Statement of Non-Discrimination: Equal Opportunity/Affirmative Action Institution

It is the policy of both Northern Virginia Community College (NOVA) and the Virginia Community College System (VCCS) to maintain and promote equal employment and educational opportunities without regard to race, color, sex or age (except where sex or age is a bona fide occupational qualification), religion, disability, national origin, marital status, veteran status, political affiliation, sexual orientation, or other non-merit factors. Inquiries concerning affirmative action and equal opportunity policies should be addressed to the College’s Office of the Assistant Attorney General, 4001 Wakefield Chapel Road, Annandale, Virginia 22003 (703–323–3266).

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Northern Virginia Community College provides its Catalog, handbooks, website, and any other printed materials or electronic media for general guidance. The College does not guarantee that the information contained within them, including, but not limited to, the contents of any page that resides under the Domain Name System (DNS) registration of www.nvcc.edu is up-to-date, complete, and accurate, and individuals assume any risks associated with relying upon information without checking other credible sources, such as a student’s academic advisor. In addition, a student’s or prospective student’s reliance upon information contained within these sources, or individual program catalogs or handbooks, when making academic decisions does not constitute, and should not be construed as, a contract with the College. Further, the College reserves the right to make changes to any provision or requirement within these sources, as well as changes to any curriculum or program, whether during a student’s enrollment or otherwise.

Links or references to other materials or websites provided in the above-referenced sources are also for information purposes only and do not constitute the College’s endorsement of products or services referenced.

There may be times when substantive changes are required during the academic year after the Catalog has been printed. Such changes are posted to the College website at www.nvcc.edu/curcatalog.
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LaVonne Ellis
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William C. Hall, Jr.
Dave Nutter
Don “Robin” Sullenberger
Michael Zajur

Accreditation
Northern Virginia Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award the associate degree. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033–4097, or call 404–679–4500 for questions about the accreditation of Northern Virginia Community College. For other information about the College, please contact NOVA’s Administrative Offices, 4001 Wakefield Chapel Road, Annandale, Virginia 22003–3796 or call 703–323–3000.

Curricula of the College are approved by the College Board and by the State Board for Community Colleges. The two-year associate degree programs are also approved by the State Council of Higher Education for Virginia. Other agencies that accredit or recognize selected NOVA programs include:
- Accreditation Commission for Education in Nursing
- American Bar Association
- American Culinary Federation
- American Dental Association
- American Veterinary Medical Association – Committee on Veterinary Technician Education and Activities
- Commission on Accreditation of Allied Health Education Programs
- Commission on Accreditation of Educational Programs for Emergency Medical Services Professions
- Commission on Accreditation for Health Informatics and Information Management Education
- Commission on Accreditation in Physical Therapy Education
- Commission on Accreditation for Respiratory Care
- HVAC Excellence (Benchmark of Academic Excellence)
- National Accrediting Agency for Clinical Laboratory Sciences
FALL SEMESTER 2016

Important Dates

April 4–8: Advising Week for Fall Semester
April 4: NOVAConnect priority registration for continuing students begins for Fall
May 1: Priority date for Fall financial aid applications for all students
May 2: Open registration for all students begins for Fall
July 25: Tuition payment deadline if you register by July 24
NOTE: If you register July 25 or after, you must pay your tuition before 5:00 p.m. the next business day to prevent being dropped from your classes.
August 9: Last day to add your name to the Wait List for all classes for First 8-week Session and 16-week Session
August 17: Last day to initiate change of domicile for Fall
September 5: Labor Day holiday for students, faculty, and staff. College offices closed.
October 1: Last day to apply for Fall graduation
October 10: Last day to add your name to the Wait List for Second 8-week Session
October 10–11: Professional development days for faculty. No classes for students.
November 23: Non-instructional day. No classes. College closes at noon.
November 26–27: Non-instructional days. No classes.
December 18: Last day to withdraw Fall 2016 graduation application

16-Week Session

August 22: Classes begin
August 22–September 8: Drops on NOVAConnect with tuition refund
September 8: Last day to drop with a tuition refund or change to audit (census date)
November 1: Last day to withdraw without grade penalty
December 5–11: Last week of classes
December 12–18: Final exam week
December 18: Final exams end

First 8-Week Session

August 22: Classes begin
August 22–30: Drops on NOVAConnect with tuition refund
August 30: Last day to drop with a tuition refund or change to audit (census date)
September 25: Last day to withdraw without grade penalty
October 18: Classes and examinations end

Second 8-Week Session

October 19: Classes begin
October 19–28: Drops on NOVAConnect with tuition refund
October 28: Last day to drop with a tuition refund or change to audit (census date)
November 28: Last day to withdraw without grade penalty
December 18: Classes and examinations end

Winter Break


Please check NOVAConnect for start dates and census dates for variable duration (dynamic) sessions.
**SPRING SEMESTER 2017**

**Important Dates**

**October 1:** Priority date for Spring financial aid applications for all students

**October 31–November 4:** Advising Week for Spring Semester

**November 8:** NOVAConnect priority registration for continuing students begins for Spring

**November 14:** Open registration for all students begins for Spring

**January 16:** Martin Luther King, Jr., holiday for students, faculty, and staff. College offices closed.

**March 1:** Last day to apply for Spring graduation

**16-Week Session**

**January 9:** Classes begin

**January 26:** Last day to drop with a tuition refund or change to audit (census date)

**March 21:** Last day to withdraw without grade penalty

**April 24–30:** Last week of classes

**May 7:** Final exams end

**First 8-Week Session**

**January 9:** Classes begin

**January 17:** Last day to drop with a tuition refund or change to audit (census date)

**February 11:** Last day to withdraw without grade penalty

**March 5:** Classes and examinations end

**Second 8-Week Session**

**March 13:** Classes begin

**March 21:** Last day to drop with a tuition refund or change to audit (census date)

**April 15:** Last day to withdraw without grade penalty

**May 7:** Classes and examinations end

**Spring Break**

**March 6–12:** Spring break for students. Non-instructional days. No classes. College offices open March 6–10.

Please check NOVAConnect for start dates and census dates for variable duration (dynamic) sessions.
SUMMER TERM 2017

Important Dates
March 28: NOVAConnect registration for all students begins for Summer
April 1: Priority date for Summer financial aid applications for all students
June 1: Last day to apply for Summer graduation
July 4: Independence Day holiday for students, faculty, and staff. College offices closed.

12-Week Session
May 15: Classes begin
May 30: Last day to drop with a tuition refund or change to audit (census date)
July 5: Last day to withdraw without grade penalty
August 6: Classes and examinations end

First 6-Week Session
May 15: Classes begin
May 23: Last day to drop with a tuition refund or change to audit (census date)
June 9: Last day to withdraw without grade penalty
June 25: Classes and examinations end

First 8-Week Session
May 15: Classes begin
May 23: Last day to drop with a tuition refund or change to audit (census date)
June 16: Last day to withdraw without grade penalty
July 9: Classes and examinations end

Second 6-Week Session
June 26: Classes begin
July 5: Last day to drop with a tuition refund or change to audit (census date)
July 21: Last day to withdraw without grade penalty
August 6: Classes and examinations end

Second 8-Week Session
June 12: Classes begin
June 20: Last day to drop with a tuition refund or change to audit (census date)
July 14: Last day to withdraw without grade penalty
August 6: Classes and examinations end

Please check NOVAConnect for start dates and census dates for variable duration (dynamic) sessions.
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<td>703–323–3101</td>
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<td><strong>Academic and Student Services</strong></td>
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<tr>
<td>Dr. Melvyn D. Schiavelli, Executive Vice President</td>
<td>703–323–3195</td>
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<td><strong>Academic Services</strong></td>
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<td>Dr. Sharon N. Robertson, Associate Vice President</td>
<td>703–323–3198</td>
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<td><strong>Academic Assessment</strong></td>
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<td>Sharon Karkehabadi, Associate Vice President</td>
<td>703–764–7390</td>
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<td><strong>Administrative Services</strong></td>
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<td>703–425–5982</td>
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<td><strong>Budget</strong></td>
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<td>Diana Cline, Director</td>
<td>703–323–2158</td>
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<td><strong>Call Center</strong></td>
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<td>Linda Barthelus, Director</td>
<td>703–323–3409</td>
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<td><strong>Disability Services</strong></td>
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<td>John J. Ruffino, Executive Director</td>
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<td>Chief Daniel Dusseau, Acting Director</td>
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<td>Student Services and Enrollment Management</td>
<td>703–323–3459</td>
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<td>Dr. Elizabeth P. Harper, Associate Vice President and Title IX Coordinator</td>
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<td>Dr. Steven Partridge, Vice President</td>
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*As of 06/01/16*
# ALEXANDRIA CAMPUS

5000 Dawes Avenue, Alexandria, Virginia 22311  
For campus maps, directions, and building locations, go to [http://www.nvcc.edu/campuses](http://www.nvcc.edu/campuses)

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<td>Instructional Support and Development</td>
<td>AA337/AA343</td>
<td>703–933–3998/6553</td>
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As of 06/01/16
# ANNANDALE CAMPUS

8333 Little River Turnpike, Annandale, Virginia 22003
For campus maps, directions, and building locations, go to [http://www.nvcc.edu/annandale/index.html](http://www.nvcc.edu/annandale/index.html)

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<td>Community Outreach: Robert Hull</td>
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<td>Student Support Services: Marilyn Deppe, Coordinator</td>
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As of 06/01/16
# LOUDOUN CAMPUS

21200 Campus Drive, Sterling, Virginia 20164

For campus maps, directions, and building locations, go to http://www.nvcc.edu/campuses

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<td>Writing Center: Jeremy Ruane</td>
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As of 06/01/16
**MANASSAS CAMPUS**

*6901 Sudley Road, Manassas, Virginia 20109*

For campus maps, directions, and building locations, go to [http://www.nvcc.edu/campuses](http://www.nvcc.edu/campuses)

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*As of 06/01/16*
# MEDICAL EDUCATION CAMPUS

**6699 Springfield Center Drive, Springfield, Virginia 22150**
For campus maps, directions, and building locations, go to [http://www.nvcc.edu/campuses](http://www.nvcc.edu/campuses)

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As of 06/01/16
## WOODBRIDGE CAMPUS

2645 College Drive, Woodbridge, Virginia 22191
For campus maps, directions, and building locations, go to http://www.nvcc.edu/campuses

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<td>Natural Science and Mathematics Division: Alison Thimblin, Dean</td>
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<td>NOVACard and Parking Services</td>
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<td>WC208A</td>
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<td>WC202</td>
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<tr>
<td>Veterans Advisor: Diane Malone</td>
<td>WC208R</td>
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As of 06/01/16
RESTON CENTER

1831 Wiehle Avenue, Third Floor, Reston, Virginia 20190
For campus maps, directions, and building locations, go to http://www.nvcc.edu/campuses

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<th>CENTER OFFICES AND STAFF</th>
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As of 06/01/16
The Extended Learning Institute (ELI) 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 ELI website at http://eli.nvcc.edu for a complete listing of programs and courses.

Most coursework may be completed at home, although 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. All ELI online learning courses require regular Internet access. ELI courses have regular deadlines for course progress. When taking an ELI 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. ELI has counselors, success coaches, a librarian, online tutors, and other support staff to assist students, and the NOVA campuses provide additional services such as computer labs and in-person tutoring. Students also interact with their classmates throughout their online courses.

Courses include two or more proctored exams/assignments. These exams should be taken at one of NOVA’s campus Testing Centers, with an ELI-approved proctor for students living outside the Northern Virginia area, or via webcam through ELI’s online proctoring service.

Students may enroll in ELI courses the same way they enroll in on-campus courses, through NOVAConnect online. Most ELI courses have multiple sections starting throughout the semester. When course capacity limits are reached, ELI sections are closed to further enrollment. Advising for ELI courses is available from the ELI counselors. Students who are veterans and enroll in an ELI course will not be certified for benefits until they satisfactorily complete the course. For international students, certain restrictions apply to how many ELI credits they may take in a given semester.

ELI offices are located at 3922 Pender Drive, Fairfax, Virginia 22030.

For additional information, see “Extended Learning Institute” in the Academic Policies and Information section of this Catalog or visit the ELI website at http://eli.nvcc.edu. Individuals may write to the

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**ELI STAFF**

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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 and served for thirty years. Dr. Belle S. Wheelan became the third president of the College in July 1998 and served for three years. Dr. Robert G. Templin, Jr., became the fourth president of the College in August 2002.

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. 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 2013–2014 academic year, the College served more than 77,390 students in credit courses and another 22,400 in noncredit courses. More than 300,000 people came to NOVA campuses throughout the year for various cultural and enrichment activities.

Northern Virginia Community College (NOVA) has grown from a single building in Bailey’s Crossroads to a comprehensive community college with six permanent campus sites. The College operates on the semester system with 16-week Fall and Spring Semesters and a 12-week Summer Session. Many courses are offered in shorter sessions, often including 12-week, 10-week, 8-week, and 6-week sessions, to meet the needs of students, business, and industry.

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.

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 16-week Fall and Spring Semesters and a 12-week Summer Session. Many courses are offered in shorter sessions, often including 12-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 comprehensive higher-education and workforce-training programs and services of superior quality that are financially and geographically accessible and that meet individual, business, and community needs of the Commonwealth.”
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 committees for career and technical curricula offered at the College. Committee members are selected from career fields that are directly related to the career objectives of programs at NOVA. These committees provide the guidance necessary for planning new programs and insuring that courses and programs continue to provide instruction in the skills suited for the job market in Northern Virginia. 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 to award the associate degree. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia, 30033–4097, or call 404–679–4500 for questions about the accreditation of Northern Virginia Community College. For other information about the College, please contact NOVA’s Administrative Offices, 4001 Wakefield Chapel Road, Annandale, Virginia 22003–3796 or call 703–323–3000.

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:

- the Allied Health and Nursing Programs, accredited by the Accreditation Commission for Education in Nursing; American Dental Association, the Commission on Accreditation of Allied Health Education Programs, the Commission on Accreditation of Educational Programs for Emergency Medical Services Professions, the Commission on Accreditation for Health Informatics and Information Management Education, the Commission on Accreditation in Physical Therapy Education, the Commission on Accreditation for Respiratory Care, and the National Accrediting Agency for Clinical Laboratory Sciences;
- the Air Conditioning and Refrigeration A.A.S., recognized by HVAC Excellence (Benchmark of Academic Excellence);
- the Culinary Arts Certificate, an apprenticeship program recognized by the American Culinary Federation;
- the Paralegal Studies Program, approved by the American Bar Association; and
- the Veterinary Technology Program, accredited by the 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
With commitment to the values of access, opportunity, student success, and excellence, the mission of Northern Virginia Community College is to deliver world-class, in-person and online postsecondary teaching, learning, and workforce development to ensure our region and the Commonwealth of Virginia have an educated population and a globally competitive workforce.

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

NOVA General Education Goals

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:

Communication
Students will demonstrate the ability to
- understand and interpret complex materials;
- assimilate, organize, develop, and present an idea formally and informally;
- use standard English;
- use appropriate verbal and nonverbal responses in interpersonal relations and group discussions;
- use listening skills; and
- recognize the role of culture in communication.

Critical Thinking
Students will demonstrate the ability to
- discriminate among degrees of credibility, accuracy, and reliability of inferences drawn from given data;
- recognize parallels, assumptions, or presuppositions in any given source of information;
- evaluate the strengths and relevance of arguments on a particular question or issue;
- weigh evidence and decide if generalizations or conclusions based on the given data are warranted;
- determine whether certain conclusions or consequences are supported by the information provided; and
- use problem-solving skills.

Cultural and Social Understanding
Students will demonstrate the ability to
- assess the impact that social institutions have on individuals and culture—past, present, and future;
- describe their own as well as others’ personal ethical systems and values within social institutions;
- recognize the impact that arts and humanities have upon individuals and cultures;
- recognize the role of language in social and cultural contexts; and
- recognize the interdependence of distinctive worldwide social, economic, geo-political, and cultural systems.

Information Literacy
Students will demonstrate the ability to
- determine the nature and extent of the information needed;
- access needed information effectively and efficiently;
- evaluate information and its sources critically and incorporate selected information into his or her knowledge base;
- use information effectively, individually or as a member of a group, to accomplish a specific purpose;
- understand many of the economic, legal, and social issues surrounding the use of information and access and use information ethically and legally; and
- show computer competency in discipline-specific skills necessary for successful transfer or employment.

Personal Development
Students will demonstrate the ability to
- develop and/or refine personal wellness goals; and
- develop and/or enhance the knowledge, skills, and understanding to make informed academic, social, personal, career, and interpersonal decisions.

Quantitative Reasoning
Students will demonstrate the ability to
- use logical and mathematical reasoning within the context of various disciplines;
- interpret and use mathematical formulas;
- interpret mathematical models such as graphs, tables, and schematics and draw inferences from them;
- use graphical, symbolic, and numerical methods to analyze, organize, and interpret data;
- estimate and consider answers to mathematical problems in order to determine reasonableness; and
- represent mathematical information numerically, symbolically, and visually, using graphs and charts.

Scientific Reasoning
Students will demonstrate the ability to
- generate an empirically evidenced and logical argument;
- distinguish a scientific argument from a nonscientific argument;
- reason by deduction, induction, and analogy;
- distinguish between causal and correlational relationships; and
• recognize methods of inquiry that lead to scientific knowledge.

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 http://www.nvcc.edu/oir/novadata.html.

Offerings

College Transfer Education
The College transfer program includes courses typical of the first two years of a baccalaureate program in arts and sciences or pre-professional programs. NOVA transfer courses closely parallel courses at four-year institutions, meeting standards acceptable to baccalaureate degree programs. Since requirements vary among four-year schools, those planning to transfer should check the requirements of the 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 craftpersons 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 serve students who have a variety of goals, including access to American higher education, entry or advancement in the workforce, or simply language improvement. NOVA ESL students may be residents of Northern Virginia, students with F-1 status, or other visitors to the United States. The two principal NOVA ESL programs are College ESL and the American Culture and Language Institute (ACLI). In both ESL programs, students acquire fluency, enhance their ability to express increasingly complex ideas, and gain greater control of the linguistic complexities of English.

College ESL builds the academic literacy and critical thinking skills necessary for success in American higher education. College ESL consists of four levels of credit 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 the Office of Workforce Development. It offers noncredit classes to residents of Northern Virginia and other visitors in its Core Skills ESL and Specialty Courses Programs, and to students with F-1 status in its Intensive English Program. ACLI courses range from introductory to intermediate-level ESL. They also prepare individuals for entry or advancement in the workforce. ACLI courses are fee-based. Many ACLI students go on to take classes in College ESL and academic disciplines.

Students take a placement test to assess their English proficiency prior to enrolling in ESL courses. Students who score below 225 on the ACCUPLACER and students in F-1 status who place at College ESL Levels 2 and 3 are referred to the ACLI. Students who score 225 or higher on the ACCUPLACER may
place into College ESL or directly into ENG 111. In-state and out-of-state guidelines apply to the College ESL Program, and financial aid is available for those who qualify.

Pathway to the Baccalaureate
NOVA is a partner in a highly successful initiative that supports college access for underrepresented students in higher education in Northern Virginia. Through a partnership with area public school systems and George Mason University, NOVA’s Pathway to the Baccalaureate Program offers a supportive environment to facilitate the successful transition, retention, graduation, and transfer of participating students to a university of the student’s choice.

Admission to the program is selective and open to current high school seniors at participating high schools in Alexandria City, Arlington County, Fairfax County, Falls Church City, Loudoun County, Manassas City, Manassas Park City, and Prince William County Public Schools. Visit www.nvcc.edu/pathway to learn more.

Continuing Education
Through the Workforce Development Division, continuing education programs are offered to enable 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 nonclassroom 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.

