): EDU 200. Examines how personal and professional identities, positioning, and intersectional positionalities, values, attitudes, beliefs, and behaviors impact teaching and learning. Develops an understanding of similar and unique characteristics of PreK-12 students and their families, including culture, race, ethnicity, religion, language and learning abilities, gender socializations and sexual orientation. This course requires a practicum with a minimum of 20 hours of observation in a K-12 setting. Lecture 3 hours per week.

EDU 206 **(3 CR.)**
Classroom and Behavioral Management
Prerequisite(s): EDU 200. Provides an overview of developing a positive and inclusive learning environment. Emphasizes methods for managing the diverse needs of students in order to promote a positive learning environment. Addresses how to establish and communicate expectations for effective instruction. Lecture 3 hours per week.

EDU 207 **(3 CR.)**
Human Growth and Development
Provides an overview of the physical, intellectual, cognitive, language, social, and emotional development of human beings from birth to death, with a focus on birth to adolescence. Emphasizes how hereditary and environmental influences impact the development of the whole child. Lecture 3 hours per week.

EDU 214 **(3 CR.)**
Instructional Principles of Driver Education
Prerequisite(s): EDU 114. Analyzes rules and regulations that govern the conduct of Driver Education Programs with special emphasis on organization and administration. Includes uses in the classroom, driving range, and on the street. Prepares students so they may be eligible to take the state certification exam in driver education. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EDU 235 **(3 CR.)**
Health, Safety, and Nutrition Education
Focuses on the health and developmental needs of children and the methods by which these needs are met. Emphasizes positive health, hygiene, nutrition, and feeding routines, childhood diseases, and safety issues. Emphasizes supporting the mental and physical well-being of children, as well as procedures for reporting child abuse. Lecture 3 hours per week.

EDU 250 **(3 CR.)**
Foundations of Exceptional Education
Prerequisite(s): EDU 200. Explores the historical, ethical, social, cultural, and legal practices for providing educational services for individuals with exceptionalities including early intervention, inclusion, adapting environments, and supporting positive behavior. Includes the study of characteristics of individuals with exceptionalities and the influence of culture and environment on development. Focuses on models, theories, and trends in special education. Lecture 3 hours per week.

EDU 254 **(3 CR.)**
Teaching Basic Academic Skills to Exceptional Children
Prerequisite(s): EDU 200. Develops competencies required to teach readiness and basic skills to children with special needs in private or public-school settings. Includes the preparation of lesson plans, instructional units, and Individualized Education Programs (IEP's). Includes child abuse recognition and intervention training. Emphasizes exceptionalities for students ages 2-21 under Public Law 94-142. Familiarizes students with the indicators of effective teaching. Lecture 3 hours per week.

EDU 270 **(3 CR.)**
Introduction to Autism Spectrum Disorders
Prerequisite(s): EDU 200. Explores the nature of autism and related development disorders. Includes an exploration of assessment measures and diagnostic criteria. Discusses intervention strategies to support students in school settings. Lecture 3 hours per week.

EDU 280 **(3 CR.)**
Introduction to Instructional Technologies
Prerequisite(s): EDU 200. Provides future K-12 educators with the knowledge and skills needed to successfully implement instructional technology into their classroom. Explores the connections between types of technologies, technology standards, types of learners, and instructional practices. Lecture 3 hours per week.

EDU 285 **(3 CR.)**
Teaching Online Program (TOP)
Prerequisite(s): proficient working knowledge of the current VCCS online course delivery system. Instructs educators in the method and practice for delivery of online course content. Includes instructional technology and instructional design theory and practice, with skills and strategies that educators will use to engage students and create a collaborative online environment. Lecture 3 hours per week.

EDU 287 **(3 CR.)**
Instructional Design for Online Learning
Prepares educators to design online courses that encourage active learning and student participation. Focuses on instructional design practices including the development of content tied to learning objectives and a peer-based approach to evaluating courses. Lecture 3 hours per week.

Electrical Technology

ELE 146 **(4 CR.)**
Electric Motor Control
Prerequisite(s): ELE 150 or equivalent. Studies solid state devices with application and emphasis toward control of power. Includes diodes, SCR's, photoelectric controls, timing, circuits, voltage regulation and three phase rectifiers. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ELE 148 **(3 CR.)**
Power Distribution Systems
Prerequisite(s): ELE 150. Introduces transmission and distribution of electrical power. Includes application of transformers, distribution and over-current protection devices, substations, switchboards, feeders, bus-ways, motor control centers, generators, motors, and troubleshooting techniques associated with these systems and devices. Lecture 2 hours. Lab 2 hours. Total 4 hours per week.

ELE 150 **(3 CR.)**
A.C. and D.C. Circuit Fundamentals
Provides an intensive study of the fundamentals of direct and alternating current, resistance, magnetism, inductance and capacitance, with emphasis on practical applications. Focuses on electrical/machines applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ELE 189 **(3 CR.)**
Data Cabling Communication
Introduces construction, testing, troubleshooting, and repair of a variety of copper cables. Prepares students for the Electronics Technician Association Data Cable Installer Certification (DCIC) necessary to compete for entry-level positions in a wide range of networking, security and video companies. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ELE 211 **(3 CR.)**
Electrical Machines I
Prerequisite(s): ELE 150. Studies the construction, theory of operations and applications of DC and AC machines. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ELE 233 **(3 CR.)**
Programmable Logic Controller Systems I
Teaches operating and programming of programmable logic controllers. Covers analog and digital interfacing and communication schemes as they apply to system. Part I of II. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ELE 250 **(3 CR.)**
Fiber Optic Technology
Prerequisite(s): ELE 150. Introduces testing, troubleshooting, and repair of fiber optic systems. Prepares students for the Electronics Technician Association Fiber Optics Technician (FOT) certification necessary to compete for technician level positions in a wide range of networking, security and video companies. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Electronics Technology

ETR 281 **(3 CR.)**
Digital Systems
Prerequisite(s): ELE 150. Includes basic numbering systems, Boolean algebra, logic circuits and systems, pulse circuits and pulse logic systems as applied to computer and microprocessor technology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ETR 286 **(3 CR.)**
Principles and Application of Robotics
Provides an overview of terminology, principles, practices, and applications of robotics. Studies development, programming; hydraulic, pneumatic, electronic controls; sensors, and system troubleshooting. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Emergency Medical Services

EMS 100 **(1 CR.)**
CPR for Healthcare Providers
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 105 **(1 CR.)**
Basic Medication Administration Procedures
Covers basic theory and practical application of medication and drug dosage, as well as calculations. Direct application to the functional performance of the EMT-Intermediate in the field and clinical settings is stressed. Lecture 1 hour per week.

EMS 111 **(7 CR.)**
Emergency Medical Technician: Basic
Prerequisite(s): EMS 100/equivalent. Corequisite(s): EMS 120. 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. Lecture 5 hours. Laboratory 4 hours. Total 9 hours per week.

EMS 112 **(4 CR.)**
Emergency Medical Technician: Basic I
Prerequisite(s): EMS 100 or CPR certification at the Healthcare Provider level. Corequisite(s): EMS 120. Prepares student for certification as a Virginia and/or National Registry EMT-Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia Office of Emergency Medical Services curriculum for Emergency Medical Technician Basic. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 115 **(2 CR.)**
Emergency Medical Technician: Basic Refresher
Provides 36 clock hours of instruction to meet Virginia Office of EMS requirements for recertification at the EMT-Basic level. Lecture 2 hours per week.

EMS 120 **(1 CR.)**
Emergency Medical Technician: Basic Clinical
Corequisite(s): This course is a co-requisite for either EMS 111 or EMS 113, depending upon the program in which the student is participating. Provides supervised direct patient contact introducing the student to the assessment and emergency care of sick and injured patients. Laboratory 2 hours per week.

EMS 121 **(2 CR.)**
Preparatory Foundations
Prerequisite(s): Current Virginia EMT and CPR certification as approved by the Virginia Office of EMS. Introduces fundamental concepts established by the National Emergency Medical Service Education Standards (NEMSES) for Advanced EMT and Paramedic curricula. Includes EMS systems, introduction to research, workforce safety and wellness, EMS system communications, introduction to public health, legal and ethical issues. Lecture 2 hours. Total 2 hours per week.

EMS 123 **(1 CR.)**
EMS Clinical Preparation
Prerequisite(s): Current Virginia EMT and CPR certification as approved by the Virginia Office of EMS. Introduces the student to local clinical agencies and prepares the student for clinical activities above the level of EMT. Includes prerequisites required by clinical

affiliates, therapeutic communication, primary assessment, history taking, secondary assessment, reassessment, monitoring devices and documentation. Laboratory 2 hours. Total 2 hours per week.

EMS 125 **(1 CR.)**
Basic Pharmacology
Prerequisite(s): Current Virginia EMT and CPR certification as approved by the Virginia Office of EMS. Corequisite(s): EMS 126. Prepares students to demonstrate competency concerning basic principles of pharmacology, drug dosage calculations and medication administration. Introduces medications listed in the Advanced EMT (AEMT) scope of practice. Lecture 1 hour. Total 1 hour per week.

EMS 126 **(1 CR.)**
Basic Pharmacology Lab
Prerequisite(s): Current Virginia EMT and CPR certification as approved by the Virginia Office of EMS. Corequisite(s): EMS 125. Focuses on the safe administration of medications in the emergency setting. Includes drug dose calculation and covers multiple routes of administration including oral, intramuscular, subcutaneous, intravenous, and intraosseous and other methods within the scope of practice for the emergency care provider. Laboratory 1 hour. Total 1 hour per week.

EMS 127 **(1 CR.)**
Airway, Shock, and Resuscitation
Prerequisite(s): Current Virginia EMT and CPR certification as approved by the Virginia Office of EMS. Corequisite(s): EMS 128 Introduces concepts associated with pre-hospital emergency care of the individual experiencing airway difficulty or in need of resuscitation or shock management. Lecture 1 hour. Total 1 hour per week.

EMS 128 **(1 CR.)**
Airway, Shock, and Resuscitation Lab
Prerequisite(s): Current Virginia EMT and CPR certification as approved by the Virginia Office of EMS. Corequisite(s): EMS 127 Focuses on specific skills related to airway, resuscitation and shock management. Lecture 2 hours. Total 2 hours per week.

EMS 135 **(2 CR.)**
Emergency Medical Care
Prerequisite(s): EMS 121, EMS 123, EMS 125, EMS 126, EMS 127, and EMS 128. Corequisite(s): EMS 136 Prepares the student to assess and manage patients with common medical emergencies. Lecture 2 hours. Total 2 hours per week.

EMS 136 **(1 CR.)**
Emergency Medical Care Lab
Prerequisite(s): EMS 121, EMS 123, EMS 125, EMS 126, EMS 127, and EMS 128. Corequisite(s): EMS 135 Focuses on specific skills related to the assessment and management of common medical emergencies. Lab 2 hours. Total 2 hours per week.

EMS 137 **(1 CR.)**
Trauma Care
Prerequisite(s): EMS 121, EMS 123, EMS 125, EMS 126, EMS 127, and EMS 128. Corequisite(s): EMS 138 Prepares the student to assess and manage injured patients, developing his/her problem-solving ability in the treatment of trauma involving various body systems. Lecture 1 hour. Total 1 hour per week.

EMS 138 **(1 CR.)**
Trauma Care Lab
Prerequisite(s): EMS 121, EMS 123, EMS 125, EMS 126, EMS 127, and EMS 128. Corequisite(s): EMS 137 Focuses on the skills required for the assessment and management of patients with traumatic injury. Lab 2 hours. Total 2 hours per week.

EMS 139 **(1 CR.)**
Special Populations
Prerequisite(s): EMS 121, EMS 123, EMS 125, EMS 126, EMS 127, and EMS 128. Corequisite(s): EMS 140 Focuses on the pre-hospital assessment and management of patients in a specific population including pediatrics, geriatrics, obstetrics/gynecology (OB/GYN), bariatric, abuse, sexual assault and special needs. Lecture 1 hour. Total 1 hour per week.

EMS 140 **(1 CR.)**
Special Populations Lab
Prerequisite(s): EMS 121, EMS 123, EMS 125, EMS 126, EMS 127, and EMS 128. Corequisite(s): EMS 139. Develops skills related to the assessment and management of patients in a specific population including pediatrics, geriatrics, obstetrics/gynecology (OB/GYN), bariatric, abuse, sexual assault and special needs. Lab 2 hours. Total 2 hours per week.

EMS 141 **(2 CR.)**
Cardiovascular Care
Prerequisite(s): EMS 121, EMS 123, EMS 125, EMS 126, EMS 127, and EMS 128. Corequisite(s): EMS 142. Focuses on assessment and management of cardiac-related emergencies. Covers basic dysrhythmia recognition and relates it to overall cardiac patient care. Lecture 2 hours. Total 2 hours per week.

EMS 142 **(1 CR.)**
Cardiovascular Care Lab
Prerequisite(s): EMS 121, EMS 123, EMS 125, EMS 126, EMS 127, and EMS 128. Corequisite(s): EMS 141. Focuses on skills involved in the assessment and management of cardiac-related. Lab 2 hours. Total 2 hours per week.

EMS 151 **(4 CR.)**
Introduction to Advanced Life Support
Corequisite(s): EMS 170. Prepares the student for Virginia Enhanced certification eligibility and begins the sequence for National Registry Intermediate and/or Paramedic Certification. Includes the theory and application of the following: foundations, human systems, pharmacology, overview of shock, venous access, airway management, patient assessment, respiratory emergencies, allergic reaction, and assessment-based management. Conforms at a minimum to the Virginia Office of Emergency Medical Services curriculum.

EMS 153 **(2 CR.)**
Basic ECG Recognition
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 155 **(4 CR.)**
ALS: Medical Care
Prerequisite(s): Current EMT-B certification, EMS 151, and EMS 153. Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Includes ALS pharmacology, drug and fluid administration with emphasis on patient assessment, differential diagnosis, and management of multiple medical complaints. Includes, but not limited to conditions relating to cardiac, diabetic, neurological, non-traumatic abdominal pain, environmental, behavioral, gynecology, and toxicological

disease conditions. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 157 **(3 CR.)**
ALS: Trauma Care
Prerequisite(s): Current EMT-B certification and EMS 151. Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Utilizes techniques which will allow the student to utilize the assessment findings to formulate a field impression and implement the treatment plan for the trauma patient. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 159 **(3 CR.)**
ALS: Special Populations
Prerequisite(s): EMS 151 and EMS 153. Prerequisite or Corequisite: EMS 155. Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Focuses on the assessment and management of specialty patients including obstetrical, neonates, pediatric, and geriatrics. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 161 **(1 CR.)**
Basic Trauma Life Support (BTLS)
Prerequisite(s): current certification/licensure as an EMS provider or other allied healthcare provider. Offers instruction for students in current topics of care for trauma patients and offers certification as a Basic Trauma Life Support Provider (BTLS) as defined by the American College of Emergency Physicians. Lecture 1 hour per week.

EMS 162 **(1 CR.)**
Pediatric Basic Trauma Life Support (PBTLS)
Prerequisite(s): current certification/licensure as an EMS provider or other allied healthcare provider. Offers instruction for students in current topics of care for trauma patients and offers certifications in Pediatric Basic Trauma Life Support Provider (PBTLS) as defined by the American College of Emergency Physicians. Lecture 1 hour per week.

EMS 163 **(1 CR.)**
Prehospital Trauma Life Support (PHTLS)
Prerequisite(s): EMS 111 or equivalent. Prepares for certification as a Prehospital Trauma Life Support provider as defined by the American College of Surgeons. Lecture 1 hour. Total 1 hour per week.

EMS 164 **(1 CR.)**
Advanced Medical Life Support (AMLS)
Covers current topics of care for adult patients suffering extensive medical conditions and emergencies and offers certification as an Advanced Medical Life Support (AMLS) as defined by the National Association of Emergency Medical Technicians (NAEMT). Lecture 1 hour. Total 1 hour per week.

EMS 165 **(1 CR.)**
Advanced Cardiac Life Support (ACLS)
Prerequisite(s): EMS 100, or equivalent. Prepares for certification as an Advanced Cardiac Life provider. Follows course as defined by the American Heart Association. Lecture 1 hour per week.

EMS 167 **(1 CR.)**
Emergency Pediatrics Course (EPC)
Provides a unique approach to pediatric medical care, offering assessment techniques that can help EMS practitioners rapidly and accurately assess pediatric patients to determine which situations may be life threatening and require immediate intervention. Offers certification as defined by the National Association of Emergency Medical Technicians (NAEMT). Lecture 1 hour. Total 1 hour per week.

EMS 169 **(1 CR.)**
Pediatric Advanced Life Support (PALS)
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 **(1 CR.)**
ALS Internship I
Corequisite(s): EMS 151. Begins the first in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the emergency department, critical care units, pediatric, labor and delivery, operating room, trauma centers, and various advanced life support units. Laboratory 3 hours per week.

EMS 172 **(2 CR.)**
ALS Clinical Internship II
Corequisite(s): EMS 151. Continues with the second in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the emergency department, critical care units, pediatric, labor and delivery, operating room, and trauma centers. Laboratory 6 hours per week.

EMS 173 **(1 CR.)**
ALS Field Internship II
Continues with the second in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Laboratory 3 hours per week.

EMS 175 **(1 CR.)**
Paramedic Clinical Experience I
Prerequisite(s): EMS 121, EMS 123, EMS 125, EMS 126, EMS 127, and EMS 128. Introduces students to live patient assessment and management in the clinical setting. Begins a continuum of learning involving live patients that leads to entry-level competence at the paramedic level. Laboratory 3 hours. Total 6 hours per week.

EMS 201 **(3 CR.)**
EMS Professional Development
Prerequisite(s): EMT/B Certification. 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 202 **(2 CR.)**
Paramedic Pharmacology
Prerequisite(s): EMS 125, EMS 126, EMS 135, EMS 136, EMS 137, EMS 138, EMS 139, EMS 140, EMS 141, and EMS 142. Focuses on advanced pharmacological interventions, medications, and their effects. Lecture 2 hours. Total 2 hours per week.

EMS 203 **(2 CR.)**
Advanced Patient Care
Prerequisite(s): EMS 135, EMS 136, EMS 137, EMS 138, EMS 139, EMS 140, EMS 141, and EMS 142. Corequisite(s): EMS 204. Focuses on the comprehensive assessment and management of patients in out-of-hospital and inter-facility scenarios. Content is centered on problem-solving through integration of didactic, psychomotor, and affective curricula. Lecture 2 hours. Total 2 hours per week.

EMS 204 **(2 CR.)**
Advanced Patient Care Lab
Prerequisite(s): EMS 135, EMS 136, EMS 137, EMS 138, EMS 139, EMS 140, EMS 141, and EMS 142. Corequisite(s): EMS 203. Focuses on the comprehensive assessment and management of out-of-hospital and inter-facility patients using scenario-based learning. Lab 4 hours. Total 4 hours per week.

EMS 205 **(4 CR.)**
Advanced Pathophysiology
Prerequisite(s): EMT/B Certification. 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 healthcare provider in and out of the hospital environment. Lecture 4 hours per week.

EMS **(3 CR.)**
Pathophysiology for the Health Professions
Prerequisite(s): BIO 141 - BIO 142 combination or BIO 145. Focuses on the pathological processes of disease with emphasis on the anatomical and physiological alterations of the human body systems. Includes diagnosis and management appropriate to the advanced health care provider in and out of the hospital environment. Lecture 3 hours. Total 3 hours per week.

EMS 207 **(3 CR.)**
Advanced Patient Assessment
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 a laboratory environment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 209 **(4 CR.)**
Advanced Pharmacology
HLT 250 plus EMS 213 are equivalent to EMS 209. Students cannot receive credit for both this sequence and EMS 209. 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. Includes classification, mechanism of action, indications, contra-indications, 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 210 **(1 CR.)**
EMS Operations
Prerequisite(s): EMS 135, EMS 136, EMS 137, EMS 138, EMS 139, EMS 140, EMS 141, and EMS 142. Focuses on matters related to Emergency Medical Services (EMS) operations, incident and scene safety and awareness, triage, multiple and mass casualty incident operations and medical incident management (command and control of EMS incidents). Lab 2 hours. Total 2 hours per week.

EMS 211 **(2 CR.)**
Operations
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 212 **(1 CR.)**
Leadership and Professional Development
Prerequisite(s): EMS 135, EMS 136, EMS 137, EMS 138, EMS 139, EMS 140, EMS 141, and EMS 142. Focuses on the development of leadership within the field of Emergency Medical Services (EMS), topics include civic engagement, personal wellness, resource management, ethical considerations in leadership and research. Lecture 1 hour. Total 1 hour per week.

EMS 213 **(1 CR.)**
ALS Skills
Development Utilizes reinforcement and remediation of additional advanced life support skills, as needed. Laboratory 2 hours per week.

EMS 215 **(1 CR.)**
Registry Review
Reviews material covered in the intermediate/paramedic program. Prepares the student for National Registry testing. Lecture 1 hour per week.

EMS 216 **(1 CR.)**
Paramedic Review
Provides the student with intensive review for the practical and written portions of the National Registry Paramedic exam. This course may be retaken once for credit. Lecture 1 hour per week.

EMS 242 **(1 CR.)**
ALS Clinical Internship III
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. Laboratory 3 hours per week.

EMS 243 **(1 CR.)**
ALS Field Internship III
Continues with the third in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Laboratory 3 hours per week.

EMS 244 **(2 CR.)**
ALS Clinical Internship IV
The fourth in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the emergency department, critical care units, pediatric, labor and delivery, operating room, and trauma centers. Laboratory 6 hours per week.

EMS 245 **(1 CR.)**
ALS Field Internship IV
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 needed. Laboratory 3 hours per week.

EMS 247 **(1 CR.)**
Paramedic Clinical Experience II
Prerequisite(s): EMS 135, EMS 136, EMS 137, EMS 138, EMS 139, EMS 140, EMS 141, EMS 142, and EMS 175. Continues the student experience with live patient assessment and management in the clinical setting. It is the second step in a continuum of learning

involving live patients that leads to entry-level competence at the paramedic level. Lab 3 hours. Total 3 hours per week.

EMS 248 **(2 CR.)**
Paramedic Comprehensive Field Experience
Prerequisite(s): EMS 135, EMS 136, EMS 137, EMS 138, EMS 139, EMS 140, EMS 141, EMS 142, and EMS 175. Expands the student experience with live patient assessment and management into the field setting. It is the third step in a continuum of learning involving live patients that leads to entry-level competence at the paramedic level. Laboratory 6 hours. Total 6 hours per week.

EMS 249 **(2 CR.)**
Paramedic Capstone Internship
Provides summative evaluation of the Paramedic student in the cognitive, psychomotor, and affective domains. Lab 6 hours. Total 6 hours per week.

Energy Technology

ENE 108 **(3 CR.)**
Introduction to Data Center Operations
Provides the foundational aspects of data center fundamentals, data center compliance, operations, and physical infrastructure. Introduces mission critical operations as they apply to data centers. Teaches students the physical components of a data center, its interoperability, and the usage of data center equipment in a simulated data center environment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ENE 208 **(3 CR.)**
Critical Site Operations
Provides a complete overview of a data center such as power systems, communications systems, cooling systems and fire and intrusion detection systems. Introduces commissioning and decommissioning concepts as they apply to data centers. Provides hands-on experience through laboratory exercises.
Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ENE 228 **(3 CR.)**
Building Automation & Energy Management Systems
Introduces building automation and energy management systems. Studies how building systems HVAC, lighting, security systems, and alternative energy--can communicate through a network of intelligent control devices. Emphasizes how these controlling devices work together in common automation. Lecture 2 hours, Lab 2 hours, Total 4 hours per week.

Engineering

EGR 120 **(2 CR.)**
Introduction to Engineering
Prerequisite(s): MTH 162, MTH 167. Corequisite(s): ENG 111. Introduces the engineering profession, professional concepts, ethics, and responsibility. Reviews hand calculators, number systems, and unit conversions. Introduces the personal computer, operating systems, and processing; engineering problem solving; and graphic techniques. Lecture 2 hours per week.

EGR 121 **(2 CR.)**
Foundations of Engineering
Prerequisite(s): MTH 167 or MTH 162. Eligible for ENG 111. Introduces the engineering profession and its impact on society and the environment, including engineering problem solving, the engineering design process, and professional practices. Covers fundamental engineering calculations, descriptive statistics, basic spreadsheet and mathematical scripting language applications, professional ethics, teamwork, and communication. Lecture 2 hours per week.

EGR 122 **(3 CR.)**
Engineering Design
Prerequisite(s): EGR 121, or department permission. Applies engineering methods to a semester-long team design project with an emphasis on engineering software involving 2D and 3D computer aided design; data modeling and analysis; and iterative programming solutions. Covers design drawings and dimensioning; spreadsheet software usage; mathematical scripting language; and professional practices. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EGR 125 **(4 CR.)**
Introduction to Computer Programming for Engineers
Prerequisite(s): MTH 162 or MTH 167 or equivalent. Corequisite(s): EGR 121. Introduces problem solving and implementation of computer software solutions using a high-level programming language in a structured environment. Includes concepts and practice of algorithm design, language syntax, control structures, arrays, and introduction to object-oriented programming. Covers engineering applications, such as mathematical modeling, file input and output, and basic numerical methods. The assignments in this course require mathematical problem-solving skills, algebraic modeling, and functions, and use of variables. Lecture 4 hours per week.

EGR 126 **(3 CR.)**
Computer Programming for Engineers
Prerequisite(s): EGR 120 EGR 121, or EGR 122, and MTH 263. 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 130 **(5 CR.)**
Statics and Strength of Materials for Engineering Technology
Prerequisite(s): MTH 161 and MTH 162, or MTH 167 or equivalent. Presents principles and applications of free-body diagrams of force systems in equilibrium. Analyzes frames and trusses. Presents principles and applications to problems in friction, centroids, and moments of inertia. Includes properties of materials, stress, strain, elasticity, design of connections, shear and bending in statically determinate beams, and axially loaded columns. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

EGR 206 **(2 CR.)**
Engineering Economy
Presents economic analysis of engineering alternatives. Studies economic and cost concepts, calculation of economic equivalence, comparison of alternatives, replacement economy, economic optimization in design and operation, depreciation, and after-tax analysis. Lecture 2 hours per week.

EGR 240 **(3 CR.)**
Solid Mechanics (Statics)
Prerequisite(s): EGR 120, EGR 121 or EGR 122, MTH 263, and PHY 241 (or old PHY 231). Introduces basic concepts of engineering mechanics, systems of forces and couples, equilibrium of particles and rigid bodies, and internal forces and analysis of structures, including SI and U.S. customary units. Includes trusses, frames, machines, beams, distributed forces, friction, and centroids. Lecture 3 hours per week.

EGR 245 **(3 CR.)**
Engineering Mechanics-Dynamics
Prerequisite(s): MTH 265 and EGR 240. Presents approach to kinematics and kinetics of particles (and systems of particles) in linear and curvilinear motion. Includes kinematics and kinetics of rigid bodies in plane motion. Teaches Newton's second law, work-energy, and impulse-momentum methods. Lecture 3 hours per week.

EGR 246 **(3 CR.)**
Mechanics of Materials
Prerequisite(s): EGR 240. Introduces 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, principal stresses, and buckling. Lecture 3 hours per week.

EGR 248 **(3 CR.)**
Thermodynamics for Engineering
Prerequisite(s): MTH 264 and PHY 241 (or PHY 231). 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.