Workforce Development Services
The mission of Workforce Development Services is to advance Virginia’s workforce through world-class programs and services that focus on employee and business development and technology deployment. Workforce development instruction is designed to assist Virginia residents in gaining skills necessary for entering employment or to retrain persons displaced from other jobs so that they may obtain gainful employment. These programs are usually of a short-term nature and are tailored to fit the exact needs of a regional business. To provide this service, NOVA’s Workforce Development Office deals directly with employers in designing and offering courses to meet real, current, and projected workforce training needs. These course offerings are made available to business and industry at times and places that meet their needs. Training may take place anywhere in Virginia, as approved by the State Board for Community Colleges. For more information, go to the workforce development website at www.nvcc.edu/workforce.

Adult Career Pathways
NOVA’s Adult Career Pathways Program is for unemployed or underemployed workers, low-wage workers, work-eligible immigrants comfortable with reading and writing English, and young career starters with a high school diploma or GED. The program connects participants with NOVA career counselors who assist them in developing an education or training plan to earn a certification or credential. ACP counselors introduce students to programs and opportunities available to them and help students navigate the procedures necessary to attend NOVA classes and apply for financial assistance. For further information and upcoming College Access Workshop dates, please contact acp@nvcc.edu or 703–425–5245.

Community-Based Organizations
NOVA partners with several community-based organizations (CBOs) to offer its credit courses at the CBO sites. These partnerships provide education and training at nonprofit organizations that will create gateways of opportunity to higher education, better jobs, and increased earnings to students who are pursuing the American dream. Students receive NOVA credit and job training at the CBO site in administrative technologies, administration of justice, business management, finance, entrepreneurship, information technologies, and early childhood development fields. Students in this program will receive a NOVA transcript that shows credits and grades earned at the College. CBO students pay NOVA tuition; they are provided orientation, financial aid workshops, and assistance with application and registration by NOVA staff members. Students who wish to take a CBO class should contact one of the CBO partners, visit the website https://www.nvcc.edu/cbo/index.html, or call 703–933–1844.

Learning and Technology Resources
Learning and technology resources provided at each campus include library services, and may include information and instructional technology support services, audiovisual services, placement testing, and learning laboratory facilities. The materials,
systems, and services are designed to support the programs of the College and to create an environment conducive to learning. While the primary emphasis is directed towards supporting instructional programs at each campus, appropriate services are provided to citizens as a part of the College commitment to serve the educational needs of the community.

Library
Students, faculty, staff, and members of the local community may access the combined College collection of more than 400,000 units of print and nonprint materials that is available at all of the campuses or remotely via the College’s online public access catalog. 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. 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. Students, faculty, and staff may also access subscription databases remotely through a proxy server.

Staff members provide reference assistance and instruction in the use of resources both on-site and virtually to distance users. 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 the Extended Learning Institute 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
The Office of Disability Services provides College personnel professional development opportunities in the use of assistive technology tools used to serve students with disabilities. Some of those tools 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 start pens. Disability Services also provides support in the conversion of alternate format for texts and course materials when needed to support the specific needs of students with disabilities.

Television Services
Television production, video streaming, and satellite downlinking services are provided by the Television Center. Virginia Distance Education Network video links among the campuses and other colleges are provided and supported by the College Television Center and supported by campus staff. The Television Center is located on the Annandale Campus and provides a complete television production, editing, and transmission facility. The Television Center provides a direct link to local cable TV systems for credit telecourses and other College programming. The Center also has connections to George Mason University to provide satellite uplink services.

NVCC Educational Foundation
The Northern Virginia Community College Educational Foundation, Inc. was established to provide additional financial support for the College’s students and programs. Created in October 1979 as a nonprofit, tax-exempt 501(c)(3) charitable foundation, it strives to obtain resources from private individuals, businesses, and other foundations to enhance the College’s mission.

Gifts to the Foundation are tax deductible under Section 170 of the Internal Revenue Service Code and may be designated as restricted or unrestricted by donors. The Foundation accepts gifts of cash, securities, real estate, insurance policies, and
personal property such as books and other library materials, works of art, and equipment. Charitable gift annuities, remainder unitrusts, bequests, life-income plans, and memorial gifts can be arranged for the donor’s and College’s benefit. The Foundation offers scholarships for some currently enrolled students. Enhancing the Scholarship Fund is a Foundation priority.

The Foundation is governed by a board of directors whose members come from both the public and private sectors in Northern Virginia. A small staff manages day-to-day operations. The Foundation is located at 7630 Little River Turnpike, Annandale, Virginia 22003, 703–323–3023.

Alumni Federation

Established in June 1983, the Northern Virginia Community College Alumni Federation comprises graduates and former nongraduate students who achieved 30 credits or more at NOVA.

The 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.

Federation policy is formulated by a Board of Governors, elected annually by the membership; Federation management and operation is under the supervision of the assistant director of the Educational Foundation. Active committees include Publications, Scholarships, Awards, Programs, Nominations-Elections-Bylaws, and Alumni Senate. Those who have an interest in the Alumni Federation should contact alumni@nvcc.edu.

Grants Development

The College recognizes the importance of grants development and has committed resources to seek funding. The director of Grants and Special Projects assists administrators, faculty, and staff in identifying funding sources targeted to particular areas of interest; interacts with program officers; and assists in the preparation of grant proposals and in the administration of funded projects.

Outside funding is pursued in such areas as workforce development, professional development, purchase of equipment, student services, and curriculum development.
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.

Noncurricular Student
Students who have not requested admission to a curriculum 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 noncurricular 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 noncurricular 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 the section on “Dual Enrollment.” later in this chapter.)
- 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 temporarily 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
A full-time student is enrolled in 12 or more credits of coursework in a semester or during the summer.

Part-Time Student
A part-time student is enrolled in fewer than 12 credits of coursework in a semester or during the summer.

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 assessment scores can be found in the “Testing” 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 requested, but not required. 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 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 in order 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. This should provide incoming students with the opportunity to attend the New Student Orientation or meet with a counselor for academic assistance prior to enrollment, and give them time to take required placement tests.

The College reserves the right to evaluate Applications for Admission, document special cases, and to refuse or revoke admission if the College determines that the applicant or student is a threat, is a potential danger, is significantly disruptive to the College community, or if such refusal is considered to be in the best interest of the College. Students whose admission is revoked after enrollment must be given due process. Applicants who have been expelled or suspended from, or determined to be a threat, potential danger, or significantly disruptive by another college will not be admitted to NOVA.

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.

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

In addition, highly qualified students who meet stringent admission criteria may be able to complete a General Education certificate or degree while in high school. Students interested in this opportunity should consult with their school directly.

High School Students

High school juniors or seniors may take dual enrollment courses at a NOVA campus or center, through the Extended Learning Institute, or take NOVA courses taught at their high school. Exceptions may be considered for freshman and sophomore
students who are able to demonstrate readiness for college-level 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. It is required that all prospective dual enrollment students meet established institutional placement criteria prior to enrolling in dual enrollment coursework. (See section on “Testing.”)

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 each semester 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 a home schooled equivalent of a high school junior or senior may be eligible to take courses at a NOVA facility or through the Extended Learning Institute. Dual enrollment is considered enrichment to the home school program and cannot substitute for the home school experience.

Admission Procedures for Dual Enrollment Applicants for dual enrollment at a NOVA facility
These students should complete the online application available at www.nvcc.edu at least 30 days in advance of the start of the class. They must also submit a Dual Enrollment Recommendation Form (125–207) or Dual Enrollment for Home Schooled Students Form (125–208) once the online application is completed. These forms can be found online at www.nvcc.edu/forms. The campus dean of students 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 he/she believes 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-level work and that the district will accept appropriate coursework for high school credit. Home schooled students must provide either a copy of a current signed home school agreement between the appropriate 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 facility must meet with a NOVA counselor and/or dean of students at the campus they plan to attend at least two weeks before the start of classes. First-time dual enrollment students must bring a sealed official high school transcript to the meeting. Returning dual enrollment students will have their NOVA transcript or course progress reviewed prior to approving or denying future reenrollments at the College. All students must meet admission and course placement requirements and/or prerequisites.

Dual enrollment students who take classes at a NOVA facility must register for College classes in person. 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
These students should talk with their guidance counselor. The entire application, testing, permission, and payment process will be handled within the high school.

Applicants for a dual enrollment course offered through the Extended Learning Institute
Students who wish to take a class through NOVA’s online learning division should submit the necessary documentation to an ELI counselor (elicounselors@nvcc.edu or 703–323–2425) and follow the instructions on the ELI web page: http://eli.nvcc.edu/doc/Dual_Enrollment_ELI_Checklist.pdf. Requests by dual enrollment students to enroll in ELI are handled on a case-by-case basis.

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 section on “Testing” in this Catalog for further information.
• Dual enrollment students must meet all course prerequisites. Dual enrollment students should also review “Placement Testing” under the “Testing” section of this Catalog for additional information.
• Dual enrollment students are not eligible for financial aid through NOVA.
• Dual enrollment students are not permitted to enroll in developmental courses.
• Dual enrollment students are not allowed to 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 ELI, or at a local high school.

International Students
NOVA welcomes all international students. To be admitted, all applicants must complete the Application for Admission available online at www.nvcc.edu. When an online application is completed, the student will receive a student identification number (SIS number).

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 in other visa categories will need to visit a Student Services center on campus to provide evidence of their legal status before registering for classes. If students in other visa categories 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 attend an International Student Symposium, a New Student Orientation and a First Year Student Orientation, and to meet with a counselor for academic assistance prior to enrollment in classes.

Students may need to provide the documents below:
• Official High School Transcript
• College transcripts for those who have attended college
• Standardized Test Scores such as TOEFL or IELTS
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, 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 ELI online learning course, senior citizens must have the instructor’s permission.

Senior citizens may not register until the day before classes begin unless they pay tuition. 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.

- 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 course expenses other than tuition, such as laboratory fees.
- Audit and noncredit enrollment is limited to three courses in one term.
- The College reserves the right to cancel any class.

Visiting (Transient) Students
Students currently enrolled at four-year colleges and universities may enroll in most NOVA courses without taking a placement test to determine readiness to do college-level work. Such “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. In some cases, documentation will be required to show successful completion of course prerequisites. Full information and directions are available at http://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 academic planner 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 e-mail 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
- apply for financial aid
- 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
The Student ID will be used throughout a student’s NOVA College career to identify him or her in NOVAConnect and the student’s 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. A Social Security number is requested, but not required, when completing the Application for Admission. 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 applications 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.
## Testing

### English Language Requirement

Students are required to demonstrate a specified level of English proficiency in order to enroll in most College credit courses. Regardless of course selection and unless a student has demonstrated English proficiency through previous standardized testing, all students will be required to take an English placement test prior to registering for the 16th credit.

See “Placement Test Exemptions,” which follows.

### Admission Testing

Individuals 18 years of age and older who do not have a high school diploma or the equivalent are required to undergo assessment testing in reading, writing, and mathematics and achieve the following scores or placements:

<table>
<thead>
<tr>
<th></th>
<th>Virginia Placement Test</th>
<th>COMPASS</th>
<th>ASSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>ENF 1</td>
<td>62</td>
<td>35</td>
</tr>
<tr>
<td>Writing</td>
<td>ENF 1</td>
<td>32</td>
<td>35</td>
</tr>
<tr>
<td>Mathematics</td>
<td>MTE 1</td>
<td>25</td>
<td>33</td>
</tr>
</tbody>
</table>

Dual enrollment students must also undergo assessment testing for admission to the College. See the section on “Dual Enrollment Students” later in this section.

### Placement Testing

NOVA administers tests to assess an individual’s college readiness and placement in certain courses. Such tests are intended to assist students in selecting courses and designing an academic program in which they will most likely be successful. These tests are administered through the Testing Center at each campus. Students are encouraged to take placement tests in English and mathematics before enrolling in classes.

Prior to testing, students must have submitted an Application for Admission to the College.

Students with scores on any required placement test that are below the specified minimums must complete prescribed developmental studies or English as a Second Language (ESL) course(s). The course(s) required will be determined by the student’s scores. These requirements apply to all campuses and ELI, unless specifically waived by the responsible academic dean.

The following students must take an English placement test, unless they are enrolling in one of the courses listed under “Placement Test Exemptions”:

- students who have a cumulative grade point average (GPA) of less than 2.00 after the completion of 9 semester hours at NOVA;
- students who are transferring to NOVA with a cumulative GPA of less than 2.00 (regardless of the number of hours completed);
- students who plan to enroll in dual enrollment classes; and
- students who entered NOVA in the Fall 2002 semester or later, regardless of the GPA, prior to registering for the 16th credit, unless they present a standardized test score that exempts them as outlined in the following section.

A math placement test is required to enroll in college-level math classes, unless the student meets exemptions as outlined in the following section.

### Placement Test Exemptions

#### English Placement Test

Students who have taken a standardized test within the past two years and present test scores as follows may enroll directly into ENG 111 without testing:

- a minimum of 560 (applies only to SATs taken March 2016 onward) or 500 (applies only to SATs taken before March 2016) on both the critical reading and writing portions of the SAT exam,
- a minimum combined score of 18 on both the English and writing tests of the ACT, or
- a 95 or higher on the TOEFL iBT.

In addition, the following students may be eligible for credit for ENG 111 and may not need to take the placement test:

- students who have a previous transfer-oriented associate degree or higher from a regionally accredited U.S. institution;
- students with a satisfactory score on AP, IB, Cambridge Advanced Level, or CLEP exams.

Many courses require placement into ENG 111 as a prerequisite.
The following courses are exempt from the English placement test requirement:

<table>
<thead>
<tr>
<th>Course</th>
<th>Courses Exempt</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJ 100</td>
<td>100</td>
</tr>
<tr>
<td>CIV 171, 172</td>
<td></td>
</tr>
<tr>
<td>PED all courses except 116 and 220</td>
<td></td>
</tr>
<tr>
<td>SDV 100, 101, 107, 109 (other SDV courses are not exempt)</td>
<td></td>
</tr>
</tbody>
</table>

**Math Placement Test**

A student who provides official evidence of a minimum mathematics SAT score of 550 (applies only to SATs taken March 2016 onward) or 520 (applies only to SATs taken before March 2016) on the SAT or a minimum score of 22 on the ACT taken within the last two years may register for MTH 115, MTH 126, MTH 150, MTH 151, MTH 152, MTH 157, or MTH 181 without taking the math placement test.

**Duration of Test Score Validity and Test Retakes**

English test scores are valid for two years after the date of the test. Students who take the English placement test and who do not enroll in developmental English are allowed to take one retest within 12 months. Students who attempt a developmental English course will be ineligible for a retest. Exceptions to this retest policy may be made on a case-by-case basis in accordance with established College procedures.

Math test scores are valid for two years after the date of the test. Students who take the placement test and who do not enroll in developmental math are allowed to take one retest within 12 months. Students who attempt developmental mathematics will be ineligible for a retest. Academic deans may grant exceptions to this policy on a case-by-case basis.

**Dual Enrollment Students**

In order to be admitted to dual enrollment classes, all students must demonstrate college readiness by meeting the following placement or scoring criteria:

<table>
<thead>
<tr>
<th>Admission Criteria for Transfer Courses</th>
<th>Virginia Placement Test</th>
<th>COMPASS</th>
<th>ASSET</th>
<th>PSAT</th>
<th>SAT</th>
<th>ACT</th>
<th>SOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>ENG 111</td>
<td>81</td>
<td>42</td>
<td>N/A</td>
<td>500</td>
<td>18</td>
<td>N/A</td>
</tr>
<tr>
<td>Writing/English</td>
<td>ENG 111</td>
<td>76</td>
<td>43</td>
<td>N/A</td>
<td>500</td>
<td>18</td>
<td>N/A</td>
</tr>
<tr>
<td>Writing/Reading</td>
<td>ENG 111</td>
<td>N/A</td>
<td>N/A</td>
<td>390</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Mathematics</td>
<td>MTE 1</td>
<td>25</td>
<td>33</td>
<td>500</td>
<td>520</td>
<td>22</td>
<td>Algebra I – pass</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Admission Criteria for Non-Transfer-Oriented Courses</th>
<th>Virginia Placement Test</th>
<th>COMPASS</th>
<th>ASSET</th>
<th>PSAT</th>
<th>SAT</th>
<th>ACT</th>
<th>SOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>ENF 1</td>
<td>62</td>
<td>35</td>
<td>N/A</td>
<td>500</td>
<td>18</td>
<td>N/A</td>
</tr>
<tr>
<td>Writing/English</td>
<td>ENF 1</td>
<td>32</td>
<td>35</td>
<td>N/A</td>
<td>500</td>
<td>18</td>
<td>N/A</td>
</tr>
<tr>
<td>Writing/Reading</td>
<td>ENF 1</td>
<td>N/A</td>
<td>N/A</td>
<td>390</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Mathematics</td>
<td>MTE 1</td>
<td>25</td>
<td>33</td>
<td>500</td>
<td>520</td>
<td>22</td>
<td>Algebra I – pass</td>
</tr>
</tbody>
</table>

Exemptions to all testing requirements are stated previously under “Placement Text Exemptions.”

**Testing Centers**

A government-issued photo identification, such as a driver’s license, is required at the Testing Center to take the tests. Students will not be permitted to take backpacks, coats, or other personal effects into the Testing Center.

For information about testing or testing accommodations, contact a campus Testing Center, Student Services Center, or visit www.nvcc.edu/testing.

Extended Learning Institute students may use any of the NOVA campus Testing Centers. Some placement testing for ELI students may be arranged to be administered outside the Northern Virginia region. Contact ELI registration at elireg@nvcc.edu or call 703–323–3368 for more 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 at www.nvcc.edu/novaconnect, the online Student Information System. 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.

#### On-Time Registration

NOVA has on-time registration policy. All students must register by 11:59 p.m. the day before the session begins. Once students have registered, they have until 5:00 p.m. the next business day to pay. There will be no late registration and students will not be permitted to add/swap classes once the session has begun. Any schedule adjustment after the session has begun requires permission of the academic dean.

#### Dropping a Course

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. 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.

#### Cancellation of a Section or Course by the College

The College may cancel a course or section for any reason. Students enrolled in a canceled course or section will receive a tuition refund unless they transfer to another course. 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.

#### 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)” will 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. Furthermore, 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 or by completing a Withdrawal Initiated by the Student Form (125–047) and submitting it to the Student Services Center. Instructions for withdrawal from a course are outlined on the 125–047 Form. 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 Student Services Center. Students may only withdraw after the 60 percent point if they are in good academic standing in the class. This documentation will be retained electronically. See “Grading System” in the “Academic Policies and Information” section for an explanation of grades. The student’s money will not be refunded for courses from which he or she withdraws. To obtain a refund, students must have dropped the classes within the published tuition refund deadlines.

#### Medical/Emergency Withdrawal

A student may request a voluntary withdrawal from the College for emergency and severe medical and/or psychological reasons. Examples of situations that may fall into this category include:

- an extended illness or major medical issue 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.
- a psychiatric/psychological emergency or severe, extended illness occurring during the semester the student is registered which requires hospitalization or that prevents the student from attending classes. A written verification by the attending mental health therapist is required.
• death of the student or a member of the student’s immediate family (mother, father, sister, brother, husband, wife, or child).

The student will complete the Withdrawal Initiated by a Student Form (125–047) with appropriate documents attached. The form will be submitted to the Office of the Dean of Students. If the withdrawal is approved, a grade of “W” will be assigned to the student’s records. Any documentation from medical or mental health personnel should be detailed enough for the dean of students to make an informed determination. Students may request consideration for a tuition refund by following the Business Office procedures.

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

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). 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. The current financial aid handbook outlining complete details may be found on the financial aid website at www.nvcc.edu/financialaid or at any campus Student Services Center. 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.

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.

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 their campus dean of students for assistance with the process of withdrawal from the College and tuition refund.

The military student needs to provide the dean with his/her name; Student ID number; and a copy of his/her military orders, deployment orders, or documentation indicating he or she must leave the area for service. If the service member used Tuition Assistance (TA), the service member must contact his/her military education counselor 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 veterans office that certified the course. 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
Students who have received any veterans benefits must also report their withdrawal to the veterans advisor. The Withdrawal Initiated by a Student Form (125–047) must include the student’s last date of class attendance. Failure to follow established procedures could affect his or her future eligibility for veterans benefits. For more guidance, contact any campus veterans advisor.

Extended Learning Institute Enrollment
Students may enroll in Extended Learning Institute (ELI) online courses through NOVAConnect. Most courses have multiple sections starting throughout the semester. Details are available by calling ELI at 703–323–3368 or checking the ELI website.

Students taking their first online course at NOVA should also complete an ELI orientation, offered via webinar on multiple dates and times around the start of each semester. Check the ELI website or contact the ELI Hotline at elicoursespecialists@nvcc.edu or 703–323–3347 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
Beginning in Fall 2014, NOVA implemented a new on-time registration policy. In accordance with this new policy, students must be registered for classes by 11:59 p.m. the day before the start date of the session (e.g., 16 weeks, 14 weeks, 12 weeks, 8 weeks, etc.). Once the session begins, registration is closed. Students may not enroll in courses after the on-time registration period has ended (i.e., the day before the session begins). Students may drop courses at any time but should consult with an advisor before doing so. Students who drop a course after the session has begun will not be able to add another course in the same session. In other words, students cannot “swap” a course for another one in the same session once that session has started. Students can, however, add a course in a later 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 (125–077) and submit supporting documentation to the appropriate academic dean for approval. The academic dean 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 (125–077) and submitted to the appropriate academic dean for approval. The academic dean is the only person who can grant permission for schedule adjustment. Tuition is charged for courses added.

After in-class diagnostic testing in ENF, ESL, or MTT, 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 (125–077). 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 an ELI 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 ELI. If the change is approved, there is no refund eligibility for the ELI 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. The regular tuition rate is charged. 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 Extended Learning Institute courses with the instructor’s permission. The instructor may still 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.

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. There are several payment options 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 and 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 official day of classes
- 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 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.

**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. In the event that 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 MyCAA at https://aiportal.acc.af.mil/mycaa/Default.aspx or NOVA’s 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 program application may be downloaded at www.dvs.virginia.gov/education-employment/virginia-military-survivors-and-dependents-education-program/, or obtained by contacting the Virginia Department of Veterans Services, 1351 Hershberger Road, N.W., Roanoke, Virginia 24012. The telephone number is 540–561–6625.

Veterans Benefits
All College degree and certificate programs are approved for training-eligible servicepersons, veterans, and dependents. Additional information is available from the veterans advisor on each campus.

Veterans and veteran’s 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 the Extended Learning Institute and accelerated courses are also measured differently. See a campus veterans advisor for details.

Students who receive educational benefits must report their enrollment each semester to their veterans advisor. 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 to the campus veterans advisor. 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.

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:

<table>
<thead>
<tr>
<th>Regular Credits Attempted (A, B, C, D, F)</th>
<th>Minimum Cumulative GPA Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>13–23 credits</td>
<td>1.50</td>
</tr>
<tr>
<td>24–47 credits</td>
<td>1.75</td>
</tr>
<tr>
<td>48 or more credits</td>
<td>2.00</td>
</tr>
</tbody>
</table>

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 by the veterans advisor 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 campus veterans advisor.

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 Refunds

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

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

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 on financial aid may charge books following the procedures established by the Financial Aid Office.

**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 (“B” lots) on any campus during any semester, including Summer, must display a valid parking permit. A current NOVACard and valid parking permit are required to access the permit holder lanes at the Annandale and Medical Education Campus garages. Hourly pay parking is also available at all campuses for those who do not have a current permit.

Permits may be purchased beginning May 1 for the Summer, August 1 for the Fall Semester, and December 1 for the Spring Semester. Students may purchase “B” parking permits online through the parking services website at https://parking.nvcc.edu. Permits purchased online will be mailed to the applicant’s home address on record, and a temporary 21-day pass can be printed for use while awaiting mail delivery. Permits must be correctly displayed by placing it as directed on the vehicle. Display instructions are provided with the permit and described on the parking services website.

The cost of a parking permit and hourly parking rates are specified on the parking website.

Parking enforcement on “B” lots will begin at 6 a.m. 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. NOVA students may park for free and without a permit on any NOVA campus after 4:00 p.m. on weekdays and at any time on weekends.

Questions regarding parking on campus can be directed to a campus Parking Services Office.

**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.

**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 students to have the “W” grades removed and to be reinstated in his/her courses. 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 publishes 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.

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 www.fafsa.gov. Applications should be completed several months in advance of the semester for which assistance is needed. Applicants for all aid programs, including loans, must file the FAFSA. Completed applications received by May 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 or 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 one of the campus Student Services Centers for evaluation. The student must also complete NOVA’s Request for Evaluation of Transcript Form (125–049). 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.

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.

<table>
<thead>
<tr>
<th>Total Number of Credits Attempted</th>
<th>GPA Requirement</th>
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<tbody>
<tr>
<td>1–15</td>
<td>1.50</td>
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<tr>
<td>16–30</td>
<td>1.75</td>
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<tr>
<td>31 or more</td>
<td>2.00</td>
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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 exist 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:

2. Attach documentation in support of the appeal, including an academic plan or an advisor statement showing remaining credits to graduation for 150 percent appeals.
3. Submit all items to the College Financial Aid Office: Northern Virginia Community College, CFAO, Annandale, VA 22003–3796.

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 Student Financial Aid Committee, the donor, 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 NVCC 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 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 students 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.

Student Rights and Responsibilities

There are certain rights that each College student body member 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, 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 first-time-to-college students ages 17–24 are required to meet with their advisor before registration. Other new students should also 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 an academic 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.

GPS for Success

GPS for Success is a comprehensive advising experience specifically for recent high school graduates who have never been to college. The program aims to help students foster connections with professional advisors and faculty, while teaching students how to plan and evaluate their academic performance.

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 e-mail. Students can log on during specified hours and chat with an advisor. In addition, e-mail sent to AcademicAdvising@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 an academic 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, financial aid, 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.

The Student Services Center on each campus also has information available about national testing programs, such as the Test of English as a Foreign Language (TOEFL) and the College-Level Examination Program (CLEP).

Students requiring accommodations or special services should see the “Disability Services” section for more information.

**Career Development Services**

**Career Planning Services**

Career planning services help students explore, develop, and set goals related to their career and educational needs; make effective career decisions; and obtain employment. Students may assess their interests, skills, preferences, values, and strengths; investigate the world of work through research, internships, cooperative education, and volunteer opportunities; and learn about job search tools and strategies such as writing resumes and interviewing successfully.

A variety of printed materials is available in the Student Services Center and in the Library of each campus. Reference books and college catalogs providing
information on colleges and professional schools are available. Other books and pamphlets describe the entrance requirements, working conditions, and compensations of thousands of career and job opportunities. Specialized materials that help students learn more about how to plan for their education and personal development are also available.

**Employment Resources**

Employment resources refer to those resources that help students find jobs. Available in the Student Services Center on each campus, these resources include printed materials and electronic databases that provide students with community job listings and career information in both the public and private sectors, including salaries and the employment outlook in each occupation. Area employers cooperate with the College to provide part-time and full-time employment for students. Internet resources allow further access to local, state, and national job openings.

**Extended Learning Institute Students**

The Extended Learning Institute provides a variety of student services to ELI students, including counseling, financial aid, student success coaching, transfer advising, career services, disability services, library services, online tutoring, New Student Orientation, registration support, and student life opportunities. ELI students may also use services provided at any of the NOVA campuses and centers.

**New Student Orientation**

New Student Orientation sessions are offered at each campus before the Spring and Fall Semesters. New Student Orientation provides academic advising, course registration, and an introduction to NOVA’s tradition and culture for recent high school graduates and first-semester NOVA students.

Students and parents learn about degree and certificate programs and how to utilize NOVA resources, including financial aid, transfer counseling, tutoring, and counseling services. Students will also learn how to choose and register for classes online. Campus tours and a College resource fair will be available during all New Student Orientation sessions.

Students can register for a New Student Orientation session online at www.nvcc.edu/orientation.

Students taking their first online course at NOVA should also complete an ELI orientation, offered via webinar on multiple dates and times around the start of each semester. Check the ELI website or contact the ELI Hotline at elicoursespecialists@nvcc.edu or 703–323–3347 for registration information.

**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 ELI.

**Disability Services**

NOVA is committed to serving persons with documented disabilities. A goal of NOVA is that each qualified student has an equal opportunity to pursue a college education regardless of the presence or absence of a disability. To reach that goal, NOVA will make reasonable accommodations in courses, programs, and facilities for students with documented disabilities. Students who require any special accommodation or service should contact the NOVA counselor for Disability Support Services at the campus of their choice at least four weeks prior to the beginning of classes. To qualify for accommodations, students must provide clear and specific evidence of a documented disability by a qualified professional. In general, the documentation should be no more than three years old or must be based on adult norms.

All information obtained in the diagnostic and 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 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.

Questions of compliance with Section 504 of the Rehabilitation Act or the Americans with Disabilities Act of 1990...
Act should be addressed to the director of Equity and Diversity.

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.

Each campus has identified one or more counselors to assist students in the determination of eligibility for accommodations and in academic counseling. NOVA assumes that a student with a disability will assist the College in identifying needed resources and possible agency sources. NOVA has a liaison with the Virginia Department of Rehabilitative Services and the Virginia Department for the Blind and Visually Impaired.

Additional information may be obtained on each campus or by visiting the website www.nvcc.edu/disability-services.

Military Services Office

NOVA’s Office of Military 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.

Veterans Affairs Office

The College veterans advisor 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 veterans advisor. See also the “Admission” and “Financial Information” sections of this Catalog 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 e-mail account, the Student Information System (NOVAConnect), and Blackboard courses. NOVAConnect allows students to enroll and pay for courses online.

Students are responsible for checking their e-mail often for College announcements on student services or messages from instructors and classmates. In order to insure student privacy, the College will use a student’s official College e-mail 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. Voter registration materials can be obtained at campus Counseling and Student Services Centers, and campus libraries.

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.

Printed copies of publications referred to below are available as follows:

- **Student Services Financial Aid Handbook:** All campus Financial Aid Offices and the College Financial Aid Office
- **Annual Security Report:** Any campus Police Office
<table>
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<th>Consumer Information</th>
<th>Where Available</th>
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| • Procedures for inspecting and reviewing of student’s education records | • Catalog: www.nvcc.edu/curcatalog  
• Student Handbook: www.nvcc.edu/students/handbook |
| • Procedures for amending student records | |
| • Procedures for disclosing student’s educational records | |
| • Procedures for filing a complaint to the U.S. Department of Education | • See U.S. Dept. of Education, Office for Civil Rights website at www2.ed.gov/about/offices/list/ocr/docs/howto.html and Office of Inspector General website at www2.ed.gov/about/offices/list/oig/hotline.html |
| • A list of all available federal, state, local, private, and institutional financial need-based and non-need-based assistance programs | • Financial aid website: www.nvcc.edu/financialaid |
| • The application procedures, eligibility criteria, method and frequency of disbursements, terms of loans, general conditions, and exit counseling information for these assistance programs | |
| • Cost of attending College (tuition and fees posted online only) | • Catalog: www.nvcc.edu/curcatalog  
• Student Handbook: www.nvcc.edu/students/handbook  
• Financial aid website: www.nvcc.edu/financialaid |
| • Refund policy | |
| • Grant or loan return or repayment procedures for withdrawn students | |
| • Requirements for officially withdrawing from the College | |
| • Academic programs information | • Catalog: www.nvcc.edu/curcatalog  
• Schedule of Classes: www.nvcc.edu/curschedule |
| • Organizations that accredit, license, or approve the College and its programs. Procedures for reviewing schools’ accreditation, licensing, or approval documentation | • Catalog: www.nvcc.edu/curcatalog |
| • Description of any special services and facilities for disabled students | • Catalog: www.nvcc.edu/curcatalog  
• Student Handbook: www.nvcc.edu/students/handbook |
| • Title and availability of NOVA staff responsible for dissemination of institutional and financial assistance disclosure information and how to contact them | • Catalog: www.nvcc.edu/curcatalog  
• Student Handbook: www.nvcc.edu/students/handbook  
• Financial aid: www.nvcc.edu/financialaid |
| • Statement that enrollment in a study abroad program approved for credit may be considered enrollment at NOVA for the purpose of applying for Title IV assistance | • Catalog: www.nvcc.edu/curcatalog  
• If a NOVA credit course offers special studies abroad, it is treated as a regular credit course. |
| • Completion or graduation rate for NOVA certificate- or degree-seeking, full-time students who graduated or completed their program within 150% of the normal time for graduation or completion | • Office of Institutional Research and Analysis (OIR) Reports: www.nvcc.edu/oir/graduate.html  
• Virginia Community College System (VCCS) Institutional Research Information: www.vccs.edu/Research |
| • Transfer-out rate for above described students | |
| • Campus security report. The Annual Security Report includes statistics concerning crimes on College property. The report includes institutional policies on campus security, alcohol and drug use, crime prevention, the reporting of crimes, sexual assault, and other matters. | • Annual Security Report: www.nvcc.edu/police/college-safety |
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 www.nvcc.edu/students/handbook. 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

Students will be assigned a faculty advisor in their program of study. Counselors also provide academic advising services through the Student Services Center. See Counseling and Advising Services under the “Student Services” section of this Catalog 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 his/her instructor prior to an absence from class. Students are responsible for making up all coursework missed during an absence. In the event of unexplained absences, the instructor may withdraw a student administratively from the course.

If a student does 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), his/her class registration will 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 his/her 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/assistant dean.

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/novacomm. 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 learning course. In an online learning course, initial student attendance is determined by course participation as measured by accessing and using course materials, completion of a class assignment, participation in a course discussion, or other evidence of participation. 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 nondevelopmental 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 approved experiential learning program such as PLACE (SDV 298).

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 satisfactory 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 nondevelopmental 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.

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours Attempted</th>
<th>Grade</th>
<th>Grade Points</th>
<th>Credit Hours Completed</th>
<th>Total Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 101</td>
<td>4</td>
<td>C</td>
<td>2</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>ENG 111</td>
<td>3</td>
<td>B</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>MUS 141</td>
<td>2</td>
<td>A</td>
<td>4</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>PED 109</td>
<td>1</td>
<td>F</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>FRE 101</td>
<td>5</td>
<td>D</td>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>PSY 100</td>
<td>0</td>
<td>W</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>15</td>
<td></td>
<td>10</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

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 Course Grade Appeal Form (125–053) 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 satisfactory 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.

For students who were enrolled during any semester or session beginning in Fall 1988 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 and curriculum GPA and for satisfying curricular requirements. 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 curriculum and cumulative GPAs and Honors designations at the time of graduation will remain unchanged if the graduate repeats a course.

**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.

**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.
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.

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.

Student Development Courses

All curricular students, except those in some career studies certificate programs, shall participate in a one-credit student development course designed to help them succeed in college, 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 hold a transfer-oriented associate degree or bachelor’s degree from a regionally accredited institution. Students still must complete the required 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.

Transferring Credit to NOVA

NOVA allows previous academic study, examination, or career experience to be evaluated for possible College credit. Only students who have declared a major and registered for at least one credit at NOVA may request evaluation of transfer credit or credit for prior learning. 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 credits from other regionally accredited U.S. colleges and universities for which a student has earned a grade of “C” or better. To have such credit evaluated, students must submit an official transcript from their previous institution and a request for evaluation to the Student Services Center at 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 in a sealed envelope from the originating institution that has no overt sign of having been opened or otherwise disturbed. Official transcripts may be mailed directly from the transferring institution to a NOVA Student Services Center or delivered in acceptable condition, such that the receiving registrar has confidence that the record received is authentic. Official transcripts that are sent to College faculty also may be accepted. Contact the Student Services Center at any campus for procedures required to initiate the evaluation of transfer credit.

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 evaluations from World Education Services (www.wes.org) or the American Association of College Registrars and Admissions Officers (www.aacrao.org). Students must submit an official transcript from the evaluation agency to a campus Student Services Center and submit a request for evaluation.

Credit for Prior Learning

NOVA also evaluates prior college-level learning from nontraditional sources. Only official transcripts or other documentation specified in the Credit for Prior Learning Manual will be evaluated. Consult NOVA’s Credit for Prior Learning Manual at www.nvcc.edu/prior-learning/cpl-manual.html 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 basic categories:

- credit for military training and courses
- credit earned in nontraditional programs, including workplace and government training programs evaluated by the American Council on Education (ACE), National College Credit Recommendation Services (NCCRS), and NOVA faculty
- credit by examination, including Abitur, Advanced Placement (AP), Assessment by Local Examination (ABLE), University of Cambridge Advanced Level Examinations, College-Level Examination Program (CLEP), DSST (formerly known as DANTES), International Baccalaureate (IB), and SAT II subject exams
- credit by PLACE (Prior Learning Activity for Credit Evaluation) portfolio development, a NOVA program for adults who have gained college-level learning through life experiences, such as work, volunteer activities, participation in civic and community assignments, travel, independent study, etc.

**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 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 general 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](http://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:

<table>
<thead>
<tr>
<th>Cumulative Grade Point Average</th>
<th>Honor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.20</td>
<td>Cum Laude (with honor)</td>
</tr>
<tr>
<td>3.50</td>
<td>Magna Cum Laude (with high honor)</td>
</tr>
<tr>
<td>3.80</td>
<td>Summa Cum Laude (with highest honor)</td>
</tr>
</tbody>
</table>
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.

Associate Degree and Certificate Requirements
To be eligible for graduation with an associate degree (A.A., A.S., 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, or any subsequent Catalog of the student’s choice from an academic year in which he/she attended NOVA. The Catalog to be used in certifying the student’s graduation shall have been in effect no more than seven years prior to the semester of graduation;
• taken at least 25 percent of the credit required in the curriculum at NOVA;
• 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 (no application is necessary for the General Education Certificate);
• resolved all financial obligations to the College and returned all materials, including library books; 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.

**Certification 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 executive vice president for Academic and Student Services. 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 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.

The College will reissue diplomas in cases of natural disaster (such as fire or tornado), printing error, or name changes resulting from gender reassignment.

**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 the Spring 2017 Commencement this means students who complete program requirements in Spring 2017 or any prior semester may participate. Spring Semester graduation applicants who participate in the Commencement ceremony are not guaranteed the awarding of a degree. Graduation applicants still must successfully complete their program requirements to graduate from NOVA.

Students who have completed only the General Education Certificate are not eligible to participate in the Commencement ceremony.

**Transcripts**

The official NOVA transcript of a student’s academic record will be issued at no charge by the College Records Office. When requesting an official transcript by using NOVAConnect, the request will be processed within two days. Students who submit a written request or Request for Official Transcript Form (125–089) to a campus Student Services Center should do so at least 10 working days before the transcript is needed. Official transcripts are released only after a student has completed one course at NOVA. Financial aid transcripts are available at no cost through the College Financial Aid Office. Students may print their own unofficial transcript from NOVAConnect at www.nvcc.edu/novaconnect.

**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 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 Transfer Articulation Agreements
NOVA has formal guaranteed admission and transfer 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:

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 students or another appropriate College administrator. Students on academic probation may be required to carry less than a normal load the following semester and are required to consult with their advisor/counselor. 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 students for reinstatement following an absence of five years (60 months). To appeal, the student must submit a written request to the dean of students 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 readmitted 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 students.

5. The campus dean of students will make the reinstatement decision.

6. The dean of students’ reinstatement decision may be appealed to the campus provost.

**Academic Renewal**

Students who return to the College after a separation of five years or more 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 students.
- Academic renewal cannot be applied to a degree or certificate that has already been conferred.

**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 and culinary arts at the Annandale 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.

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

After taking the placement test, advisors will help students determine which ENF and MTT courses they may need. 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. ENF courses are offered in a variety of formats. MTT courses use individualized technology-based instruction. Students who have any questions should check with a counselor or academic advisor.