EGR 270 **(4 CR.)**
Fundamentals of Computer Engineering
Prerequisite(s): EGR 120 or EGR 121 and either EGR 125 or CSC 221 (or CSC 200 or CSC 201). Covers digital system analysis, design, and implementation. Includes digital logic, Boolean algebra, combinational and sequential circuits, hierarchical design, and introduction to computer organization and assembly language. Features in laboratory work the use of discrete logic, programmable logic devices, and hardware description language to design, simulate, implement, validate, and document digital circuits. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

EGR 271 **(4 CR.)**
Electric Circuits I
Prerequisite(s): MTH 264 and EGR 121. Covers fundamentals of electric circuits. Teaches resistive circuit analysis methods, including network theorems. Teaches operational amplifiers, capacitors, inductors, resistor-capacitor (RC), resistor-inductor (RL) and resistance-inductance-capacitance (RLC) circuit transient response. Introduces phasor representation of alternating current (AC) circuits. Utilizes circuit design processes, technical writing and computer software for problem solving. Includes laboratory analysis to explore course concepts. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

EGR 272 **(4 CR.)**
Electric Circuits II
Prerequisite(s): MTH 267 and EGR 271. Covers sinusoidal steady-state circuit response using phasors; frequency analysis of linear circuits including frequency response, Bode plots, Fourier series analysis, and design of basic filters. Examines Laplace circuit analysis and transfer functions, AC power analysis; nonlinear diode models; and technical writing. Includes laboratory analysis and open-ended design project. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

English Direct Enrollment

EDE 10 **(3 CR.)**
English Composition Preparation
Prerequisite(s): Upon successful completion of EDE 10, instructors recommend enrollment in EDE 11/ENG 111 or ENG 111 or ENG 115/ENG 131. Provides academic skills and support for introductory composition. Students will identify and apply academic skills including critical reading, writing, thinking, and research. Lecture 3 hours per week.

EDE 11 **(3 CR.)**
English Composition Readiness
Provides academic support for successful completion of ENG 111. Students will identify and apply academic skills including critical reading, writing, thinking, and introductory research. Lecture 3 hours. Total 3 hours per week.

English

ENG 100 **(3 CR.)**
Basic Occupational Communication
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. (Intended for certificate and diploma students.) Lecture 3 hours per week.

ENG 111 **(3 CR.)**
College Composition I
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. **This is a UCGS transfer course.**

ENG 112 **(3 CR.)**
College Composition II
Students must successfully complete ENG 111 or its equivalent and must be able to use word processing software. Continues to develop college writing with increased emphasis on critical essays, argumentation, and research, developing these competencies through the examination of a range of texts about the human experience. Requires students to locate, evaluate, integrate, and document sources and effectively edit for style and usage. Lecture 3 hours per week. **This is a UCGS transfer course.**

ENG 113 **(3 CR.)**
Technical-Professional Writing
Prerequisite(s): ENG 111. Develops ability in technical writing through extensive practice in composing technical reports and technical documents. Guides students in achieving voice, tone, style, and content in formatting, editing, and graphics. Introduces students to technical discourse through selected readings. Provides instruction and practice in basic principles of oral communication/presentation. Lecture 3 hours per week. **This is a UCGS transfer course.**

ENG 114 **(3 CR.)**
Scientific Writing
Prerequisite(s): ENG III or equivalent. Develops rhetorical expertise in the conventions of scientific argumentation and writing through reading scientific literature and composing scientific writings. Introduces plain style and common genres of scientific writing. Develops the ability to communicate scientific knowledge to diverse audiences. Guides the student in achieving typical voice, tone, style,

audience, and content in formatting, editing, and graphics. Lecture 3 hours per week.

ENG 115 **(3 CR.)**
Technical Writing
Develops ability in technical writing through extensive practice in composing technical reports and other documents. Guides students in achieving voice, tone, style, and content in formatting, editing, and graphics. Introduces students to technical discourse through selected reading. Lecture 3 hours per week.

ENG 116 **(3 CR.)**
Writing for Business
Develops ability in business writing through extensive practice in composing business correspondence and other documents. Guides students in achieving voice, tone, style, and content appropriate to a specific audience and purpose. Includes instruction in formatting and editing. Introduces students to business discourse through selected readings. Lecture 3 hours per week.

ENG 121 **(3 CR.)**
Introduction to Journalism I
Prerequisite(s): ENG 111 or ENG 112 or division approval. Introduces students to all news media, especially news gathering and preparation for print. Lecture 3 hours per week.

ENG 122 **(3 CR.)**
Introduction to Journalism II
Prerequisite(s): ENG 111 or ENG 112 or division approval. Introduces students to all news media, especially news gathering and preparation for print. Lecture 3 hours per week.

ENG 123 **(3 CR.)**
Writing for the World Wide Web
Prerequisite(s): ENG 111 or division approval. Introduces basic web page design. Teaches students how to outline, compose, organize, and edit written materials for publication on the World Wide Web. Teaches students how to design basic web pages, compose website layout, and develop website navigation for a variety of possible audiences. Lecture 3 hours per week.

ENG 125 **(3 CR.)**
Introduction to Literature
Prerequisite(s): ENG 111 or its equivalent and ability to use word processing software. Introduces students to a range of literary genres that may include poetry, fiction, drama, creative nonfiction, and other cultural texts, as it continues to develop college writing. Lecture 3 hours per week.

ENG 135 **(3 CR.)**
Applied Grammar
Prerequisite(s): ENG 111 or division approval. Develops ability to edit and proofread correspondence and other documents typically produced in business and industry. Instructs the student in applying conventions of grammar, usage, punctuation, spelling, and mechanics. Lecture 3 hours per week.

ENG 200 **(3 CR.)**
Introduction to Linguistics
Prerequisite(s): ENG 111. Introduces the scientific study of language. Focuses on brain and language, phonetics, morphology, syntax, first and second language acquisition, language and society, and language in social contexts. Lecture 3 hours per week.

ENG 205 **(3 CR.)**
Technical Editing
Prerequisite(s): ENG 111 or equivalent. Prepares business and technical communicators to edit self-generated writings as well as writings prepared by others, including individual or collaborative authors. Teaches students to make editorial content decisions, verify information and copyright compliance, adapt and design formats for audience and purpose, and edit the work of several authors into a seamless final product. Covers basic proofreading and editing skills. Lecture 3 hours per week.

ENG 210 **(3 CR.)**
Advanced Composition
Prerequisite(s): ENG 112 or ENG 125, or division approval. Helps students refine skills in writing nonfiction prose. Guides development of individual voice and style. Introduces procedures for publication. Lecture 3 hours per week.

ENG 211 **(3 CR.)**
Creative Writing I
Prerequisite(s): ENG 112 or ENG 125, or division approval. Introduces the student to the fundamentals of writing imaginatively. Students write in forms to be selected from poetry, fiction, drama, and essays. Lecture 3 hours per week.

ENG 212 **(3 CR.)**
Creative Writing II
Prerequisite(s): ENG 112 or ENG 125, or division approval. Introduces the student to the fundamentals of writing imaginatively. Students write in forms to be selected from poetry, fiction, drama, and essays. Lecture 3 hours per week.

ENG 215 **(3 CR.)**
Creative Writing: Fiction I
Prerequisite(s): ENG 112 or ENG 125, or equivalent, or division approval. Introduces the student, in a workshop setting, to the fundamentals and techniques of writing short and long fiction. Lecture 3 hours per week.

ENG 217 **(3 CR.)**
Creative Writing: Poetry I
Prerequisite(s): ENG 112 or ENG 125, or equivalent, or division approval. Introduces the student, in a workshop setting, to the fundamentals and techniques of writing poetry. Lecture or workshop 3 hours per week.

ENG 219 **(3 CR.)**
Creative Writing: Drama
Prerequisite(s): ENG 112 or ENG 125, or equivalent, or division approval. Introduces the student to the fundamentals and techniques of writing plays. Lecture 3 hours per week.

ENG 221 **(3 CR.)**
Advanced Journalism I
Prerequisite(s): ENG 121, or equivalent courses, or division approval. Provides instruction in news and feature writing and other aspects of journalism. Lecture 3 hours per week.

ENG 222 **(3 CR.)**
Advanced Journalism II
Prerequisite(s): ENG 122, or equivalent courses, or division approval. Provides instruction in news and feature writing and other aspects of journalism. Lecture 3 hours per week.

ENG 225 **(3 CR.)**
Reading Literature: Culture and Ideas
Prerequisite(s): ENG 112, ENG 113, or departmental approval. Examines a set of literary texts linked by a particular theme, with inquiry into the historical, cultural, and/or social contexts of the texts and the theme. Emphasizes interpretive and critical analysis skills developed through close reading and intertextual study, as well as highlights an exploration of cultural ideas. Engages works of diverse genres, authors, and time periods. Specific themes will vary by section. Lecture 3 hours per week. **This is a UCGS transfer course.**

ENG 230 **(3 CR.)**
Mystery in Literature and Film
Prerequisite(s): ENG 112 or ENG 125, or division approval. Studies the mystery as a genre, including history, types, and cultural aspects of stories, novels, plays, and film adaptations. Involves critical reading, writing, and viewing. Lecture 3 hours per week.

ENG 236 **(3 CR.)**
Introduction to the Short Story
Prerequisite(s): ENG 112 or ENG 125, or division approval. Examines selected short stories emphasizing the history of the genre. Involves critical reading and writing. Lecture 3 hours per week.

ENG 237 **(3 CR.)**
Introduction to Poetry
Prerequisite(s): ENG 112 or ENG 125, or division approval. Examines selected poetry, emphasizing the history of the genre. Involves critical reading and writing. Lecture 3 hours per week.

ENG 245 **(3 CR.)**
British Literature
Prerequisite(s): ENG 112, ENG 113, or departmental approval. Examines British literary traditions and texts from diverse time periods, genres, and authors. Develops critical thinking and interpretive skills through close reading, discussion, and analysis of literary texts in their historical, cultural, social, and/or literary contexts. Lecture 3 hours per week. **This is a UCGS transfer course.**

ENG 246 **(3 CR.)**
American Literature
Prerequisite(s): ENG 112, ENG 113, or departmental approval. Examines American literary traditions and texts from diverse time periods, genres, and authors. Analyzes literary works within their historical, cultural, social, and/or literary contexts. Emphasizes skills of close reading. Develops critical thinking and interpretive skills through discussion, interpretation, and analysis of these texts. **This is a UCGS transfer course.** Lecture 3 hours per week.

ENG 247 **(3 CR.)**
Survey of Popular Culture
Prerequisite(s): ENG 112 or ENG 125, or division approval. Analyzes familiar aspects of American culture, as seen through popular literature, with additional emphasis on television, film, and popular art. Lecture 3 hours per week.

ENG 250 **(3 CR.)**
Children's Literature
Prerequisite(s): ENG 112 or ENG 125, or division approval. 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 255 **(3 CR.)**
World Literature
Prerequisite(s): ENG 112, ENG 113, or departmental approval. Examines literary texts across a variety of cultures, genres, and time periods. Develops critical thinking and interpretive skills through close reading, discussion, and analysis of literary texts from around the world in their historical, cultural, social, and/or literary contexts. **This is a UCGS transfer course.** Lecture 3 hours per week.

ENG 256 **(3 CR.)**
Literature of Scientific Fiction
Prerequisite(s): ENG 112 or ENG 125, or division approval. 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. Lecture 3 hours per week.

ENG 257 **(3 CR.)**
Mythological Literature
Prerequisite(s): ENG 112 or ENG 125, or division approval. Studies selected mythologies of the world as literature, emphasizing their common origins and subsequent influence on human thought and expression. Involves critical reading and writing. Lecture 3 hours per week.

ENG 258 **(3 CR.)**
African American Literature
Prerequisite(s): ENG 112, ENG 113, or departmental approval. Explores the stories African American authors tell about themselves, their communities, and the world. Examines common and diverging themes within African American literary traditions through the study of diverse authors, genres, and literary movements from a variety of time periods. Emphasizes interpretive and critical analysis skills developed through close reading and consideration of historical and cultural contexts. Lecture 3 hours per week. Lecture 3 hours. Total 3 hours per week. **This is a UCGS transfer course.**

ENG 261 **(3 CR.)**
Advanced Creative Writing I
Prerequisite(s): ENG 112 or ENG 125, or division approval. Guides the student in imaginative writing in selected genres on an advanced level. Lecture 3 hours per week.

ENG 262 **(3 CR.)**
Advanced Creative Writing II
Prerequisite(s): ENG 112 or ENG 125, or division approval. Guides the student in imaginative writing in selected genres on an advanced level. Lecture 3 hours per week.

ENG 271 **(3 CR.)**
The Works of Shakespeare I
Prerequisite(s): ENG 112 or ENG 125. Examines selected tragedies and/or comedies by Shakespeare. Involves critical reading and writing. Lecture 3 hours per week.

ENG 275 **(3 CR.)**
Women in Literature
Prerequisite(s): ENG 112, or ENG 113, or department approval. Examines literary texts by women writers from diverse time periods, genres, and authors. Develops skills of close reading and literary analysis through analysis of texts within their historical, cultural, social, and/or literary contexts. Explores how women's experiences have shaped their literary contributions, the cultural forces affecting their lives, and how they have used writing to shape their cultures. Lecture 3 hours per week. **This is a UCGS transfer course.**

ENG 279 **(3 CR.)**
Film and Literature
Prerequisite(s): ENG 112 or ENG 125, or division approval. Examines literature and film as related forms of art and cultural expression. Lecture 3 hours per week.

ENG 295 **(3 CR.)**
Topics in
Proposal Writing Lecture 3 hours per week.

English as a Second Language

ESL 20 **(10 CR.)**
English as a Second Language II
Prerequisite(s): Recommendation for ESL Level 2. Provides intensive instruction and practice at the low intermediate level. Introduces the sound system, stress, intonational, and rhythmic patterns of English through listening and speaking exercises. Includes individualized instruction to improve basic reading comprehension. Requires practice in writing with emphasis on building basic sentence structures, grammar, and sentence-level writing. Credits are not applicable toward graduation. Lecture 10 hours per week.

ESL 21 **(5 CR.)**
Written Communication
Improves students' competence in grammatical patterns of written English. Requires practice in writing sentences and longer pieces of writing. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 22 **(5 CR.)**
Reading and Vocabulary
Provides instruction in writing at the low-intermediate level. Provides instruction and practice in reading and vocabulary development at the low-intermediate level. Improves students' reading fluency, proficiency, and vocabulary to enable them to function adequately in ESL Level 3 and prepare for college-level reading. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 24 **(5 CR.)**
Oral and Written Communications I
Provides practice in the sound, stress, intonation, structural patterns, grammar, vocabulary, and idioms of beginning-level English. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 31 **(5 CR.)**
Composition I
Prerequisite(s): Successful completion of ESL 20. Provides instruction and practice in the writing process, emphasizing development of fluency in writing and competence in structural and grammatical patterns of written English. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 32 **(5 CR.)**
Reading I
Prerequisite(s): Successful completion of ESL 20. Helps students improve their reading comprehension and vocabulary development. Improves students' reading proficiency to a level that would allow the students to function adequately in ESL 42 and other college classes. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 33 **(5 CR.)**
Oral Communications I
Prerequisite(s): Successful completion of ESL 24. Helps students practice and improve listening and speaking skills as needed for functioning successfully in academic, professional, and personal settings. Assesses students' oral skills and includes, as needed, practice with pronunciation, rhythm, stress, and intonation. Provides exercises, practices, small and large group activities, and oral presentations to help students overcome problems in oral communication. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 35 **(3 CR.)**
Applied Grammar III
Prerequisite(s): Successful completion of ESL 20 or ESL 24. Provides instruction and practice in the use of intermediate-level academic English grammar structures including verb tenses, parts of speech, and basic sentence structure. Helps ESL students assess their own knowledge of English grammar, improve accuracy, and learn methods to improve editing. Credits are not applicable toward graduation. Lecture 3 hours per week.

ESL 41 **(5 CR.)**
Composition II
Prerequisite(s): Successful completion of ESL 31. Provides further instruction and practice in the writing process and introduces advanced language patterns. Includes practice in developing and improving writing strategies. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 42 **(5 CR.)**
Reading II
Prerequisite(s): Successful completion of ESL 32. Helps students improve their reading comprehension and vocabulary development. Improves students' reading proficiency to a level that would allow students to function adequately in the ESL 52 reading class and other college courses. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 45 **(3 CR.)**
Applied Grammar IV
Prerequisite(s): Successful completion of ESL 31. Provides instruction and practice in the use of high intermediate and advanced academic English grammar structures including advanced verb forms, clauses, determiners, and prepositions. Helps ESL students assess their own knowledge of English grammar, improve accuracy, and learn methods to improve editing. Credits are not applicable toward graduation. Lecture 3 hours per week.

ESL 48 **(5 CR.)**
Writing Workshop
Prerequisite(s): Requires teacher recommendation from ESL 41. Provides an opportunity for further practice in intermediate and advanced writing techniques taught in required ESL writing courses. Provides reinforcement in writing skills, including composing, organizing, revising, and editing. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 51 **(5 CR.)**
Composition III
Prerequisite(s): Successful completion of ESL 41 or ESL 48. Prepares for college-level writing by practice in the writing process, emphasizing development of thought in essays of greater length and complexity, and use of appropriate syntax and diction. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 52 **(5 CR.)**
Reading III
Prerequisite(s): Successful completion of ESL 42. Helps students improve their reading comprehension and vocabulary development. Improves students' reading proficiency to a level that would allow

students to succeed in certificate and degree programs. Emphasizes applying and synthesizing ideas. Includes ways to detect organization, summarize, make inferences, draw conclusions, evaluate generalizations, recognize differences between facts and opinions, and introduces other advanced comprehension strategies. May also include comprehensive library skills. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 58 **(5 CR.)**
Writing Workshop II
Prerequisite(s): Requires teacher recommendation from ESL 51. Provides an intensive writing seminar for students struggling with the writing process, editing, and self-correction in academic English. Helps students improve their fluency and command of American academic English. Credits are not applicable toward graduation. Lecture 5 hours per week.

ESL 72 **(3 CR.)**
Spelling and Vocabulary
Prerequisite(s): Successful completion of ESL 20 and ESL 24. Provides individualized instruction and practice in sound-letter correspondences. Introduces students to basic spelling rules, word division, prefixes, roots, and suffixes. Helps students master vocabulary through an understanding of homonyms, confusing words, and Greek and Latin roots. Stresses using words in context. Credits are not applicable toward graduation. Total 3 hours per week.

ESL 73 **(3 CR.)**
Accent Reduction
Prerequisite(s): Successful completion of ESL 20 and ESL 24. Provides contextualized practice at the high intermediate/advanced level to improve the speech and intelligibility of nonnative speakers of English. Focuses on problems of American English pronunciation, unclear individual sounds and positional variants, stress, rhythm, and intonation common to speakers of different language backgrounds. Credits are not applicable toward graduation. Lecture 3 hours per week.

Environmental Science

ENV 100 **(3 CR.)**
Basic Environmental Science
Presents and discusses basic scientific, health-related, ethical, economic, social, and political aspects of environmental activities, policies, and decisions. Emphasizes the multidisciplinary nature of environmental problems and their potential solutions. Lecture 3 hours per week.

ENV 121
General Environmental Science I (4 CR.)
Prerequisite(s): Eligible for ENG 111, or completion of EDE 10. 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. **This is a Passport transfer course.** Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ENV 122 **(4 CR.)**
General Environmental Science II
Prerequisite(s): Eligible for ENG 111, or completion of EDE 10. General Environmental Science I is recommended. Explores fundamental interactions between human populations and natural systems of the earth. Introduces the basic science behind the causes, effects, and mitigation of major environmental issues. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ENV 136 **(3 CR.)**
Survey of Environmental Concerns
Studies the relationship of man to his physical environment; ecological principles; public health; topics of current importance including air pollution, potable water, waste disposal, communicable disease, poisoning and toxicity, and radiation, with particular emphasis on community action programs. Lecture 3 hours per week.

ENV 161 **(3 CR.)**
Introduction to Environmental Compliance
Examines the statutory history of significant environmental legislation and the promulgation of rules and regulations attendant to these laws. Emphasis will be placed on 40 CFR and appropriate Virginia environmental code. Students will understand proper field techniques in sampling protocols for soil, water and air. Lecture 3 hours per week.

ENV 227 **(3 CR.)**
Environmental Law
Prerequisite(s): two semesters of college-level science or division approval. Introduces environmental law including the history of environmental laws, the National Environment Policy Act, state environmental acts, hazardous wastes, endangered species, pollution, and surface mine reclamation. Lecture 3 hours per week.

ENV 230 **(3 CR.)**
Applications in Environmental Science
Prerequisite(s): GIS 200. Introduces Global Positioning Systems (GPS) and Geographic Information Systems (GIS) hardware and software and applies the principles of GPS and GIS to forest science and environmental science. Includes natural disasters, pest control, water quality, prescribed burning, and identifying sources of pollution. This course covers the same content as GIS 230. Credit will not be granted for both courses. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Financial Services

FIN 107 **(3 CR.)**
Personal Finance
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 108 **(3 CR.)**
Principles of Securities Investment
Introduces the fundamentals of the security investment process. Reviews the investment strategy associated with various types of stock orders, discusses the fundamental and technical approaches to common stock analysis, and examines bond and preferred stock pricing mechanisms. Also reviews the unique aspects of derivative security, mutual fund, real estate, and limited partnership investments. Lecture 3 hours per week.

FIN 141 **(3 CR.)**
Principles of Credit Union Operations I
Prerequisite(s): FIN 140 or division approval. Presents functions of teller transactions, loan approval, financial counseling, and collection procedures and systems. Addresses such topics as delinquency control and current regulations and policies governing credit unions. Lecture 3 hours per week.

FIN 142 **(3 CR.)**
Principles of Credit Union Operations II
Prerequisite(s): FIN 141 or division approval. Examines the financial management skills necessary to operate a credit union. Emphasizes implications of risk management and insurance. Explores investment procedures and teaches use of sound accounting principles. Lecture 3 hours per week.

FIN 215 **(3 CR.)**
Financial Management
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 versus 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.

FIN 248 **(3 CR.)**
International Finance
Exposes the student to the international financial environment. Focuses on the financial management of businesses operating in international markets. Includes topics such as importance of international finance; monetary systems; foreign exchange risk; and short-term and long-term financial markets including how to manage political risk. Lecture 3 hours per week.

FIN 260 **(2 CR.)**
Financial Management for Small Business
Prerequisite(s): ACC 220 or ACC 211 and BUS 165. Provides the tools of financial planning for the small business owner. Includes areas such as financial statements, ratio analysis, forecasting profit, cash flow, pricing, and obtaining capital. Lecture 2 hours per week.

French

FRE 101 **(4 CR.)**
Beginning French I
Introduces understanding, speaking, reading, and writing skills; emphasizes basic French sentence structure. Lecture 4 hours per week. **This is a UCGS transfer course.**

FRE 102 **(4 CR.)**
Beginning French II
Prerequisite(s): FRE 101. Introduces understanding, speaking, reading, and writing skills; emphasizes basic French sentence structure. Lecture 4 hours per week. **This is a UCGS transfer course.**

FRE 201 **(3 CR.)**
Intermediate French I
Prerequisite(s): FRE 102 or equivalent. Continues to develop understanding, speaking, reading, and writing skills. French is used in the classroom. Lecture 3 hours per week.

FRE 202 **(3 CR.)**
Intermediate French II
Prerequisite(s): FRE 201. Continues to develop understanding, speaking, reading, and writing skills. French is used in the classroom. Lecture 3 hours per week.

FRE 211 **(3 CR.)**
Intermediate French Conversation I
Prerequisite(s): FRE 202 or equivalent. Continues to develop fluency through emphasis on idioms and other complex sentence structures. Lecture 3 hours per week.

FRE 212 **(3 CR.)**
Intermediate French Conversation II
Prerequisite(s): FRE 211. Continues to develop fluency through emphasis on idioms and other complex sentence structures. Lecture 3 hours per week.

Geographic Information Systems

GIS 101 **(3 CR.)**
Introduction to Geospatial Technology
Prerequisite(s): basic computer literacy. Introduces the concepts of Geographic Information Systems (GIS), Global Positioning Systems (GPS), and remote sensing components of geospatial technology. Teaches the introductory concepts of geographic location and problem solving by using GIS and GPS units in demonstrating solutions to cross-curricular applications of the technology. Part I of II. Lecture 3 hours per week.

GIS 200 **(4 CR.)**
Geographical Information Systems I
Provides hands-on introduction to a dynamic desktop GIS (Geographic Information System). Introduces the components of a desktop GIS and their functionality. Emphasizes manipulation of data for the purpose of analysis, presentation, and decision-making. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

GIS 201 **(4 CR.)**
Geographical Information Systems II
Prerequisite(s): GIS 200. Provides a continuation of GIS 200, with emphasis on advanced topics in problem-solving, decision-making, modeling, programming, and data management. Covers map projections and data formats, and methods for solving the problems they create. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

GIS 203 **(3 CR.)**
Cartography for GIS
Prerequisite(s): GIS 200. Focuses on the fundamental cartographic concepts used in planning, designing, and creating effective maps. Provides the foundation to critically evaluate maps to produce accurate and visually pleasing cartographic displays that convey information in a manner that enables easy interpretation. Includes topics of map compilation, map design, map types, and critical evaluation of map content. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

GIS 205 **(4 CR.)**
Geographical Information Systems: 3-Dimensional Analysis
Prerequisite(s): GIS 200. Introduces GIS 3D (three-dimensional) concepts and practices with a concentration on displaying, creating, and analyzing spatial GIS data using 3D. Covers 3D shape files, 3D data formats such as Tin's, DEM's, grids, and controlling the perspective and scale of 3D data through rotating. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

GIS 210 **(4 CR.)**
Understanding Geographic Data
Provides the student with an introduction to geographic data and the principles behind their construction. Introduces the concepts for measuring locations and characteristics of entities in the real world. Exposes the student to the limitations and common characteristics of geographic data. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

GIS 225 **(4 CR.)**
GIS Applications for Tax Assessors
Introduces the use of GIS in the local government tax assessment process. Students learn to apply common GIS technical skills to property valuation and the defense of assessed values. This course also teaches how to create spatial queries, produce maps, generate statistics, manipulate tabular data, use charts, and employ other technical skills in major topic areas including special regulations, ratio studies, comparable sales, and parcel data development and maintenance. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

GIS 230 **(3 CR.)**
Applications in Environmental Science
Prerequisite(s): GIS 200. Introduces Global Positioning Systems (GPS) and Geographic Information Systems (GIS) hardware and software and applies the principles of GPS and GIS to forest science and environmental science. Includes natural disasters, pest control, water quality, prescribed burning, and identifying sources of pollution. This course covers the same content as ENV 230. Credit will not be granted for both courses. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

GIS 255 **(3 CR.)**
Exploring Our Earth: Introduction to Remote Sensing
Prerequisite(s): GIS 200. Introduces material to understand the fundamental physical and mathematical principles and techniques of Remote Sensing. Introduces how each part of the electromagnetic spectrum is used to gather data about Earth. Describes limitations imposed by satellites, aircraft, and sensors. Surveys various methods to access and apply Earth observation/Remote Sensing data. Teaches students to use Remote Sensing software to process and manipulate Landsat, SPOT, photographic, and other imagery in a hands-on approach to Remote Sensing analysis. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Geography

GEO 200 **(3 CR.)**
Introduction to Physical Geography
Examines the global patterns and processes of the atmosphere, biosphere, lithosphere, and hydrosphere. Explores Earth's physical systems and the interrelationships among them through studying Earth-Sun geometry, climate and weather phenomena, landforms, biomes, and environmental change. Lecture 3 hours per week.

GEO 210 **(3 CR.)**
People and the Land: An Introduction to Cultural Geography
Introduces themes in human geography and the ways in which human geographers study spatial relationships in the world. Emphasizes geospatial tools and concepts to examine global patterns of human demographics, culture, geopolitics, and economic and environmental interdependence through introduction to a broad range of subject matter. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

GEO 220 **(3 CR.)**
World Regional Geography
Examines similarities and differences among the world's major regions. Evaluates ways in which people and places interact across space and time to produce particular spatial and environmental patterns. Introduces the student to geographic tools such as maps. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

GEO 225 **(3 CR.)**
Economic Geography
Introduces the subfield of human geography by focusing on the key interactions of people, space, and economics. Familiarizes students with economic, geographic, political, and demographic factors that impact international target markets and trade activity. Focuses on levels of development, urban areas, globalization, and international trade. Lecture 3 hours per week.