Extended Learning Institute
The Extended Learning Institute (ELI) offers online learning courses. ELI 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:
- 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 Blackboard.
- Some online courses require in-person meetings or labs, and some require live meetings attended from home via web conferencing.
- All ELI courses require at least two proctored exams. Students should follow the instructions in their course syllabus for specific requirements. Examinations in ELI 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 an ELI-approved proctor. Exams in most courses may also be taken from home using ELI’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
Degrees and certificates offered by ELI are administered by NOVA campus academic divisions. Students may complete a NOVA degree or certificate program entirely through ELI, entirely through a campus, or by combining ELI and campus courses. Prospective degree candidates should contact an ELI counselor, a campus counselor, or an academic advisor to plan their program of study.

Textbooks
Textbooks for ELI courses might not be the same as those used on campus, so students should check the ELI bookstore specifically when looking for textbook information. ELI books may be purchased or rented through the Alexandria Campus bookstore or ordered online at http://nvcc-alexandria.bkstore.com, by fax, or mail. Typically, books ordered from the bookstore by mail are shipped the same day.
Assignments
Students are required to submit assignments by specific due dates. Students who do not submit these assignments on time can be dropped from the course with a grade of “W.”

Honors
Qualified, highly motivated students may enrich their study through participation in NOVA’s Honors Program or by enrolling in individual Honors courses. Honors chairs and Honors counselors are available at each campus 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 critical reading and math sections or at least 1800 out of 2400 with a score of at least 600 on each section; OR
- place into Honors English and/or Honors math based on placement test scores as indicated by a Testing Center representative; OR
- document a cumulative GPA of at least 3.5 at the last academic institution attended (high school, college, or university); OR
- provide recommendations from two instructors, counselors or advisors based on any course taken in high schools, college, or university OR
- provide a recommendation from the Honors chair, Honors counselor, or Honors instructor teaching the requested Honors course(s). This recommendation should indicate the student’s life experience, special aptitude, or interest that indicates potential for success in an Honors course.

Eligibility for the Honors Program
Students who meet at least one of the criteria listed above must request an interview with a campus Honors chair to be considered for admittance into the Honors Program. Depending upon other factors, students may be required to have successfully completed at least 6 credits of Honors courses in order to be admitted to the Program.

1. To be eligible for the Honors Interdisciplinary Seminar, students must have completed a minimum of 3–6 semester hours in Honors courses. Campus Honors chairs have lists of courses that may be offered as interdisciplinary seminars.
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. ELI Honors courses will be considered on a case by case basis (contact a campus Honors chair for more guidance).

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

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td>Social/Behavioral Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Physical and Life Sciences/Mathematics</td>
<td>3–5</td>
</tr>
<tr>
<td>1 Interdisciplinary Seminar or 200-level Honors course that is part of a learning community or Honors Study Abroad or Approved Honors Internship</td>
<td>3</td>
</tr>
<tr>
<td>2 Electives</td>
<td>3–4</td>
</tr>
<tr>
<td>3 Total</td>
<td>18–21</td>
</tr>
</tbody>
</table>

1 To take the Honors Interdisciplinary Seminar, it is recommended that students have completed a minimum of 3 semester hours in Honors English and 3 semester hours of the humanities, social/behavioral sciences, and/or math/science Honors unit.

2 Elective credits may come from any discipline offering an Honors course.

3 Only 9 credits of Honors option courses can be used toward the total Honors Core Curriculum credits.

### 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. Campus Honors chairs, 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.

**Servicemembers Opportunity College (SOC)**

NOVA has been designated as an institutional member of Servicemembers Opportunity Colleges (SOC), an association of more than 1,900 colleges and universities providing voluntary postsecondary education to members of the military throughout the world. As an SOC member, NOVA recognizes the unique nature of the military lifestyle and has committed itself to easing the transfer of relevant course credits, providing flexible academic residency requirements, and providing credit for learning from appropriate military training and experiences. SOC has been developed jointly by educational representatives of each of the Armed Services, the Office of the Secretary of Defense, and a consortium of 14 leading national higher education associations; it is sponsored by the American Association of State Colleges and Universities (AASCU) and the American Association of Community Colleges (AACC).

In addition to its SOC membership, NOVA is one of approximately 50 institutions providing career and flexible Servicemembers Opportunity Colleges Associate Degree (SOCAD) programs on more than 500 Army installations worldwide. These programs lead to associate degrees and most of them correspond to enlisted and warrant officer job
specialties. Through prior agreement, students in SOCAD programs qualify to
• have residency credit limited to one-fourth of total degree requirements taken at any time;
• be awarded credit for experience in their military occupational specialties (MOS) and service schools as appropriate to their program;
• be awarded credit for nontraditional learning based on results of national tests, such as CLEP and SSTs, as appropriate to their program;
• have a SOCAD Student Agreement completed as their official evaluation stating remaining degree requirements and eliminating the need for reevaluation of previous credit; and
• be guaranteed that courses listed in transferability charts in the SOCAD Handbook will be accepted for degree requirements within each curriculum area.

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 nonrestricted 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 credit and noncredit 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 each campus Workforce Development Office.

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.

Cultural affairs are available through short courses, special lectures, music presentations, and art festivals. Community groups and organizations may also make special arrangements to use facilities of the College for their own programs or meetings.
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.
Northern Virginia Community College offers two-year associate degrees, one-year certificates, and short career studies certificates. The requirements for these awards for completion of curricula 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 nondegree 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 class. A career studies certificate is awarded for the completion of an approved nondegree curriculum of 9–29 semester credit hours in length.

Associate of Arts Degree (A.A.)
Awarded for the completion of two-year curricula in fine arts, liberal arts, and music. The A.A. degree is designed for those who plan to transfer to a four-year, degree-granting institution for the completion of 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 for the completion of 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 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 four-year colleges as part of a special program. 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 the student 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, career courses may transfer, and there may be articulation arrangements with four-year colleges as part of a special program. 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. This must include at least 3 semester credits of English (ENG) and at least 1 semester credit for a Student Development (SDV) course.

Most certificates prepare the student 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. However, in some limited cases, career courses may transfer, and there may be articulation arrangements with four-year colleges as part of a special program.

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 certificate and degree programs that require similar courses.

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.

<table>
<thead>
<tr>
<th>Components</th>
<th>Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A.A.</td>
</tr>
<tr>
<td>1 Written and Oral Communication</td>
<td>9</td>
</tr>
<tr>
<td>2 Humanities/Fine Arts</td>
<td>6</td>
</tr>
<tr>
<td>3 Foreign Language</td>
<td>6</td>
</tr>
<tr>
<td>4 Social/Behavioral Sciences</td>
<td>9</td>
</tr>
<tr>
<td>5 Mathematics</td>
<td>6</td>
</tr>
<tr>
<td>6 Physical and Life Science</td>
<td>8</td>
</tr>
<tr>
<td>7 Other General Education</td>
<td></td>
</tr>
<tr>
<td>Minimum Total General Education Requirements</td>
<td>44</td>
</tr>
<tr>
<td>8 SDV Elective</td>
<td>1</td>
</tr>
<tr>
<td>9 Elective and Major Area Requirements</td>
<td>5–18</td>
</tr>
<tr>
<td>10 Total Credits$^*$</td>
<td>60–63</td>
</tr>
</tbody>
</table>

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

1. **Written and Oral Communication**
For A.A. and A.S. degrees, ENG 111 College Composition I and ENG 112 College Composition II or ENG 125 Introduction to Literature is required. A 3-credit oral communication course is also required.

For A.A.A. degrees, 3 credits in English composition (ENG 111 College Composition, ENG 115 Technical Writing, or ENG 131 Technical Report Writing) and an oral communication course are required.

For A.A.S. degrees, 3 credits in English composition (ENG 111 College Composition I, ENG 115 Technical Writing, or ENG 131 Technical Report Writing) are required.

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

2. **Humanities/Fine Arts**
Humanities requirements may be met by selected courses in art (ART), 200-level literature (ENG), humanities (HUM), music (MUS), philosophy (PHI), religion (REL), American Sign Language (ASL),
200-level foreign languages, and the history (HIS) courses specified under Humanities/Fine Arts Electives. See the “General Education Electives” section for a list of approved general education courses.

3 Foreign Language
Students who are in an A.A. program must demonstrate proficiency in a foreign 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 (through CLEP) for previous experience may be available for some languages.

4 Social/Behavioral Sciences
The social/behavioral science requirement may be met by selected courses in economics (ECO), geography (GEO), history (HIS), political science (PLS), psychology (PSY), and sociology (SOC). Where the social science is listed as an elective in a curriculum, students may select from courses in any of these areas.

Only 6 semester hours of social/behavioral sciences are required for engineering majors who plan to transfer to a baccalaureate degree engineering program that requires 6 or fewer hours in this category, provided that the college/university publishes such requirements in its transfer guide.

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

5 Mathematics
A.A. and A.S.: A minimum of 6 credits in mathematics at or above MTH 151 is required. The A.S. in General Studies requires only 3 credits of mathematics.

A.A.A. and A.A.S.: A minimum of 3 credits must be earned in mathematics/natural sciences. In degrees that have a science requirement, the mathematics course may be fewer than 3 credits.

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

6 Physical and Life Sciences
A.A. and A.S. degrees require 8 credits in courses in the 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). Some four-year degree programs require a two-semester sequence in a single laboratory science.

A.A.A. and A.A.S. degrees may or may not require a physical/life science, depending on the curriculum.

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

7 Other General Education
To meet SACS and VCCS requirements, any given degree program MUST include at least 15 credits in general education courses; the additional credit for the A.A.S. degree may be in any of the general education areas.

8 SDV Elective
A one-credit Student Development course, either SDV 100 College Success Skills or SDV 101 Orientation to a specific discipline, is required. 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.

9 General Elective and Major Area Requirements
Not all courses will transfer or meet the requirements of a four-year degree. Students should see a counselor or academic advisor prior to registering for general electives. If a student’s primary goal is to transfer to a four-year degree program, he/she should become familiar with the requirements of the intended transfer institution and select electives that meet that institution’s requirements.

10 Total Credits
The total credits in A.S. degrees are between 60 and 63 credits, with the exception of engineering, which may have as many as 72 credits.

The total credits in A.A.S. degrees are between 65 and 69 credits, with the exception of the programs in Allied Health and Veterinary Technology, which may have 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: communication, critical thinking, cultural and social understanding, information literacy, personal development, quantitative reasoning, and scientific reasoning.
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 their academic advisor or counselor in order to select the most appropriate course for their curriculum and/or transferability to another college.

**Humanities/Fine Arts Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 200</td>
<td>History of Architecture</td>
</tr>
<tr>
<td>ARC 201</td>
<td>History of Modern Architecture</td>
</tr>
<tr>
<td>ART 100</td>
<td>Art Appreciation</td>
</tr>
<tr>
<td>ART 101–102</td>
<td>History and Appreciation of Art</td>
</tr>
<tr>
<td>ART 103–104</td>
<td>History of Far Eastern Art</td>
</tr>
<tr>
<td>ART 105</td>
<td>Art in World Culture</td>
</tr>
<tr>
<td>ART 150</td>
<td>History of Modern Art</td>
</tr>
<tr>
<td>ART 211–212</td>
<td>History of American Art</td>
</tr>
<tr>
<td>ART 213–214</td>
<td>Italian Art</td>
</tr>
<tr>
<td>ART 250</td>
<td>History of Design</td>
</tr>
<tr>
<td>ASL 125</td>
<td>The History and Culture of the Deaf Community</td>
</tr>
<tr>
<td>ASL 201–202</td>
<td>American Sign Language III–IV</td>
</tr>
<tr>
<td>CST 130</td>
<td>Introduction to the Theatre</td>
</tr>
<tr>
<td>CST 141</td>
<td>Theatre Appreciation</td>
</tr>
<tr>
<td>CST 151–152</td>
<td>Film Appreciation I–II</td>
</tr>
<tr>
<td>CST 231–232</td>
<td>History of the Theatre I–II</td>
</tr>
<tr>
<td>ENG 230, ENG 236, ENG 237, ENG 241, ENG 242, ENG 243, ENG 244, ENG 245, ENG 246, ENG 249, ENG 250, ENG 251, ENG 252, ENG 253, ENG 254, ENG 255, ENG 256, ENG 257, ENG 267, ENG 270, ENG 271, ENG 272, ENG 273, ENG 274, ENG 276, ENG 279.</td>
<td>200-level literature courses:</td>
</tr>
</tbody>
</table>

**PLEASE NOTE:** Credit cannot be awarded for ENG 245/ENG 246 if taken along with ENG 243/ENG 244 or ENG 241/ENG 242.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Languages</td>
<td>All 200-level courses</td>
</tr>
</tbody>
</table>

**Other General Education Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST 114</td>
<td>Introduction to Mass Media</td>
</tr>
<tr>
<td>CST 229</td>
<td>Intercultural Communication</td>
</tr>
<tr>
<td>ENG 247</td>
<td>Survey of Popular Culture</td>
</tr>
<tr>
<td>ENV 136</td>
<td>Survey of Environmental Concerns</td>
</tr>
</tbody>
</table>

**Foreign Languages**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARA 101–102</td>
<td>Beginning Arabic I–II</td>
</tr>
<tr>
<td>ARA 111–112</td>
<td>Conversation in Arabic I–II</td>
</tr>
<tr>
<td>CHI 101–102</td>
<td>Beginning Chinese I–II</td>
</tr>
<tr>
<td>CHI 121–122</td>
<td>Beginning Chinese Reading and Writing I–II</td>
</tr>
<tr>
<td>FRE 101–102</td>
<td>Beginning French I–II</td>
</tr>
<tr>
<td>FRE 111–112</td>
<td>Conversation French I–II</td>
</tr>
<tr>
<td>GER 101–102</td>
<td>Beginning Arabic I–II</td>
</tr>
<tr>
<td>GER 111–112</td>
<td>Conversation in German I–II</td>
</tr>
<tr>
<td>SPA 101–102</td>
<td>Beginning Spanish I–II</td>
</tr>
<tr>
<td>SPA 111–112</td>
<td>Conversation in Spanish I–II</td>
</tr>
</tbody>
</table>

**Physical and Life Sciences/ Mathematics Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 101–102*</td>
<td>General Biology I–II</td>
</tr>
<tr>
<td>BIO 107</td>
<td>Biology of the Environment</td>
</tr>
<tr>
<td>BIO 110</td>
<td>General Botany</td>
</tr>
<tr>
<td>BIO 120</td>
<td>General Zoology</td>
</tr>
<tr>
<td>BIO 141–142</td>
<td>Anatomy and Physiology I–II</td>
</tr>
<tr>
<td>BIO 150</td>
<td>Introduction to Microbiology</td>
</tr>
<tr>
<td>CHM 101–102**</td>
<td>Introductory Chemistry I–II</td>
</tr>
<tr>
<td>CHM 111–112</td>
<td>General Chemistry I–II</td>
</tr>
<tr>
<td>ENV 121–122</td>
<td>General Environmental Science I–II</td>
</tr>
<tr>
<td>GOL 105</td>
<td>Physical Geology</td>
</tr>
<tr>
<td>GOL 106</td>
<td>Historical Geology</td>
</tr>
<tr>
<td>GOL 111–112</td>
<td>Oceanography I–II</td>
</tr>
<tr>
<td>GOL 206</td>
<td>Paleontology</td>
</tr>
<tr>
<td>GOL 225</td>
<td>Environmental Geology</td>
</tr>
<tr>
<td>NAS 101–102***</td>
<td>Natural Sciences I–II</td>
</tr>
<tr>
<td>NAS 125</td>
<td>Meteorology</td>
</tr>
<tr>
<td>NAS 130</td>
<td>Elements of Astronomy</td>
</tr>
<tr>
<td>PHY 101–102</td>
<td>Introduction to Physics I–II</td>
</tr>
<tr>
<td>PHY 201–202</td>
<td>General College Physics I–II</td>
</tr>
<tr>
<td>PHY 231–232</td>
<td>General University Physics I–II</td>
</tr>
<tr>
<td>MTH 151–152</td>
<td>Math for Liberal Arts I–II</td>
</tr>
<tr>
<td>MTH 157</td>
<td>Elementary Statistics</td>
</tr>
<tr>
<td>MTH 163–164</td>
<td>Precalculus I–II</td>
</tr>
<tr>
<td>MTH 166</td>
<td>Precalculus with Trigonometry</td>
</tr>
</tbody>
</table>

**The following HIS courses can be considered humanities at VCCS colleges, but may not transfer as humanities to other institutions.**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIS 101–102</td>
<td>History of Western Civilization</td>
</tr>
<tr>
<td>HIS 111–112</td>
<td>History of World Civilization</td>
</tr>
<tr>
<td>HIS 243</td>
<td>History of the Ancient World</td>
</tr>
<tr>
<td>HIS 255</td>
<td>History of Chinese Culture and Institutions</td>
</tr>
<tr>
<td>HIS 256</td>
<td>History of Japanese Culture and Institutions</td>
</tr>
</tbody>
</table>
MTH 173–174  Calculus with Analytic Geometry I–II
MTH 181–182  Finite Mathematics
MTH 241–242  Statistics I–II
MTH 271–272  Applied Calculus

*Additional biology (BIO) courses may be approved by an academic advisor.

**Additional chemistry (CHM) courses may be approved by an academic advisor.

***Additional natural science (NAS) courses may be approved by an academic advisor.

**Social/Behavioral Sciences Electives**
ECO 110  Consumer Economics
ECO 115  Understanding Our Environment: An Economic Introduction
ECO 120  Survey of Economics
ECO 201-202  Principles of Macro and Micro Economics
ECO 210  International Economics
ECO 245  Contemporary Economic Issues
GEO 200  Introduction to Physical Geography
GEO 210  Introduction to Cultural Geography
GEO 220  World Regional Geography
GEO 230  Political Geography
HIS 101–102  History of Western Civilization
HIS 111–112  History of World Civilization
HIS 121–122  United States History I–II
HIS 125  History of the American Indian
HIS 126  Women in World History
HIS 127  Women in American History
HIS 135  History of the Contemporary World
HIS 141–142  Afro-American History I–II
HIS 203  History of African Civilization
HIS 211–212  History of England I–II
HIS 225–226  Topics in European History
HIS 231–232  History of Latin American Civilizations I–II
HIS 241–242  History of Russia I–II
HIS 243  History of the Ancient World
HIS 251–252  History of Middle East Civilization I–II
HIS 253–254  History of Asian Civilizations
HIS 255  History of Chinese Culture and Institutions
HIS 256  History of Japanese Culture and Institutions
HIS 261  Topics in Cultural Ethnicity
HIS 269  Civil War and Reconstruction
HIS 281–282  History of Virginia I–II
HIS 262  United States History in Film
PLS  All courses except PSY 211, 213, 245, 250, 255
PSY  All courses
SOC  All courses
SSC 115  Introduction to Global Affairs
PROGRAMS OF STUDY

Accounting
Associate of Applied Science Degree

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. The occupational objectives include accounting trainee, accounting technician, junior accountant, and accountant.

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 Credits
1st Semester
ACC 211 Principles of Accounting I 3
BUS 100 Intro. to Business 3
ENG 111 College Composition I 3
ITE 115 Intro. to Computer Applications and Concepts or BUS 226 Computer Business Applications 3
1 MTH 151 Mathematics for the Liberal Arts I 3
2 PED 116 Lifetime Fitness and Wellness 1
3 SDV 100 College Success Skills 1
Total 17

2nd Semester
ACC 212 Principles of Accounting II 3
ACC 231 Cost Accounting I 3
ACC 261 Principles of Federal Taxation I 3
BUS 241 Business Law I 3
1 ECO 120 Survey of Economics 3
2 PED/RPK Elective 1
Total 16

3rd Semester
ACC 221 Intermediate Accounting I 3
ACC 232 Cost Accounting II 3
ACC 262 Principles of Federal Taxation II 3
BUS 241 Business Law II 3
CST 110 Intro. to Communication or CST 227 Business and Professional Communication 3
Total 15

4th Semester
ACC 222 Intermediate Accounting II 3
ACC 241 Auditing I 3
5 ACC Elective 3
BUS 220 Intro. to Business Statistics 3
FIN 215 Financial Management 3
6 Humanities/Fine Arts Elective 3
Total 18

Total credits for the A.A.S. Degree in Accounting = 66

1 Students may substitute a higher-level mathematics course. Consult an academic advisor for appropriate selection.
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 May substitute the SDV 101 Orientation section related to this program.
4 May substitute ENG 115 or ENG 116.
5 ACC 215, ACC 219, ACC 220, ACC 230, ACC 232, ACC 240, and ACC 262 are acceptable electives.
6 See humanities/fine arts courses listed under General Education Electives.

Accounting: Bookkeeping Certificate

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.

One Year Credits
1st Semester
ACC 211 Principles of Accounting I 3
BUS 100 Intro. to Business 3
ENG 111 College Composition I 3
ITE 115 Intro. to Computer Applications and Concepts or BUS 226 Computer Business Applications 3
1 MTH 151 Mathematics for the Liberal Arts I 3
2 PED 116 Lifetime Fitness and Wellness 1
3 SDV 100 College Success Skills 1
Total 16

2nd Semester
ACC 212 Principles of Accounting II 3
ACC 215 Computerized Accounting 3
ACC 215 Computerized Accounting 3
BUS 125 Applied Business Mathematics 3
ITE 140 Spreadsheet Software 3
2 Social Science Elective 3
Total 15

Total credits for the Bookkeeping Certificate = 31

1 May substitute the SDV 101 Orientation section related to this program.
2 See social/behavioral science courses listed under General Education Electives.

Accounting Career Studies Certificate

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:

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• 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 Principles of Accounting I–II or equivalent as demonstrated through transcript evaluation.

These accounting courses may also meet accounting requirements of various government and private sector positions.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ACC</td>
<td>219 Government and Not-For-Profit Accounting</td>
</tr>
<tr>
<td>ACC</td>
<td>221 Intermediate Accounting I</td>
</tr>
<tr>
<td>ACC</td>
<td>261 Principles of Federal Taxation I</td>
</tr>
<tr>
<td>ENG/CST Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>ACC</td>
<td>222 Intermediate Accounting II</td>
</tr>
<tr>
<td>ACC</td>
<td>231 Cost Accounting I</td>
</tr>
<tr>
<td>ACC</td>
<td>262 Principles of Federal Taxation II</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>ACC</td>
<td>230 Advanced Accounting</td>
</tr>
<tr>
<td>ACC</td>
<td>241 Auditing</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ADJ</td>
<td>100 Survey of Criminal Justice</td>
</tr>
<tr>
<td>1 ADJ</td>
<td>111 Law Enforcement Organization and Administration I</td>
</tr>
<tr>
<td>ADJ</td>
<td>Elective or BUS 100 Intro. to Business</td>
</tr>
<tr>
<td>ENG</td>
<td>111 College Composition I</td>
</tr>
<tr>
<td>PED</td>
<td>116 Lifetime Fitness and Wellness</td>
</tr>
<tr>
<td>1 Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>SDV</td>
<td>100 College Success Skills</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>ADJ</td>
<td>105 The Juvenile Justice System</td>
</tr>
<tr>
<td>ADJ</td>
<td>107 Survey of Criminology</td>
</tr>
<tr>
<td>4 ADJ</td>
<td>Elective or ADJ 159 Physical Security</td>
</tr>
<tr>
<td>MTH</td>
<td>151 Mathematics for the Liberal Arts I</td>
</tr>
<tr>
<td>PED/RPK Elective</td>
<td>1</td>
</tr>
<tr>
<td>1 Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>ADJ</td>
<td>211 Criminal Law, Evidence, and Procedures I</td>
</tr>
<tr>
<td>ADJ</td>
<td>216 Organized Crime and Corruption</td>
</tr>
<tr>
<td>ADJ</td>
<td>236 Principles of Criminal Investigation or ADJ 234 Terrorism and Counter-Terrorism</td>
</tr>
<tr>
<td>CST</td>
<td>110 Intro. to Communication</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>ITE</td>
<td>115 Intro. to Computer Applications and Concepts</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
</tr>
</tbody>
</table>

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 115, CST 126, CST 227, or CST 229.

Administration of Justice
Associate of Applied Science Degree

Offered through AN, MA, WO, ELI

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. The occupational objectives 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.
Administration of Justice: Homeland Security Specialization

Associate of Applied Science Degree

Offered through AN, MA, WO, ELI

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.

Total credits for the A.A.S. Degree in Administration of Justice = 66

Although not required as part of this program, students planning to transfer to Mason may wish to complete eight hours of a laboratory science while attending NOVA. Check the current Mason Catalog or contact a Mason academic advisor for further information.

1 May substitute ADJ 140 or ADJ 150.
2 The PED requirements 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 Students may choose from any of the following homeland security electives: ADJ 127, ADJ 154, ADJ 160, ADJ 161, ADJ 244, or other homeland security elective approved by an academic advisor.
4 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.
5 Students may take any higher-level MTH, especially if pursuing a four-year degree. Students planning to transfer should work with an academic advisor in course selection. ENG 115 or ENG 131 may be substituted with the advice of a counselor or academic advisor.
6 Students planning to transfer to Mason may wish to complete eight hours of a laboratory science while attending NOVA. Check the current Mason Catalog or contact a Mason academic advisor for further information.
7 Some four-year colleges require a two-semester sequence.

Total credits for the A.A.S. Degree in Administration of Justice with a Specialization in Homeland Security = 65–66

1 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.
2 ENG 111 is recommended for those students who may pursue a four-year degree. Students planning to transfer should work with an academic advisor in course selection. ENG 115 or ENG 131 may be substituted with the advice of a counselor or academic advisor.
3 Students may take any higher-level MTH, especially if pursuing a four-year degree where most institutions will require a minimum of MTH 151 or MTH 157. The science elective may be selected from physical and life science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
4 Students may choose from any of the following homeland security electives: ADJ 127, ADJ 154, ADJ 160, ADJ 161, ADJ 163, ADJ 169, ADJ 170, ADJ 233, ADJ 240, ADJ 244, ADJ 250, ADJ 252, PBS 140, PBS 145, PBS 150, PBS 210, PBS 220, or other homeland security elective approved by an academic advisor, including ADJ 295 or ADJ 298. Some ADJ 244 instructors may incorporate FEMA IS-200 and FEMA IS-860 and some ADJ 252 instructors may incorporate FEMA IS-100LE and FEMA IS-891 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. Additionally, ADJ faculty approval may be obtained for selected ADJ 195 or ADJ 298 courses related to homeland security.
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.

**Administration of Justice Certificate**

**Offered through AN, MA, WO, ELI**

**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 basic foundation for individuals entering some particular 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:** The same requirements apply as stated for the A.A.S. curriculum.

**One Year**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJ 100 Survey of Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>ADJ 211 Criminal Law, Evidence, and Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>ADJ Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>1 Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>2 SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 ADJ Elective</td>
<td>3</td>
</tr>
<tr>
<td>2 ADJ Elective</td>
<td>3</td>
</tr>
<tr>
<td>1 Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

**Total credits for the Administration of Justice Certificate = 34**

1 See social/behavioral science courses listed under General Education Electives. PSY 201–202 or SOC 201–202 are recommended.

2 May substitute the SDV 101 Orientation section related to this program.

3 IT elective approved by the student’s academic advisor.

**Administration of Justice: General Forensic Investigation Career Studies Certificate**

**Offered through 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.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ADJ 171 Forensic Science I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ADJ 212 Criminal Law, Evidence, and Procedures II</td>
<td>3</td>
</tr>
<tr>
<td>1 ADJ 275 Forensic Pathology</td>
<td>3</td>
</tr>
<tr>
<td>2 ADJ 298 Homicide Seminar or BIO 101 General Biology I or CHM 101 Introductory Chemistry I</td>
<td>3–4</td>
</tr>
<tr>
<td>3 ADJ Forensic Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9–10</strong></td>
</tr>
</tbody>
</table>

**Total credits for the General Forensic Investigation Career Studies Certificate = 19–20**

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 Course should be selected according to desired forensic specialty or emphasis.

2 Homicide Seminar must be three-credit option.

3 Approved forensic elective courses include the following: ADJ 118, ADJ 127, ADJ 134, ADJ 157, ADJ 164, ADJ 165, ADJ 172, ADJ 173, ADJ 174, ADJ 175, ADJ 176, ADJ 186, ADJ 226, ADJ 235, ADJ 236, ADJ 237, ADJ 276, ADJ 278.

**Administration of Justice: Advanced Forensic Investigation Career Studies Certificate**

**Offered through 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 assistant dean.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ADJ 172 Forensic Science II</td>
<td>4</td>
</tr>
<tr>
<td>1 ADJ Forensic Elective</td>
<td>3–4</td>
</tr>
<tr>
<td>ENG 111 College Composition I or CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13–15</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>2 ADJ Elective</td>
<td>3</td>
</tr>
<tr>
<td>2 ADJ Elective</td>
<td>3</td>
</tr>
<tr>
<td>1 ADJ Forensic Elective</td>
<td>3–4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9–10</strong></td>
</tr>
</tbody>
</table>

**Total credits for the Advanced Forensic Investigation Career Studies Certificate = 22–25**
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 118, ADJ 127, ADJ 134, ADJ 157, ADJ 164, ADJ 165, ADJ 173, ADJ 174, ADJ 175, ADJ 176, ADJ 186, ADJ 226, ADJ 235, ADJ 236, ADJ 237, ADJ 276, ADJ 278, as well as ADJ faculty-approved ADJ 195 Topics or ADJ 295 Seminar courses.

2  Choose any ADJ course.

### Administration of Justice: National Security
Career Studies Certificate

**Offered through 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 such as the drug culture. 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.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ADJ 133 Ethics and the Criminal Justice Professional</td>
<td>3</td>
</tr>
<tr>
<td>ADJ 163 Crime Analysis and Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| ADJ 234 Terrorism and Counter-Terrorism | 3 |
| ADJ 250 Global Security Concepts for Law Enforcement and National Security | 3 |
| **Total** | **9** |

**Total credits for the National Security Career Studies Certificate = 19**

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

### Administration of Justice: Security Management
Career Studies Certificate

**Offered through AN, MA, WO**

**Purpose:** This curriculum is intended to meet the educational needs of security personnel who seek formal education and training in physical security and industrial security methods and techniques; experienced practitioners who wish to extend and expand their knowledge and skills; and persons exploring the security field as a career alternative. This certificate is applicable toward the two-year Associate of Applied Science in Administration of Justice.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ADJ 255 Security Management</td>
<td>3</td>
</tr>
<tr>
<td>ADJ Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENG/CST Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| ADJ 159 Physical Security | 3 |
| ADJ 256 Information Security or ADJ 157 Computer Security | 3 |
| General Elective | 1–3 |
| **Total** | **7–9** |

**Total credits for the Security Management Career Studies Certificate = 16–18**

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  Select one from the following: ADJ 150, ADJ 228, or ADJ 234.
2  May be met by ENG 111 or other ENG courses approved by the student’s advisor, or by CST 100, CST 110, CST 115, CST 126, CST 227 or CST 229.
3  Elective must be chosen with advisor approval.

### Air Conditioning and Refrigeration
Associate of Applied Science Degree

**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 HVACR industry. Occupational objectives include industry licensing, advanced critical thinking skills, and state tradesman licenses in HVACR.

**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. The program is accredited by HVAC Excellence through May 23, 2016.

### Two Years Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR 111 Air Conditioning and Refrigeration Controls I</td>
<td>3</td>
</tr>
<tr>
<td>AIR 121 Air Conditioning and Refrigeration I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>PHY 101 Intro. to Physics or MTH 151 Mathematics for the Liberal Arts I or higher</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR 122 Air Conditioning and Refrigeration II</td>
<td>4</td>
</tr>
<tr>
<td>AIR 134 Circuits and Controls</td>
<td>3</td>
</tr>
<tr>
<td>AIR 257 Gas-Fired Warm Air Furnaces</td>
<td>4</td>
</tr>
<tr>
<td>AIR 213 Air Conditioning and Refrigeration Controls III</td>
<td>4</td>
</tr>
<tr>
<td>PHY 101 Intro. to Physics or MTH 151 Mathematics for the Liberal Arts I or higher</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

**Total credits for the A.A.S. Degree in Air Conditioning and Refrigeration = 67**

1. See humanities/fine arts courses listed under General Education Electives.

### One Year Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR 111 Air Conditioning and Refrigeration Controls I</td>
<td>3</td>
</tr>
<tr>
<td>AIR 121 Air Conditioning and Refrigeration I</td>
<td>4</td>
</tr>
<tr>
<td>AIR 154 Heating Systems I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR 122 Air Conditioning and Refrigeration II</td>
<td>4</td>
</tr>
<tr>
<td>AIR 134 Circuits and Controls</td>
<td>3</td>
</tr>
<tr>
<td>AIR 213 Air Conditioning and Refrigeration Controls III</td>
<td>4</td>
</tr>
<tr>
<td>PHY 101 Intro. to Physics or MTH 151 Mathematics for the Liberal Arts I or higher</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

**Total credits for the Air Conditioning and Refrigeration Certificate = 32**

1. See social/behavioral science courses listed under General Education Electives.

### Air Conditioning and Refrigeration: HVAC-R and Facilities Services Technology Career Studies Certificate

**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.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>AIR 111 Air Conditioning and Refrigeration Controls I</td>
<td>3</td>
</tr>
<tr>
<td>AIR 121 Air Conditioning and Refrigeration I</td>
<td>4</td>
</tr>
<tr>
<td>AIR 154 Heating Systems I</td>
<td>4</td>
</tr>
<tr>
<td>1. AIR 154 Heating Systems I or BLD 20 Intro. to Plumbing</td>
<td>2–4</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10–12</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR 122 Air Conditioning and Refrigeration II</td>
<td>4</td>
</tr>
<tr>
<td>AIR 134 Circuits and Controls</td>
<td>3</td>
</tr>
<tr>
<td>1. ENG/CST Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

**Total credits for the HVAC-R and Facilities Services Technology Career Studies Certificate = 20–22**

### Air Conditioning and Refrigeration Certificate

**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.
1 Students who plan to work in the air conditioning and refrigeration industry or who plan to complete the Air Conditioning and Refrigeration Certificate or A.A.S. should take AIR 154, while students who plan to work in facilities maintenance should take BLD 20. See an advisor for details.

2 May be met by ENG 111 or other ENG courses approved by a student’s advisor, or by CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.

**American Sign Language to English Interpretation**

**Associate of Applied Science Degree**

**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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ASL</td>
<td>261 American Sign Language V</td>
</tr>
<tr>
<td>ENG</td>
<td>111 College Composition I</td>
</tr>
<tr>
<td>INT</td>
<td>105 Interpreting Foundations I</td>
</tr>
<tr>
<td>INT</td>
<td>142 Discourse Analysis</td>
</tr>
<tr>
<td>SDV</td>
<td>100 College Success Skills</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| ASL | 262 American Sign Language VI | 3 |
| CST | 110 Intro. to Communication | 3 |
| INT | 106 Interpreting Foundations II | 3 |
| INT | 107 Translation Skills | 3 |
| **Total** | **15** |

| 3rd Semester (summer) | |
| INT | 141 Transliterating I | 3 |
| PED | 116 Lifetime Fitness and Wellness | 1 |
| **Total** | **4** |

| 4th Semester | |
| INT | 130 Interpreting: An Intro. to the Profession | 3 |
| INT | 133 ASL-to-English Interpretation I | 3 |
| INT | 134 English-to-ASL Interpretation I | 3 |
| **Math Elective or Science Elective** | **3–4** |
| **Total** | **12–13** |

| 5th Semester | |
| INT | 233 ASL-to-English Interpretation II | 3 |
| INT | 234 English-to-ASL Interpretation II | 3 |
| INT | 237 Interpreting in Safe Settings | 2 |
| INT/ASL | INT/ASL Elective | 3 |
| PED/RPK | Elective | 1 |
| Social Science Elective | 3 |
| **Total** | **15** |

| 6th Semester (summer) | |
| 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 = 65–66**

1 May substitute the SDV 101 Orientation section related to this program.

2 See humanities/fine arts courses listed under General Education Electives.

3 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.

4 May choose MTH 151 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. Some four-year colleges require a two-semester sequence.

5 Approved electives may be selected from INT 235, INT 236, ASL 208, and ASL 210.

6 Elective must be approved. See social/behavioral science courses listed under General Education Electives. Students should base selection on requirements of transfer institution.

**American Sign Language (ASL) Career Studies Certificate**

**Offered through AN**

**Purpose:** This program prepares students to communicate proficiently in American Sign Language, including both expressive and receptive skills. Some students will transfer course credits to four-year institutions. Other students will be able to enhance their skills and employability in careers such as teaching, in the health or social service occupations, or in public safety positions.

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

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ASL</td>
<td>100 Orientation of ASL as an Adult</td>
</tr>
<tr>
<td>ASL</td>
<td>102 American Sign Language II</td>
</tr>
<tr>
<td>ASL</td>
<td>125 History and Culture of the Deaf Community</td>
</tr>
<tr>
<td>ENG</td>
<td>111 College Composition I</td>
</tr>
<tr>
<td>SDV</td>
<td>100 College Success Skills</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| ASL | 115 Fingerspelling and Number Use in ASL or ASL 212 Advanced Fingerspelling and Number Use in ASL | 2 |
| ASL | 201 American Sign Language III | 4 |
| ASL | 220 Comparative Linguistics: ASL and English | 3 |
| **Total** | **9** |
### Programs of Study

#### NOVA Catalog 2016–2017

3rd Semester

<table>
<thead>
<tr>
<th>Program</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL 202</td>
<td>American Sign Language IV</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total credits for the American Sign Language (ASL) Career Studies Certificate = 26**

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

### Architecture Technology

**Associate of Applied Science Degree**

**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 will 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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ARC 123 Architectural Graphics I</td>
<td>3</td>
</tr>
<tr>
<td>ARC 133 Construction Methodology and Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>ARC 200 History of Architecture</td>
<td>4</td>
</tr>
<tr>
<td>CAD 201 Computer Aided Drafting and Design I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 124 Architectural Graphics II</td>
<td>3</td>
</tr>
<tr>
<td>ARC 134 Construction Methodology and Procedures II</td>
<td>3</td>
</tr>
<tr>
<td>ARC 138 Structures for Architects</td>
<td>3</td>
</tr>
<tr>
<td>2. ARC 298 Seminar and Project or AR Technical Elective</td>
<td>2–3</td>
</tr>
<tr>
<td>3. MTH 115 Technical Math I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14–15</strong></td>
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</table>

<table>
<thead>
<tr>
<th>3rd Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 225 Site Planning</td>
<td>3</td>
</tr>
<tr>
<td>ARC 231 Architectural Design and Graphics I</td>
<td>4</td>
</tr>
<tr>
<td>ARC 243 Environmental Systems</td>
<td>4</td>
</tr>
<tr>
<td>CAD 202 Computer Aided Drafting and Design II</td>
<td>4</td>
</tr>
<tr>
<td>4. Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>4th Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD 203 Computer Aided Drafting and Design III</td>
<td>3</td>
</tr>
<tr>
<td>ARC 232 Architectural Design and Graphics II</td>
<td>4</td>
</tr>
<tr>
<td>ARC 240 Designing Sustainable Built Environments or Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>5. CST Elective</td>
<td>3</td>
</tr>
<tr>
<td>6. Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>CAD 203 Computer Aided Drafting and Design III</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Architecture Technology = 70–71

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. May substitute the SDV 101 Orientation section related to this program.
2. ARC 298 is recommended for the students who are planning to transfer to four-year colleges.
3. MTH 163 (3 cr.) or higher may be substituted for MTH 115. MTH 166 (5 cr.) is recommended for students who wish to transfer.
4. See social/behavioral science courses listed under General Education Electives.
5. Courses may be selected from ARC, BLD, and CAD.
6. Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
7. See humanities/fine arts courses listed under General Education Electives.