GEO 230 **(3 CR.)**
Political Geography
Examines the influence of geography on political systems and nation states. Discusses historic and current events including campaigns, wars, trade, and treaties as functions of land, resources and energy requirements. Introduces students to types and uses of maps. Lecture 3 hours per week.

Geology

GOL 105 **(4 CR.)**
Physical Geology
Introduces the composition and structure of the earth and modifying agents and processes. Investigates the formation of minerals and rocks, weathering, erosion, earthquakes, and plate tectonics. **This is a Passport transfer course.** Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

GOL 106 **(4 CR.)**
Historical Geology
Traces the evolution of the earth and life through time. Presents scientific theories of the origin of the earth and life; interprets rock and fossil record. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. **This is a Passport and UCGS transfer course.**

GOL 111 **(4 CR.)**
Oceanography I
Examines the dynamics of the oceans and ocean basins. Applies the principles of physical, chemical, biological, and geological oceanography. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

GOL 112 **(4 CR.)**
Oceanography II
Prerequisite(s): instructor permission. Examines the dynamics of the oceans and ocean basins. Applies the principles of physical, chemical, biological, and geological oceanography. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

GOL 135 **(1 CR.)**
Field Studies in Geology
Investigates geologic phenomena. Includes activities such as observation of regional geology and land forms, collection of samples, and measurement and interpretation of geologic structures. Field studies 3 hours per week.

GOL 206 **(4 CR.)**
Paleontology
Prerequisite(s): GOL 106 or permission of instructor. Surveys major groups of fossil invertebrates and vertebrates. Covers form, function, ecology, and evolution for each group in the context of geologic time. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

GOL 207 **(4 CR.)**
Mineralogy
Prerequisite(s): GOL 105. Provides details for study of minerals. Focuses on the structure and properties of minerals, their occurrence,

and uses. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

German

GER 101 **(4 CR.)**
Beginning German I
Introduces understanding, speaking, reading, and writing skills and emphasizes basic German sentence structures. Lecture 4 hours per week. **This is a UCGS transfer course.**

GER 102 **(4 CR.)**
Beginning German II
Prerequisite(s): GER 101. Introduces understanding, speaking, reading, and writing skills and emphasizes basic German sentence structures. Lecture 4 hours per week. **This is a UCGS transfer course.**

GER 201 **(3 CR.)**
Intermediate German I
Prerequisite(s): GER 102 or equivalent. Continues to develop understanding, speaking, reading, and writing skills. German is used in the classroom. Lecture 3 hours per week.

GER 202 **(3 CR.)**
Intermediate German II
Prerequisite(s): GER 201 or equivalent. Continues to develop understanding, speaking, reading, and writing skills. German is used in the classroom. Lecture 3 hours per week.

Health

HLT 110 **(3 CR.)**
Personal and Community Health
Introduces students to the basic concepts of health and dimensions of wellness through exploration of a variety of personal health topics. Identifies factors that affect the health status of individuals in addition to health promotion and disease prevention at the personal and community level. Lecture 3 hours per week.

HLT 141 **(1 CR.)**
Introduction to Medical Terminology
Focuses on medical terminology for students preparing for careers in the health professions. Lecture 1 hour per week.

HLT 143 **(3 CR.)**
Medical Terminology
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. Lecture 3 hours.

HLT 145 **(2 CR.)**
Ethics for Healthcare Personnel
Focuses on ethical concepts of health care. Emphasizes confidentiality, maintaining patient records, personal appearance, professionalism with patients/clients, associates, and an awareness of health care facilities. Lecture 2 hours per week.

HLT 220 **(3 CR.)**
Concepts of Disease
Emphasizes general principles, classifications, causes, and treatments of selected disease processes. Intended primarily for students enrolled in health technology programs. Lecture 3 hours per week.

HLT 230 **(3 CR.)**
Principles of Nutrition
Introduces students to the basic concepts of nutrition and its impact on personal wellness. Emphasizes an evidence-based approach to various topics, such as the nutrient components of food, the components of a healthy eating pattern, and the relationship between diet and health. Provides a behavioral approach to nutrient guidelines for the development and maintenance of optimum wellness. The assignments in the course require college-level reading fluency and coherent communication through documented written reports. Lecture 3 hours per week.

HLT 250 **(3 CR.)**
General Pharmacology
Emphasizes general pharmacology for the health-related professions; covers 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.

Health Information Management

HIM 110 **(3 CR.)**
Introduction to Human Pathology
Prerequisite or Corequisite: HIM 111. Introduces the basic concepts, terminology, etiology, and characteristics of pathological processes. Lecture 3 hours per week.

HIM 111 **(3 CR.)**
Medical Terminology I
Introduces the student to the language used in the health record. Includes a system-by-system review of anatomic, disease, and operative terms, abbreviations, radiography procedures, laboratory tests, and pharmacology terms. Lecture 3 hours per week.

HIM 121 **(4 CR.)**
Medical Transcription I
Prerequisite(s): typing speed of 40 words per minute. Develops skills in the transcription of various medical record reports, use of transcription references, and proofreading reports. Evaluates the productivity and organization of transcription departments/services and the quality of transcribed reports and equipment utilized. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

HIM 122 **(4 CR.)**
Medical Transcription II
Prerequisite(s): HIM 121. Develops skills in the transcription of various medical record reports, use of transcription references and proofreading reports. Evaluates the productivity and organization of transcription departments/services and the quality of transcribed reports and equipment utilized. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

HIM 130 **(3 CR.)**
Healthcare Information Systems
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 **(3 CR.)**
Fundamentals of Health Information Systems I
Focuses on health data collection, storage, retrieval, and reporting systems, with emphasis on the role of the computer in accomplishing these functions. Lecture 3 hours per week.

HIM 142 **(3 CR.)**
Fundamentals of Health Information Systems II
Prerequisite(s): HIM 141. Focuses on health data collection, storage, retrieval, and reporting systems, with emphasis on the role of the computer in accomplishing these functions. Lecture 3 hours per week.

HIM 151 **(2 CR.)**
Reimbursement Issues in Medical Practice Management
Introduces major reimbursement systems in the United States. Focuses on prospective payment systems, managed care, and documentation necessary for appropriate reimbursement. Emphasizes management of practice to avoid fraud. Lecture 2 hours per week.

HIM 200 **(3 CR.)**
Survey of Healthcare Administration
Provides an overview of healthcare. Prepares the student with the essential vocabulary and thought processes to understand and evaluate the legal, political, and ethical challenges facing healthcare in the U.S. needed for a supervisory role in healthcare administration. Introduces healthcare policy, how healthcare is organized and dispensed, and how the practitioner can better work in the system. Lecture 3 hours per week.

HIM 215 **(5 CR.)**
Health Data Classification Systems
Prerequisite(s): HIM 110 and BIO 141 or permission of instructor. Focuses on disease and procedure classification systems currently utilized for collecting health data for the purposes of statistical research and financial reporting. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

HIM 220 **(3 CR.)**
Health Statistics
Prerequisite(s): HIM 130 and HIM 141 or permission of instructor. Introduces the student to basic statistical principles and calculations as applied in the healthcare environment procedures for collection and reporting vital statistics and basic quality control basics. Lecture 3 hours per week.

HIM 225 **(2 CR.)**
Quality Assurance in Healthcare
Prerequisite(s): HIM 141 and HIM 215 or permission of instructor. Presents medical care evaluation techniques, utilization review activities, peer review organization requirements, and risk management. Lecture 2 hours per week.

HIM 226 **(2 CR.)**
Legal Aspects of Health Record Documentation
Prerequisite(s): HIM 142 and HIM 220 or permission of instructor. Presents the legal requirements associated with health record documentation. Emphasizes the policies and procedures concerning the protection of the confidentiality of the patient's health record. Lecture 2 hours per week.

HIM 229 **(2 CR.)**
Performance Improvement in Healthcare Settings
Prerequisite(s): HIM 226. Focuses on concepts of facility-wide performance improvement, resource management, and risk management. Applies tools for data collection and analysis. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

HIM 230 **(3 CR.)**
Information Systems and Technology in Healthcare
Prerequisite(s): HIM 130 and HIM 142. Explores computer technology and system application in healthcare. Introduces the information systems life cycle. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HIM 233 **(3 CR.)**
Electronic Health Records Management
Prerequisite(s): HIM 230. 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 healthcare settings. Discusses legal issues created by implementation of the EHR. Lecture 3 hours per week.

HIM 249 **(3 CR.)**
Supervision and Management Practices for HIM
Prerequisite(s): HIM 226. Introduces supervision and management principles with emphasis on the application of these principles in the health information setting. Lecture 3 hours per week.

HIM 250 **(4 CR.)**
Health Data Classification Systems I
Prerequisite(s): HIM 110, HIM 111, BIO 141 and BIO 142, or BIO 145 (Clinical Data Coding students) or permission of instructor. Focuses on the current classification systems used in the healthcare industry. Introduces the professional standards for coding and reporting of inpatient/outpatient diagnostic codes as well as inpatient procedures. Utilizes standards in identifying and accurately assigning codes to diseases and procedures as they relate to statistical research and healthcare financing. Lecture 4 hours per week.

HIM 251
Clinical Practice I **(3 CR.)**
Prerequisite(s): HIM 130, HIM 141, HIM 142, HIM 220, HIM 226. Prepares the Health Information Technology Student to perform all functions commonly allocated to health record services. Gives practice in various settings under the supervision of a clinical practice supervisor. Part I of II. Clinical 6 hours per week.

HIM 252
Clinical Practice II **(3 CR.)**
Prerequisite(s): HIM 250 and HIM 251. Corequisite(s): HIM 254 and HIM 255. Prepares the Health Information Management student to perform all functions commonly allocated to health record services. Gives practice in various settings under the supervision of a clinical practice supervisor. Clinical practice at various facilities 6 hours per week.

HIM 254 **(3 CR.)**
Advanced Coding and Reimbursement
Prerequisite(s): HIM 250. Corequisite(s): HIM 255. Stresses advanced coding skills through practical exercises using actual medical records. Introduces CPT-4 coding system and guidelines for outpatient/ambulatory surgery coding. Introduces prospective payment system and its integration with ICD-9-CM coding. Lecture 3 hours per week.

HIM 255 **(2 CR.)**
Health Data Classification Systems II: CPT
Prerequisite(s): HIM 110, HIM 111, and HIM 250 plus either BIO 141-BIO 142 or permission of instructor. Focuses on procedure classification using CPT. This system is currently utilized for

collecting health data for the purposes of statistical research and financial reporting. Lecture 2 hours per week.

HIM 260 **(3 CR.)**
Pharmacology for Health Information Management
Prerequisite or Corequisite: HIM 110, HIM 111, BIO 142, BIO 145. Emphasizes general pharmacology for health information professions. Covers general principles of drug actions/reactions, major drug classes, specific agents within each class, and routine mathematical calculation needed to determine desired dosages. Lecture 3 hours per week.

HIM 280 **(1 CR.)**
HIM Capstone
Prerequisite(s): completion of all necessary coursework for graduation. Integrates and applies knowledge and skills learned in prior HIM courses, focusing on those required to prepare for national certification in American Health Information Management Association's Domains, Sub-domains, and Tasks. Includes a capstone project in which students apply principles of good practice in health information management. Lecture 1 hour per week.

Health Information Technology

HIT 100 **(1 CR.)**
Introduction to the Healthcare Delivery System
Introduces the organization of the health care system. Introduces the concepts necessary to be a successful professional in the health care industry. Covers the roles of various health professionals, issues in healthcare with implications for healthcare workers, and skills unique to the health care setting. Lecture 1 hour per week.

HIT 130 **(3 CR.)**
Introduction to Computers in Healthcare
Introduces students to computers in healthcare. Provides a basic overview of computer architecture, common software applications and their use in healthcare, electronic data management, adoption of the electronic health record (EHR), and privacy and security. Lecture 2 hours. Lab 3 hours. Total 5 hours per week.

HIT 132 **(3 CR.)**
Health-IT Infrastructure Development
Introduces the various system life cycle. Covers processes in the design of electronic health information system, operational management, and medical legal issues facing healthcare. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HIT 141 **(3 CR.)**
Introduction to Healthcare and Health-IT in the U.S.
Focuses on how healthcare is organized and services are delivered in the evolving electronic healthcare environment. Covers public policy, the interrelationship of healthcare facilities and regulatory organizations, legal and regulatory issues, healthcare financing, the history and adoption of electronic health records (EHRs) and health-IT, and reinforces the roles of healthcare professionals. Covers evolving healthcare initiatives in the electronic environment. Lecture 3 hours per week.

HIT 229 **(3 CR.)**
Performance Improvement and Data Usage in Healthcare
Focuses on how healthcare is organized, and services are delivered. Explores the history and development of the performance improvement process. Addresses licensure/accreditation, utilization management, risk management, process management, and the medical staff credentialing and privileging. Covers clinical communication and health information exchange. Covers approaches to assess patient safety, implementing quality management and reporting using electronic systems. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HIT 230 **(3 CR.)**
Computer Applications in Healthcare
Covers systems planning, acquisition, implementation, technology support, strategic planning and governance, as well as threats to security of health information. Covers the value and organization of healthcare information system (IS) and the role of the Information Technology (IT) Department. Lecture 3 hours per week.

HIT 233 **(3 CR.)**
Working with Electronic Health Records
Provides an in-depth analysis of the electronic health record (EHR). Explores the features of EHRs as they relate to practical deployment in the healthcare setting. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HIT 235 **(3 CR.)**
Emerging Technologies in Health-IT
Provides an overview of various emerging technologies. Explores how healthcare technologies are used to treat patients, promote safety, and improve patient care. Discusses legal issues created by implementation of the electronic health record. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

History

HIS 101 **(3 CR.)**
Western Civilizations Pre-1600 CE
Examines the development of western civilization from ancient times to 1600 CE. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

HIS 102 **(3 CR.)**
Western Civilizations Post 1600 CE
Examines the development of western civilization from 1600 CE to the present. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

HIS 111 **(3 CR.)**
World Civilizations Pre-1500 CE
Surveys the history of Asia, Africa, the Americas, and Europe from antiquity to approximately 1500. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

HIS 112 **(3 CR.)**
History of World Civilization Post-1500 CE
Surveys the history of Asia, Africa, Europe, and the Americas from approximately 1500 CE through the present. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

HIS 121 **(3 CR.)**
United States History to 1877
Introduces the history of the United States from its origins to 1877. Includes the European exploration, development of the American colonies and their institutions, the Revolution, major political, social and economic developments, geographical expansion, the Civil War, and Reconstruction. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

HIS 122 **(3 CR.)**
United States History Since 1865
Introduces the history of the United States from 1865 to the present. Includes major political, social and economic developments

since 1865, overseas expansion, the two world wars, the Cold War and the post-Cold War era. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

HIS 125 **(3 CR.)**
History of the American Indian
Examines the history and culture of the native peoples of the Americas. Lecture 3 hours per week.

HIS 126 **(3 CR.)**
Women in World History
Studies the role of women and attitudes toward women from ancient times to the present. Lecture 3 hours per week.

HIS 127 **(3 CR.)**
Women in American History
Studies the role of women and attitudes toward women in American society from colonial times to the present. Lecture 3 hours per week.

HIS 135 **(3 CR.)**
History of the Contemporary World
Analyzes world developments since World War II. Lecture 3 hours per week.

HIS 141 **(3 CR.)**
African-American History I
Surveys the history of African-Americans from their African origins to the present. Lecture 3 hours per week.

HIS 142 **(3 CR.)**
African-American History II
Surveys the history of African-Americans from their African origins to the present. Lecture 3 hours per week.

HIS 180 **(3 CR.)**
Historical Archaeology
Introduces both the methods and theories in historical archaeology as practiced in the United States and worldwide. Includes time and space, field survey, excavation, and archival and laboratory research. Some field trips to site excavations. Lecture 3 hours per week.

HIS 181 **(3 CR.)**
Introduction to Historic Preservation
Provides a foundation and introduction to historic preservation practices and issues in Virginia and the United States. Emphasizes legislation, policies, and methodologies that form our present national, state, and local preservation systems. Includes specific treatment of Alexandria, Arlington, Fairfax, and Loudoun counties. Lecture 3 hours per week.

HIS 183 **(3 CR.)**
Survey of Museum Practice
Explores the role of the museum in society and traces the foundations upon which these public, cultural, and educational institutions are built. Emphasizes the management and interpretation of historic properties and collections. Lecture 3 hours per week.

HIS 186 **(3 CR.)**
Collections Management
Discusses the fundamentals of collections policy, deaccessioning, appraisal, and curatorial management. Lecture 3 hours per week.

HIS 187 **(3 CR.)**
Interpreting Material Culture
Surveys America's material culture and provides techniques to interpret artifacts. Lecture 3 hours per week.

HIS 203 **(3 CR.)**
History of African Civilizations
Examines major social, economic, political, and religious developments from earliest times to the present. Lecture 3 hours per week.

HIS 205 **(3 CR.)**
Local History
Studies the history of the local community and/or region. Lecture 3 hours per week.

HIS 218 **(3 CR.)**
Introduction to Digital History
Introduces the methods, theories, and practices of digital history. Lecture 3 hours per week.

HIS 231 **(3 CR.)**
Introduction to Latin American History
Examines the development of Latin American civilizations from the pre-Columbian era to the present. Lecture 3 hours per week.

HIS 241 **(3 CR.)**
History of Russia I
Surveys history of Russia from earliest times to the present. Includes political, economic, multinational, social, and cultural aspects of Russian and Soviet history. Lecture 3 hours per week.

HIS 243 **(3 CR.)**
History of the Ancient World I
Studies the history of the ancient world from the dawn of civilization in the Near East to the fall of Rome. Lecture 3 hours per week.

HIS 251 **(3 CR.)**
History of Middle East Civilization I
Surveys intellectual, cultural, social, economic and religious patterns in the civilizations of the Middle East. Covers Semitic, Indo-European, and Turkic-speaking peoples from pre-Islamic to the present. Lecture 3 hours per week.

HIS 254 **(3 CR.)**
History of Modern East Asian Civilizations
Examines East Asian civilizations from the early modern period through the present day. Lecture 3 hours per week.

HIS 256 **(3 CR.)**
History of Japanese Culture and Institutions
Examines traditional Japanese social, political, economic, and military institutions. Also examines major literary, artistic, and intellectual achievements from prehistoric times to the present. Lecture 3 hours per week.

HIS 267 **(3 CR.)**
The Second World War
Examines causes and consequences of the Second World War. Includes the rise of totalitarianism, American neutrality, military developments, the home fronts, diplomacy, and the decision to use the atomic bomb. Lecture 3 hours per week.

HIS 268 **(3 CR.)**
The American Constitution
Analyzes the origin and development of the United States Constitution. Includes the evolution of civil liberties, property rights, contracts, due process, judicial review, federal-state relationships, and corporate-government relations. Lecture 3 hours per week.

HIS 269 **(3 CR.)**
Civil War and Reconstruction
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 271 **(3 CR.)**
The American Frontier 1607-1890
Studies the expansion across North America by peoples of Old-World descent, the interaction of these settlers with the native nations they encountered, and the effects of this dynamic zone of contact between the Old World and New World on American society, values, identity, and character. Lecture 3 hours per week.

HIS 276 **(3 CR.)**
United States History Since World War II
Investigates United States history from 1946 to the present, studying both domestic developments and American involvement in international affairs. Lecture 3 hours per week.

HIS 277 **(3 CR.)**
The American Experience in Vietnam
Analyzes American involvement in Vietnam from World War II with emphasis on the presidencies of Johnson, Nixon, and Ford. Lecture 3 hours per week.

HIS 279 **(3 CR.)**
Age of the American Revolution
Examines the factors that led to the separation of the American Britain colonies from Great Britain. Covers the Revolutionary War, the problems faced by the revolutionary government, and postwar events that led to the adoption the United States Constitution. Lecture 3 hours per week.

HIS 280 **(3 CR.)**
American Foreign Policy Since 1890
Examines American foreign policy since 1890 with an emphasis on current events and diverse points of view. Lecture 3 hours per week.

HIS 281 **(3 CR.)**
History of Virginia I
Examines the cultural, political, and economic history of the Commonwealth from its beginning to the present. Lecture 3 hours per week.

Horticulture

HRT 100 **(3 CR.)**
Introduction to Horticulture
Introduces commercial horticulture industry with emphasis on career opportunities. Examines equipment; facilities; and physical arrangements of production, wholesale, and retail establishments. Surveys individual areas within horticulture industry. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 121 **(3 CR.)**
Greenhouse Crop Production I
Examines commercial practices related to production of floricultural crops. Considers production requirements, environmental control and management, and cultural techniques affecting production of seasonal crops. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 127 **(3 CR.)**
Horticultural Botany
Studies taxonomy, anatomy, morphology, physiology, and genetics of plants as applied to identification, propagation, and culture. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 160 **(2 CR.)**
Applied Mathematics for the Green Industry
Covers the basic math skills needed in the green industry to include areas, volumes, calibration calculations, profit and loss statements, and topics specific to turf, landscape, greenhouse, nursery, and interior landscapes. Lecture 2 hours per week.

HRT 201 **(3 CR.)**
Landscape Plants I
Studies landscape use of plants. Considers ornamental value, growth habit, identification, and limitations. Part I of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 202 **(3 CR.)**
Landscape Plants II
Studies landscape use of plants. Considers ornamental value, growth habit, identification, and limitations. Part II of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 231 **(3 CR.)**
Planting Design I
Applies landscape theory and principles of drawing to the planning of residential and small-scale commercial projects. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 232 **(3 CR.)**
Planting Design II
Prerequisite(s): HRT 231. Applies landscape theory and principles of drawing to the planning of large-scale landscape designs. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 245 **(3 CR.)**
Woody Plants
Studies identification, culture, and uses of woody plants in landscaping. Includes deciduous and evergreen, native and cultivated shrubs, trees, and vines. Teaches scientific and common names of plants. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 259 **(3 CR.)**
Arboriculture
Studies the techniques of tree care. Covers surgery, pruning, insect and disease recognition and control, fertilization, cabling, and lightning rod installation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 260 **(3 CR.)**
Introduction to Floral Design
Teaches skills required for the composition of basic table arrangements. Includes the history of design styles, identification of flowers and greens, identification and use of equipment, and conditioning and handling of flowers. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 266 **(3 CR.)**
Advanced Floral Design
Prerequisite(s): HRT 260. Teaches skills required for composition of traditional and contemporary floral designs. Includes use of exotic flowers to create arrangement styles such as Japanese, European, Williamsburg, etc. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 269 **(3 CR.)**
Professional Turf Care
Covers turfgrass identification, selection, culture, propagation, and pest control. Surveys commercial turf care operations and use of common equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

VEN 100 **(3 CR.)**
Introduction to Viticulture
Introduces grapes, their history, distribution, classification, and areas of production. Provides an overview of grape uses and products made from them. Includes site selection and environmental factors that affect grapes and their quality. Lecture 3 hours per week.

Hospitality Management

HRI 101 **(3 CR.)**
Hotel-Restaurant Organization and Management I
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. Lecture 3 hours per week.

HRI 106 **(3 CR.)**
Principles of Culinary Arts I
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 2 hours. Total 4 hours per week.

HRI 145 **(3 CR.)**
Garde Manger
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 **(3 CR.)**
Sanitation and Safety
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 food-borne illnesses in conformity with federal, state and local guidelines. Focuses on OSHA standards in assuring safe working conditions. Lecture 3 hours per week.

HRI 225 **(3 CR.)**
Menu Planning and Dining Room Service
Covers fundamentals of menu writing, types of menus, layout, design, and food merchandising, and interpreting a profit and loss statement as it relates to menu pricing. Analyzes menus for effectiveness. Instructs on proper dining room service, customer seating, and dining room management. Emphasizes use of computer in management of food service operations. Lecture 3 hours per week.

HRI 231 **(3 CR.)**
Principles of Event Planning and Management
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 251 **(3 CR.)**
Food and Beverage Cost Control I
Presents methods of pre-cost and pre-control as applied to the menu, purchasing, receiving, storing, issuing, production, sales, and service which result in achievement of an operation's profit potential. Emphasizes both manual and computerized approaches. Lecture 3 hours per week.

HRI 255 **(3 CR.)**
Human Resources Management and Training for Hospitality and Tourism
Prepares the students for interviewing, training, and developing employees. Covers management skills (technical, human, and conceptual) and leadership. Covers the establishment and use of effective training and evaluative tools to improve productivity. Emphasizes staff and customer relations. Lecture 3 hours per week.

Human Services

HMS 121 **(3 CR.)**
Basic Counseling Skills I
Develops skills needed to function in a helping relationship. Emphasizes skills in attending, listening, and responding. Clarifies personal skill strengths, deficits, and goals for skill improvement. Lecture 3 hours per week.

HMS 141 **(3 CR.)**
Group Dynamics I
Examines the stages of group development, group dynamics, the role of the leader in a group, and recognition of the various types of group processes. Discusses models of group dynamics that occur as a result of group membership dynamics. Lecture 3 hours per week.

HMS 142 **(3 CR.)**
Group Dynamics II
Examines group dynamics, group leadership, group cohesion, transference, and group helping through experiential involvement in group facilitating and leadership. Increases group skills through active classroom participation in group experiences. Lecture 3 hours per week.

HMS 145 **(3 CR.)**
Effects of Psychoactive Drugs
Provides information on the biochemical, physiological, and behavioral aspects of substance addiction and reviews the symptoms of addiction. Emphasizes areas of chemical dependency, medical epidemiology, physiological threats of addiction, and methods of identifying multiple drug abusers. Lecture 3 hours per week.

HMS 251 **(3 CR.)**
Substance Abuse I
Provides knowledge, skills, and insight for working in drug and alcohol abuse programs. Emphasizes personal growth and client growth measures in helping relationships. Stresses various methods of individual and group techniques for helping the substance abuser. Lecture 3 hours per week.

HMS 266 **(3 CR.)**
Counseling Psychology
Studies major counseling theories, their contributions and limitations, and the application of each to a counseling interaction. Students develop their own personal counseling theory. Lecture 3 hours per week.

Humanities

HUM 201 **(3 CR.)**
Early Humanities
Examines the values and expression of ideas of selected western and non-western cultures from prehistory up to the 1300s, integrating the arts, literature, religion, and philosophy within the context of history. The assignments in this course require college-level reading, analysis of scholarly studies, and coherent communication through properly cited and formatted written reports. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

HUM 202 **(3 CR.)**
Modern Humanities
Studies thought, values, and arts of Western culture, integrating major developments in art, architecture, literature, music, and philosophy. Covers the following periods: Renaissance, Baroque, Enlightenment, Romantic, and Modern. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

HUM 210 **(3 CR.)**
Introduction to Women and Gender Studies
Broadens understanding and awareness of women by exploring different cultural, historical, and gendered experiences of social groups throughout the world in relationship to such fields as art, literature, religion, philosophy, social sciences, and music. The assignments in this course require college-level reading, analysis of scholarly studies, and coherent communication through properly cited and formatted written reports. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

HUM 220 **(3 CR.)**
Introduction to African American Studies
Presents an interdisciplinary approach to the study of African-American life, history, and culture. Examines specific events, ideologies, and individuals that have shaped the contours of African-American life. Studies the history, sociology, economics, religion, politics, psychology, creative productions, and culture of African-Americans. The assignments in this course require college-level reading, analysis of scholarly studies, and coherent communication through properly cited and formatted written reports. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

HUM 256 **(3 CR.)**
Comparative Mythology
Studies the cultural expressions of mythology. Considers selected mythologies representing diverse global culture, with emphasis on parallels and divergences in structure, purpose, and representation in literature and the arts. The assignments in this course require college-level reading, analysis of scholarly studies, and coherent communication through properly cited and formatted written reports. Lecture 3 hours. Total 3 hours per week. **This is a Passport and UCGS transfer course.**

HUM 259 **(3 CR.)**
The Greek and Roman Tradition
Explores the significance of Greek and Roman cultures on the individual and society, expressed prominently from the Classical Age in Athens to its survival during Roman times. Examines the key contributions that the Greeks and Romans have imparted upon storytelling, theater, philosophy, civics, political morphology, and the arts and the impact they have in the modern world. The assignments in this course require college-level reading, analysis of scholarly studies, and coherent communication through properly cited and formatted written reports. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

HUM 298 **(1 CR.)**
Seminar and Project Liberal Arts
Lecture 1 hour per week.