### Architectural Drafting Certificate

**Offered through AL, AN**

**Purpose:** This program is designed to prepare the student for entry-level employment in an architectural firm or a construction office. The student who completes the certificate may continue study toward the A.A.S. in Architecture Technology. Occupational objectives include architectural draftsman and engineering aide.

**Recommended Preparation:** Two years of high school algebra and geometry.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ARC 123 Architectural Graphics I</td>
<td>3</td>
</tr>
<tr>
<td>ARC 133 Construction Methodology and Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>CAD 201 Computer Aided Drafting and Design I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 124 Architectural Graphics II</td>
<td>3</td>
</tr>
<tr>
<td>ARC 134 Construction Methodology and Procedures II</td>
<td>3</td>
</tr>
<tr>
<td>ARC 138 Structures for Architects</td>
<td>3</td>
</tr>
<tr>
<td>ARC 298 Seminar and Project or AR Technical Elective</td>
<td>2–3</td>
</tr>
<tr>
<td>MTH 115 Technical Math I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14–15</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3rd Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students may substitute the SDV 101 Orientation section related to this program.</td>
<td></td>
</tr>
<tr>
<td>2. Courses may be selected from ARC, BLD, and CAD.</td>
<td></td>
</tr>
<tr>
<td>3. MTH 163 (3 cr.) or higher may be substituted for MTH 115. MTH 166 (5 cr.) is recommended for students who wish to transfer.</td>
<td></td>
</tr>
</tbody>
</table>

Total credits for the Architectural Drafting Certificate = 30
Automotive Technology
Associate of Applied Science Degree

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. The occupational objectives 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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>AUT 100 Intro. to Automotive Shop Practices</td>
<td>2</td>
</tr>
<tr>
<td>AUT 111 Automotive Engines I</td>
<td>4</td>
</tr>
<tr>
<td>AUT 241 Automotive Electricity I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I or ENG 131 Technical Report Writing I</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| AUT 242 Automotive Electricity II | 4 |
| AUT 265 Automotive Braking Systems | 4 |
| AUT 266 Auto Alignment, Suspension, and Steering | 4 |
| PHY 101 Intro. to Physics I or MTH 151 Mathematics for the Liberal Arts I or PHY 130 Survey of Applied Physics | 3–4 |
| SDV 101 Orientation | 1 |
| Total | 17–18 |

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

| 4th Semester | |
| AUT 112 Automotive Engines II | 4 |
| AUT 122 Automotive Fuel Systems II | 4 |
| AUT 141 Automotive Power Trains I | 4 |
| Humanities/Fine Arts Elective | 3 |
| Total | 16 |

| 5th Semester | |
| AUT 142 Automotive Power Trains II | 4 |
| AUT 245 Automotive Electronics | 4 |
| CST 110 Intro. to Communication | 3 |
| Social Science Elective | 3 |
| Total | 13 |

Total credits for the A.A.S. Degree in Automotive Technology = 67–68

1 May substitute DSL 141 plus DSL 143. Both courses must be taken in order to make this substitution.
2 May substitute the SDV 101 Orientation section related to this program.
3 See humanities/fine arts courses listed under General Education Electives.

Automotive Technology: Emissions Specialization
Associate of Applied Science Degree

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. The occupational objectives 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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>AUT 100 Intro. to Automotive Shop Practices</td>
<td>2</td>
</tr>
<tr>
<td>AUT 111 Automotive Engines I</td>
<td>4</td>
</tr>
<tr>
<td>AUT 121 Automotive Fuel Systems I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I or ENG 131 Technical Report Writing I</td>
<td>3</td>
</tr>
<tr>
<td>PHY 101 Intro. to Physics I or MTH 151 Mathematics for the Liberal Arts or PHY 130 Survey of Applied Physics</td>
<td>3–4</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>17–18</td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| AUT 122 Automotive Fuel Systems II | 4 |
| AUT 215 Emissions Systems Diagnosis/Repair | 2 |
| AUT 241 Automotive Electricity I | 4 |
| CST 110 Intro. to Communication | 3 |
| ITE 115 Intro. to Computer Applications and Concepts | 3 |
| Total | 16 |

| 3rd Semester | |
| AUT 236 Automotive Climate Control | 4 |
| Total | 4 |

| 4th Semester | |
| AUT 141 Automotive Power Trains I | 4 |
| AUT 242 Automotive Electricity II | 4 |
| AUT 265 Automotive Braking Systems | 4 |
| PED 116 Lifetime Fitness and Wellness | 1 |
| Social Science Elective | 3 |
| Total | 16 |

| 5th Semester | |
| AUT 142 Automotive Power Trains II | 4 |
| AUT 226 Advanced ASM Emissions Diagnostics | 2 |
| AUT 266 Automotive Alignment, Suspension, and Steering | 4 |
| Humanities/Fine Arts Elective | 3 |
| Total | 13 |

Total credits for the A.A.S. Degree in Automotive Technology with a Specialization in Emissions = 68–67

1 May substitute AUT 233.
2 May substitute DSL 141 plus DSL 143. Both courses must be taken in order to make this substitution.
3 See social/behavioral science courses listed under General Education Electives.
4 See humanities/fine arts courses listed under General Education Electives.
Automotive Technology: Maintenance and Light Repair
Career Studies Certificate

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  Credits
1st Semester
AUT  100 Intro. to Automotive Shop Practices  2
  1 AUT 241 Automotive Electricity I  4
  AUT 265 Automotive Braking Systems  4
  SDV 100 College Success Skills  1
  Total     11

2nd Semester
AUT 111 Automotive Engines I  4
  AUT 285 Auto Service and Practical Application Capstone or AUT 266 Auto Alignment, Suspension and Steering  4
  Total     8

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

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.

Automotive Technology: Collision Repair Technology
Career Studies Certificate

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 a counselor about selecting classes in the curriculum.

One Year  Credits
1st Semester
AUB 106 Basic Sheet Metal Operations  4
AUB 118 Paint Preparation  4
AUT 100 Intro. to Automotive Shop Practices  2
  Total     10

2nd Semester
AUB 125 Automotive Body Welding  4
AUB 119 Automotive Painting  4
ENG 131 Technical Report Writing I or CST 110 Intro. to Communication  3
  Total     11

3rd Semester
AUB 116 Automotive Body Repair  4
  Total     4

Total credits for the Collision Repair Technology Career Studies Certificate = 25

Automotive Technology: Diesel Mechanics Technology
Career Studies Certificate

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, electrical circuits, power train maintenance, and fuel injection. The curriculum provides practical training and the option of on-the-job experience through cooperative education. Graduates will have a background in basic diesel equipment technology principles. 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.

One Year  Credits
1st Semester
DSL 111 Intro. to Diesel Engine  2
  DSL 141 Transportation Electrical Systems I  2
  DSL 153 Power Trains I  3
  DSL 155 Heavy Duty Suspension and Service  3
  ENG 111 College Composition I or ENG 131 Technical Report Writing  3
  SDV 100 College Success Skills  1
  Total     14

2nd Semester
DSL 123 Diesel Engine Systems I  2
DSL 143 Diesel Truck Electrical Systems  4
DSL 150 Mobile Hydraulics and Pneumatics  3
DSL 160 Air Brake Systems  3
WEL 120 Intro. to Welding  2
  Total     14

Total credits for the Diesel Mechanics Technology Career Studies Certificate = 28

1 May substitute AUT 241.
2 May substitute the SDV 101 Orientation section related to this program.
Biotechnology
Associate of Applied Science Degree
Offered through LO, 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 151 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 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.
   - Applicants need to complete an application online. This will automatically be e-mailed to the Biotechnology Program coordinator. S/he will review the applicant’s application, test scores, and transcripts to confirm he/she is eligible for admission. An advising session will be scheduled if not already completed. Applicants will be notified within 2–4 weeks as to whether they have been accepted.

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

<table>
<thead>
<tr>
<th>Two Years</th>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 101 General Biology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHM 111 General Chemistry I or CHM 101 Introductory Chemistry I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MTH Elective</td>
<td>3–5</td>
<td></td>
</tr>
<tr>
<td>SDV 100 College Success Skills or SDV 101 Orientation to Biotechnology</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15–17</strong></td>
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<table>
<thead>
<tr>
<th>2nd Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 147 Basic Laboratory Calculation for Biotechnology</td>
</tr>
<tr>
<td>BIO 250 Biotechnology Research Methods and Skills</td>
</tr>
<tr>
<td>BIO 253 Biotechnology Concepts</td>
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<tr>
<td>BIO 255 Bioinformatics and Computer Applications for Biotechnology</td>
</tr>
<tr>
<td>CHM 112 General Chemistry II or CHM 102 Introductory Chemistry II</td>
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<td><strong>Total</strong></td>
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<table>
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<tr>
<th>3rd Semester</th>
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</thead>
<tbody>
<tr>
<td>BIO 205 General Microbiology</td>
</tr>
<tr>
<td>Social Science Elective</td>
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<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>4th Semester</th>
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</thead>
<tbody>
<tr>
<td>BIO 165 Principles in Regulatory and Quality Environments for Biotechnology</td>
</tr>
<tr>
<td>BIO 180 Intro. to Careers in Biotechnology</td>
</tr>
<tr>
<td>BIO 206 Cell Biology</td>
</tr>
<tr>
<td>Biotechnology/Science Elective</td>
</tr>
<tr>
<td>ENG 115 Technical Writing</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
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<tr>
<td><strong>Total</strong></td>
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<thead>
<tr>
<th>5th Semester</th>
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<tbody>
<tr>
<td>BIO 251 Protein Applications for Biotechnology or BIO 252 Nucleic Acid Methods</td>
</tr>
<tr>
<td>BIO Biotechnology Internship/Special Project</td>
</tr>
<tr>
<td>BIO 254 Capstone Seminar in Biotechnology</td>
</tr>
<tr>
<td>CST 126 Interpersonal Communication</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Biotechnology = 65–67

1. May substitute BIO 173.
2. Students who wish to transfer to a four-year institution for a baccalaureate degree should complete the CHM 111–112 series.
3. Must complete one of the following: MTH 157, MTH 181, MTH
generally require at least an associate degree, obtain the required retraining necessary for continued who wish to refine their own biotechnology skills and undergraduate degrees, and high school teachers find a job in local industry while they complete their to obtain a core of biotechnology courses and/or training, current A.S. in Science students who want were trained in foreign countries who need updated already have a bachelor's degree, scientists who in this certificate may include career changers who wishing to enhance their employment options or considering taking ENG 112.

This requirement may be satisfied by a total of 3 credits selected from BIO 290, BIO 296, BIO 297, and BIO 299. A total of 3 credits in this category is required, from a combination of 1–3 credits in any of these courses. Students must be approved by the Biotechnology program coordinator(s) for an internship or Cooperative Education assignment. 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.

May substitute CST 100, CST 110, CST 115, CST 227, or CST 229.

See humanities/fine arts courses listed under General Education Electives.

Biotechnology Lab Technician Career Studies Certificate

Offered through LO, 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. To apply to the program, please go to www.nvcc.edu/manassas/biotech.

Prerequisites: Because jobs in biotechnology generally require at least an associate degree,
Business Administration
Associate of Science Degree
Offered through AL, AN, LO, MA, WO, ELI

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, 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 Credits
1st Semester
1 CST Elective 3
2 ENG 111 College Composition I 3
3 HIS Elective 3
4 ITE 115 Intro. to Computer Applications and Concepts 3
5 MTH 163 Precalculus I 3
6 SDV 100 College Success Skills 1
Total 16

2nd Semester
7 BUS 100 Intro. to Business 3
8 ENG 125 Intro. to Literature 3
9 MTH 271 Applied Calculus I 3
10 Humanities/Fine Arts Elective 3
11 Physical or Life Science Elective w/Lab 4
Total 16

3rd Semester
12 ACC 211 Principles of Accounting I 3
13 BUS 280 Intro. to International Business 3
14 ECO 201 Principles of Economics I 3
15 Humanities/Fine Arts Elective 3
16 Physical or Life Science Elective w/Lab 4
Total 16

4th Semester
17 ACC 212 Principles of Accounting II 3
18 ECO 202 Principles of Economics II 3
19 BUS 224 Statistical Analysis for Business 4
20 BUS 270 Interpersonal Dynamics in the Business Organization 3
21 PED 116 Lifetime Fitness and Wellness 1
Total 14

Total credits for the A.S. Degree in Business Administration = 62

Business Management
Associate of Applied Science Degree
Offered through AL, AN, LO, MA, WO, ELI

Purpose: The curriculum is designed for individuals who seek employment in business management or for those presently in management who are seeking promotion. The occupational objectives include administrative assistant, management trainee, department head, branch manager, office manager, manager of small business, and supervisor.

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 Credits
1st Semester
1 BUS 100 Intro. to Business 3
2 ENG 111 College Composition I 3
3 Humanities/Fine Arts Elective 3
4 MTH 151 Mathematics for the Liberal Arts I 3
5 Physical or Life Science Elective w/Lab 4
Total 16

2nd Semester
6 BUS 125 Applied Business Mathematics 3
7 ECO 200 Principles of Management 3
8 Business Elective 3
9 ENG 112 College Composition II 3
10 MKT 201 Intro. to Marketing 3
Total 15

3rd Semester
11 BUS 125 Applied Business Mathematics 3
12 ECO 200 Principles of Management 3
13 Business Elective 3
14 ENG 112 College Composition II 3
15 MKT 201 Intro. to Marketing 3
Total 18

1 May be selected from the following: CST 100, CST 110, or CST 126.
2 See HIS courses listed under the social/behavioral science courses under General Education Electives. HIS 101, HIS 102, or HIS 112 are for transferring to Mason.
3 Students placing directly into MTH 271 may replace MTH 163 + BUS 224 with MTH 241 + ITE 140 + any 1-credit elective.
4 May substitute the SDV 101 Orientation section related to this program.

5 ENG 125 is a preferred course if transferring to Mason. Students considering transfer should consult an academic advisor to select the appropriate course.
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 requirements of the transfer institution. Students with an interest in International Business should consider at least 3 credits of a 200 level language course.
7 Select from biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
8 Students considering transfer to an institution other than Mason, consult an academic advisor. Both Marymount University and JMU recommend BUS 241.
9 Students considering transfer to an institution other than Mason consult an academic advisor. Marymount University recommends BUS 242.
4th Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 212 Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>6 Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>a BUS 220 Intro. to Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>BUS 226 Computer Business Applications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 242 Business Law II</td>
<td>3</td>
</tr>
<tr>
<td>FIN 215 Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>3 PED/RPK Elective</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Business Management = 66

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.
2 May substitute a higher-level mathematics course. If considering transfer, consult an academic advisor for appropriate selection.
3 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.
4 May substitute the SDV 101 Orientation section related to this program.
5 Students considering transfer should consult an academic advisor.
6 May be selected from ACC, BUS, CON, ECO, FIN, HRI, IT, MKT, or REA. Students considering transfer should consult an academic advisor for appropriate choices.
7 May be selected from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
8 Students considering transfer may take ECO 201 or ECO 202 after consulting an academic advisor.
9 BUS 224 is recommended for those who qualify and want to transfer.

Business Management: Finance Specialization
Associate of Applied Science Degree

Offered through AL, AN, LO, MA, WO

Purpose: This program is designed to be broadly based and cover general concepts and principles as they apply to a wide area of finance including the financial management of business firms, real estate finance, international finance, personal finance, and securities investments. A graduate of this program will be competent for an entry-level position in any of the financial services industries and will have the overall academic preparation needed to make it possible to advance to a higher-level position.

Two Years

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 211 Principles of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS 100 Intro. to Business</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>1 MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>2 PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>3 Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>4 SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACC 212 Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUS 125 Applied Business Math</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>FIN 107 Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>FIN 226 Computer Business Applications</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
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</table>

Total credits for the A.A.S. Degree in Business Management with a Specialization in Finance = 69

1 May substitute a higher-level mathematics course. Consult with an academic advisor for appropriate selection.
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.
4 May substitute the SDV 101 Orientation section related to this program.
5 Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
6 Students wishing to transfer to a four-year college need to take ECO 201–202.
7 See humanities/fine arts courses listed under General Education Electives.

Business Management: Healthcare Administration Specialization
Associate of Applied Science Degree

Offered through AL, AN, LO, MA, WO

Purpose: This curriculum is designed for individuals who seek employment as a supervisor, manager, or assistant manager in a physician’s office or other medical practice. The program of study blends training in the principles of business operations, management, and healthcare administration, to include marketing, human resource management, reimbursement, accreditation standards, legal issues, and computer applications. A graduate of this program will be prepared for an entry-level position in the healthcare industry and will have the overall academic preparation needed to make it possible to advance to a higher-level position along with further education.
**Recommended Preparation:** The student should possess a proficiency in high school English and a strong background in basic arithmetic operations.

The HIM courses in this degree are only offered at the Medical Education Campus or through ELI.

### Business Management: International Business Specialization

**Associate of Applied Science Degree**

**Offered through AL, AN, LO, ELI**

**Purpose:** This program provides knowledge and skills in international business and is designed to prepare students for initial full-time employment or advancement in present employment. The occupational objectives include administrative assistant, branch manager, supervisor, or office manager in an international firm. Careers exist in import-export management for small business and as an international marketing specialist.

**Recommended Preparation:** The student should possess a proficiency in high school English and a strong background in basic arithmetic operations.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ACC 211 Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 100 Intro. to Business</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HIM 141 Fundamentals of Health Information Systems I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>BUS 200 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>ENG 116 Writing for Business</td>
<td>3</td>
</tr>
<tr>
<td>HIM 111 Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>HIM 142 Fundamentals of Health Information Systems II</td>
<td>3</td>
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<tr>
<td>MKT 201 Intro. to Marketing</td>
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<tr>
<td><strong>Social Science Elective</strong></td>
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<td><strong>Total</strong></td>
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<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>1 BUS 125 Applied Business Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>BUS 201 Organizational Behavior</td>
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<tr>
<td>BUS 241 Business Law I</td>
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<tr>
<td>CST Elective</td>
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<tr>
<td>ECO 120 Survey of Economics</td>
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<tr>
<td>HIM 220 Health Statistics</td>
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<td><strong>Total</strong></td>
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<tr>
<td>4th Semester</td>
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<tr>
<td>BUS 202 Applied Management Principles or BUS 242 Business Law II</td>
<td>3</td>
</tr>
<tr>
<td>BUS 205 Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>FIN 215 Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>HIM 200 Survey of Health Care Administration</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>PED 116 Lifetime Fitness and Wellness</strong></td>
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</tr>
<tr>
<td><strong>PED/RPK Elective</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Business Management with a Specialization in Healthcare Administration = 69

Check course descriptions in this Catalog for requirements regarding placement tests and/or prerequisites.

1. May substitute a higher-level mathematics course. Consult an academic advisor for appropriate selection.
2. May substitute the SDV 101 Orientation section related to this program.
3. See social/behavioral science courses listed under General Education Electives.
4. Students considering transfer should consult an academic advisor.
5. Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
6. Students considering transfer may take ECO 201 or ECO 202 after consulting an academic advisor.
7. See humanities/fine arts courses listed under General Education Electives.
8. 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.

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**Business Management: International Business Specialization**

**Associate of Applied Science Degree**

**Offered through AL, AN, LO, ELI**

**Purpose:** This program provides knowledge and skills in international business and is designed to prepare students for initial full-time employment or advancement in present employment. The occupational objectives include administrative assistant, branch manager, supervisor, or office manager in an international firm. Careers exist in import-export management for small business and as an international marketing specialist.

**Recommended Preparation:** The student should possess a proficiency in high school English and a strong background in basic arithmetic operations.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
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<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ACC 211 Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 100 Intro. to Business</td>
<td>3</td>
</tr>
<tr>
<td>1 MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>2 SDV 100 College Success Skills</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>ACC 212 Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUS 125 Applied Business Math</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 226 Computer Business Applications or AST 236 Specialized Software Applications or ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td><strong>Social Science Elective</strong></td>
<td><strong>3</strong></td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>BUS 202 Applied Management Principles</td>
<td>3</td>
</tr>
<tr>
<td>BUS 280 Intro. to International Business</td>
<td>3</td>
</tr>
<tr>
<td>CST Elective</td>
<td>3</td>
</tr>
<tr>
<td>ECO 120 Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td><strong>Foreign Language</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
<tr>
<td>BUS 220 Intro. to Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>BUS 241 Business Law I</td>
<td>3</td>
</tr>
<tr>
<td>FIN 215 Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>FIN 248 International Finance</td>
<td>3</td>
</tr>
<tr>
<td>MKT 275 International Marketing</td>
<td>3</td>
</tr>
<tr>
<td><strong>PED/RPK Elective</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Business Management with a Specialization in International Business = 66

1. May substitute a higher-level mathematics course. Consult an academic advisor for appropriate selection.
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 humanities/fine arts courses listed under General Education Electives.
4. May substitute the SDV 101 Orientation section related to this program.
Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
May substitute ECO 201 or ECO 202.

Business Management: Public Management Specialization
Associate of Applied Science Degree

Offered through WO

Purpose: This program provides knowledge and skills in public sector management and is designed to prepare students for initial employment or advancement in present employment. The occupational objectives include administrative assistant, management trainee, supervisor, office manager, or manager in local, state, federal, or nonprofit organizations.

Recommended Preparation: The student should possess a proficiency in high school English and a strong background in basic arithmetic operations.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ACC 211 Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 100 Intro. to Business</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>PLS 211 U.S. Government I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>ACC 212 Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>PBS 100 Intro. to Public Administration</td>
<td>3</td>
</tr>
<tr>
<td>PBS 105 Personnel Management in the Public Sector</td>
<td>3</td>
</tr>
<tr>
<td>PLS 212 U.S. Government II or Elective</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
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<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>BUS 201 Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BUS 202 Applied Management Principles</td>
<td>3</td>
</tr>
<tr>
<td>BUS 241 Business Law I</td>
<td>3</td>
</tr>
<tr>
<td>CST Elective</td>
<td>3</td>
</tr>
<tr>
<td>ECO 120 Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
<tr>
<td>BUS 220 Intro. to Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>BUS 226 Computer Business Applications or AST 236 Specialized Software Applications or ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>PBS 116 Public Budgeting and Finance</td>
<td>3</td>
</tr>
<tr>
<td>PBS 240 Constitutional Law</td>
<td>3</td>
</tr>
<tr>
<td>PED/RPK Elective</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Business Management with a Specialization in Public Management = 69

1 May substitute a higher-level mathematics course. Consult an academic advisor for appropriate selection.
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 is offered as both a 1-credit and a 2-credit course.
3 May substitute the SDV 101 Orientation section related to this program.
4 Public Service elective may be selected from ACC, CON, BUS, ECO, FIN, ITD, ITE, ITN, ITP, MKT, PBS, or PLS.
5 Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
6 May substitute ECO 201 or ECO 202.
7 See humanities/fine arts courses listed under General Education Electives.

Business Management: Business Information Technology
Career Studies Certificate

Offered through AL, AN, LO, MA, WO, ELI

Purpose: The curriculum is designed to provide the foundations 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.

<table>
<thead>
<tr>
<th>One Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 100 Intro. to Business or BUS 204 Project Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS or IT Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENG/CST Elective</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective or BUS 201 Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

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 115, CST 126, CST 227, or CST 229.
2 May substitute BUS 226.
3 See social/behavioral science courses listed under General Education Electives. Students completing this program through Training Futures should take PSY 125.

Business Management: Entrepreneurship
Career Studies Certificate

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.

Special Admission Requirement: This program is open only to students in selected groups as approved by
the dean of the Science, Technology, and Business Division at the Alexandria Campus.

**Communication Design**

**Associate of Applied Science Degree**

**Offered through AL, LO**

**Purpose:** The curriculum is designed for individuals who seek full-time employment in the communication design field. The occupational objectives include graphic designer in the communication design marketplace.

**Recommended Preparation:** Proficiency in high school English and a satisfactory aptitude for drawing.

**Equipment and Supplies:** Communication 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.

**Business Management:**

**Leadership Development**

**Career Studies Certificate**

**Offered through AL, AN, LO, MA, WO, ELI**

**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 or 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**

**Credits**

**1st Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 100 Intro. to Business or</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 Principles of Management</td>
<td></td>
</tr>
<tr>
<td>BUS 201 Organizational Behavior</td>
<td></td>
</tr>
<tr>
<td>CST 227 Business and Professional Communication or</td>
<td>3</td>
</tr>
<tr>
<td>ENG 116 Writing for Business</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

**2nd Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 117 Leadership Development or</td>
<td>3</td>
</tr>
<tr>
<td>BUS 297 Cooperative Education</td>
<td></td>
</tr>
<tr>
<td>BUS 205 Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

**Total credits for the Leadership Development Career Studies Certificate = 16**

1 May substitute SDV 101 Orientation section related to this program.
2 Students may substitute the SDV 101 Orientation section related to this program.

**Communication Design**

**Associate of Applied Science Degree**

**Offered through AL, LO**

**Purpose:** The curriculum is designed for individuals who seek full-time employment in the communication design field. The occupational objectives include graphic designer in the communication design marketplace.

**Recommended Preparation:** Proficiency in high school English and a satisfactory aptitude for drawing.

**Equipment and Supplies:** Communication 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**

**Credits**

**1st Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 121 Drawing I</td>
<td>4</td>
</tr>
<tr>
<td>ART 131 Fundamentals of Design I</td>
<td>4</td>
</tr>
<tr>
<td>ART 140 Intro. to Graphic Skills</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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</table>

**2nd Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 116 Design for the Web I</td>
<td>3</td>
</tr>
<tr>
<td>ART 135 Visual Communications</td>
<td>3</td>
</tr>
<tr>
<td>ART 141 Typography I</td>
<td>3</td>
</tr>
<tr>
<td>ART 209 Creative Concepts and Writing</td>
<td>3</td>
</tr>
<tr>
<td>PHT 270 Digital Imaging I or</td>
<td></td>
</tr>
<tr>
<td>ART 251 Communication Design I</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
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**3rd Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ART 142 Typography II</td>
<td>3</td>
</tr>
<tr>
<td>ART 217 Graphic Design I</td>
<td>3</td>
</tr>
<tr>
<td>ART 265 Graphic Techniques</td>
<td>3</td>
</tr>
<tr>
<td>ART Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for Liberal Arts I or</td>
<td>3–4</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
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**4th Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ART 218 Graphic Design II</td>
<td>3</td>
</tr>
<tr>
<td>ART 250 History of Design</td>
<td>3</td>
</tr>
<tr>
<td>ART 287 Portfolio and Resume Preparation</td>
<td>3</td>
</tr>
<tr>
<td>ART Elective</td>
<td>3</td>
</tr>
<tr>
<td>CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

**Total credits for the A.A.S. Degree in Communication Design = 67–68**

1 May substitute the SDV 101 Orientation section related to this program.
2 PHT 270 will teach digital imaging from a photography perspective, whereas ART 251 provides a design perspective.
3 See social/behavioral science courses listed under General Education Electives.
4 Approved ART Electives: ART 122, ART 132, ART 117, ART 270, ART 266, ART 267, ART 268, ART 281, or division approval for other ART courses.
5 Division approval required for substitution. The science elective may be selected from biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
6 See fine arts/humanities courses other than ART listed under General Education Electives.

Communication Design: Interactive Design Specialization
Associate of Applied Science Degree
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.

Recommended Preparation: Proficiency in high school English and a satisfactory aptitude for drawing.

Equipment and Supplies: Communication 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

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 121 Drawing I</td>
<td>4</td>
</tr>
<tr>
<td>ART 131 Fundamentals of Design I</td>
<td>4</td>
</tr>
<tr>
<td>ART 140 Intro. to Graphic Skills</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 116 Design for the Web I</td>
<td>3</td>
</tr>
<tr>
<td>ART 135 Visual Communications</td>
<td>3</td>
</tr>
<tr>
<td>ART 209 Creative Concepts and Writing</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>3rd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 141 Typography I</td>
<td>3</td>
</tr>
<tr>
<td>ART 263 Interactive Design I</td>
<td>3</td>
</tr>
<tr>
<td>ART 270 Motion Graphics</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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</table>

<table>
<thead>
<tr>
<th>4th Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 142 Typography II</td>
<td>3</td>
</tr>
<tr>
<td>ART 250 History of Design</td>
<td>3</td>
</tr>
<tr>
<td>ART 264 Interactive Design II</td>
<td>3</td>
</tr>
<tr>
<td>ART 287 Portfolio and Resume Preparation</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Communication Design with a Specialization in Interactive Design = 67–68

1 May substitute the SDV 101 Orientation section related to this program.
2 See fine arts/humanities courses other than ART listed under General Education Electives.
3 Approved ART electives: ART 122, ART 132, ART 117, ART 270, ART 266, ART 267, ART 268, ART 281, or division approval for other ART courses.
4 Division approval required for substitution. The science elective may be selected from biology, chemistry, ENV 121–122, 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 social/behavioral science courses listed under General Education Electives.

Communication Design: Multimedia Design Certificate
Offered through AL, LO

Purpose: This curriculum is designed to prepare the student for employment as a visual communicator in the field of multimedia production and to broaden the skills of those presently employed in the profession. Upon successful completion, the program prepares students to work as visual communicators in the field of multimedia production.

One Year

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 121 Drawing I</td>
<td>4</td>
</tr>
<tr>
<td>ART 130 Intro. to Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>ART 131 Fundamentals of Design I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 150 History of Film and Animation</td>
<td>3</td>
</tr>
<tr>
<td>ART 203 Animation I</td>
<td>3</td>
</tr>
<tr>
<td>ART 207 3-D Model Rendering</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3rd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 208 Video Techniques</td>
<td>3</td>
</tr>
<tr>
<td>ART 230 Multimedia II or ART 204 Animation II</td>
<td>3</td>
</tr>
<tr>
<td>ART 270 Motion Graphics I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

Total credits for the Certificate in Multimedia Design = 36

1 May substitute the SDV 101 Orientation section related to this program.
2 See the social/behavioral science courses listed under General Education Electives.

Communication Design: Web Design Specialist Career Studies Certificate
Offered through AL, LO

Purpose: This curriculum provides students with the aesthetic and technical knowledge required for the creation of well-designed and organized websites.
All first-time students must take a one-credit Student Development (SDV) course prior to enrolling in their 16th credit at NOVA.

Computer Science–Related Programs
See also Information Technology and Computer Science Associate of Science Degrees

Computer Science
Associate of Science Degree

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.

Recommended Preparation: Satisfactory completion of the following high school units or equivalent: 4 units of English and 4 units of college preparatory mathematics.

Construction Management Technology
Associate of Applied Science Degree

Purpose: The curriculum is designed to qualify personnel in both engineering technology and management for employment in all areas of a construction firm. Occupational objectives include
engineering aide, construction project manager, construction supervisor, estimator, and facilities planning and supervision.

### Programs of Study

#### NOVA Catalog 2016–2017

**Construction Management Technology:**

**Construction Supervision**

**Career Studies Certificate**

**Offered through AL**

**Purpose:** The curriculum is designed to qualify personnel in both building construction and engineering technologies. Occupational objectives 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.

#### Two Years Credits

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>BLD 101 Construction Management I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BLD 165 Construction Field Operations</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>BLD 231 Construction Estimating I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CIV 171 Surveying I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CAD 165 Architectural Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

| 2nd      | BLD 102 Construction Management II           | 3       |
|          | BLD 215 OSHA 30 Construction Safety          | 2       |
|          | BLD 232 Construction Estimating II           | 3       |
|          | CAD 201 Computer Aided Drafting and Design I | 4       |
|          | Humanities/Fine Arts Elective                | 3       |
|          | MTH 163 Precalculus I                        | 3       |
|          | **Total**                                    | **18**  |

| 3rd      | ARC 133 Construction Methodology and Procedures I | 3       |
|          | ARC 225 Site Planning and Technology         | 3       |
|          | BLD 200 Sustainable Constructions            | 3       |
|          | BLD 241 Construction Management III          | 3       |
|          | PED 116 Lifetime Fitness and Wellness        | 1       |
|          | **CST Elective**                             | **3**   |
|          | **Total**                                    | **16**  |

| 4th      | ARC 134 Construction Methodology and Procedures II | 3       |
|          | ARC 243 Environmental Systems or              | 4       |
|          | Technical Elective                           |         |
|          | BLD 242 Construction Management IV            | 3       |
|          | BLD 247 Construction Planning and Scheduling | 3       |
|          | Humanities/Behav Social Sciences Elective     | 3       |
|          | **CST Elective**                             | **3**   |
|          | **Total**                                    | **19**  |

**Total credits for the A.A.S. Degree in Construction Management Technology = 71**

1. May substitute the SDV 101 Orientation section related to this program.
2. See humanities/fine arts courses listed under General Education Electives.
3. Students transferring to a four-year college or university should consider taking MTH 166, 5 cr.; or MTH 173, 5 cr. instead of MTH 163.
4. Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
5. Technical elective courses must be approved by the program academic advisor. May be selected from the following: ARC 134, CAD 202, CAD 203, CAD 260, CIV 171, EGR Static 130 or 240, or EGR 246.
6. See social/behavioral science courses listed under General Education Electives. Students planning to transfer to a four-year degree program should consider taking HIS 102.

#### One Year Credits

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>BLD 101 Construction Management I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BLD 165 Construction Field Operations</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>BLD 231 Construction Estimating I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CAD 165 Architectural Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

| 2nd      | ARC 133 Construction Methodology and Procedures I | 3       |
|          | BLD 215 OSHA 30 Construction Safety          | 2       |
|          | CIV 171 Surveying I                          | 3       |
|          | **Technical Elective**                        | **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 courses must be approved by the program academic advisor. May be selected from the following: ARC 134, CAD 202, CAD 203, CAD 260, CIV 171, EGR Static 130 or 240, or EGR 246.

#### Contract Management

**Associate of Applied Science Degree**

**Offered through AL, 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. Occupational objectives 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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>CON</td>
<td>100 Shaping Business Arrangements</td>
</tr>
<tr>
<td>1  ECO</td>
<td>120 Survey of Economics</td>
</tr>
<tr>
<td>ENG</td>
<td>111 College Composition I</td>
</tr>
<tr>
<td>ITE</td>
<td>115 Intro. to Computer Applications and Concepts</td>
</tr>
<tr>
<td>2  MTH</td>
<td>151 Mathematics for the Liberal Arts I</td>
</tr>
<tr>
<td>3  SDV</td>
<td>100 College Success Skills</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
</tbody>
</table>

2nd Semester

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>CON</td>
<td>110 Contract Support Planning</td>
</tr>
<tr>
<td>1  CON</td>
<td>120 Strategic Focused Contracting I</td>
</tr>
<tr>
<td>2  CST</td>
<td>110 Intro. to Communication</td>
</tr>
<tr>
<td>3  ENG</td>
<td>112 College Composition II</td>
</tr>
<tr>
<td>4  PED</td>
<td>116 Lifetime Fitness and Wellness</td>
</tr>
<tr>
<td>5  Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
</tr>
</tbody>
</table>

3rd Semester

| ACC | 211 Principles of Accounting I | 3 |
| BUS | 200 Principles of Management | 3 |
| CON | 111 Contract Strategy Execution | 3 |
| CON | 214 Business Decisions for Contracting | 3 |
| CON | 215 Intermediate Contracting Support | 3 |
| 6  Humanities/Fine Arts Elective | 3 |
| Total | 18 |

4th Semester

| ACC | 212 Principles of Accounting II | 3 |
| BUS | 220 Intro. to Business Statistics | 3 |
| CON | 112 Contract Performance Assessment I | 3 |
| CON | 216 Legal Considerations in Contracting | 3 |
| CON | 217 Cost Analysis and Negotiation Techniques | 3 |
| CON | 218 Advanced Contracting Support | 3 |
| Total | 18 |

Total credits for the A.A.S. Degree in Contract Management = 69

1  May substitute ECO 201 or 202.
2  May substitute a higher-level mathematics course. Consult an academic advisor for appropriate selection.
3  May substitute the SDV 101 Orientation section related to this program.
4  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.
5  See social/behavioral science courses listed under General Education Electives. PLS 211 is recommended.
6  See humanities/fine arts courses listed under General Education Electives.

Contract Management Certificate

Offered through AL, WO

Purpose: This curriculum is designed for students wishing to take courses directly related to the contract management field. Upon successful completion, employment objectives include project management, procurement analyst, contract administrator, contract negotiator, contract price analyst, contract termination specialist, and contracting officer.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>CON</td>
<td>100 Shaping Business Arrangements</td>
</tr>
<tr>
<td>CON</td>
<td>110 Contract Support Planning</td>
</tr>
<tr>
<td>CON</td>
<td>111 Contract Strategy Execution</td>
</tr>
<tr>
<td>CON</td>
<td>112 Contract Performance Assessment I</td>
</tr>
<tr>
<td>ENG</td>
<td>111 College Composition I</td>
</tr>
<tr>
<td>1  SDV</td>
<td>100 College Success Skills</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
</tbody>
</table>

2nd Semester

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CON</td>
<td>120 Strategic Focused Contracting I</td>
</tr>
<tr>
<td>CON</td>
<td>214 Business Decisions for Contracting</td>
</tr>
<tr>
<td>CON</td>
<td>215 Intermediate Contracting Support</td>
</tr>
<tr>
<td>CON</td>
<td>216 Legal Considerations in Contracting</td>
</tr>
<tr>
<td>CON</td>
<td>217 Cost Analysis and Negotiation Techniques</td>
</tr>
<tr>
<td>CON</td>
<td>218 Advanced Contracting Support</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
</tr>
</tbody>
</table>

Total credits for the Contract Management Certificate = 34

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

Convention Management

See Hospitality Management

Culinary Arts Certificate

See Hospitality Management

Cybersecurity-Related Programs

See also Computer Science and Information Technology

Cybersecurity

Associate of Applied Science Degree

Offered through AL, AN, LO, MA, 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.

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 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.
### Cybersecurity

**Career Studies Certificate**

**Offered through AL, MA, 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.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ENG   Elective</td>
<td>3</td>
</tr>
<tr>
<td>ITN   260 Network Security Basics</td>
<td>3</td>
</tr>
<tr>
<td>ITN   261 Network Attacks, Computer Crime, and Hacking</td>
<td>4</td>
</tr>
<tr>
<td>ITN   262 Network Communication, Security and Authentication</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>ITN   263 Internet/Intranet Firewalls and E-Commerce Security</td>
<td>4</td>
</tr>
<tr>
<td>ITN   266 Network Security Layers</td>
<td>3</td>
</tr>
<tr>
<td>ITN   267 Cyberlaw</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

**Total credits for the Career Studies Certificate in Cybersecurity = 24**

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.

1. Must be selected from the following: ENG 115, ENG 116, ENG 131.

---

### Database Specialist Career Studies Certificate

See Information Systems Technology

### Deaf Studies Specialization A.S.

See Social Sciences

### Dental Hygiene A.A.S.

See Medical Education section

### Diagnostic Imaging

See Medical Education: Radiography

### Diagnostic Medical Sonography A.A.S.

See Medical Education section

### Diesel Mechanics Technology Career Studies Certificate

See Automotive Technology
Drafting Specialization
See Architectural Drafting or Engineering Technology: Drafting Specialization

Driver Education
Career Studies Certificate

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.

<table>
<thead>
<tr>
<th>One Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST/ENG Elective</td>
<td>3</td>
</tr>
<tr>
<td>EDU 114 Driver Task Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EDU 214 Instructional Principles of Driver Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

**Purpose:**
This program is designed for students who wish to become qualified teachers of driver education or maintain qualifications in the state of Virginia.