Industrial Engineering Tech

IND 123 **(1 CR.)**
Intro to Lean Manufacturing and Six Sigma
Covers basic Lean and Six Sigma concepts. Examines the importance of Lean and Six Sigma as pertaining to the world of manufacturing. Provides students with the opportunity to demonstrate the impact of Lean and Six Sigma manufacturing environment. Lecture 1 hour. Total 1 hour per week.

IND 137 **(3 CR.)**
Team Concepts in Problem-Solving
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.

Information Technology and Database Design

ITD 110 **(3 CR.)**
Web Page Design I
Stresses a working knowledge of website designs, construction, and management using HTML or XHTML. Includes headings, lists, links, images, image maps, tables, forms, and frames. Lecture 3 hours per week.

ITD 132 **(3 CR.)**
Structured Query Language
Incorporates a working introduction to commands, functions, and operators used in SQL for extracting data from standard databases. Lecture 3 hours per week.

ITD 134 **(3 CR.)**
PL/SQL Programming
Presents a working introduction to PL/SQL programming within the Oracle RDBMS environment. Includes PL/SQL fundamentals of block program structure; variables; cursors and exceptions; and creation of program units of functions, triggers, procedures, and packages. Lecture 3 hours per week.

ITD 140 **(3 CR.)**
Machine Learning I
Introduces students to artificial intelligence and machine learning. Examines basic theory, algorithms, and applications. Focuses on feature engineering and machine learning applications within the larger world of artificial intelligence. Part I of II. Lecture 3 hours per week.

ITD 145 **(3 CR.)**
Applied Data Science Techniques
Reviews the fundamentals of descriptive and inferential statistics, probability, and distributions, as well as basic dataset manipulation and plotting techniques. Focuses on application to real datasets using graphical user interface (GUI) software tools as well as Python. Lecture 3 hours per week.

ITD 210 **(3 CR.)**
Web Page Design II
Prerequisite(s): ITD 110. Incorporates advanced techniques in website planning, design, usability, accessibility, advanced site management, and maintenance utilizing web editor software(s). Lecture 3 hours per week.

ITD 240 **(3 CR.)**
Machine Learning II
Prerequisite(s): ITD 140 or division approval. Examines theory, algorithms, applications, and issues within the subfield of pattern recognition and machine learning, including feature engineering and extraction, supervised and unsupervised learning. Focuses on theory and practice, with coverage of underlying mathematical and heuristic concepts. Part II of II. Lecture 3 hours per week.

ITD 245 **(3 CR.)**
Advanced Applied Data Science Techniques
Prerequisite(s): ITD 145 or division approval. Surveys Big Data and data analytics, including demonstrations and applications of widely used tools and methods. Offers practice in data extraction and visualization. Lecture 3 hours per week.

ITD 256 **(3 CR.)**
Advanced Database Management
Prerequisite(s): ITE 152. Focuses in-depth instruction in the handling of critical tasks of planning and implementing large databases. Includes an introduction to concepts of advanced data warehousing and database configuration. Lecture 3 hours per week.

ITD 260 **(3 CR.)**
Data Modeling and Design
Prerequisite(s): ITE 152. Introduces life cycle application development methodologies in a systematic approach to developing relational databases and designing applications. Presents content introducing functional and business process modeling, using modeling information to produce application designs, analyzing data requirements as entities, attributes, and relationships; and map an entity relationship diagram to an initial database design. Identifies the available automated development tools and utilizes Oracle Developer software to perform practical applications of these concepts. Lecture 3 hours per week.

Information Technology Essentials

ITE 100 **(3 CR.)**
Introduction to Information Systems
Covers the fundamentals of computers and computing and topics that include impact of computers on society, ethical issues, and terminology. Provides discussion about available hardware and software as well as their application. Lecture 3 hours per week.

ITE 140 **(3 CR.)**
Spreadsheeting for Business
Provides a working knowledge of a commercial spreadsheet package to include design and development of a variety of worksheets, preparing graphs, working with database queries, macro writing, menu techniques, and decision analysis tools. Lecture 3 hours per week.

ITE 152 **(3 CR.)**
Introduction to Digital and Information Literacy and Computer Applications
Develops understanding of digital and information literacy. Introduces basic computer concepts in hardware, software, cyber, cloud, database, and operating systems. Includes hands-on experience developing word processing, spreadsheet and presentation documents. Evaluates the reliability of sources. Covers creating a simple web page. Examines topics such as social, legal, and ethical issues. Lecture 3 hours per week. **This is a UCGS transfer course.** Please note: Credit will only be awarded for one of the following courses: ITE 115, ITE 119, or ITE 152.

ITE 170 **(3 CR.)**
Multimedia Software
Explores technical fundamentals of creating multimedia projects with related hardware and software. Students will learn to manage resources required for multimedia production and evaluation and techniques for selection of graphics and multimedia software. Lecture 3 hours per week.

ITE 180 **(3 CR.)**
Help Desk Support Skills
Prerequisite(s): ITE 152. Emphasizes instruction in customer support techniques required for analyzing and coordinating software and hardware solutions for end-user needs. Includes evaluation and communication techniques required to provide help desk support necessary to transfer knowledge and achieve a solution. Lecture 3 hours per week.

ITE 182 **(3 CR.)**
User Support/Help Desk Principles
Prerequisite(s): ITE 180. Introduces a variety of tools and techniques that are used to provide user support in help desk operations. Includes help desk concepts, customer service skills, troubleshooting problems, writing for end users, help desk operations and software, needs analysis, facilities management, and other topics related to end user support. Lecture 3 hours per week.

ITE 221 **(3 CR.)**
Personal Computer Hardware and OS Architecture
Prerequisite(s): ITE 152. Covers instruction about processors, internal functions, peripheral devices, computer organization, memory management, architecture, instruction format, and basic OS architecture. Lecture 3 hours per week.

ITE 270 **(3 CR.)**
Advanced Multimedia Development
Prerequisite(s): ITE 170. Refines multimedia skills, focusing on project development using digital media; video clips, still images, and audio (sounds, music, and narration). Lecture 3 hours per week. Lecture 3 hours.

SDV 101 **(1 CR.)**
Orientation to Information Technology
Introduces students to the skills necessary to achieve their academic goals, to the services offered at the College, and to the discipline in which they are enrolled. Covers topics such as learning resource services; counseling and advising; listening, test-taking, and study skills; and topical areas specific to their particular discipline. Lecture 1 hour per week.

Information Technology Networking

ITN 100 **(3 CR.)**
Introduction to Telecommunications
Prerequisite(s): or Corequisite: ITE 152. Surveys data transmission systems, communication lines, data sets, network, interfacing, protocols, and modes of transmission. Emphasizes network structure and operation. Lecture 3 hours per week.

ITN 101 **(3 CR.)**
Introduction to Network Concepts
Prerequisite(s): or Corequisite: ITE 152. 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 106 **(3 CR.)**
Microcomputer Operating Systems
Teaches use of operating system utilities and multiple-level directory structures, creation of batch files, and configuration of microcomputer environments. May include a study of graphic user interfaces. Lecture 3 hours per week.

ITN 107 **(3 CR.)**
Personal Computer Hardware and Troubleshooting
Includes specially designed instruction to give students a basic knowledge of hardware and software configurations. Includes the installation of various peripheral devices as well as basic system hardware components. Lecture 3 hours per week.

ITN 120 **(3 CR.)**
Wireless: Network Administration (W-NA)
Prerequisite(s): ITN 100 or ITN 101. Corequisite(s): ITN 101. Provides instruction in fundamentals of radio frequency and spread spectrum technology and wireless networking systems implementation and design. Includes radio frequency and spread spectrum concepts, 802.11 standards and regulations, wireless network architecture, topology, software, equipment, OSI Model, site surveys, security features, and the design and implementation of wireless network solutions. Lecture 3 hours per week.

ITN 154 **(4 CR.)**
Introduction to Networks - Cisco
Provides instruction in the fundamentals of networking environments, the basics of router operations, and basic router and switch configuration. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

ITN 155 **(4 CR.)**
Switching, Wireless, And Wireless Essentials - Cisco
Prerequisite(s): ITN 154. Provides the skills and knowledge to install, operate, and troubleshoot routers and switches in small networks. Introduces students to wireless local area networks (WLANS) and network security concepts. Lecture 4 hours per week.

ITN 156 **(4 CR.)**
Enterprise Networking, Security, and Automation - Cisco
Prerequisite(s): ITN 155. Teaches students to configure, troubleshoot, and secure enterprise networks. Introduces students to virtualization, application programming interfaces (APIs) and the configuration management tools that make network automation possible. Lecture 4 hours per week.

ITN 157
WAN Technologies: Cisco **(4 CR.)**
Prerequisite(s): ITN 156 or permission of the instructor. Concentrates on an introduction to Wide Area Networking (WANs). Includes WAN design, LAPB, Frame Relay, ISDN, HDLC, and PPP. Lecture 4 hours per week.

ITN 170 **(3 CR.)**
Linux System Administration
Prerequisite(s): ITE 152 or (ITE 119 or ITE 115). Focuses instruction on the installation, configuration, and administration of the Linux operating system and emphasizes the use of Linux as a network client and workstation. Lecture 3 hours per week.

ITN 171 **(3 CR.)**
UNIX I
Prerequisite(s): ITE 152 or (ITE 119 or ITE 115). Introduces UNIX operating systems. Teaches login procedures, file creation, UNIX file structure, input/output control, and the UNIX shell. Lecture 3 hours per week.

ITN 200 **(3 CR.)**
Administration of Network Resources
Prerequisite(s): ITN 100 or ITN 101. Students must be able to read and write at a college level. Focuses on the management of local area network servers. Teaches proper structuring of security systems. Explains print queues, disk management, and other local area network (LAN) issues. Presents concerns and issues for the purchase and installation of hardware and software upgrades. Can be taught using any network operating system or a range of operating systems as a delivery tool. Lecture 3 hours per week.

ITN 213 **(3 CR.)**
Information Storage and Management
Prerequisite(s): ITD 256 and ITN 257. Focuses on advanced storage systems, protocol, and architectures including Storage Area Networks (SAN), Network Attached Storage (NAS), Fibre Channel Networks, Internet Protocol SANs (IPSAN), iSCSI, and Content Addressable Storage (CAS). Lecture 3 hours per week.

ITN 245 **(3 CR.)**
Network Troubleshooting
Prerequisite(s): ITN 100 or ITN 101. Students must be able to read and write at a college level. Focuses on servicing and maintaining local area networks (LANs). Teaches network installation, network troubleshooting, installation of file servers and workstations, configuring of network boards and cables, and diagnosing common network problems. Lecture 3 hours per week.

ITN 254 **(4 CR.)**
Virtual Infrastructure: Installation and Configuration
Prerequisite(s): ITN 257 and ITN 213. Explores concepts and capabilities of virtual architecture with a focus on the installation, configuration, and management of a virtual infrastructure, ESX Server, and Virtual Center. Covers fundamentals of virtual network design and implementation, fundamentals of storage area networks, virtual switching, virtual system management, and engineering for high availability. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

ITN 255 **(4 CR.)**
Virtual Infrastructure: Deployment, Security, and Analysis
Focuses on the deployment, security, and analysis of the virtual infrastructure, including scripted installations, advanced virtual switching for security, server monitoring for health and resource management, high-availability management, system backups, and fault analysis. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

ITN 257 **(3 CR.)**
Cloud Computing: Infrastructure and Services
Focuses on cloud infrastructure, deployment, security models, and the key considerations in migrating to cloud computing. Covers the

technologies and processes required to build traditional, virtualized, and cloud data center environments, including computation, storage, networking, desktop and application virtualization, business continuity, security, and management. Lecture 3 hours. Total 3 hours per week.

ITN 260 **(3 CR.)**
Network Security Basics
Prerequisite(s): ITN 100 or ITN 101 or networking/network protocols knowledge. Explores the basics of network security in depth. Includes security objectives, security architecture, security models, and security layers. Discusses risk management, network security policy, and security training. Discusses the five security keys: confidentiality, integrity, availability, accountability, and auditability. Lecture 3 hours per week.

ITN 261 **(4 CR.)**
Network Attacks, Computer Crime, and Hacking
Prerequisite(s): ITN 260 or instructor's permission. Provides an in-depth exploration of various methods for attacking and defending a network. Explores network security concepts from the point of view of hackers and their attack methodologies. Discusses hackers, attacks, Intrusion Detection Systems (IDS), malicious code, computer crime, and industrial espionage. Lecture 4 hours per week.

ITN 262 **(4 CR.)**
Network Communication, Security, and Authentication
Prerequisite(s): ITN 260 or instructor's permission. Provides 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. Discusses Internet architecture, routing, addressing, topology, fragmentation, and protocol analysis. Includes the use of various utilities to explore TCP/IP. Lecture 4 hours per week.

ITN 263 **(4 CR.)**
Internet/Intranet Firewalls and E-Commerce Security
Prerequisite(s): ITN 260 or instructor's permission. Provides an in-depth exploration of firewalls, web security, and e-commerce security. Explores firewall concepts, types, topology, and the firewall's relationship to the TCP/IP protocol. Explores client/server architecture, the web server, HTML, and HTTP in relation to web security. Discusses digital certification, 7D.509, and Public Key Infrastructure (PKI). Lecture 4 hours per week.

ITN 264 **(3 CR.)**
Introduction to Malware Analysis
Prerequisite(s): ITN 261. Provides instruction in fundamentals of malware analysis using open-source tools. Emphasizes malware detection as well as the utilization of industry standard tools to analyze malwares using both static and dynamic techniques. Lecture 3 hours per week.

ITN 266 **(3 CR.)**
Network Security Layers
Prerequisite(s): ITN 260 or instructor's permission. Provides an in-depth exploration of various security layers needed to protect the network. Explores network security from the point of view of the environment in which the network operates and the necessity to secure that environment in order to lower the risk to the network. Discusses physical security, personnel security, operating system security, software security, and database security. Lecture 3 hours per week.

ITN 267 **(3 CR.)**
Legal Topics in Network Security
Provides 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 crime and privacy. Discusses rules of evidence, seizure and evidence handling, court presentation, and computer privacy in the digital age. Lecture 3 hours per week.

ITN 270 **(3 CR.)**
Advanced Linux Network Administration
Prerequisite(s): ITN 170. Focuses instruction on the configuration and administration of the Linux operating system as a network server. Emphasizes the configuration of common network services such as routing, http, DNS, DHCP, ftp, telnet, SMB, NFS, and NIS. Lecture 3 hours per week.

ITN 276 **(3 CR.)**
Computer Forensics I
Prerequisite(s): ITN 106 and ITN 107 or ITE 221. Corequisite: ITN 260. Teaches computer forensic investigation techniques for collecting computer-related evidence at the physical layer from a variety of digital media, (hard drives, compact flash, and PDAs) and performing analysis at the file system layer. Lecture 3 hours per week.

ITN 277 **(3 CR.)**
Computer Forensics II
Prerequisite(s): ITN 276. Develops skills in the forensic extraction of computer evidence at a logical level using a variety of operating systems and applications (i.e. e-mail), and learn techniques for recovering data from virtual memory, temporary Internet files, and intentionally hidden files. Lecture 3 hours per week.

Information Technology Programming

ITP 100 **(3 CR.)**
Software Design
Introduces principles and practices of software development. Includes instruction in critical thinking, problem-solving skills, and essential programming logic in structured and object-oriented design using contemporary tools. Lecture 3 hours per week.

ITP 120 **(4 CR.)**
Java Programming I
Teaches fundamentals of object-oriented programming using Java. Emphasizes program construction, algorithm development, coding, debugging, and documentation of console and graphical user interface applications. Lecture 4 hours per week.

ITP 132 **(4 CR.)**
C++ Programming I
Presents fundamentals of object-oriented programming and design using C++. Course content emphasizes program construction, algorithm development, coding, debugging, and documentation of C++ applications. Lecture 4 hours per week.

ITP 137 **(4 CR.)**
Programming IOS Devices
Examines object-oriented Objective C design and programming concepts for Mac OS X, iPhone, and iPad. Introduces the tools and APIs for the latest iOS SDK, and how they fit together to build full-featured iOS and Mac OS X applications. Lecture 4 hours per week.

ITP 140 **(4 CR.)**
Client-Side Scripting
Prerequisite(s): ITD 110. Provides instruction in fundamentals of Internet application design, development, and deployment using client-side scripting language(s). Lecture 4 hours per week.

ITP 150 **(4 CR.)**
Python Programming
Entails instruction in fundamentals of object-oriented programming using Python. Emphasizes program construction, algorithm development, coding, debugging, and documentation of Python applications. Lecture 4 hours.

ITP 160 **(4 CR.)**
Introduction to Game Design and Development
Introduces object-oriented game design and development. Provides overview of the electronic game design and development process and underlines the historical contest, content creation strategies, game careers, and future trends in the industry. Utilizes a game language environment to introduce game design, object-oriented paradigms, software design, software development and product testing. Teaches skills of writing a game design document and creating a game with several levels and objects. Integrate 2D animations, 3D models, sound effects, and background music as well as graphic backgrounds. Lecture 4 hours per week.

ITP 165 **(4 CR.)**
Gaming and Simulation
Introduces students to the concepts and applications of gaming and simulation through the use of gaming and simulation tools, as well as through basic programming skills. Lecture 4 hours per week.

ITP 170 **(3 CR.)**
Project Management
Introduces the concepts of project management as defined by the Project Management Institute, the accreditation body for project management. Lecture 3 hours per week.

ITP 220 **(4 CR.)**
Java Programing
Prerequisite(s): ITP 120. Imparts instruction in application of advanced object-oriented techniques to application development using Java. Emphasizes database connectivity, inner classes, collection classes, networking, and threads. Lecture 4 hours per week.

ITP 225 **(4 CR.)**
Web Scripting Languages
Prerequisite(s): ITD 110, ITP 100, or permission of the instructor. 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 websites. Students will develop web applications utilizing client-side and server-side scripting languages along with auxiliary tools needed for complete applications. Lecture 4 hours per week.

ITP 226 **(4 CR.)**
Mobile Java Development
Provides the necessary design and programming skills required for developing applications on mobile devices (smartphones, tablets, etc.). Utilize the Java-based Android Development Kit to create Android applications, from concept to business model to final product. Lecture 4 hours per week.

ITP 227 **(4 CR.)**
Advanced Android Application Development
Prerequisite(s): ITP 226 or Instructor Permission. Focuses on the development of the advanced Android app. Surveys tools, technologies, principles, and patterns that underpin all Android app development. Emphasizes communication protocols in the Android Platform and secure coding practices of mobile app development. Lecture 4 hours per week.

ITP 230 **(4 CR.)**
C Programming II
Prerequisite(s): ITP 130. Teaches advanced structured techniques to application development using C. Emphasizes database structures, database connectivity, and operating system components. Lecture 4 hours per week.

ITP 236 **(4 CR.)**
C# Programming II
Prerequisite(s): ITP 136. Focuses instruction on advanced object-oriented techniques using C# for application development. Emphasizes database connectivity and networking using the .NET Framework. Lecture 4 hours per week.

ITP 246 **(4 CR.)**
Java: Server-Side Programming
Prerequisite(s): ITP 120. Provides instruction in application and integration of web-based clients and server-side Java to three-tier business applications. Course content will use tools UML, XML, Java servlets, JSPs, and JDBC database access. Lecture 4 hours per week.

ITP 250 **(4 CR.)**
Advanced Python Programming
Prerequisite(s): ITP 150. Introduces object-oriented design and advanced programming concepts using Python through instruction and hands-on programming. Emphasizes Object-oriented design (OOD) Object Orient Programming (OOP) concepts, such as classes, inheritance, polymorphism, Object-oriented design patterns, and Unified Modeling Language (UML). Examines best practices, code reusability, and exploration of Python modules and advanced topics. Lecture 4 hours per week.

ITP 251 **(3 CR.)**
Systems Analysis and Design
Prerequisite(s): ITE 152. Focuses on application of information technologies (IT) to system life cycle methodology, systems analysis, systems design, and system implementation practices. Methodologies related to identification of information requirements, feasibility in the areas of economic, technical, and social requirements, and related issues are included. Software applications may be used to enhance student skills. Lecture 3 hours per week.

ITP 265 **(4 CR.)**
Concepts of Simulation
Prerequisite(s): ITP 165. Expands the application of discrete event simulation and introduces continuous simulation. Develops object-oriented programming techniques. Presents distributed modeling and simulation network communication protocols. Explores the practical applications of distributed simulations in industry. Lecture 4 hours per week.

ITP 270 **(4 CR.)**
Programming for Cybersecurity
Prerequisite(s): ITP 100. Teaches scripting and software development techniques for automating security tasks such as network monitoring and penetration testing using Python. Additional topics include

writing custom tools and the basics of developing software exploits. Lecture 4 hours per week.

Instrumentation

INS 230 **(3 CR.)**
Instrumentation I
Presents the fundamental scientific principles of process control including temperature, pressure, level, and flow measurements. Topics including transducers, thermometers, and gauges are introduced along with calibration. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

INS 233 **(4 CR.)**
Process Control Integration
Prerequisite(s): INS 230 and ELE 233. Presents computer automation including PLCs, SCADA, and PC-based systems to control processes. Topics such as PLC control and computer data acquisition are introduced where students will use existing systems or build systems and control these systems with PLCs and computer data acquisition systems. Assesses students through test and project evaluations and the course will be assessed by graduate feedback. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Interior Design

IDS 100 **(3 CR.)**
Theory and Techniques of Interior Design
Introduces drafting and presentation, color theory, and coordination, space planning, and arrangement of furnishings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 105 **(3 CR.)**
Architectural Drafting for Interior Design
Introduces tools and equipment, lettering, methods of construction, designing, and delineation of architecture. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 106 **(3 CR.)**
Three-Dimensional Drawing and Rendering
Prerequisite(s): IDS 100. Provides instruction in graphic presentation of three dimensionally drawn interiors. Presents the use of colored media to render 3D drawings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 109 **(3 CR.)**
Styles of Furniture and Interiors
Prerequisite(s): ART 101. Teaches history of furnishings and interiors from the ancient world to the present. Lecture 3 hours per week.

IDS 130 **(3 CR.)**
Introduction to Kitchen and Bath Design Systems
Prerequisite(s): IDS 100 and IDS 105. Introduces quality kitchen and bath design elements in accordance with recognized industry standards. Presents basic components of kitchen and bath design, including assessment of existing conditions and construction systems, measurement, product selection, specification, and communication of the design. Teaches coordination of kitchen and bath design with existing structural, electrical, mechanical, plumbing, and ventilation systems. Lecture 3 hours per week.

IDS 205 **(3 CR.)**
Materials and Sources
Prerequisite(s): IDS 100 and IDS 105. Presents textiles, floor and wall coverings, and window treatments. Emphasizes construction, fiber, finish, and code applications. May use research and field trips to trade sources representing these elements. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 206 **(3 CR.)**
Lighting and Furnishings
Prerequisite(s): IDS 105. Provides instruction in lighting terminology and calculations and instructions in techniques of recognizing quality of construction in furnishings and related equipment. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 215 **(3 CR.)**
Theory and Research in Commercial Design
Prerequisite(s): IDS 245. Teaches graphic standards and specifications in interior design. Explains handicap codes and fire codes for large-scale spaces. Provides programming and space planning with emphasis on systems furniture. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 221 **(4 CR.)**
Designing Commercial Interiors I
Prerequisite(s): IDS 105, IDS 106, IDS 205, IDS 206, and IDS 215. Presents problems in designing and developing presentations with emphasis on retail spaces. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

IDS 225 **(3 CR.)**
Business Procedures
Prerequisite(s): IDS 100. Provides instruction in preparation of contracts, purchase orders, specifications, and other business forms used in the interior design field. Lecture 3 hours per week.

IDS 235 **(3 CR.)**
Antiques
Involves research, authentication, and provenance of historic objects. Covers examples of furnishings, fixtures, textiles, glass, and ceramics. May provide field trips, lectures, examination, and discussion to assist in determining age, condition, and other properties. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

IDS 245 **(3 CR.)**
Computer-Aided Drafting for Interior Designers
Prerequisite(s): IDS 105. Provides instruction in the use of computer aided drafting and design software, and architectural and engineering software for developing floor plans, elevations, perspectives, shadowing and lighting, and color applications. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

IDS 246 **(3 CR.)**
Advanced CADD for Interior Designers
Prerequisite or Corequisite: IDS 245. Introduces advanced methods of designing project spaces in a computer aided design-based program. Includes wire frame construction, skins, lighting the space, fly through, entourage, presentation in various oblique formats as well as one- and two-point perspective views. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 250 **(3 CR.)**
Green Design for Interior Designers
Introduces interior design solutions that support the environment and can be utilized in new and existing structures. Includes the principles of Green Design and steps in producing design solutions using

natural and toxin-free materials. Covers material sources, interior finishes, furnishings and lighting, and their applications. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

IDS 285 **(3 CR.)**
Portfolio and Resume Preparation for Interior Designers
Introduces the proper elements of a professional resume for employment in the field. Focuses on the preparation of portfolio content, recorded images, and construction methods. Introduces various methods of digital production of portfolio materials, as well as traditional formats. Includes detailed instruction on proper oral presentation skills, interview preparation and techniques, and professional dress and behaviors. Lecture 2 Hours. Laboratory 2 Hours. Total 4 hours per week

Interpreter Education

Additional sign language courses are listed under American Sign Language (ASL).

INT 105 **(3 CR.)**
Interpreting Foundations I
Develops fundamental skills of interpreting, including cognitive processes and intralingual language development in English and ASL. Reviews Process Models of Interpreting and uses one to analyze interpretations. Develops feedback skills essential to the team interpreting process. Lecture 3 hours per week.

INT 106 **(3 CR.)**
Interpreting Foundations II
Develops fundamental skills of interpreting, including cognitive processes and intralingual language development in English and ASL. Reviews Process Models of Interpreting and uses one to analyze interpretations. Develops feedback skills essential to the team interpreting process. Lecture 3 hours per week.

INT 107 **(3 CR.)**
Translation Skills
Prerequisite(s): INT 105 and ASL 262. Continues developing fundamental skills needed for the task of interpreting targets, comprehending source language (either ASL or English), transferring content into memory store (breaking from original form), restructuring into target language, maintaining message equivalence, conveying implicit and inferred information, and applying appropriate discourse structure. Reviews Process Model of interpreting and uses it to analyze translations. Further develops feedback skills essential to the team interpreting process. Lecture 3 hours per week.

INT 130 **(3 CR.)**
Interpreting: Introduction to the Profession
Introduction to the Profession introduces basic principles and practices of interpreting, focusing on the history of the profession, logistics of interpreting situations, regulatory and legislative issues, resources, and the Code of Ethics. Describes the state quality assurance screening and national certification exam systems, including test procedures. Lecture 3 hours per week.

INT 133 **(3 CR.)**
ASL-to-English Interpretation I
Prerequisite(s): INT 107. Begins consecutively interpreting monologues from the source language (ASL) to the target language (English). Watch entire ASL monologues, process them, analyze them, then choose appropriate English to match the message. Eventually interpret the monologue into English. Puts interpreting theory into practice in a lab environment. Conducts research in the field of interpretation. Develops team interpreting techniques. Interacts with consumers of ASL-English interpretation. Lecture 3 hours per week.

INT 134 **(3 CR.)**
English-to-ASL Interpretation I
Prerequisite(s): INT 107. Begins consecutively interpreting monologues from the source language (English) to the target language (ASL). Listen to entire English monologues, process them, analyze them, then choose appropriate ASL to match the message. Puts interpreting theory into practice in a lab environment. Conducts research into the field of interpretation. Develops team interpreting techniques. Encourages interaction with consumers of ASL-English interpretation. Lecture 3 hours per week.

INT 141 **(3 CR.)**
Transliterating I
Prerequisite(s): ASL 201. Studies the skills required to transmit spoken English into a manual code for English or an interpreting product with more obvious English influences, and vice versa. Introduces a variety of manual codes and their relationship to American Sign Language and Contact Signing. Lecture 3 hours per week.

INT 142 **(3 CR.)**
Discourse Analysis
Prerequisite(s): ASL 202. Introduces the study of language and communication between Deaf and hearing clients. Focuses on the features of language use and their impact on communication success in American Sign Language and spoken English. Lecture 3 hours per week.

INT 233 **(3 CR.)**
ASL-to-English Interpretation II
Prerequisite(s): INT 133 and INT 134. Perform simultaneous interpretations of monologues in the source language (ASL) to the target language (English). Process an incoming ASL monologue while simultaneously producing an appropriate interpretation in English. Conduct research in the field of interpretation. Apply team interpreting techniques. Interact with consumers of interpretation. Lecture 3 hours per week.

INT 234 **(3 CR.)**
English-to-ASL Interpretation II
Prerequisite(s): INT 133 and INT 134. Perform simultaneous interpretations of monologues in the source language (English) into the target language (ASL). Processes an incoming English monologue while simultaneously producing an appropriate interpretation in ASL. Conduct research in the field of interpretation. Apply team interpreting techniques. Interact with consumers of interpretation. Lecture 3 hours per week.

INT 237 (2 CR.)
Interpreting ASL in Safe Settings
Prerequisite(s): INT 133 and INT 144. Studies roles, responsibilities, and experiences involved in working community and educational settings, including ethical and business practices. Analyzes the specific linguistic needs of the clients, managing the environment, and resolving ethical concerns for interpreters. Lecture 2 hours per week.

INT 250 **(3 CR.)**
Dialogic Interpretation I
Prerequisite(s): INT 233 and INT 234. Apply interpreting fundamentals. Interpret dialogs between spoken English and ASL users. Analyze interpretations by using a Process Model of Interpreting. Conduct research. Practice team interpreting skills in an

interactive interpreting environment. Prepare for the interactive nature of standard interpreting evaluations. Lecture 3 hours per week.

Japanese

JPN 101 **(4 CR.)**
Beginning Japanese I
Develops the understanding, speaking, reading, and writing of Japanese, and emphasizes the structure of the language. Lecture 4 hours per week. **This is a UCGS transfer course.**

JPN 102 **(4 CR.)**
Beginning Japanese II
Prerequisite(s): JPN 101. Develops the understanding, speaking, reading, and writing of Japanese, and emphasizes the structure of the language. Lecture 4 hours per week. **This is a UCGS transfer course.**

JPN 201
Intermediate Japanese I **(4 CR.)**
Prerequisite(s): JPN 102. Continues the development of the skills of understanding, speaking, reading, and writing of Japanese. Classes conducted in Japanese. Lecture 4 hours per week.

JPN 202
Intermediate Japanese II **(4 CR.)**
Prerequisite(s): JPN 201. Continues the development of the skills of understanding, speaking, reading, and writing of Japanese. Classes conducted in Japanese. Lecture 4 hours per week.

Korean

KOR 101 **(4 CR.)**
Beginning Korean I
Introduces understanding, speaking, reading, and writing skills and emphasizes basic Korean sentence structure. Includes an introduction to Korean culture. Lecture 5 hours per week.

KOR 102 (**4 CR.)**
Beginning Korean II
Prerequisite(s): KOR 101. Introduces understanding, speaking, reading, and writing skills and emphasizes basic Korean sentence structure. Includes an introduction to Korean culture. Lecture 5 hours per week.

Latin

LAT 101 **(3 CR.)**
Elementary Latin I
Teaches Latin grammar and composition. Introduces the translation of Latin literature, with special selections from Caesar and other writers. Lecture 3 hours per week. **This is a UCGS transfer course.**

LAT 102 **(3 CR.)**
Elementary Latin II
Prerequisite(s): LAT 101. Teaches Latin grammar and composition. Introduces the translation of Latin literature, with special selections from Caesar and other writers. Lecture 3 hours per week. **This is a UCGS transfer course.**

LAT 201 **(3 CR.)**
Intermediate Latin I
Prerequisite(s): two years high school Latin or one year college Latin. Introduces the reading of classical Latin with a review of Latin grammar, forms, and syntax. Lecture 3 hours per week.

LAT 202 **(3 CR.)**
Intermediate Latin II
Prerequisite(s): LAT 201. Introduces the reading of classical Latin with a review of Latin grammar, forms, and syntax. Lecture 3 hours per week.

Legal/Paralegal Studies

LGL 110 **(3 CR.)**
Introduction to Law and the Paralegal Assistant
Prerequisite or Corequisite: ENG 111. Introduces various areas of law in which a paralegal assistant may be employed. Includes study of the court system (Virginia and federal), as well as a brief overview of criminal law, torts, domestic relations, evidence, ethics, role of the legal assistant, and other areas of interest. Lecture 3 hours per week.

LGL 115 **(3 CR.)**
Real Estate Law
Studies law of real property and gives in-depth survey of more common types of real estate transactions and conveyances such as deeds, contracts, leases, and deeds of trust. Focuses on drafting these various instruments, and studies the system of recording and searching public documents. Lecture 3 hours per week.

LGL 117 **(3 CR.)**
Family Law
Studies elements of a valid marriage, grounds for divorce and annulment, separation, defenses, custody, support, adoptions and applicable tax consequences. Includes property settlement agreements, pre- and ante-nuptial agreements, pleadings and rules of procedure. May include specific federal and Virginia consumer law. Lecture 3 hours per week.

LGL 125 **(3 CR.)**
Legal Research
Provides an understanding of various components of a law library, and emphasizes research skills through the use of digests, encyclopedias, reporter systems, codes, citations, ALR and other research tools. May include research through electronic database, overview of computer applications and writing projects. Lecture 3 hours per week.

LGL 126 **(3 CR.)**
Legal Writing
Prerequisite(s): LGL 125. Studies proper preparation of various legal documents, including case and appeal briefs, legal memoranda, letters, and pleadings. Involves practical applications. Lecture 3 hours per week.

LGL 127 **(3 CR.)**
Legal Research and Writing
Prerequisite(s): ENG 111 or permission of division. Provides a basic understanding of legal research and the proper preparation of legal documents, including brief writing. Lecture 3 hours per week.

LGL 200 **(1 CR.)**
Ethics for the Paralegal
Examines general principles of ethical conduct applicable to paralegals. Includes the application of rules of ethics to the practicing paralegal. Lecture 1 hour per week.

LGL 215 **(3 CR.)**
Torts
Studies fundamental principles of the law of torts and may include preparation and use of pleadings and other documents involved in the trial of a civil action. Emphasizes intentional torts, negligence, personal injury, products liability, and malpractice cases.

LGL 217 **(3 CR.)**
Trial Practice and the Law of Evidence
Introduces civil and criminal evidence: kinds, degrees, and admissibility of evidence; and methods and techniques of its acquisition. Emphasizes Virginia and federal rules of evidence and procedure. Focuses on elements of a trial and various problems associated with the trial of a civil or criminal case. Lecture 3 hours per week.

LGL 218 **(3 CR.)**
Criminal Law
Focuses on major crimes, their classification, elements of proof, intent, conspiracy, responsibility, parties, and defenses. Emphasizes Virginia and federal law. Gives general principles of applicable constitutional law and criminal procedure. Lecture 3 hours per week.

LGL 220 **(3 CR.)**
Administrative Practice and Procedure
Surveys applicable administrative laws, including the Privacy Act, the Administrative Process Act and Freedom of Information Act. Studies practice and procedure involving the Department of Alcoholic Beverage Control, State Corporation Commission, Virginia Workers' Compensation Commission, Social Security Administration, Virginia Employment Commission and other administrative agencies. Lecture 3 hours per week.

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

LGL 230 **(3 CR.)**
Legal Transactions
Presents an in-depth study of general contract law, including formation, breach, enforcement, and remedies. Includes an overview of Uniform Commercial Code provisions governing sales, commercial paper, and collections. Lecture 3 hours per week.

LGL 235 **(3 CR.)**
Legal Aspects of Business Organizations
Studies fundamental principles of agency law and the formation of business organizations. Includes sole proprietorships, partnerships, corporations, limited liability companies, and other business entities. Reviews preparation of the documents necessary for organization and operation of business. Lecture 3 hours per week.

LGL 250 **(3 CR.)**
Immigration Law
Introduces immigration law and policy, giving an overview of the United States legal system that regulates the admission, exclusion, removal, and naturalization of immigrants. Includes issues concerning refugees, asylum seekers, illegal immigrants, and undocumented aliens. Lecture 3 hours per week.

Marketing

MKT 201 **(3 CR.)**
Introduction to Marketing
Introduces students to the discipline of marketing and the need to create customer value and relationships in the marketplace. Presents an overview of the marketing principles and management strategies, along with the analytical tools used by organizations in the creation of a marketing plan. Lecture 3 hours per week.

MKT 215 **(3 CR.)**
Sales and Marketing Management
Emphasizes the relationship of professional sales skills and marketing management techniques to successful profit and nonprofit organizations. Focuses on challenges connected with the sales and distribution of products and services, including pricing, promotion, and buyer motivation. Demonstrates uses of the Internet to enhance marketing. Studies legal and ethical considerations. Introduces sales management in planning, organizing, directing, and controlling for a well-coordinated sales effort. Lecture 3 hours per week.

MKT 221 **(3 CR.)**
Public Relations
Introduces public relations as a marketing activity and focuses on media relations, publicity, strategic planning, public relations research, communication with multiple audiences, and the elements of an effective public relations campaign to influence public opinion. Equips students with the basic skills for writing publicity materials and coordinating public relations campaigns and media kits. This course applies basic writing and communication skills to the principles of public relations. This is an upper-level course intended for students planning to study in this or a related field. This course is cross-listed with CST 221. Credit will not be awarded for both. Lecture 3 hours per week.

MKT 228 **(3 CR.)**
Promotion
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 **(3 CR.)**
Principles of E-Commerce
Studies online business strategies, and the hardware and software tools necessary for Internet commerce. Includes the identification of appropriate target segments, the development of product opportunities, pricing structures, distribution channels, and the execution of successful marketing strategies. Lecture 3 hours per week.

MKT 284 **(3 CR.)**
Social Media Marketing
Prerequisite(s): an understanding of basic marketing, computer and business activities is desirable. Surveys the use of social networks and online communities such as blogs, wikis, and 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 Direct Enrollment

MDE 10 **(3 CR.)**
Introduction to Algebra
Covers topics in arithmetic through introduction to variables and equations. Lecture 3 hours per week.

MDE 54 **(3 CR.)**
Learning Support for Quantitative Reasoning
Corequisite(s): MTH 154. Provides support to ensure success for students co-enrolled in Quantitative Reasoning (MTH 154). Course will review foundational topics through direct instruction, guided practice, and individualized support. Lecture 3 hours per week.

MDE 60 **(3 CR.)**
Intermediate Algebra
Covers topics in algebra. Lecture 3 hours per week.

MDE 61 **(3 CR.)**
Learning Support for Pre-Calculus
Corequisite(s): MTH 161. Provides support to ensure success for students co-enrolled in Pre-Calculus (MTH 161). Course will review foundational topics through direct instruction, guided practice, and individualized support. Lecture 3 hours per week.

Mathematics

MTH 111 **(3 CR.)**
Basic Technical Mathematics
Prerequisite(s): At least one of MTE units 1-3; MDE 10; or other placement methods. Provides a foundation in mathematics with emphasis in arithmetic, unit conversion, basic algebra, geometry and trigonometry. This course is intended for CTE programs. Lecture 3 hours per week.

MTH 133 **(3 CR.)**
Mathematics for Health Professions
Prerequisite(s): At least one of MTE units 1-3; MDE 10; or other placement methods. Presents in context the arithmetic of fractions and decimals, the metric system and dimensional analysis, percent's, ratio and proportion, linear equations, topics in statistics, topics in geometry, logarithms, topics in health professions including dosages, dilutions and IV flow rates. This course is intended for programs in the Health Professions. Lecture 3 per week.

MTH 154 **(3 CR.)**
Quantitative Reasoning
Prerequisite(s): Any four MTE units 1-9; or other placement methods. Prerequisite of MTH 154 with MDE 54 is any two MTE units 1-9, MDE 10 or other placement methods. 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. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

MTH 161 **(3 CR.)**
PreCalculus I
Prerequisite(s): Any eight MTE units 1-9; Prerequisite for MTH 161 with MDE 61 is any six MTE units 1-9, MDE 60, or other placement methods. 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, and MTH 167 or equivalent. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

MTH 162 **(3 CR.)**
PreCalculus II
Prerequisite(s): Completion of MTH 161, or equivalent with a grade of C or better. Presents trigonometry, trigonometric applications including Law of Sines and Cosines and an introduction to conics. Credit will not be awarded for both MTH 162 and MTH 167 or equivalent. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

MTH 165 **(3 CR.)**
Finite Math
Presents topics in systems of equations, matrices, linear programming, mathematics of finance, counting theory, probability, and Markov Chains. Emphasis is placed on the development of mathematical skills that are then applied to business applications and models. Lecture 3 hours per week.

MTH 167 **(5 CR.)**
PreCalculus with Trigonometry
Prerequisite(s): Completion of MTE 1-9 or other placement methods. 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, and MTH 161/MTH 162 or equivalent. Lecture 5 hours per week. **This is a Passport and UCGS transfer course.**

MTH 245 **(3 CR.)**
Statistics I
Prerequisite(s): Completion of MTH 154, MTH 161 or equivalent with a grade of C or better. 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. Part I of a two semester sequence. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

MTH 246 **(3 CR.)**
Statistics II
Prerequisite(s): Completion of MTH 245 or equivalent with a grade of C or better. 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. Lecture 3 hours per week.

MTH 261 **(3 CR.)**
Applied Calculus I
Prerequisite(s): Completion of MTH 161 or equivalent with a grade of C or better. 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. Credit will not be awarded for both MTH 261: Applied Calculus I and MTH 263 - Calculus I**.** Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

MTH 262 **(3 CR.)**
Applied Calculus II
Prerequisite(s): Completion of MTH 261 or equivalent with a grade of C or better. 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. Lecture 3 hours per week.

MTH 263 **(4 CR.)**
Calculus I
Prerequisite(s): Completion of MTH 162 or MTH 167 or equivalent with a grade of C or better. 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. Credit will not be awarded for both MTH 261- Applied Calculus I and MTH 263 - Calculus I. Lecture 4 hours per week. **This is a Passport and UCGS transfer course.**

MTH 264 **(4 CR.)**
Calculus II
Prerequisite(s): Completion of MTH 263 or equivalent with a grade of C or better. 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. Lecture 4 hours per week. **This is a UCGS transfer course.**

MTH 265 **(4 CR.)**
Calculus III
Completion of MTH 264: Calculus II or equivalent with a grade of C or better. 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. Lecture 4 hours per week.

MTH 266 **(3 CR.)**
Linear Algebra
Prerequisite(s): 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. 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. Lecture 3 hours per week.

MTH 267 **(3 CR.)**
Differential Equations
Prerequisite(s): Completion of MTH 264 or equivalent with a grade of C or better. Introduces ordinary differential equations. Includes first order differential equations, second and higher order ordinary differential equations with applications and numerical methods. Lecture 3 hours per week.

MTH 281 **(3 CR.)**
Introductory Abstract Algebra
Prerequisite(s): Completion of MTH 263, Calculus I with a grade of C or better or equivalent. Introduces groups, isomorphisms, fields, homomorphisms, rings, and integral domains. Applicable to some education licensure programs; not intended for STEM majors. Lecture 3 hours per week.

MTH 288 **(3 CR.)**
Discrete Mathematics
Completion of MTH 263, Calculus I with a grade of C or better or equivalent. Presents topics in sets, counting, graphs, logic, proofs, functions, relations, mathematical induction, Boolean Algebra, and recurrence relations. Lecture 3 hours per week.

MTH 289 **(3 CR.)**
Differential Equations Extended
Prerequisite(s): MTH 267 with a grade of C or better. Presents systems of differential equations, power series solutions, Fourier series, Laplace transform and Fourier transform, partial differential equations, and boundary value problems. Designed as math elective course for mathematical, physical, and engineering science programs Lecture 3 hours per week.

Mechanical Engineering Technology

MEC 112 **(3 CR.)**
Processes of Industry
Analyzes the processes of manufacturing products from materials for industry/engineering. Includes machining casting, forming molding, hot/cold working, chipless machining, and welding. Addresses quality assurance and inspection procedures. Lecture 3 hours per week.

MEC 118 **(3 CR.)**
Automated Manufacturing Technology
Prerequisite(s): MEC 120 or instructor's permission. Studies numerical control systems. Includes application of numerical control to standard machine tools, numerical control systems, NC coordinate system, APT systems, two-dimensional machine process, three-dimensional machine process, and flexible manufacturing role of robotics in automated manufacturing. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MEC 140 **(3 CR.)**
Introduction to Mechatronics
Prerequisite(s): divisional approval. 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. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MEC 161 **(4 CR.)**
Basic Fluid Mechanics: Hydraulics/Pneumatics
Introduces theory, operation and maintenance of hydraulic/pneumatics devices, and systems. Emphasizes the properties of fluids, fluid flow, fluid statics, and the application of Bernoulli's equation. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

MEC 210 **(3 CR.)**
Machine Design
Prerequisite(s): EGR 130 and MEC 112 or instructor's permission. 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. Lecture 3 hours per week.

MEC 230 **(3 CR.)**
Mechatronics Process Control
Prerequisite(s): MEC 140 and ELE 150. Studies systems integrating mechanical components with electrical components and logic devices used to control manufacturing operations. Surveys electromechanical actuators, sensors, digital to analog conversion, and methods of computer control as related to the managing and monitoring of

manufacturing processes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MEC 255 **(3 CR.)**
Thermodynamics
Corequisite(s): MEC 295. Studies the properties of fluids and basic principles of work, energy, and heat. Includes the first and second laws of thermodynamics, processes and cycles, thermal reversibilities and irreversibilities, internal combustion engines, and gas turbines. Lecture 3 hours per week.

MEC 265 **(3 CR.)**
Fluid Mechanics
Studies properties of fluids and fluid flow, Bernoulli's theorem, measuring devices, viscosity, and dimensional analysis. Emphasizes pumps, piping, and fluid motors. Lecture 3 hours per week.

MEC 266 **(3 CR.)**
Application of Fluid Mechanics
Teaches theory of hydraulic and pneumatic circuits including motors, controls, actuators, valves, plumbing, accumulators, reservoirs, pumps, compressors, and filters. Lecture 3 hours per week.

MEC 270 **(3 CR.)**
Computation for Engineering Technology
Presents the use of spreadsheets and Matlab or equivalent to solve a variety of problems in introductory engineering analysis, such as graphing data, unit conversions, simple statistical analysis, sorting, searching and analyzing data, curve fitting, interpolation, solving algebraic equations, logical decisions, evaluating integrals, comparing economic alternatives, and finding optimum solutions. The acquisition and processing of data as well as macro programming in Basic are also covered. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MEC 295 **(1 CR.)**
Topics in Thermodynamics
Corequisite(s): MEC 255. Provides a computational study in the practical application of thermodynamic and fluid systems concepts. Includes a brief case study of a fluid system and an on-site visit to an operational fluid system plant. Lecture 1 hour per week.

Medical Laboratory

MDL 100 **(2 CR.)**
Introduction to Medical Laboratory Technology
Introduces the basic principles, techniques, and vocabulary applicable to all phases of medical laboratory technology. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

MDL 101 **(3 CR.)**
Introduction to Medical Laboratory Techniques
Prerequisite(s): ENG 111, BIO 141, CHM 111, SDV 101 or SDV elective all with a grade of "C" or better; successful placement in MTH 161. Students should be enrolled in the first year of the Medical Laboratory Technology AAS degree program or receive program director approval. Introduces the basic techniques including design of the healthcare system, ethics, terminology, calculations, venipuncture, and routine urinalysis. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 105 **(3 CR.)**
Phlebotomy
Prerequisite(s): Students must have completed or qualify for ENG 111. Students must be accepted and program placed into the Phlebotomy CSC program, Medical Laboratory Assistant CSC program, or receive program director approval. Introduces basic medical terminology, anatomy, physiology, components of healthcare delivery, and clinical laboratory structure. Teaches techniques of specimen collection, specimen handling, and patient interactions. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 106 **(4 CR.)**
Clinical Phlebotomy
Prerequisite(s): MDL 105 with a grade of "C" or better is required. Prerequisites for Phlebotomy CSC: ENG 111, HIM 130, HLT 141 and HLT 145 with a grade of "C" or better is required.
Prerequisites for Medical Laboratory Assistant CSC program: ENG 111, MDL 100, HLT 141, and MDL 140 with a grade of "C" or better is required.
Focuses on obtaining blood specimens, processing specimens, managing assignments, assisting with and/or performing specified tests, performing clerical duties, and maintaining professional communication. Provides supervised learning in college laboratory and/or cooperating agencies. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

MDL 125 **(3 CR.)**
Clinical Hematology I
Prerequisite(s): Students should be enrolled in the first year of the Medical Laboratory Technology AAS degree program or receive program director approval. 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 127 **(3 CR.)**
Hematology
Teaches various blood components, how they are obtained and methods of examination. Includes erythrocyte, leukocyte and platelet counts, hemoglobin and hematocrit determinations, normal and abnormal smears. Introduces coagulation screening studies. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

MDL 130 **(3 CR.)**
Basic Clinical Microbiology
Prerequisite(s): BIO 141 with a grade of "C" or better. Students must be enrolled in the Medical Laboratory Technology AAS degree program, Medical Laboratory Assistant CSC program or receive program director approval. Corequisite(s): BIO 142. Studies classification, theories, techniques, and methods used in basic bacteriology, parasitology and mycology. Emphasizes routine identification. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 140 **(2 CR.)**
Clinical Urinalysis
Focuses on urinalysis studies including physical and chemical properties, microscopic techniques. Emphasizes the significance of abnormal results. Lecture 1 hour per week. Laboratory 3 hours per week. Total 4 hours per week.

MDL 215 **(2 CR.)**
Immunology
Corequisite(s): MDL 101 with a minimum grade of "C" or program director approval. Presents the physiological basis of humeral and cell mediated immunity, including the medical and clinical laboratory application of immunological principles. Lecture 2 hours per week.

MDL 216 **(4 CR.)**
Blood Banking
Prerequisite(s): MDL 215 with a minimum grade of "C" or program director approval. Completion of the first-year core courses with a grade of "C" or better is required. 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 **(3 CR.)**
Clinical Hematology II
Prerequisite(s): MDL 101, MDL 125, and MDL 140 with a grade of "C" or better. Students must be enrolled in their first year of the Medical Laboratory Technology AAS degree program or receive program director approval. Corequisite(s): MDL 260. Teaches advanced study of blood to include coagulation, abnormal bloody formation, and changes seen in various diseases. Lecture 2 hours per week. Laboratory 3 hours per week. Total 5 hours per week.

MDL 243 **(2 CR.)**
Introduction to Clinical Molecular Diagnostics
Prerequisite(s): Students should be enrolled in the second year of the Medical Laboratory Technology AAS degree program Completion of the first-year core courses with a grade of "C" or better or receive program director approval. Provides the fundamentals of genetics and inheritance along with an overview of the basic principles of clinical molecular diagnostics. Discusses the use of common molecular techniques in the diagnosis of disease. Lecture 2 hours per week.

MDL 251 **(3 CR.)**
Clinical Microbiology I
Prerequisite(s): MDL 130 minimum grade of "C" or program director approval. Students should be enrolled in the second year of the Medical Laboratory Technology AAS degree program. Completion of the first-year core courses with a grade of "C" or better. Teaches handling, isolation and identification of pathogenic microorganisms. Emphasizes clinical techniques of bacteriology, mycology, parasitology and virology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 260 **(2 CR.)**
Laboratory Instrumentation I
Prerequisite(s): for Medical Laboratory students: MDL 101, MDL 125, MDL 140, and MDL 215 with a grade of "C" or better. for Medical Laboratory Assistant students: MDL 100, MDL 105, MDL 106, MDL 140 with a grade of "C" or better. for Medical Laboratory students: MDL 225 and MDL 263. Corequisite(s): for Medical Laboratory Assistant students: MDL 130. Teaches the theory, principles of operation, methodologies, maintenance, and troubleshooting of the more common instrumentation used in the clinical laboratory. Lecture 2 hours. Laboratory 1 hour. Total 3 hours per week.

MDL 263 **(3 CR.)**
Clinical Chemistry and Instrumentation III
Prerequisite(s): CHM 111 and BIO 141 and BIO 142 with a grade of "C" or better. Students should be enrolled in the first year of the Medical Laboratory Technology AAS degree program or receive program director approval. Students enrolling in this course are expected to be familiar with basic general chemistry and the principles of human anatomy and physiology. Emphasizes application of chemical theories and principles to perform routines and special chemistries on various types of instrumentations, to evaluate quality control programs, and to associate test results with clinical significance. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MDL 265 **(2 CR.)**
Advanced Clinical Chemistry
Presents principles of current special chemistry techniques. Lecture 2 hours per week.

MDL 266 **(3 CR.)**
Clinical Chemistry Techniques
Prerequisite(s): MDL 260 and MDL 263 with a grade "C" or better. Student must be enrolled in the first-year summer semester of the Medical Laboratory Technology AAS degree program or receive program director approval. Includes performing of clinical chemistry methodologies and operation of typical instrumentation in a clinical laboratory. Clinical 9 hours per week.

MDL 276 **(3 CR.)**
Clinical Hematology Techniques
Prerequisite(s): MDL 125 and MDL 225 with a grade of "C" or better and be enrolled in the first year, third semester summer term, of the Medical Laboratory Technology A.A.S. Stresses performing hematological and coagulation methods and operation of typical instrumentation in a clinical laboratory. Clinical 9 hours per week.

MDL 277 **(4 CR.)**
Clinical Blood Banking Techniques
Prerequisite(s): MDL 215, and MDL 216 with a grade of "C" or better. Students must be enrolled in the second year of the Medical Laboratory Technology AAS degree program or receive program director approval. Provides training in techniques, procedures, and interpretations in blood banking in a clinical laboratory or simulated laboratory setting. Clinical 12 hours per week.

MDL 278 **(4 CR.)**
Clinical Microbiology Techniques II
Prerequisite(s): MDL 130 and MDL 251 with a grade of "C" or better. Students must be enrolled in the second year of the Medical Laboratory Technology AAS degree program or receive program director approval. Includes performing of techniques, procedures, and identification of microorganisms in a clinical laboratory. Clinical 12 hours per week.

MDL 281 **(1 CR.)**
Clinical Correlations
Teaches students to apply knowledge gained in courses offered in the MDL curriculum using primarily a case history form of presentation. Emphasizes critical thinking skills in the practice of laboratory medicine. Lecture 1 hour per week.

Music
***Applied Music:** Private lessons are available for either 1 or 2 hours of credit per semester. Students may take a one-half hour lesson for 1 credit or a 1-hour lesson for 2 credits per week per semester. All courses in applied music may be repeated one time. Music majors may repeat these courses up to 8 hours with special permission.
****Ensemble:** Courses in ensemble consist of performance from the standard repertoires, including study of ensemble techniques and interpretation. Laboratory/rehearsal is 3 hours per week for 1 credit and 6 hours per week for 2 credits.

MUS 101 **(3 CR.)**
Fundamentals of Music
Provides the ability to read and identify basic fundamentals of music notation. Teaches major and minor scales, chords and basic harmonic progressions. Covers basic ear training and keyboard exercises. Lecture 3 hours per week. **This is a UCGS transfer course.**

MUS 111 **(4 CR.)**
Music Theory I
Discusses elements of musical construction of scales, intervals, triads, and chord progressions. Develops ability to sing at sight and write from dictation. Introduces the analysis of the Bach chorale style. Expands facility with harmonic dictation and enables the

student to use these techniques at the keyboard. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

MUS 112 **(4 CR.)**
Music Theory II
Discusses elements of musical construction of scales, intervals, triads, and chord progressions. Develops ability to sing at sight and write from dictation. Introduces the analysis of the Bach chorale style. Expands facility with harmonic dictation and enables the student to use these techniques at the keyboard. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

MUS 121 **(3 CR.)**
Music in Society
Explores the language of music through an introduction to basic elements, forms and styles across time. Acquaints students with composers' lives and influential creative individualities, discovering representative works and milestones in western society. Develops techniques for listening analytically and critically. Reviews historical development and significance of art music within the context of evolving societal structures. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

MUS 130 **(1 CR.)**
Overview of the Recording Industry
Prerequisite(s): division approval. Introduces and surveys employment opportunities in the commercial music industry. Assists students in defining their professional goals. Lecture 1 hour per week.

MUS 131 **(2 CR.)**
Class Voice I
Introduces the many aspects of singing from the physical act through the aesthetic experience. The course is designed for the beginning singer who desires vocal improvement, and for the voice major as an addition to and extension of skills and knowledge necessary for artistic development. Introduces appropriate repertoire. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 132 **(2 CR.)**
Class Voice II
Introduces the many aspects of singing from the physical act through the aesthetic experience. The course is designed for the beginning singer who desires vocal improvement, and for the voice major as an addition to and extension of skills and knowledge necessary for artistic development. Introduces appropriate repertoire. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 133 **(3 CR.)**
Recording Systems Services I
Introduces the principles of recording systems and recording system designs. Provides the student with theoretical and practical site locations. Includes the study of sound studio design and construction, production costs, and retail distribution. This general survey course is not applicable to the Music Recording Technology Certificate program. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 134 **(3 CR.)**
Recording Systems Services II
Introduces the principles of recording systems and recording system designs. Provides the student with theoretical and practical site locations. Includes the study of sound studio design and construction, production costs, and retail distribution. This general survey course is not applicable to the Music Recording Technology Certificate program. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 135 **(1 CR.)**
Jazz Ensemble
Prerequisite(s): Secondary-level musical knowledge and performing experience on an instrument or voice. Department permission required. Consists of performance from standard jazz and American songbook repertoires, including study of ensemble techniques, interpretation, and improvisation. Division approval required. Laboratory 3 hours per week.

MUS 136 **(1-2 CR.)**
Applied Music: Voice *
Teaches singing, proper breath control, diction, and development of tone. Studies the standard vocal repertoire. One or two half-hour lessons per week; 4-8 hours practice required. Private lessons are available for either one or two hours of credit per semester. Students may take a one half-hour lesson for one credit or a one-hour lesson for two credits per week per semester. All courses in applied music may be repeated one time. Music majors may repeat these courses up to 8 hours with special permission.

MUS 137 **(1-2 CR.)**
Chorus Ensemble **
Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. Laboratory 3-6 hours per week.

MUS 138 **(2 CR.)**
Small Vocal Ensemble **
Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. Laboratory 6 hours per week.

MUS 140 **(3 CR.)**
Introduction to Recording Techniques
Introduces students to the theory of and practices in digital audio. Describes basic background of the history of audio, culminating with hands-on operation of a digital audio workstation (DAW). Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 141 **(2 CR.)**
Class Piano I
Offers the beginning piano student activities in learning musical notation, in accomplishing sight-reading skills, and in mastering techniques of keyboard playing. Presents appropriate literature. Open to all students and may be used to fulfill applied minor instrument requirement for music major. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 142 **(2 CR.)**
Class Piano II
Offers the beginning piano student activities in learning musical notation, in accomplishing sight-reading skills, and in mastering techniques of keyboard playing. Presents appropriate literature. Open to all students and may be used to fulfill applied minor instrument requirement for music major. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 143 **(1 CR.)**
Chamber Ensemble
Consists of performance in a select ensemble, designed for high-level, artistic, public performances of major literature strings, winds, brass, percussion, keyboard, and voice. Membership in the chamber ensemble is open to any student who qualifies through audition.

MUS 144
Jazz Chamber Ensemble
Consists of performance from the standard jazz small group repertoires. Applies ensemble techniques, improvisation, and arranging. Division approval and performing experience required.

MUS 145 **(1-2 CR.)**
Applied Music: Keyboard *
Teaches piano, organ, harpsichord, or synthesizer. Studies the standard repertoire. Private lessons are available for either one or two hours of credit per semester. The length of the lessons will be half-hour for one hour credit and one hour for two hours credit per semester. 1-2 half-hour lessons per week, 4-8 hours practice (laboratory) required.

MUS 147 **(1 CR.)**
Applied Music Composition
Teaches the fundamentals of music composition, including score notation software. Introduces basic manipulation of melodic and motivic composition devices, conscious use of texture, and basic knowledge of orchestration. Lecture 1 hour per week.

MUS 148 **(1-2 CR.)**
Orchestra Ensemble **
Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. Laboratory 3-6 hours per week.

MUS 149 **(1-2 CR.)**
Band Ensemble **
Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. Laboratory 3-6 hours per week.

MUS 155 **(1-2 CR.)**
Applied Music: Woodwinds *
Teaches fundamentals of the woodwind instruments. Studies the standard repertoire. Private lessons are available for either one or two hours of credit per semester. The length of the lessons will be half hour for one hour credit and one hour for two hours credit per semester. 1-2 half-hour lessons per week, 4-8 hours practice (laboratory) required.

MUS 157 **(3 CR.)**
Sound Studio Design
Prerequisite(s): division approval. Introduces the theory and practice of sound studio design. Provides a basic understanding of acoustics and the acoustical properties of construction materials. Allows the student practical opportunities in designing sound studios. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 158 **(3 CR.)**
Recording Studio Electronics:
Theory and Maintenance
Introduces the practices used in maintaining professional recording equipment and basic electronic theory used within the recording industry. Provides the skills and knowledge necessary to perform routine maintenance and to repair recording and related equipment. Designed to prepare the student for a position as an entry-level technician or apprentice recording engineer. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 159 **(3 CR.)**
Improvisational Techniques
Prerequisite(s): selected applied music or freshman-level proficiency. Introduces the principles of improvisation using harmonic structures and progressions from the period of common practice. Includes listening to and performing music of the standard jazz and popular repertoire. Develops performance skills utilizing specific improvisational devices employed in different historical periods. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 161 **(2 CR.)**
Class Strings
Offers the beginning string student activities in learning musical notation, in accomplishing sight-reading skills, and in mastering techniques of specific string instruments. Presents appropriate literature. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 163 **(3 CR.)**
Guitar Theory and Practice I
Studies the fundamentals of sound production, music theory, and harmony as they apply to guitar. Builds proficiency in both the techniques of playing the guitar and in the application of music fundamentals to these techniques. Presents different types of guitars and related instruments. Emphasizes music as entertainment and as a communication skill. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MUS 164 **(3 CR.)**
Guitar Theory and Practice II
Studies the fundamentals of sound production, music theory, and harmony as they apply to guitar. Builds proficiency in both the techniques of playing the guitar and in the application of music fundamentals to these techniques. Presents different types of guitars and related instruments. Emphasizes music as entertainment and as a communication skill. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MUS 165 **(1-2 CR.)**
Applied Music: Strings *
Teaches fundamentals of string instruments, harp, or guitar. Studies the standard repertoire. Private lessons are available for either one or two hours of credit per semester. The length of the lessons will be half hour for one hour credit and one hour for two hours credit per semester. 1-2 half-hour lessons per week, 4-8 hours practice (laboratory) required.

MUS 175 **(1-2 CR.)**
Applied Music: Brass *
Teaches fundamentals of brass instruments. Studies the standard repertoire. Private lessons are available for either one or two hours of credit per semester. The length of the lessons will be half hour for one hour credit and one hour for two hours credit per semester. 1-2 half-hour lessons per week, 4-8 hours practice (laboratory) required.

MUS 179 **(1 CR.)**
Music Copyright Law
Prerequisite(s): division approval. Introduces the legal problems and normal conventions practiced within the commercial music industry. Provides a basic understanding of national and international music copyright laws. Lecture 1 hour per week.

MUS 185 **(1-2 CR.)**
Applied Music: Percussion *
Teaches fundamentals of percussion instruments. Studies the standard repertoire. Private lessons are available for either one or two hours of credit per semester. The length of the lessons will be half hour for one hour credit and one hour for two hours credit per semester. 1-2 half-hour lessons per week, 4-8 hours practice (laboratory) required.

MUS 211 **(4 CR.)**
Advanced Music Theory I
Prerequisite(s): MUS 111-MUS 112 or equivalent. Increases facility in the analysis and usage of diatonic and chromatic harmonies. Continues harmonic analysis of Bach style. Includes exercises in sight-singing, ear-training, and keyboard harmony. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

MUS 212 **(4 CR.)**
Advanced Music Theory II
Prerequisite(s): MUS 111-MUS 112 or equivalent. Increases facility in the analysis and usage of diatonic and chromatic harmonies. Continues harmonic analysis of Bach style. Includes exercises in sight-singing, ear-training, and keyboard harmony. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

MUS 213 **(3 CR.)**
Composition I
Prerequisite(s): division approval. Requires the writing of short compositions in several styles, ranging from the eighteenth to the twentieth century, for various instrumental or vocal combinations. Individualized instruction meets the special need of each student. Score analysis forms an important part of this course. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 214 **(3 CR.)**
Composition II
Prerequisite(s): division approval. Requires the writing of short compositions in several styles, ranging from the eighteenth to the twentieth century, for various instrumental or vocal combinations. Individualized instruction meets the special need of each student. Score analysis forms an important part of this course. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 221 **(3 CR.)**
History of Western Music Pre-1750
Presents the chronology of musical styles and significant composers from Antiquity through the Pre-Classical era. Relates the development of music from a socio-historical perspective including parallel movements within the arts. Develops techniques for listening analytically and critically to music. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

MUS 222 **(3 CR.)**
History of Western Music 1750 to Present
Presents the chronology of musical styles and significant composers from the Classical Period through the Modern era. Relates the development of music from a socio-historical perspective including parallel movements within the arts. Develops techniques for listening analytically and critically to music. MUS 221 and 222 may transfer as the same course. Lecture 3 hours. **This is a Passport and UCGS transfer course.**

MUS 225 **(3 CR.)**
The History of Jazz
Studies the underlying elements of jazz, concentrating on the socio-cultural and historical development from earliest stages to the present. Explores key figures and significant works instrumental in the development and evolution of jazz. Lecture 3 hours per week.

MUS 226 **(3 CR.)**
World Music
Explores music emanating from cultural traditions around the world within their respective socio-cultural contexts. Introduces basic elements of music. Increases global awareness and enhances knowledge of the origins, evolution, aesthetics and purposes of music from an ethnomusicological perspective. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

MUS 227 **(3 CR.)**
Editing and Mixdown Techniques
Prerequisite(s): MUS 140 MUS 157 and MUS 158. Introduces the theories and practice of digital editing and mixdown techniques. Provides the skills necessary to edit, mixdown, externally reprocess, and otherwise manipulate multitrack original recordings into finished master recordings. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 231 **(2 CR.)**
Advanced Class Voice I
Continues MUS 131-MUS 132. Continues the expansion of appropriate vocal repertoire. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 232 **(2 CR.)**
Advanced Class Voice II
Continues MUS 131-MUS 132. Continues the expansion of appropriate vocal repertoire. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 235 **(3 CR.)**
Advanced Recording Techniques
Prerequisite(s): MUS 140 or division approval. Introduces advanced digital recording techniques that lead to mixdowns and digital masters for commercial CD duplication, other digital media and online distribution. Provides knowledge and skills in refined areas of digital multitrack recording and mixdown techniques. Includes a study of the process that converts finished digital masters to compact discs and digital files suitable for retail release. Studies troubleshooting skills pertaining to digital audio workstations. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 236 **(1-2 CR.)**
Advanced Applied Music: Voice *
Continues MUS 126. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one half-hour for 1 credit and 1 hour for 2 credits per week per semester. Continues MUS 137. Laboratory 3-6 hours per week.

MUS 237 **(1-2 CR.)**
Chorus Ensemble **
Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. Continues MUS 137. Laboratory 3-6 hours per week.

MUS 238 **(2 CR.)**
Small Vocal Ensemble **
Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. Continues MUS 138. Laboratory 6 hours per week.

MUS 239 **(1 CR.)**
Advanced Jazz Ensemble
Consists of performance from standard jazz and American songbook repertoires, including study of ensemble techniques, interpretation, and improvisation. Continues jazz ensemble with additional leadership and responsibilities. Completion of Jazz Ensemble required.

MUS 240 **(1 CR.)**
Advanced Jazz Chamber Ensemble
Consists of performance of advanced repertoire in a jazz small group. Studies ensemble techniques, improvisation, and arranging. Continues Jazz Ensemble 100-level with additional leadership responsibilities. Completion of Jazz Chamber Ensemble.

MUS 241 **(2 CR.)**
Advanced Class Piano I
Teaches advanced applications of keyboard fundamentals and technical skills. Includes exercises in intervals, triads, all major and minor scales, and simple and compound meters. Uses advanced repertoire. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 242 **(2 CR.)**
Advanced Class Piano II
Teaches advanced applications of keyboard fundamentals and technical skills. Includes exercises in intervals, triads, all major and minor scales, and simple and compound meters. Uses advanced repertoire. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 243 **(2 CR.)**
Advanced Applied Music Composition
Teaches the advanced study of music composition and includes instruction using 20th and 21st century compositional techniques. Studies complex compositional devices including advanced harmony, rhythm, texture, and orchestration. Lecture 2 hours per week.

MUS 245 **(1-2 CR.)**
Advanced Applied Music: Keyboard *
Continues Applied Music: Keyboard MUS 145. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one-half hour for 1 credit and 1 hour for 2 credits per week per semester.

MUS 248 **(1-2 CR.)**
Orchestra **
Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. Continues MUS 148. Laboratory 3-6 hours per week.

MUS 249 **(1-2 CR.)**
Band Ensemble **
Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. Continues MUS 149. Laboratory 3-6 hours per week.

MUS 255 **(1-2 CR.)**
Advanced Applied Music: Woodwinds *
Continues Applied Music: Woodwinds MUS 155. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one-half hour for 1 credit and 1 hour for 2 credits per week per semester.

MUS 259 **(3 CR.)**
Advanced Improvisational Techniques
Prerequisite(s): MUS 159. Extends the improvisational performance skills of the student in the standard jazz repertoire through the use of techniques based on harmonic progressions, rhythmic patterns, and scalar and arpeggio patterns. Includes the practical application of modal theory to standard jazz and popular repertoire. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 265 **(1-2 CR.)**
Advanced Applied Music: Strings *
Continues Applied Music: Strings MUS 165. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one-half hour for 1 credit and 1 hour for 2 credits per week per semester.

MUS 275 **(1-2 CR.)**
Advanced Applied Music: Brass *
Continues Applied Music: Brass MUS 175. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one-half hour for 1 credit and 1 hour for 2 credits per week per semester.

MUS 278 **(2 CR.)**
Multichannel Recording Workshop
Prerequisite(s): division approval. Provides the opportunity to improve and refine multichannel recording techniques in a seminar and project format. Emphasizes hands-on laboratory experiences in multichannel recording, overdubbing, and mixdown techniques. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 285 **(1-2 CR.)**
Advanced Applied Music: Percussion *
Continues Applied Music: Percussion, MUS 185. Private lessons are available for either 1 or 2 hours of credit per semester. The length of the lessons will be one-half hour for 1 credit and 1 hour for 2 credits per week per semester.

MUS 288 **(2 CR.)**
Recording Problems Seminar
Prerequisite(s): MUS 140 or division approval. Provides a seminar setting in which students may discuss recording problems with commercial music industry professionals. Introduces the student to professional organizations, libraries, and journals common to the recording industry. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

MUS 298 **(1 CR.)**
Seminar and Project: Capstone Recital
Requires completion of a project or research report related to the student's occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. Lecture 1 hour per week.

Natural Science

NAS 2 **(2 CR.)**
Foundations of Life Sciences
Presents elementary biological and chemical principles for allied health students whose high school preparation is deficient in the biological sciences. Lecture 1.5 hours. Laboratory 3 hours. Total 4.5 hours per week.

NAS 125 **(4 CR.)**
Meteorology
Prerequisite(s): Eligible for ENG 111, or completion of EDE 10. Presents a nontechnical survey of fundamental meteorology. Focuses on the effects of weather and climate on humans and their activities. Serves for endorsement or recertification of earth science teachers. Lecture 3 hours. Total 5 hours per week.

NAS 150 **(4 CR.)**
Human Biology
Corequisite(s): Eligible for ENG 111, or completion of EDE 10. Surveys the structure and function of the human body. Applies

principally to students who are not majoring in science fields. Lecture 4 hours per week.

Nursing

Enrollment in NSG courses is restricted to students' program-placed in the Nursing Program.

NSG 100 (4 CR)
Introduction to Nursing Concepts
Prerequisite(s): BIO 141 and BIO 142 or BIO 231 and BIO 232. ENG 111, PSY 230, SDV 101 or SDV 100. Corequisite(s): BIO 150 or BIO 205, NSG 106 and NSG 130, NSG 200. Introduces concepts of nursing practice and conceptual learning. Focuses on basic nursing concepts with an emphasis on safe nursing practice and the development of the nursing process. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

NSG 106 (2 CR.)
Competencies for Nursing Practice
Prerequisite(s): MTE 1-5 and BIO 141 and BIO 142 or BIO 231 and BIO 232. ENG 111, PSY 230, SDV 101 or SDV 100. Corequisite(s): BIO 150 or BIO 205, NSG 100 and NSG 130, NSG 200. Focuses on the application of concepts through clinical skill development. Emphasizes the use of clinical judgment in skill acquisition. Includes principles of safety, evidence-based practice, informatics and math computational skills. Prepares students to demonstrate competency in specific skills and drug dosage calculation including the integration of skills in the care of clients in simulated settings. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

NSG 130 (1 CR.)
Professional Nursing Concepts
Prerequisite(s): BIO 141 and BIO 142 or BIO 231 and BIO 232. ENG 111, PSY 230, SDV 101 or SDV 100. Corequisite(s): BIO 150 or BIO 205, NSG 100 and NSG 106, NSG 200. Introduces the role of the professional nurse and fundamental concepts in professional development. Focuses on professional identity, legal/ethical issues and contemporary trends in professional nursing. Lecture 1 hour. Total 1 hour per week.

NSG 152 (3 CR.)
Health Care Participant
Prerequisite(s): BIO 142 or BIO 232, NSG 100, NSG 106, NSG 130 and NSG 200. Corequisite(s): BIO 150 or BIO 205; NSG 170. Focuses on the health and wellness of diverse individuals, families, and the community throughout the lifespan. Covers concepts that focus on client attributes and preferences regarding healthcare. Emphasizes population-focused care. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or cooperating agencies, and/or simulated environments. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

NSG 170 (6 CR.)
Health/Illness Concepts
Focuses on the nursing care of individuals and/or families throughout the lifespan with an emphasis on health and illness concepts. Includes concepts of nursing care for the antepartum client and clients with common and predictable illnesses. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Lecture 4 hours. Laboratory 6 hours. Total 10 hours per week.

NSG 200 (3 CR.)
Health Promotion and Assessment
Prerequisite(s): BIO 141 and BIO 142 or BIO 231 and BIO 232. ENG 111, PSY 230, SDV 101 or SDV 100. Corequisite(s): BIO 150 or BIO 205, NSG 100 and NSG 106, NSG 130. Introduces assessment and health promotion for the individual and family. Includes assessment of infants, children, adults, geriatric clients and pregnant females. Emphasizes health history and the acquisition of physical assessment skills with underlying concepts of development, communication, and health promotion. Prepares students to demonstrate competency in the assessment of clients across the lifespan. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

NSG 210 (5 CR.)
Health Care Concepts I
Prerequisite(s): BIO 141 and BIO 142 or BIO 231 and BIO 232, or NAS 161 and NAS 162. ENG 111, PSY 230, SDV 101 or SDV 100. BIO 150 or BIO 205, CST 110 or CST 115 or CST 126 or CST 229, NSG 100, NSG 106, NSG 130, NSG 152, NSG 170 and NSG 200. Corequisite(s): required Elective ENG 112 or HIS 101 or MTH 154 or MTH 245, NSG 211. Focuses on care of clients across the lifespan in multiple settings including concepts related to physiological health alterations and reproduction. Emphasizes the nursing process in the development of clinical judgment for clients with multiple needs. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Part I of II. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

NSG 211 (5 CR.)
Health Care Concepts II
Prerequisite(s): BIO 141 and BIO 142 or BIO 231 and BIO 232. ENG 111, PSY 230, SDV 101 or SDV 100, BIO 150 or BIO 205, CST 110 or CST 115 or CST 126 or CST 229, NSG 100, NSG 106, NSG 130, NSG 152, NSG 170 and NSG 200. Corequisite(s): required Elective ENG 112 or HIS 101 or MTH 154 or MTH 245, NSG 210. Focuses on care of clients across the lifespan in multiple settings including concepts related to psychological and physiological health alterations. Emphasizes the nursing process in the development of clinical judgment for clients with multiple needs. Provides supervised learning experiences in college nursing laboratories, clinical/community settings, and/or simulated environments. Part II of II. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

NSG 230 (2 CR.)
Advanced Professional Nursing Concepts
Prerequisite(s): BIO 141 and BIO 142 or BIO 231 and BIO 232. ENG 111, PSY 230, SDV 101 or SDV 100, BIO 150 or BIO 205, CST 110 or CST 115 or CST 126 or CST 229, required Elective ENG 112 or HIS 101 or MTH 154 or MTH 245, NSG 100, NSG 106, NSG 130, NSG 152, NSG 170 and NSG 200, NSG 210, NSG 211. Corequisite(s): HUM Elective (see college catalog), NSG 252, NSG 270. Develops the role of the professional nurse in the healthcare environment in preparation for practice as a registered nurse. Introduces leadership and management concepts and focuses on the integration of professional behaviors in a variety of healthcare settings. Lecture 2 hours. Total 2 hours per week.

NSG 252 (4 CR.)
Complex Health Care Concepts
Prerequisite(s): BIO 141 and BIO 142 or BIO 231 and BIO 232. ENG 111, PSY 230, SDV 101 or SDV 100, BIO 150 or BIO 205, CST 110 or CST 115 or CST 126 or CST 229, required Elective ENG 112 or HIS 101 or MTH 154 or MTH 245, NSG 100, NSG 106,

NSG 130, NSG 152, NSG 170 and NSG 200, NSG 210, NSG 211. Corequisite(s): HUM Elective (see college catalog), NSG 230, NSG 270. Focuses on nursing care of diverse individuals and families integrating complex health concepts. Emphasizes clinical judgment, patient-centered care and collaboration. Lecture 4 hours. Total 4 hours per week.

NSG 270 **(4 CR.)**
Nursing Capstone
Prerequisite(s): BIO 141 and BIO 142 or BIO 231 and BIO 232. ENG 111, PSY 230, SDV 101 or SDV 100, BIO 150 or BIO 205, CST 110 or CST 115 or CST 126 or CST 229, required Elective ENG 112 or HIS 101 or MTH 154 or MTH 245, NSG 100, NSG 106, NSG 130, NSG 152, NSG 170 and NSG 200, NSG 210, NSG 211. Corequisite(s): HUM Elective (see college catalog), NSG 230, NSG 252. Provides students with the opportunity to comprehensively apply and integrate learned concepts from previous nursing courses into a capstone experience. Emphasizes the mastery of patient-centered care, safety, nursing judgment, professional behaviors, informatics, quality improvement, and collaboration in the achievement of optimal outcomes of care. Provides supervised learning experiences in faculty and/or preceptor-guided college nursing laboratories, clinical/community settings, and/or simulated environments. Laboratory 12 hours. Total 12 hours per week.

Occupational Therapy

OCT 100 **(3 CR.)**
Introduction to Occupational Therapy
Prerequisite(s): admission to the Occupational Therapy Assistant Program. Introduces the concepts of occupational therapy as a means of directing a person's participation in tasks selected to develop, maintain, or restore skills in daily living. Examines the role of the assistant for each function of occupational therapy, and for various practice settings in relationship to various members of the healthcare team. Lecture 3 hours per week.

OCT 201 **(3 CR.)**
Occupational Therapy with Psychosocial Dysfunction
Prerequisite(s): instructor permission. Focuses on the theory and application of occupational therapy in the evaluation and treatment of psychosocial dysfunction. Includes a survey of conditions which cause emotional, mental, and social disability, as well as the role of the occupational therapy assistant in the assessment, planning, and implementation of treatment programs. Lecture 3 hours per week.

OCT 202 **(4 CR.)**
Occupational Therapy with Physical Disabilities
Prerequisite(s): admission to the Occupational Therapy Assistant Program. Focuses on the theory and application of occupational therapy in the evaluation and treatment of physical dysfunction. Includes a survey of conditions which cause physical disability as well as the role of the occupational therapy assistant in assessment, planning, and implementation of treatment programs. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

OCT 203 **(4 CR.)**
Occupational Therapy with Developmental Disabilities
Focuses on the theory and application of occupational therapy in the evaluation and treatment of developmental dysfunction. Includes a survey of conditions which cause developmental disability across the life span, with particular emphasis on children and the elderly. Investigates the role of the occupational therapist in assessment, planning, and implementation of treatment programs. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

OCT 205 **(2 CR.)**
Therapeutic Media
Develops proficiency in various crafts used as treatment modalities in occupational therapy. Emphasizes how to analyze, adapt, and teach selected activities as well as how to equip and maintain a safe working environment. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

OCT 206 **(3 CR.)**
Dyadic and Group Dynamics
Provides theory and activity to develop positive interpersonal relationships and effective communication ability. Includes non-verbal communication, listening, observation, interviewing and documentation. Covers group process and its application to occupational therapy, including types of therapeutic groups, group membership roles, leadership skills and forces which affect group function and decision making. Lecture 3 hours per week.

OCT 207 **(3 CR.)**
Therapeutic Skills
Prerequisite(s): instructor permission. Presents techniques used in the treatment of a variety of conditions frequently seen across the life span. Emphasizes the activities of self-care, work, and leisure as they relate to the development/resumption of normal social role functioning. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

OCT 208 **(3 CR.)**
Occupational Therapy Service Management
Prerequisite(s): instructor permission. Presents principles and techniques of management appropriate to the occupational therapy assistant. Includes roles and functions of the supervisor and the supervisee, scheduling, billing, and quality improvement. Issues relevant to professional practice and patient care will be discussed with similarities and differences between various facilities highlighted. Lecture 3 hours per week.

OCT 210 **(2 CR.)**
Assistive Technology in Occupational Therapy
Prerequisite(s): OCT 202 and OCT 203 or instructor permission. Explores the assistive technologies available for persons with physical, sensory, and cognitive disabilities. Provides instruction in the process of assessment, selection adaptation and training of assistive technology to persons with a disability. Presents information on funding and maintenance of devices. Exposes students to technology in clinical practice and equipment companies. Lecture 2 hours per week.

OCT 225 **(4 CR.)**
Neurological Concepts for Occupational Therapy Assistants
Focuses on the workings of the human nervous system from the cellular level to the systems level with an emphasis on normal neurological function, the impact of neurological dysfunction, and how to use neurological rehabilitation techniques to facilitate the rehabilitation process across the life span. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Philosophy

PHI 100 **(3 CR.)**
Introduction to Philosophy
Presents an introduction to philosophical problems and perspectives with emphasis on the systematic questioning of basic assumptions about meaning, knowledge, reality, and values. The assignments in

the course require college-level reading fluency and coherent communication through written reports. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

PHI 111 **(3 CR.)**
Logic
Introduces inductive and deductive reasoning, with an emphasis on common errors and fallacies. The assignments in the course require college-level reading fluency and coherent communication through written reports. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

PHI 200 **(3 CR.)**
The History of Western Philosophy
Offers a historical survey of major philosophers from the ancient Greeks to the modern era. The assignments in this course require the ability to write at the college level, read college-level philosophical texts, and understand and apply philosophical concepts with complex meanings. Lecture 3 hours per week.

PHI 220 **(3 CR.)**
Ethics and Society
Provides a systematic study of representative ethical concepts and theories and discusses their application to concrete moral dilemmas and social issues and problems. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

PHI 227 **(3 CR.)**
Biomedical Ethics
Examines the ethical implications of specific biomedical issues in the context of major ethical systems. Lecture 3 hours per week.

Photography

PHT 101 **(3 CR.)**
Photography I
Teaches principles of photography and fundamental camera techniques. Requires outside shooting and lab work. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

PHT 102 **(3 CR.)**
Photography II
Teaches principles of photography and fundamental camera techniques. Requires outside shooting and lab work. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

PHT 103 **(3 CR.)**
Black and White Darkroom Photography I
Highlights principles of photography including camera operation and darkroom procedures. Focuses on black and white photography. Requires outside shooting and lab work. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

PHT 104 **(3 CR.)**
Black and White Darkroom Photography II
Highlights advanced principles of photography including camera operation and darkroom techniques. Requires outside shooting and lab work. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

PHT 110 **(3 CR.)**
History of Photography
Surveys important photographers, technical developments, and historical influences on nineteenth and twentieth century photography. Lecture 3 hours per week.

PHT 130 **(3 CR.)**
Video I
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. Part I of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

PHT 131 **(3 CR.)**
Video II
Prerequisite(s): PHT 130 or permission of the instructor. 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. Part II of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

PHT 201 **(3 CR.)**
Advanced Photography I
Prerequisite(s): PHT 102 or permission of the instructor. Provides weekly critiques of students' work. Centers on specific problems found in critiques. Includes working procedures and critical skills in looking at photographs. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 202 **(3 CR.)**
Advanced Photography II
Prerequisite(s): PHT 102 and PHT 201 or permission of instructor. Provides weekly critiques of students' work. Centers on specific problems found in critiques. Includes working procedures and critical skills in looking at photographs. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 206 **(3 CR.)**
Large Format Photography
Prerequisite(s): PHT 102 and PHT 103 or permission of instructor. Discusses 4x5 view camera techniques and controls, and sheet film processing. Demonstrates the image-making advantages of large format photography. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 211 **(3 CR.)**
Color Photography I
Prerequisite(s): PHT 102. Introduces theory, materials, and processes of modern color images. Includes additive and subtractive theory, color filtration, and negative and positive printing techniques. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 221 **(3 CR.)**
Studio Lighting I
Prerequisite(s): PHT 102 or approval of instructor. Examines advanced lighting and camera techniques under controlled studio conditions. Includes view camera use, electronic flash, advanced lighting techniques, color temperature and filtration, and lighting ratios. Requires outside shooting. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 222 **(3 CR.)**
Studio Lighting II
Prerequisite(s): PHT 102 and PHT 221 or permission of instructor. Examines advanced lighting and camera techniques under controlled studio conditions. Includes view camera use, electronic flash, advanced lighting techniques, color temperature and filtration, and lighting ratios. Requires outside shooting. Part II of II. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 227 **(3 CR.)**
Careers in Photography and Media
Introduces students of photography and video to a variety of professional opportunities in the field. This is an advanced course for students who would like to know more about their options in staff and freelance work. Lecture 3 hours per week.

PHT 228 **(3 CR.)**
Professional Practices for Photographers
Prepares students of photography and video to start and operate a professional practice. This is an advanced course for students who wish to be self-employed as photographers and/or videographers. Lecture 3 hours per week.

PHT 231 **(3 CR.)**
Photojournalism I
Prerequisite(s): PHT 102. 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. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 235 **(3 CR.)**
Documentary Photography
Prerequisite(s): PHT 102 and basic computer skills or permission of instructor. Students learn how to create an in-depth documentary photography photo-essay. The final project will be edited for presentation. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 247 **(3 CR.)**
Alternative Photographic Processes
Prerequisite(s): PHT 102 or approval of instructor. Explores manipulated imagery including traditional and nontraditional processes such as non-silver and electronic imaging. Uses enlarged film negatives in order to investigate a variety of methods. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

PHT 249 **(3 CR.)**
Night and Low Light Photography
Prerequisite(s): PHT 102. Explores physical limits of photographic capture including exposure in low light and use of extended time values. Considers the role of these factors in the history, theory, and practice of the medium, as an art form and means of communication. Lecture 2 hours per week. Laboratory 2 hours. Total 4 hours per week.

PHT 270 **(3 CR.)**
Digital Imaging I
Introduces students to the tools and techniques used by professionals in the electronic imaging field. Focuses on current trends within the photographic, prepress, and Internet industries. Includes image capture, manipulation, and output. Exposes students to the hardware and software used by today's creative professionals in a combination of lectures, demonstrations, and class projects. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

PHT 271 **(3 CR.)**
Digital Imaging II
Introduces students to the tools and techniques used by professionals in the electronic imaging field. Focuses on current trends within the photographic, prepress, and Internet industries. Includes image capture, manipulation, and output. Exposes students to the hardware and software used by today's creative professionals in a combination of lectures, demonstrations, and class projects. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

PHT 274 **(3 CR.)**
Digital Film Editing and Post Production
Prerequisite(s): PHT 130 or ART 160. Introduces students to techniques and procedures involved in digital film editing and post production. Covers aspects of editing to include industry standard software packages. Emphasizes the mechanics and obstacles of working with the moving image in the twenty-first century including available tools and methods, importance of file types, and how to keep things organized. Lecture 2 hours. Lab 2 hours. Total 4 hours per week.

Physical Education and Recreation

PED 109 **(1 CR.)**
Yoga
Focuses on the forms of yoga training emphasizing flexibility. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 110 **(1 CR.)**
Zumba
Focuses on Latin rhythms, dance moves, and techniques in Zumba. Utilizes physical activity, cardiovascular endurance, balance, coordination and flexibility as related to dance. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 111 **(1 CR.)**
Weight Training I
Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 116 **(1-2 CR.)**
Lifetime Fitness and Wellness
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. A personal fitness/wellness plan is required for the 2-credit course. For PED 116 -1 credit: Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week. For PED 116 - 2 credits: Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 168 **(3 CR.)**
Basic Personal Trainer Preparation
Introduces the skills and knowledge required to become a personal trainer. Includes the principles of individual weight management, personal wellness, and the skills necessary for the creation of a fitness program for potential clients. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

PED 171 **(1 CR.)**
Ballroom Dance I
Presents the basic step patterns, rhythmic patterns, and positions in ballroom dance. Includes techniques based upon traditional steps with basic choreographic patterns. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

Physical Therapist Assistant

PTH 105 **(3 CR.)**
Introduction to Physical Therapy
Introduces the physical therapist assistant student to various aspects of physical therapy, and exposes the student to the physical therapy

clinical setting. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

PTH 115 **(5 CR.)**
Kinesiology for the Physical Therapist Assistant
Focuses on the relationship of specific joint structure and function, the role of individual muscles and groups of muscles and neurological principles in both normal and pathological movement. The course includes a review of basic physics and biomechanical principles applied to human movement. Includes specific posture and gait analysis. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

PTH 121 **(5 CR.)**
Therapeutic Procedures I
Emphasizes therapeutic procedures utilized by physical therapist assistants. Allows students to practice elements of patient care and therapeutic skills. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

PTH 122 **(5 CR.)**
Therapeutic Procedures II
Emphasizes therapeutic procedures utilized by physical therapist assistants. Allows students to practice elements of patient care and therapeutic skills. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

PTH 131 **(3 CR.)**
Clinical Education I
Provides supervised instruction in administering therapeutic skills in a variety of clinical settings. Emphasizes the development of oral and written communication skills and the understanding of commonly seen disabilities. Lecture 1 hour. Clinical 8 hours. Total 9 hours per week.

PTH 151 **(5 CR.)**
Musculoskeletal Structure and Function
Focuses on the musculoskeletal system and the nervous system. Emphasizes bone formation and landmarks; ligaments, muscle origin, action, and innervation. Includes basic sensory and motor control. Prepares student for principles of kinesiology and biomechanics. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

PTH 210 **(2 CR.)**
Psychological Aspects of Therapy
Focuses on the psychological reactions and behavioral changes in patients and their families. Emphasizes techniques of effective interaction between the allied health worker and the patient. Lecture 2 hours per week.

PTH 225 **(5 CR.)**
Rehabilitation Procedures
Focuses on rehabilitation techniques utilized in the treatment of disabling conditions. Emphasizes advanced exercise procedures, prosthetic and orthotic training, and other specialized techniques. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

PTH 227 **(3 CR.)**
Pathological Conditions
Studies specific pathologic conditions commonly seen in physical therapy. Emphasizes musculoskeletal and neurological system conditions. Lecture 3 hours per week.

PTH 231 **(5 CR.)**
Clinical Education II
Provides instruction during the administration of therapeutic skills in a clinical setting. Emphasizes the total therapy program including rehabilitation techniques and specialized exercise programs. Provides experience in a variety of clinical settings. Lecture 2 hours. Clinical 15 hours. Total 17 hours per week.

PTH 232 **(5 CR.)**
Clinical Education III
Provides instruction during the administration of therapeutic skills in a clinical setting. Emphasizes the total therapy program including rehabilitation techniques and specialized exercise programs. Provides experience in a variety of clinical settings. Lecture 1 hour. Clinical 20 hours. Total 21 hours per week.

PTH 245 **(3 CR.)**
Professional Issues
Studies administrative procedures, changing practices in physical therapy, and trends in healthcare delivery. Lecture 3 hours per week.

Physics

PHY 100 **(4 CR.)**
Elements of Physics
Covers basic concepts of physics, including Newtonian mechanics, properties of matter, heat transfer, waves, fundamental behavior of gases, optics, ionizing radiation, and fundamentals of electricity and magnetism. The assignments in the course require college-level reading fluency, coherent written communication, application of arithmetic, exponents, and algebraic skills such as solving for an unknown variable in an equation, and finding the slope and intercept from the equation of a line. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. **This is a Passport and UCGS transfer course.**

PHY 150 **(4 CR.)**
Elements of Astronomy
Covers history of astronomy and its recent developments. Stresses the use of astronomical instruments and measuring techniques and includes the study and observation of the solar system, stars, and galaxies. Lecture 3 hours. Total 6 hours per week.

PHY 201 **(4 CR.)**
General College Physics I
Prerequisite(s): MTH 161 or MTH 167 with a grade of C or better. Covers classical mechanics and thermodynamics. Includes kinematics, Newton's laws of motion, work, energy, momentum, rotational kinematics, dynamic and static equilibrium, elasticity, gravitation, fluids, simple harmonic motion, calorimetry, ideal gas law, and the laws of thermodynamics. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. **This is a UCGS transfer course.**

PHY 202 **(4 CR.)**
General College Physics II
Prerequisite(s): PHY 201 with a grade of C or better and MTH 162 or MTH 167 with a grade of C or better. Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity, optics, magnetism, and selected topics in modern physics. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. **This is a UCGS transfer course.**

PHY 241 **(4 CR.)**
University Physics I
Prerequisite(s): MTH 263 with a grade of C or better. Covers classical mechanics and thermodynamics. Includes kinematics, Newton's laws of motion, work, energy, momentum, rotational kinematics, dynamics and static equilibrium, elasticity, gravitation, fluids, simple harmonic motion, calorimetry, ideal gas law, and the laws of thermodynamics. Part I of II. **This is a UCGS transfer**

course. Please note: Credit will not be awarded for both PHY 241: University Physics I and PHY 231: General University Physics I. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

PHY 242 **(4 CR.)**
University Physics II
Prerequisite(s): PHY 241 or PHY 231 with a grade of C or better and MTH 264 with a grade of C or better. Covers waves, electromagnetism and optics. Includes mechanical waves and sound, electrostatics, Ohm's law and DC circuits, magnetic forces and magnetic fields, electromagnetic induction, AC circuits, ray optics, and wave optics. Part II of II. **This is a UCGS transfer course.** Please note: Credit will not be awarded for both PHY 242: University Physics II and PHY 232: General University Physics II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

PHY 243 **(3 CR.)**
Modern Physics
Prerequisite(s): PHY 242 with a grade of C or better or departmental approval. Covers principles of modern physics including in-depth coverage of relativity, quantum physics, solid state, and nuclear physics. Lecture 3 hours.

PHY 244 **(1 CR.)**
Modern Physics Lab
Corequisite(s): PHY 243. Introduces various methods and procedures used in modern physics experiments. Covers the general experimentation and modeling techniques for topics such as an introduction to the theory of relativity, elementary quantum theory, and its applications to atomic and nuclear physics. Laboratory 3 hours.

Political Science

PLS 135 **(3 CR.)**
U.S. Government and Politics
Teaches the political structure, processes, institutions, and policymaking of the US national government. Focuses on the three branches of government, their interrelationships, and how they shape policy. Addresses federalism; civil liberties and civil rights; political socialization and participation; public opinion, the media; interest groups; political parties; elections; and policymaking. The assignments in the course require college-level reading fluency and coherent communication through written reports. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

PLS 136 **(3 CR.)**
State and Local Government and Politics
Teaches structure, powers, and functions of state and local government in the United States as related to federalism; constitutionalism; elections; powers of legislative, executive, and judicial powers of state and local government; state-local-federal relations; fiscal matters; metropolitan issues; and policy issues, like health, education, criminal justice and welfare. The assignments in the course require college-level reading fluency and coherent communication through written reports. Lecture 3 hours per week.

PLS 140 **(3 CR.)**
Introduction to Comparative Politics
Teaches basic concepts and methods of comparative politics. Includes analyses of government and politics in a variety of nations around the world. **This is a Passport transfer course.** Lecture 3 hours per week.

PLS 200 **(3 CR.)**
Introduction to Political and Democratic Theory
Presents concepts of politics using political theory. Emphasizes the core thinkers and themes of political theory, with focus on concepts of justice, power, rights, liberty, and citizenship, within the context of differing conceptions of the state. Apply political theory as a method of analysis for analyzing current political events and problems. The assignments in the course require college-level reading fluency and coherent communication through written reports. Lecture 3 hours per week.

PLS 241 **(3 CR.)**
Introduction to International Relations
Prerequisite(s): ENG 111. Introduces the causes of international conflict and cooperation. Focuses on the modern state, diplomacy, war initiation, crisis bargaining, international terrorism, nuclear strategy, interstate economic relations, economic growth, international law, human rights, and environmental politics. Lecture 3 hours per week. **This is a UCGS transfer course.**

Psychology

PSY 100 **(3 CR.)**
Principles of Applied Psychology
Introduces the general principles of psychology as they are applied to work, relationships, and growth. Includes perception, learning, development, motivation, emotion, therapy, communication, and attitudes. Lecture 3 hours per week.

PSY 120 **(3 CR.)**
Human Relations
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 125 **(3 CR.)**
Interpersonal Relationships
Studies individual behavior as it affects the individual's relationships. Considers such topics as attitudes, needs, values, leadership, communication, and group dynamics. Teaches constructive methods of interpersonal problem solving. Lecture 3 hours per week.

PSY 200 **(3 CR.)**
Principles of Psychology
Surveys the basic concepts of psychology. Covers the scientific study of behavior, behavioral research methods and analysis, and theoretical interpretations. Includes topics that cover physiological mechanisms, sensation/perception, motivation, learning, personality, psychopathology, therapy, and social psychology. Lecture 3 hours per week. (Students who take PSY 200 cannot receive credit for either PSY 201 or PSY 202.) **This is a Passport and UCGS transfer course.**

PSY 205 **(3 CR.)**
Personal Conflict and Crisis Management
Studies the effective recognition and handling of personal and interpersonal conflicts. Discusses cooperative roles of public and private agencies, management of family disturbances, child abuse, rape, suicide, and related cases. Lecture 3 hours per week.

PSY 210 **(4 CR.)**
Statistics for Behavioral Sciences
Prerequisite(s): PSY 200. Corequisite(s): MTH 245 or equivalent. Introduces the principles and processes of statistics within behavioral research. Emphasizes understanding and applying

statistical tests to behavioral data. Stresses recognition and use of process, based on knowledge and understanding, over mathematical derivation. Focuses on selection of appropriate statistics, their application and correct decisions of interpretation within a behavioral research experience. Lecture 4 hours per week.

PSY 211 **(4 CR.)**
Research Methodology for Behavioral Sciences
Prerequisite(s): PSY 200 and PSY 210 (formerly PSY 213) or department approval. Introduces the principles and processes of various research methods for applying the scientific method to understanding behavior. Includes preparation for and fundamental experience with designing, conducting, interpreting, and evaluating behavioral science research studies. Prepares students for creating APA-style research manuscripts to summarize research. Lecture 4 hours per week.

PSY 215 **(3 CR.)**
Psychopathology
Prerequisite(s): PSY 200, or permission of instructor. Explores historical views and current perspectives of psychopathology. Emphasizes major diagnostic categories and criteria, individual and social factors of maladaptive behavior, and types of treatments. Includes methods of clinical assessment and research strategies. Lecture 3 hours per week.

PSY 216 **(3 CR.)**
Social Psychology
Prerequisite(s): PSY 200 or division approval. ENG 111 is suggested. Examines individuals in social contexts, their social roles, group processes and intergroup relations. Acquaints students with a scientific understanding of how the presence of other people, interactions with other people, and other situational factors influence human thoughts and behaviors. The assignments in the course require college-level reading, analysis of scholarly studies, and coherent communication through written reports (including the production of at least one APA-formatted individual writing assignment). Lecture 3 hours per week.

PSY 219 **(3 CR.)**
Cross-Cultural Psychology
Investigates psychological principles from a cross-cultural perspective. Examines cultural basics for views of reality. Describes topics such as time, space, values, sex-roles, and human development in relation to culture. Lecture 3 hours per week.

PSY 225 **(3 CR.)**
Theories of Personality
Prerequisite(s): PSY 200, or permission of instructor. PSY 225 and HMS 265 cannot both be taken for credit toward graduation. Studies the major personality theories and their applications. Includes psychodynamic, behavioral, cognitive, and humanistic perspectives. Lecture 3 hours per week.

PSY 230 **(3 CR.)**
Developmental Psychology
Traces development in context from pre-conception to death, including the physical, cognitive, and psychosocial domains. Examines methods of scientific inquiry as they apply to lifespan development. Addresses the interrelatedness of developmental domains, as well as the interdependent influences of environment and biology. Students majoring in or considering a major in Psychology should complete PSY 200 prior to PSY 230. Lecture 3 hours per week. Students who take PSY 230 cannot receive credit for either PSY 231 or PSY 232.

PSY 235 **(3 CR.)**
Child Psychology
Studies development of the child from conception to adolescence. Investigates physical, intellectual, social, and emotional factors involved in the child's development. Lecture 3 hours per week. Students who take PSY 235 cannot receive credit for PSY 231.

PSY 236 **(3 CR.)**
Adolescent Psychology
Studies development of the adolescent. Investigates physical, intellectual, social, and emotional factors of the individual from late childhood to early adulthood. Lecture 3 hours per week.

PSY 237 **(3 CR.)**
Adult Psychology
Studies development of the adult personality. Investigates physical, intellectual, social, and emotional aspects of aging from early adulthood to death. Lecture 3 hours per week.

PSY 240 **(3 CR.)**
Health Psychology
Prerequisite(s): PSY 200, or division approval. Studies the psychology of healthy behavior. Applies psychological principles to preventative health care. Covers topics such as exercise, nutrition, stress, lifestyles, and habits. Lecture 3 hours per week.

PSY 250 **(3 CR.)**
Law Enforcement Psychology
Prerequisite(s): PSY 100, PSY 125, or division approval. Studies the psychology of police work in interpersonal or intergroup situations. Includes topics such as prejudice, suggestion, emotion, frustration, and aggression. Lecture 3 hours per week.

PSY 255 **(3 CR.)**
Psychological Aspects of Criminal Behavior
Studies psychology of criminal behavior. Includes topics such as violent and nonviolent crime, sexual offenses, insanity, addiction, white-collar crime, and other deviant behaviors. Provides a background for law enforcement occupations. Lecture 3 hours per week.

PSY 260 **(3 CR.)**
Psychopharmacology and Substance Abuse
Prerequisite(s): PSY 200, PSY 201, or division approval. Examines how psychoactive drugs interact with the body and the brain. Explores the use of prescription psychoactive drugs to treat mental disorders. Explores the use of psychoactive drugs in American culture. Differentiates use and abuse of psychoactive substances so that symptoms of abuse can be identified in a person. Investigates various treatments of substance abuse. Lecture 3 hours per week.

PSY 270 **(3 CR.)**
Psychology of Human Sexuality
Prerequisite(s): PSY 200, or division approval. Focuses on scientific investigation of human sexuality and psychological and social implications of such research. Considers sociocultural influences, the physiology and psychology of sexual response patterns, sexual dysfunctions, and development of relationships. Lecture 3 hours per week.

Radiation Oncology

ROC 131 **(4 CR.)**
Clinical Clerkship I
Introduces student to clinical setting and the basics of radiation oncology. Covers basic technical and patient care skills through

supervised direct patient contact and phantom work. Lecture 1 hour. Laboratory 15 hours. Total 16 hours per week.

ROC 132 **(5 CR.)**
Clinical Clerkship II
Prerequisite(s): ROC 131. Continues supervised direct patient contact and phantom work with focus on technical skills related to equipment manipulation. With minimal assistance the student should be able to perform basic treatment and simulation procedures as well as patient care skills. Laboratory 25 hours per week.

ROC 231 **(5 CR.)**
Clinical Clerkship III
Prerequisite(s): ROC 132. Introduces student to intermediate and complex treatment and simulation procedures as well as dosimetry, beam modification devices, and Brach therapy competencies. Students should demonstrate proficiency in equipment manipulation and intermediate care skills. Laboratory 25 hours per week.

ROC 232 **(5 CR.)**
Clinical Clerkship IV
Prerequisite(s): ROC 231. Students perform intermediate procedures with minimal assistance and demonstrate comprehension of tasks related to complex procedures. During this clerkship the student should demonstrate the ability to work more independently. Laboratory 25 hours per week.

Radiography

RAD 105 **(2 CR.)**
Introduction to Radiology, Protection, and Patient Care
Presents brief history of the radiologic profession, code of ethics, conduct for radiologic students, and basic fundamentals of radiation projection. 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 115 **(3 CR.)**
Principles of Magnetic Resonance Imaging
Prerequisite(s): ARRT or eligible. Presents concepts of magnetic imaging, magnetic physics, fundamentals of magnetic resonance, and application of these principles. Lecture 3 hours per week.

RAD 121 **(4 CR.)**
Radiographic Procedures I
Introduces procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the chest, abdomen, extremities, and axial skeleton. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RAD 125
Patient Care Procedures (3 CR.)
Presents the care and handling of the sick and injured patient in the radiology department. Introduces the fundamentals of nursing procedures, equipment, and supplies specific to radiology. Lecture 3 hours per week.

RAD 131 **(3 CR.)**
Elementary Clinical Procedures I
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 135 **(5 CR.)**
Elementary Clinical Procedures II
Introduces advanced technical skills in fundamental radiographic procedures. Focuses on basic contrast media studies, osseous studies, and skull procedures. Provides clinical experiences in healthcare agencies. Clinical 25 hours per week.

RAD 136 **(2 CR.)**
Clinical Procedures in Magnetic Resonance Imaging
Develops technical skills in magnetic resonance procedures. Focuses on manipulation of equipment, patient care, and procedures. Clinical 10 hours per week.

RAD 141 **(4 CR.)**
Principles of Radiographic Quality I
Prerequisite(s): admission to program. Presents factors that control and influence radiographic quality, as well as various technical conversion factors useful in radiography. Discusses automatic film processing, sensitometry, and quality assurance testing. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RAD 142 **(4 CR.)**
Principles of Radiographic Quality II
Prerequisite(s): RAD 141 and admission to the program. Presents factors that control and influence radiographic quality, as well as various technical conversion factors useful in radiography. Discusses automatic film processing, sensitometry, and quality assurance testing. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RAD 205 **(3 CR.)**
Radiation Protection and Radiobiology
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 **(1 CR.)**
Correlated Radiographic Theory
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 1 hour per week.

RAD 221 **(4 CR.)**
Radiographic Procedures II
Continues procedures for positioning the patient's anatomical structures relative to X-ray beam and image receptor. Emphasizes procedures for routine examination of the skull, contrast studies of internal organs, and special procedures employed in the more complicated investigation of the human body. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RAD 231 **(5 CR.)**
Advanced Clinical Procedures I
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 232 **(5 CR.)**
Advanced Clinical Procedures II
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 **(3 CR.)**
Radiographic Pathology
Presents a survey of common medical and surgical disorders that affect radiographic image. Discusses conditions related to different systems of the human body. Studies the correlation of these conditions with radiographs. Lecture 3 hours per week.

RAD 242 **(2 CR.)**
Computed Tomography Procedures and Instrumentation
Prerequisite(s): ARRT or eligible. Focuses on the patient care, imaging procedures, physics, and instrumentation related to computed tomography imaging. Lecture 2 hours per week.

RAD 246 **(1 CR.)**
Special Procedures
Studies special radiographic and surgical procedures and equipment employed in the more complicated investigation of internal conditions of the human body. Lecture 1 hour per week.

RAD 247 **(3 CR.)**
Cross-Sectional Anatomy
Prerequisite(s): ARRT or eligible. Presents a specialized study of cross-sectional anatomy relevant to sectional imaging modalities such as computed tomography and magnetic resonance imaging. Lecture 3 hours per week.

RAD 255 **(3 CR.)**
Radiographic Equipment
Studies principles and operation of general and specialized X-ray equipment. Lecture 3 hours per week.

Real Estate

REA 100 **(4 CR.)**
Principles of Real Estate
Examines practical applications of real estate principles. Includes a study of titles, estates, land descriptions, contracts, legal instruments, financing, and management of real estate. Lecture 4 hours per week.

Religion

REL 100 **(3 CR.)**
Introduction to the Study of Religion
Explores the idea of religion (as a general category), how to study religion in an academic context, and common elements across most religions such as beliefs, practices, values, community, spiritual experience, symbolism, and narrative. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

REL 230 **(3 CR.)**
Religions of The World
Surveys various manifestations of religion in the American experience. Emphasizes concepts, problems, and issues of religious diversity and character of U.S. religious life. Lecture 3 hours per week. **This is a UCGS transfer course.**

REL 233 **(3 CR.)**
Introduction to Islam
Studies Islam in its historical, religious, and political dimensions and assists in the understanding of its contemporary vitality and attraction as a faith, a culture, and a way of life. Lecture 3 hours per week.

REL 237 **(3 CR.)**
Religions of the East
Studies major religious traditions originating in India and East Asia, including Hinduism, Buddhism, Jainism, Sikhism, Confucianism, Daoism and Shinto. Examines origins, values, ethics, teachings, and practices. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

REL 238
Religions of the West (3 CR.)
Studies major religious traditions originating in the Near East, including Judaism, Christianity, and Islam. Examines origins, values, ethics, teachings, and practices. Lecture 3 hours.

Respiratory Therapy

RTH 102 **(3 CR.)**
Integrated Science for Respiratory Care II
Integrates the concepts of mathematics, chemistry, physics, microbiology, and computer technology as these sciences apply to the practices of respiratory care. Lecture 3 hours per week.

RTH 111 **(3 CR.)**
Anatomy and Physiology of the Cardiopulmonary System
Concentrates on anatomy and physiology of the cardiopulmonary system. Lecture 3 hours per week.

RTH 120 **(2 CR.)**
Fundamental Theory for Respiratory Care
Presents the theory of basic patient assessment and functional medical terminology. Lecture 2 hours per week.

RTH 121 **(3 CR.)**
Cardiopulmonary Science I
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 **(4 CR.)**
Respiratory Care Theory and Procedures I
Presents theory of equipment and procedures used for patients requiring general and critical cardiopulmonary care. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

RTH 135 **(2 CR.)**
Diagnostic and Therapeutic Procedures I
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 per week. Laboratory 3 hours per week. Total 4 hours per week.

RTH 145 **(1 CR.)**
Pharmacology for Respiratory Care I
Presents selection criteria for the use of, and detailed information on, pharmacological agents used in pulmonary care. Lecture 1 hour per week.

RTH 151 **(3 CR.)**
Fundamental Clinical Procedures I
Offers clinical instruction in basic patient care practices. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

RTH 215 **(1 CR.)**
Pulmonary Rehabilitation
Focuses on purpose and implementation of comprehensive pulmonary rehabilitation program. Lecture 1 hour per week.

RTH 222 **(3 CR.)**
Cardiopulmonary Science II
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 **(2 CR.)**
Cardiopulmonary Science III
Continues the exploration of topics discussed in RTH 121 and RTH 222. Lecture 2 hours per week.

RTH 225 **(3 CR.)**
Neonatal and Pediatric Respiratory Procedures
Prerequisite(s): RTH 222 or permission of the program director. Focuses on the cardiopulmonary, physiology, pathology, and application of therapeutic procedures in the management of the newborn and pediatric patient. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

RTH 227 **(2 CR.)**
Integrated Respiratory Therapy Skills II
Presents intensive correlation of all major respiratory therapy subject areas reflecting the entry-level and advanced practitioner matrices. Emphasizes assessment, implementation, and modification of therapy to patient response. Lecture 2 hours per week.

RTH 236 **(3 CR.)**
Critical Care Monitoring
Prerequisite(s): completion of all first and second semester required courses or permission of the program head. Focuses on techniques and theory necessary for the evaluation and treatment of the critical care patient. Explores physiologic effects of advanced mechanical ventilation. Lecture 2 hours per week. Laboratory 3 hours. Total 5 hours per week.

RTH 245 **(2 CR.)**
Pharmacology for Respiratory Care II
Concentrates on pharmacologic agents used in the management of the critically ill patient. Lecture 2 hours per week.

Russian

RUS 101 **(4 CR.)**
Beginning Russian I
Develops the understanding, speaking, reading, and writing of Russian, and emphasizes the structure of the language. Lecture 4 hours per week. **This is a UCGS transfer course.**

RUS 102 **(4 CR.)**
Beginning Russian II
Prerequisite(s): RUS 101. Develops the understanding, speaking, reading, and writing of Russian, and emphasizes the structure of the language. Lecture 4 hours per week. **This is a UCGS transfer course.**

RUS 201 **(4 CR.)**
Intermediate Russian I
Prerequisite(s): RUS 102, or three years of successful completion of high school Russian, or demonstrated experiential learning, or by placement test, or equivalent. Continues to develop cultural awareness, listening, speaking, reading, and writing skills, and introduces complex sentence structures. Classes may be conducted in target language. Part I of II. Lecture 4 hours per week.

RUS 202 **(4 CR.)**
Intermediate Russian II
Prerequisite(s): RUS 201 or four years of successful completion of high school Russian, or demonstrated experiential learning, or by placement test, or equivalent. Continues to develop cultural awareness, listening, speaking, reading, and writing skills, and emphasizes complex sentence structures. Classes may be conducted in the target language. Part II of II. Lecture 4 hours per week.

Safety

SAF 130 **(1 CR.)**
Industrial Safety - OSHA 10
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 200 **(3 CR.)**
Introduction to Sociology
Introduces the fundamental concepts and principles of sociology with attention to sociological theory, research methods, and the impact of social inequality. Examines a variety of topics such as culture, race, social class, gender, major social institutions and their role in contemporary society, and the processes of social change. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

SOC 211 **(3 CR.)**
Cultural Anthropology
Examines the origins, development, research, diversification and evolution of human cultures. Includes exposure to the variability of both Western and Non-Western aspects of culture. Introduces the nature of culture and its relationship to various social institutions and societies. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

SOC 236 **(3 CR.)**
Criminology
Studies research and causal theories of criminal behavior. Examines crime statistics, crime victims, and types of criminal offenses. Introduces role of police, judicial, and correctional system in treatment and punishment of offenders. Lecture 3 hours per week.

SOC 245 **(3 CR.)**
Sociology of Aging
Introduces study of aging with special emphasis on later stages of the life cycle. Includes theories of aging, historical and comparative

settings, social policy, and future trends of aging. Lecture 3 hours per week.

SOC 266 **(3 CR.)**
Race and Ethnicity
Considers race and ethnicity as social constructs that deeply affect personal experience and social institutions. Examines the relationships of racial and ethnic groups with each other and with larger society including ideas of racial inequality both individually and systemically. Introduces significant theoretical approaches to the study of race and ethnicity. Lecture 3 hours per week.

SOC 268 **(3 CR.)**
Social Problems
Introduces the fundamental concepts underlying social problems construction with attention to how these problems are defined, understood and arbitrated. Examines a variety of topics such as researching social problems and policymaking. Lecture 3 hours per week. **This is a Passport and UCGS transfer course.**

Spanish

SPA 101 **(4 CR.)**
Beginning Spanish I
Introduces understanding, speaking, reading, and writing skills, and emphasizes basic Spanish sentence structure. Lecture 4 hours per week. **This is a UCGS transfer course.**

SPA 102 **(4 CR.)**
Beginning Spanish II
Prerequisite(s): SPA 101. Introduces understanding, speaking, reading, and writing skills, and emphasizes basic Spanish sentence structure. Lecture 4 hours per week. **This is a UCGS transfer course.**

SPA 115 **(5 CR.)**
Intensive Beginning Spanish
Develops understanding, speaking, reading, and writing skills through the Beginning level of Spanish. Covers the material in SPA 101 and SPA 102 in an accelerated one-semester format. Strengthens, reviews and refines the concepts of SPA 101 and SPA 102 for students who have had previous Spanish language instruction or exposure but who are not ready for SPA 201 Intermediate Spanish. May include one additional hour of oral practice per week. Lecture 5 hours per week.

SPA 201 **(3 CR.)**
Intermediate Spanish I
Prerequisite(s): SPA 102 or SPA 115. Continues to develop understanding, speaking, reading, and writing skills. Spanish is used in the classroom. Lecture 3 hours per week.

SPA 202 **(3 CR.)**
Intermediate Spanish II
Prerequisite(s): SPA 201. Continues to develop understanding, speaking, reading, and writing skills. Spanish is used in the classroom. Lecture 3 hours per week.

SPA 205 **(3 CR.)**
Spanish for Heritage Speakers I
Fosters appreciation of Hispanic cultural-linguistic heritage. Develops understanding, speaking, reading, and writing skills to native or near-native level. Focuses on reading development, orthography, lexical expansion, formal grammar, facility in writing and composition, and an introduction to selected representations of literary texts. Lecture 3 hours per week.

SPA 206 **(3 CR.)**
Spanish for Heritage Speakers II
Prerequisite(s): SPA 205. Fosters appreciation of Hispanic cultural-linguistic heritage. Develops understanding, speaking, reading, and writing skills to native or near-native level. Focuses on reading development, orthography, lexical expansion, formal grammar, facility in writing and composition, and an introduction to selected representations of literary texts. Lecture 3 hours per week.

SPA 211 **(3 CR.)**
Intermediate Spanish Conversation I
Prerequisite(s): SPA 202 or equivalent. Continues to develop fluency through emphasis on idioms and other complex sentence structures. Lecture 3 hours per week.

SPA 212 **(3 CR.)**
Intermediate Spanish Conversation II
Prerequisite(s): SPA 202. Continues to develop fluency through emphasis on idioms and other complex sentence structures Lecture 3 hours per week.

SPA 233 **(3 CR.)**
Introduction to Spanish Civilization and Literature I
Prerequisite(s): SPA 202 or equivalent. Introduces the student to Spanish culture and literature. Readings and discussions conducted in Spanish. Lecture 3 hours per week.

SPA 242
Intermediate Spanish Composition II (3 CR.)
Prerequisite(s): SPA 241. Develops skills in written Spanish, emphasizing grammatical correctness. Lecture 3 hours per week.

Student Development

SDV 100 **(1 CR.)**
College Success Skills
Assists students to make a successful transition to college. Provides students with the academic tools for success and teaches the skills of self-management and self-responsibility that relate to being a successful student. Helps students learn how to make responsible choices about their academic, personal, and career goals. Provides information about the College and community resources, the College's policies and procedures, and the processes of moving effectively through the educational system. Strongly recommended for beginning students; first-time college students are required to take SDV 100 or another SDV course before enrolling for their 16th semester hour at the College. Lecture 1 hour per week.

SDV 101 **(1 CR.)**
Orientation to (a Specific Discipline)
Introduces students to the skills necessary to achieve their academic goals, to the services offered at the College, and to the discipline in which they are enrolled. Covers topics such as learning resource services; counseling and advising; listening, test-taking, and study skills; and topical areas specific to their particular discipline. Specific to your Degree. Lecture 1 hour per week.

Travel and Tourism

TRV 100 **(3 CR.)**
Introduction to the Travel Industry
Presents an overview of the structure and scope of the travel industry with emphasis on job categories and functions, basic vocabulary, and the interrelationships of the various components. Includes the study

of information displays of the airline computer reservation system. Lecture 3 hours per week.

Social Science

SSC 115 **(3 CR.)**
Introduction to Global Affairs
Surveys wide range of global topics: previous periods of globalization, international organizations and law, transnational corporations and global economy, immigration and refugees, world environmental concerns, world culture, war and peace, paradoxical presence of nationalism and fundamentalism in global world, and anti-globalization movement. Lecture 3 hours per week.

Veterinary Technology

VET 105 **(3 CR.)**
Introduction to Veterinary Technology
Introduces the role of veterinary technicians in veterinary practice. Includes medical terminology, ethics, professionalism, and basic concepts of patient care. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

VET 111 **(4 CR.)**
Anatomy and Physiology of Domestic Animals
Introduces the structure and function of the animal and of all the organ systems of common domestic animals, including histology, embryology, and genetics. Includes laboratory dissection and demonstrations. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

VET 116 **(3 CR.)**
Animal Breeds and Behavior
Surveys common species of domestic animals, including basic husbandry, care, and handling. Introduces identification of various breeds and their characteristics, including behavior patterns, problems, and solutions. Lecture 3 hours per week.

VET 121 **(3 CR.)**
Clinical Practices I
Presents clinical techniques commonly performed in veterinary practice. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

VET 122 **(3 CR.)**
Clinical Practices II
Prerequisite(s): VET 121. Presents clinical techniques commonly performed in veterinary practice. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

VET 131 **(3 CR.)**
Clinical Pathology I
Surveys techniques used in the veterinary hospital laboratory, including hematology, urinalysis, microbiology, cytology, immunology, clinical chemistry, serology, and necropsy. Emphasizes the use of microscope, automated laboratory equipment, and modern diagnostic procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

VET 132 **(3 CR.)**
Clinical Pathology II
Prerequisite(s): VET 131. Surveys techniques used in the veterinary hospital laboratory, including hematology, urinalysis, microbiology, cytology, immunology, clinical chemistry, serology, and necropsy. Emphasizes the use of microscope, automated laboratory equipment, and modern diagnostic procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

VET 133 **(3 CR.)**
Clinical Pathology III
Prerequisite(s): VET 131 and VET 132. Surveys techniques used in the veterinary hospital laboratory, including hematology, urinalysis, microbiology, cytology, immunology, clinical chemistry, serology, and necropsy. Emphasizes the use of microscope, automated laboratory equipment, and modern diagnostic procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

VET 135 **(2 CR.)**
Anesthesia of Domestic Animals
Prerequisite(s): MTH 133 or equivalent. Introduces the basic principles of anesthesia of common domestic species. Includes techniques of induction, monitoring, and recovery of patients using injectable and inhalation anesthetics. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

VET 211 **(2 CR.)**
Animal Diseases I
Describes animal health and disease, surgical techniques used, and animal behavior. Includes demonstrations and selected observation and practice in animal hospitals, clinics, or research laboratories. Lecture 2 hours per week.

VET 212 **(2 CR.)**
Animal Diseases II
Describes animal health and disease, surgical techniques used, and animal behavior. Includes demonstrations and selected observation and practice in animal hospitals, clinics, or research laboratories. Lecture 2 hours per week.

VET 214 **(2 CR.)**
Animal Dentistry
Introduces the basic principles of dental care for common domestic species. Includes dental anatomy, nomenclature, common oral pathology, record systems, instrumentation, dental prophylaxis, common dental treatments, intraoral dental radiography, and local anesthesia techniques. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

VET 216 **(2 CR.)**
Animal Pharmacology
Prerequisite(s): CHM 101 or equivalent. Studies drugs and other medical substances of veterinary importance, including their characteristics, usage, measurement, dosage, administration, and also pharmacy management. Lecture 2 hours per week.

VET 217 **(2 CR.)**
Introduction to Laboratory, Zoo, and Wildlife Medicine
Focuses on the identification, captive management, restraint and diseases of fish, reptiles, birds, rodents, rabbits, ferrets, primates, wild carnivores, and wild herbivores. Presents the fields of laboratory research zoological medicine. Lecture 2 hours per week.

VET 221 **(4 CR.)**
Advanced Clinical Practices III
Prerequisite(s): VET 121-VET 122, VET 135, and VET 214. Presents advanced clinical techniques commonly performed in veterinary practice. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

VET 235 **(3 CR.)**
Animal Hospital Management and Client Relations
Introduces the basic concepts of business procedures of veterinary practice, including communication skills, office management, record keeping, and use of computers in veterinary practice. Lecture 3 hours per week.

VET 290 **(4 CR.)**
Coordinated Internship: A Preceptorship in Veterinary Technology
On-the-job training with a licensed professional in a veterinary hospital or clinical setting, approved by the College. Four credits are required for the A.A.S. in Veterinary Technology.

Welding

WEL 116 **(2 CR.)**
Welding I (Oxyacetylene)
Teaches oxygen/acetylene welding and cutting including safety of equipment, welding, brazing and soldering procedures, and cutting procedures. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 120 **(2 CR.)**
Introduction to Welding
Introduces history of welding processes. Covers types of equipment, and assembly of units. Stresses welding procedures such as fusion, nonfusion, and cutting oxyacetylene. Introduces arc welding. Emphasizes procedures in the use of tools and equipment. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

WEL 121 **(2 CR.)**
Arc Welding
Studies the operation of AC and DC power sources, weld heat, polarities, and electrodes for use in joining various alloys by the SMAW process. Covers welds in different types of joints and different welding positions. Emphasizes safety procedures. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 122 **(3 CR.)**
Welding II (Electric Arc)
Prerequisite(s): WEL 121 or instructor's approval. Teaches electric arc welding, including types of equipment, selection of electrodes, safety equipment and procedures, and principles and practices of welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 130 **(3 CR.)**
Inert Gas Welding
Introduces practical operations in the uses of inert gas-shielded arc welding. Discusses equipment, safety operations, welding practices in the various positions; shielded gases, filler rods, process variations, and applications; and manual and semi-automatic welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 141 **(3 CR.)**
Welder Qualification Tests I
Studies techniques and practices of testing welded joints through destructive and nondestructive tests; guiding; discoloration heat test; porous examinations; and tensile, hammer, and free bend tests. Also studies visual, magnetic, and fluorescent tests. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 142 **(3 CR.)**
Welder Qualification Tests II
Studies techniques and practices of testing welded joints through destructive and nondestructive tests; guiding; discoloration heat test; porous examinations; and tensile, hammer, and free bend tests. Also studies visual, magnetic, and fluorescent tests. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 145 **(3 CR.)**
Welding Metallurgy
Prerequisite(s): WEL 122, WEL 141, WEL 150, and MTH 111 or instructor's approval. Studies steel classifications, heat treatment procedures, and properties of ferrous and nonferrous metals. Discusses techniques and practices of testing welded joints and destructive/nondestructive, visual magnetic, and fluorescent testing. Lecture 3 hours per week.

WEL 146 **(3 CR.)**
Welding Quality Control
Prerequisite(s): WEL 142, WEL 150, and MTH 111 or instructor's approval. Teaches techniques and practices of inspection and interpretation of tests and measurements. Includes radiographic tests of joints of unlimited thickness welded in 3G and 4G positions. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 150 **(2 CR.)**
Welding Drawing and Interpretation
Teaches fundamentals required for successful drafting as applied to the welding industry, including blueprint reading, geometric principles of drafting and freehand sketching, basic principles of orthographic projection, preparation of drawings, and interpretation of symbols. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

WEL 160 **(3 CR.)**
Semi-Automatic Welding
Introduces semi-automatic welding processes with emphasis on practical application. Includes the study of filler wires, fluxes, and gases.

Transfer VA Curricular Changes

We have created a blog to track all curricular changes from the statewide Transfer VA initiative taking place between now and Fall 2022. Visit the blog at https://blogs.nvcc.edu/academic-affairs.

NOVA | Northern Virginia Community College

Form 125–030A
Valid through Summer 2024

Curriculum Codes

Select your major field of study from the following list. Place the curriculum code of your choice on the Application for Admission form. Please make sure that your selected program is offered at a campus you can attend.

Codes	Associate of Arts:
6480	Liberal Arts
6489	Liberal Arts/Art History
6482	Liberal Arts/Communication Studies
6484	Liberal Arts/English Specialization
6486	Liberal Arts/International Studies
	Associate of Science:
6550	Biology
2130	Business Administration
2460	Computer Science
4710	Criminology and Criminal Justice
8822	Education
8310	Engineering
6990	General Studies
6995	Health Sciences
3400	Information Technology
6520	Psychology
8800	Science
8802	Science/Mathematics
8820	Social Sciences
8823	Social Sciences/Deaf Studies
8825	Social Sciences/Geospatial
8824	Social Sciences/Political Science
	Associate of Fine Arts:
5630	Cinema
560	Music
5610	Visual Art
	Associate of Applied Arts:
5591	Music/Jazz/Popular Music
	Associate of Applied Science:
2030	Accounting
4000	Administration of Justice
4001	Administration of Justice/Homeland Security
9040	Air Conditioning and Refrigeration
6400	American Sign Language to English Interpretation
9010	Architecture Technology
9090	Automotive Technology
1490	Biotechnology
2120	Business Management
9170	Construction Management Technology
2480	Contract Management
3450	Cybersecurity
6360	Early Childhood Development
9680	Engineering Technology
9684	Engineering Technology/Data Center Operations
5110	Graphic Design
5113	Graphic Design/Interactive Design
3350	Horticulture Technology
3353	Horticulture Technology/Landscape Design
2990	Information Systems Technology
2995	Information Systems Technology/Cloud Computing
5200	Interior Design
2600	Paralegal Studies
5020	Photography and Media

Codes	Certificate:
4060	Administration of Justice
9030	Air Conditioning and Refrigeration
2040	Bookkeeping
6320	Early Childhood Development
5570	Music Recording Technology
4030	Substance Abuse Rehabilitation Counselor
695	Uniform Certificate of General Studies (UCGS)

Codes	Career Studies Certificate:
221–203–02	Accounting
221-203-10	Accounting Information Security with Data Analytics
221–640–01	American Sign Language
221–299–06	Application Programming*
221-909-02	Automotive Diagnosis and Repair
221–909–01	Automotive Maintenance and Light Repair
221–149–01	Biotechnology Lab Technician
221–212–15	Business Information Technology
221–909–10	Collision Repair Technology
221–729–01	Computer Aided Drafting and Design
221–917–01	Construction Supervision
221-299-50	Cloud Computing
221–732–09	Cybersecurity
221-299-34	Data Analytics
221-299-16	Data Center Operations
221–299–11	Database Specialist
221-920-01	Diesel Basic Repair
221-920-04	Diesel Preventative Maintenance
221–251–01	Digital Marketing
221–882–01	Driver Education Instructor*
221–636–04	Early Childhood Development
221-968-80	Engineering Technology Technician
221–212–10	Entrepreneurship
221–405–45	Forensic Investigation (Advanced)
221–405–43	Forensic Investigation (General)
221–719–71	Geographic Information Systems (GIS)
221–903–10	HVAC-R and Facilities Services Technology
221–636–06	Infant and Toddler Care
221–299–09	IT Technical Support
221–915–01	Site Development
221–212–13	Leadership Development
221-968-80	Mobile Application Development
221–407–95	National Security
221–732–01	Network Administration*
221–732–04	Network Engineering (Specialist)
221–460–01	Personal Training
221–251–03	Promotion and Public Relations
221–648–03	Public History and Historic Preservation
221-265-01	Technical and Professional Writing
221–529–02	Theatre
221–352–03	Web Design and Development
221–995–01	Welding/Basic Techniques

Allied Health, Nursing and Vet Tech Majors: These are "restricted plans" and require a separate admission process. For initial admission to the College, select General Studies/Health Sciences (6995) as the Plan/Major. From the list below, select the code for the health–related plan you are interested in and enter it as a sub–plan on the Application for Admission.

Codes	Associate of Applied Science:
1180	Dental Hygiene
1090	Diagnostic Medical Sonography/ Abdominal Sonography-Obstetrics and Gynecology Sonography
1091	Diagnostic Medical Sonography/ Echocardiography
1091	Diagnostic Medical Sonography/ Vascular Songoraphy
1460	Emergency Medical Services
1520	Health Information Management
1510	Medical Laboratory Technology
1560	Nursing
1260	Occupational Therapy Assistant
1800	Physical Therapist Assistant
1720	Radiography
1810	Respiratory Therapy
1880	Veterinary Technology

Codes	Certificate:
1200	Dental Assisting

Codes	Career Studies Certificate:
221–152–01	Clinical Data Coding
221–152–02	Health Information Technology
221–151–10	Medical Laboratory Assistant
221–151–02	Phlebotomy

*Program is not eligible for financial aid.

Northern Virginia Community College

PROGRAMS OF STUDY

2023–2024

	Alexandria	Annandale	Loudoun	Manassas	Medical Education	NOL (NOVA Online)	Woodbridge
Accounting	AAS, CSC	AAS, CSC	AAS, CSC	AAS, CSC		AAS, CSC	AAS, CSC
Bookkeeping	C	C	C	C		C	C
Accounting Information Security with Data Analytics	CSC	CSC	CSC	CSC			CSC
Administration of Justice	AAS, C	AAS, C		AAS, C		AAS, C	AAS, C
Forensic Investigation, General	CSC	CSC		CSC			CSC
Forensic Investigation, Advanced	CSC	CSC		CSC			CSC
Homeland Security Specialization		AAS		AAS			AAS
National Security	CSC	CSC		CSC			CSC
Air Conditioning and Refrigeration							AAS, C
HVAC-R and Facilities Services Technology							CSC
American Sign Language to English Interpretation		AAS					
American Sign Language		CSC					
Architecture Technology	AAS	AAS					
Architecture	CSC	CSC					
Computer Aided Drafting and Design	CSC	CSC					
Automotive Technology	AAS			AAS			
Automotive Diagnostic and Repair	CSC			CSC			
Collision Repair Technology	CSC						
Diesel Basic Repair				CSC			
Diesel Preventative Maintenance				CSC			
Maintenance and Light Repair	CSC			CSC			
Biology	AS	AS	AS	AS		AS	AS
Biotechnology				AAS			
Biotechnology Lab Technician				CSC			
Business Administration	AS	AS	AS	AS		AS	AS
Business Management	AAS	AAS	AAS	AAS		AAS	AAS
Business Information Technology	CSC	CSC	CSC	CSC		CSC	CSC
Entrepreneurship	CSC						
Leadership Development	CSC						AFA
Cinema	AFA		AFA				
Computer Science	AS	AS	AS	AS			AS
Construction Management Technology	AAS						
Construction Supervision	CSC						
Site Development	CSC						
Contract Management							AAS
Criminology and Criminal Justice	AS	AS	AS	AS		AS	AS
Cybersecurity	AAS, CSC	AAS	AAS	AAS, CSC		AAS, CSC	AAS, CSC
Dental Hygiene					AAS		
Dental Assisting					C		
Diagnostic Medical Sonography					AAS		
Driver Education				CSC			
Early Childhood Development	AAS, C, CSC		AAS, C, CSC	AAS, C, CSC		C, CSC	
Infant and Toddler Care	CSC		CSC	CSC		CSC	
Education	AS	AS	AS	AS		AS	AS
Teaching Professional	CSC	CSC	CSC	CSC		CSC	CSC
Emergency Medical Services					AAS		
Engineering	AS	AS	AS	AS			
Engineering Technology			AAS	AAS			
Data Center Operations Specialization			AAS, CSC				
Engineering Technology Technician				CSC			
General Studies	AS	AS	AS	AS		AS	AS
Geographic Information Systems			CSC				
Graphic Design	AAS		AAS				
Interactive Design Specialization	AAS		AAS				

AA – Associate of Arts
AS – Associate of Science
AAA – Associate of Applied Arts
AAS – Associate of Applied Science
AFA – Associate of Fine Arts
C – Certificate
CSC – Career Studies Certificate

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PROGRAMS OF STUDY

2023–2024

	Alexandria	Annandale	Loudoun	Manassas	Medical Education	NOL (NOVA Online)	Woodbridge
Health Information Management					AAS		
Clinical Data Coding					CSC		
Health Information Technology					CSC		
Health Science	AS	AS	AS	AS	AS	AS	AS
Horticulture Technology			AAS				
Landscape Design Specialization			AAS				
Information Systems Technology	AAS	AAS	AAS	AAS		AAS	AAS
Application Programming			CSC			CSC	
Cloud Computing	AAS, CSC	AAS, CSC	AAS, CSC	AAS, CSC		AAS, CSC	AAS, CSC
Data Analytics		CSC					
Database Specialist	CSC			CSC		CSC	
IT Technical Support	CSC		CSC	CSC			CSC
Mobile Application Development	CSC		CSC	CSC			
Network Administration		CSC	CSC			CSC	
Network Engineering (Specialist)	CSC	CSC		CSC		CSC	CSC
Web Design and Development	CSC	CSC	CSC				CSC
Information Technology	AS	AS	AS	AS		AS	AS
Interior Design			AAS				
Liberal Arts	AA	AA	AA	AA		AA	AA
Art History Specialization	AA	AA	AA	AA			AA
Communication Studies Specialization	AA	AA	AA	AA		AA	AA
English Specialization	AA	AA	AA	AA			AA
International Studies Specialization	AA	AA	AA	AA		AA	AA
Theatre	CSC			CSC			CSC
Marketing: Digital Marketing	CSC			CSC			CSC
Marketing: Promotion and Public Relations		CSC				CSC	
Medical Laboratory Technology					AAS		
Phlebotomy					CSC		
Music	AFA	AFA	AFA				
Jazz/Popular Music Specialization	AAA	AAA	AAA				
Music Recording Technology			C				
Nursing					AAS		
Occupational Therapy Assistant					AAS		
Paralegal Studies	AAS						
Personal Training	CSC	CSC	CSC	CSC			CSC
Photography and Media	AAS						
Physical Therapist Assistant					AAS		
Psychology	AS	AS	AS	AS			AS
Public History and Historic Preservation			CSC				
Radiography					AAS		
Respiratory Therapy					AAS		
Science	AS	AS	AS	AS		AS	AS
Mathematics Specialization	AS	AS	AS	AS		AS	AS
Social Sciences	AS	AS	AS	AS		AS	AS
Deaf Studies Specialization		AS					
Geospatial Specialization			AS				
Political Science Specialization	AS		AS				
Substance Abuse Rehabilitation Counselor	C						
Technical and Professional Writing	CSC	CSC	CSC	CSC			CSC
Uniform Certificate of General Studies (UCGS)	C	C	C	C		C	C
Veterinary Technology			AAS				
Visual Art	AFA	AFA	AFA	AFA			AFA
Welding: Basic Techniques				CSC			

AA – Associate of Arts
AS – Associate of Science
AAA – Associate of Applied Arts
AAS – Associate of Applied Science
AFA – Associate of Fine Arts
C – Certificate
CSC – Career Studies Certificate

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