<table>
<thead>
<tr>
<th>One Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST/ENG Elective</td>
<td>3</td>
</tr>
<tr>
<td>EDU 114 Driver Task Analysis</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

**Total credits for the Driver Education 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
Associate of Applied Science Degree

Offered through AL, LO, MA

**Purpose:** The curriculum is designed for individuals who seek employment involving the care and education of young children, or for those persons presently employed in these situations who wish to update and enhance their competencies. Occupational opportunities include program leaders, supervisors, and/or directors in child development 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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CHD 118 Language Arts for Young Children</td>
<td>3</td>
</tr>
<tr>
<td>CHD 120 Intro. to Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>CHD 145 Teaching Art, Music, and Movement to Children</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>PSY 235 Child Psychology</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**2nd Semester**

| CHD 119 Intro. to Reading Methods | 3 |
| CHD 165 Observation/Participation/ Early Childhood/Primary Settings | 3 |
| CHD 166 Infant and Toddler Programs | 3 |
| CHD 205 Guiding the Behavior of Children | 3 |
| ENG 112 College Composition II | 3 |
| PED/RPK Elective | 1 |
| PED 116 Lifetime Fitness and Wellness | 1 |
| **Total** | **17** |

3rd Semester

| CHD 146 Math, Science, Social Studies for Children | 3 |
| CHD 210 Intro. to Exceptional Children | 3 |
| CHD 215 Models of Early Childhood Education Programs, Schools, and Social Change | 3 |
| EDU 235 Health, Safety, and Nutrition Education | 3 |
| **Total** | **18** |

4th Semester

| CHD 265 Advanced Observation/Participation/ Early Childhood/Primary Settings | 3 |
| CHD 270 Administration of Child Care Programs | 3 |
| CHD 298 Seminar and Project (Portfolio) | 1 |
| CST 100 Principles of Public Speaking | 3 |
| MTH 151 Mathematics for the Liberal Arts I or Physical or Life Science Elective w/Lab | 3–4 |
| PED/RPK Elective | 1 |
| PED 116 Lifetime Fitness and Wellness | 1 |
| **Total** | **16–17** |

**Total credits for the A.A.S. Degree in Early Childhood Development** = 67–68

1. May substitute the SDV 101 Orientation section related to this program.
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 humanities/fine arts courses listed under General Education Electives.
4. See biology, chemistry, ENV 121–122, 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 social/behavioral science courses listed under General Education Electives.

Early Childhood Development
Certificate

Offered through AL, LO, MA

**Purpose:** The curriculum is designed to prepare individuals for employment in environments where the care and education of young children is the primary focus. Occupational opportunities include employment in child development programs and family child care 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.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CHD 118 Language Arts for Young Children or CHD 119 Intro. to Reading Methods</td>
<td>3</td>
</tr>
<tr>
<td>CHD 120 Intro. to Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>CHD 205 Guiding the Behavior of Children or CHD 230 Behavior Management for School-Age Child Care</td>
<td>3</td>
</tr>
<tr>
<td>EDU 235 Health, Safety, and Nutrition Education</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>PED 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>
### Early Childhood Development

#### Career Studies Certificate

**Program:** Early Childhood Development Career Studies Certificate  
**Offered through:** AL, LO, MA, ELI

**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. Occupational opportunities include employment as assistant teachers, teachers, group leaders, or family child care providers in programs for young children.

**One Year Credits**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD 120 Intro. to Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>CHD 145 Teaching Art, Music, and Movement to Children</td>
<td>3</td>
</tr>
<tr>
<td>CHD 205 Guiding the Behavior of Children</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
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</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD 165 Observation and Participation in Early Childhood/Primary Settings</td>
<td>3</td>
</tr>
<tr>
<td>EDU 235 Health, Safety, and Nutrition Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

**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: Infant and Toddler Care

#### Career Studies Certificate

**Program:** Early Childhood Development: Infant and Toddler Care Career Studies Certificate  
**Offered through:** AL, LO, MA, ELI

**Purpose:** The curriculum is designed to prepare individuals to create developmentally appropriate learning environments for infants and toddlers. Occupational opportunities include employment in child development programs and family child care homes.

**One Year Credits**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD 119 Intro. to Reading Methods</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD 146 Math, Science, and Social Studies for Children</td>
<td>3</td>
</tr>
<tr>
<td>CHD 210 Intro. to Exceptional Children</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

**Total credits for the Paraprofessional Teacher Assistant Career Studies Certificate = 16**

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

### Emergency Medical Services

See Medical Education section
**Engineering**
Associate of Science Degree

**Offered through AL, AN, LO**

**Purpose:** The curriculum is designed to prepare the student to transfer into a baccalaureate degree program in engineering fields such as mechanical engineering, civil engineering, chemical engineering, aeronautical engineering, and naval architecture/marine engineering.

**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:** 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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CHM 111 General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>EGR 120 Intro. to Engineering</td>
<td>2</td>
</tr>
<tr>
<td>ENG 111 College Composition</td>
<td>3</td>
</tr>
<tr>
<td>MTH 173 Calculus with Analytic Geometry I</td>
<td>5</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>EGR 126 Computer Programming for Engineers</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>MTH 174 Calculus with Analytic Geometry II</td>
<td>5</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>PHY 231 General University Physics I</td>
<td>5</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td><strong>3rd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CST Elective</td>
<td>3</td>
</tr>
<tr>
<td>EGR 240 Solid Mechanics (Statics)</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH 277 Vector Calculus</td>
<td>4</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td><strong>4th Semester</strong></td>
<td></td>
</tr>
<tr>
<td>EGR Elective</td>
<td>2–3</td>
</tr>
<tr>
<td>EGR 245 Engineering Mechanics–Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>EGR 246 Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>PHY 232 General University Physics II</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16–17</strong></td>
</tr>
</tbody>
</table>

**Total credits for the A.S. Degree in Engineering = 67–68**

1 Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum.
2 May substitute the SDV 101 Orientation section related to this program.
3 See social/behavioral science courses listed under General Education Electives.
4 May substitute ENG 125 with the advice of a counselor or academic advisor according to requirements of the transfer institution.
5 May be selected from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
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 requirements of the transfer institution.
7 EGR 206 (2 credits) required at Virginia Tech and desirable elsewhere. Consult a faculty advisor for other EGR classes that are acceptable electives.
8 May substitute EGR 251.

The following courses are not required for the A.S. degree; however, completion of them in addition to the degree requirements listed may be desirable for transfer as a junior in engineering. Consult the requirements of the transfer institution.

| CHM 112 General Chemistry II | 4 |
| EGR Elective | 3–6 |
| MTH 285 Linear Algebra | 3 |
| MTH 291 Differential Equations | 3 |
| MTH 292 Topics in Differential Equations | 3 |

9 Given the increased interest in the multidiscipline engineering field of Mechatronics, Mechanical Engineers may want to consider taking some of the Electric Engineering courses (EGR 251, EGR 252, EGR 255, EGR 265) and Electrical Engineering students may want to consider taking some of the Mechanical Engineering courses (EGR 240, EGR 245, and EGR 246). Both Mechanical Engineer and Electrical Engineering students may also want to consider EGR 206, especially if they are interested in System Engineering.
10 MTH 292 not recommended for students who plan to transfer to Mason.

**Engineering: Electrical Engineering Specialization**
Associate of Science Degree

**Offered through AN, LO**

**Purpose:** The curriculum is designed to permit the student to transfer into a baccalaureate degree program in Electrical Engineering (EE). All B.S.E.E. degree-granting colleges/universities require specific preparation in the sophomore year for EE majors.

**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:** High school courses:
4 units of English, 2 units of algebra, 1 unit of geometry, 1 unit of trigonometry, and 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 Credits
1st Semester
1 CHM 111 General Chemistry I or
   CSC 201 Computer Science I 4
2 EGR 120 Intro. to Engineering 2
3 ENG 111 College Composition I 3
4 MTH 174 Calculus/Analytic Geometry I 5
5 PED 116 Lifetime Fitness and Wellness 1
6 SDV 100 College Success Skills 1
Total 16

2nd Semester
1 EGR 126 Computer Programming for Engineers or
   CSC 201 or CSC 202 Computer Science I or II 3–4
2 ENG 112 College Composition II 3
3 MTH 277 Vector Calculus 4
4 — Social Science Elective 3
Total 16

3rd Semester
1 EGR 252 Basic Electric Circuits II 3
2 ENG 240 Solid Mechanics (Statics) 3
3 EGR 251 Basic Electric Circuits I 3
4 MTH 273 Calculus/Analytic Geometry II 5
5 PHY 232 General University Physics II 5
6 — Social Science Elective 3
Total 16

4th Semester
1 EGR 255 Electric Circuits Laboratory 1
2 ENG 111 College Composition I 3
3 CAD 140 Technical Drawing 3
4 MEC 112 Processes of Industry 3
5 MTH 166 Precalculus with Trigonometry 5
6 — Social Science Elective 3
Total 18

Total credits for the A.S. Degree in Engineering with a Specialization in Electrical Engineering = 66–67

1 May substitute CSC 201 for transfer to Electrical Engineering schools that do not require chemistry.
2 Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum.
3 May substitute the SDV 101 Orientation section related to this program.
4 May substitute CSC 201 for transfer to institutions that do not require a computer programming course and require chemistry.
5 Per note 1, may substitute CSC 202.
6 May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
7 May be selected from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
8 May substitute EGR 265.
9 See social/behavioral science courses listed under General Education Electives.
10 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.

The following courses are not required for the Electrical Engineering Specialization; however, completion of them may be desirable for transfer as a junior in engineering. Consult the requirements of the transfer institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGR 265 Digital Electronics and Logic Design</td>
<td>4</td>
</tr>
<tr>
<td>MTH 285 Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MTH 291 Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MTH 292 Topics in Differential Equations</td>
<td>3</td>
</tr>
</tbody>
</table>

Engineering Technology
Associate of Applied Science

Purpose: This curriculum is designed to prepare students for employment in civil engineering, mechanical engineering, or drafting technology fields.

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 Credits
1st Semester
1 ARC 123 Architectural Graphics I 3
2 CIV 171 Surveying I 3
3 ENG 111 College Composition I 3
4 CSC 110 Intro. to Computing 3
5 MTH 166 Precalculus with Trigonometry 5
6 PED/PPK Elective 1
Total 18

2nd Semester
1 ARC 133 Construction Methodology and Procedures I 3
2 CAD 201 Computer Aided Drafting and Design I 4
3 MEC 112 Processes of Industry 3
4 MTH 166 Precalculus with Trigonometry 5
5 PED/PPK Elective 1
Total 18

3rd Semester
1 CIV 210 Structural Systems 5
2 CST Elective 3
3 EGR 115 Engineering Graphics 2
4 EGR 130 Statics and Strength of Materials 5
5 — Humanities/Fine Arts Elective 3
Total 18

4th Semester
1 ARC 124 Architectural Graphics II 3
2 CAD 140 Technical Drawing 3
3 CAD 202 Computer Aided Drafting and Design II 4
4 MEC 118 Automated Manufacturing Technology 3
5 PHY 201 General College Physics I 4
Total 17

Total credits for the A.A.S. Degree in Engineering Technology = 68

1 CIV classes are offered only on the Alexandria Campus.
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 205, RPK 216, or RPK 225. 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. Students planning to transfer should consider taking HIS 101–102 or HIS 111–112.

4 May substitute SDV 101 Orientation section related to this program.

5 MEC courses are offered only on the Annandale Campus.

6 May substitute MTH 163–164.

7 Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.

8 See humanities/fine arts courses listed under General Education Electives.

9 Individuals planning to transfer to a mechanical engineering technology baccalaureate program should take PHY 201–202.

**Engineering Technology: Civil Engineering Technology Specialization**

**Associate of Applied Science**

**Offered through AL**

**Purpose:** This curriculum is designed to prepare students for either employment in civil engineering or the construction industry as a technician or to provide a broad foundation for those individuals who wish to continue their education. Specialization is achieved through the selection of courses for the technical elective requirement. Graduates may seek employment as civil, structural, land planning CAD operators, and civil or construction engineering technicians.

### Two Years Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CAD</td>
<td>201 Computer Aided Drafting and Design I</td>
</tr>
<tr>
<td>CIV</td>
<td>171 Surveying I</td>
</tr>
<tr>
<td>CSC</td>
<td>110 Intro. to Computing</td>
</tr>
<tr>
<td>EGR</td>
<td>115 Engineering Graphics or CAD 165 Architectural Blueprint Reading</td>
</tr>
<tr>
<td>ENG</td>
<td>111 College Composition I</td>
</tr>
<tr>
<td>PED</td>
<td>116 Lifetime Fitness and Wellness</td>
</tr>
<tr>
<td>SDV</td>
<td>100 College Success Skills</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17–18</td>
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</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
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<tbody>
<tr>
<td>CAD</td>
<td>202 Computer Aided Drafting and Design II</td>
</tr>
<tr>
<td>CIV</td>
<td>172 Surveying II</td>
</tr>
<tr>
<td>CIV</td>
<td>225 Soil Mechanics Laboratory</td>
</tr>
<tr>
<td>CIV</td>
<td>226 Soil Mechanics Laboratory</td>
</tr>
<tr>
<td>MTH</td>
<td>166 Precalculus with Trigonometry</td>
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<tr>
<th>3rd Semester</th>
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<tbody>
<tr>
<td>ARC</td>
<td>124 Architectural Graphics II or CAD 203 Computer Aided Drafting and Design III (Land Development Desktop)</td>
</tr>
<tr>
<td>ARC</td>
<td>133 Construction Methodology and Procedures I or CAD 290 Computer Applications for Surveyors and Technicians (Land Development Desktop)</td>
</tr>
<tr>
<td>EGR</td>
<td>130 Statics and Strength of Materials or Technical Elective</td>
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<tr>
<td>PED/PRK</td>
<td>Elective</td>
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<table>
<thead>
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<th>4th Semester</th>
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<tbody>
<tr>
<td>ARC</td>
<td>225 Site Planning and Technology</td>
</tr>
<tr>
<td>CIV</td>
<td>210 Structural Systems or Technical Elective</td>
</tr>
<tr>
<td>CIV</td>
<td>228 Concrete Technology</td>
</tr>
<tr>
<td>CIV</td>
<td>229 Concrete Lab</td>
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<tr>
<td>CST</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
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</table>

**Total credits for the A.A.S. Degree in Engineering Technology with a Specialization in Civil Engineering Technology = 67–68**

1 CIV classes are offered only on the Alexandria Campus.

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 205, RPK 216, or RPK 225. PED 116 is offered as both a 1-credit and a 2-credit course.

3 May substitute the SDV 101 Orientation section related to this program.

4 May substitute MTH 163–164.

5 See social/behavioral science courses listed under General Education Electives. Students planning to transfer should consider taking HIS 101–102 or HIS 111–112.

6 Technical elective must be approved by academic advisor. Acceptable courses include ARC 200, ART 121, BLD 231, CAD 195/295, CAD 233, or HRT 246.

7 Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.

8 See humanities/fine arts courses listed under General Education Electives.

**Engineering Technology: Drafting Specialization**

**Associate of Applied Science**

**Offered through AL, AN**

**Purpose:** This curriculum is designed to provide individuals with skills, knowledge, and techniques to obtain employment as a drafter in any of the many architectural or engineering firms and other organizations requiring drafting and design professionals. This degree offers a broad range of drafting experiences. With technical electives, each individual is offered the opportunity to emphasize a particular drafting area of interest.

Internships are available through Cooperative Education, and students are encouraged to participate to complement their academic preparation.

### Two Years Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
<th></th>
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<tbody>
<tr>
<td>ARC</td>
<td>123 Architectural Graphics I</td>
</tr>
<tr>
<td>CSC</td>
<td>110 Intro. to Computing</td>
</tr>
<tr>
<td>CST</td>
<td>Elective</td>
</tr>
<tr>
<td>ENG</td>
<td>111 College Composition I</td>
</tr>
<tr>
<td>MTH</td>
<td>166 Precalculus with Trigonometry</td>
</tr>
<tr>
<td>SDV</td>
<td>100 College Success Skills</td>
</tr>
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<td><strong>Total</strong></td>
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<table>
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<th>2nd Semester</th>
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<tbody>
<tr>
<td>ARC</td>
<td>124 Architectural Graphics II</td>
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<tr>
<td>CAD</td>
<td>201 Computer Aided Drafting and Design I</td>
</tr>
<tr>
<td>PED</td>
<td>116 Lifetime Fitness and Wellness</td>
</tr>
<tr>
<td>PED/PRK</td>
<td>Elective</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
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<table>
<thead>
<tr>
<th>3rd Semester</th>
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</thead>
<tbody>
<tr>
<td>ARC</td>
<td>133 Construction Methodology and Procedures I</td>
</tr>
<tr>
<td>EGR</td>
<td>130 Statics and Strength of Materials</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
</tr>
</tbody>
</table>

**Total credits for the A.A.S. Degree in Engineering Technology with a Specialization in Drafting Technology = 67–68**

1 CIV classes are offered only on the Alexandria Campus.

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 205, RPK 216, or RPK 225. PED 116 is offered as both a 1-credit and a 2-credit course.

3 May substitute the SDV 101 Orientation section related to this program.

4 May substitute MTH 163–164.

5 See social/behavioral science courses listed under General Education Electives. Students planning to transfer should consider taking HIS 101–102 or HIS 111–112.

6 Technical elective must be approved by academic advisor. Acceptable courses include ARC 200, ART 121, BLD 231, CAD 195/295, CAD 233, or HRT 246.

7 Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.

8 See humanities/fine arts courses listed under General Education Electives.
4th Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CIV 171 Surveying I</td>
<td>3</td>
</tr>
<tr>
<td>CIV 210 Structural Systems or Technical Elective</td>
<td>4–5</td>
</tr>
<tr>
<td>MEC 118 Automated Manufacturing Technology</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16–17</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Engineering Technology with a Specialization in Drafting = 68

1. Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
2. May substitute MTH 163–164 (6 cr.).
3. May substitute the SDV 101 Orientation section related to this program.
4. 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.
5. See social/behavioral science courses listed under General Education Electives. Students planning to transfer should consider taking HIS 101–102 or HIS 111–112.
6. Technical electives may be selected from ARC, CIV, CAD, or ETR prefixes. MEC 210 (which is offered only on Annandale Campus) may also be selected.
7. See humanities/fine arts courses listed under General Education Electives.
8. CIV courses are offered only on the Alexandria Campus.
9. MEC 118 is offered only on the Annandale Campus.

Engineering Technology: Mechanical Engineering Technology Specialization
Associate of Applied Science

Offered through AN

**Purpose:** This curriculum is designed to prepare the student for employment as a mechanical engineering technician. Occupational objectives include mechanical draftsman, engineering technician, research and development technician, engineering equipment inspector, engineering plant operator, or estimator.

**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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 110 Intro. to Computing</td>
<td>3</td>
</tr>
<tr>
<td>EGR 115 Engineering Graphics</td>
<td>2</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

1st Semester

2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD 140 Technical Drawing</td>
<td>3</td>
</tr>
<tr>
<td>CAD 201 Computer Aided Drafting and Design I</td>
<td>4</td>
</tr>
<tr>
<td>MEC 112 Processes of Industry</td>
<td>3</td>
</tr>
<tr>
<td>MEC 118 Automated Manufacturing Technology</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Total credits for the Computer Aided Drafting and Design Career Studies Certificate = 14

1. Technical elective must be approved by department.
Engineering Technology: Site Development
Career Studies Certificate

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. Occupational objectives may include CAD operation, entry-level land planning or land development technician, and civil or construction engineering technician.

One Year Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLD 165 Construction Field Operations</td>
<td>2</td>
</tr>
<tr>
<td>CAD 201 Computer Aided Drafting and Design I</td>
<td>4</td>
</tr>
<tr>
<td>CIV 228 Soil Mechanics</td>
<td>2</td>
</tr>
<tr>
<td>CIV 228 Soil Mechanics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CIV 171 Surveying I</td>
<td>3</td>
</tr>
<tr>
<td>EGR 115 Engineering Graphics or CAD 165 Architectural Blue-Print Reading</td>
<td>2</td>
</tr>
<tr>
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<td>14–15</td>
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</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 225 Site Planning Technology</td>
<td>3</td>
</tr>
<tr>
<td>CAD 260 Computer Application for Surveyors and Technicians</td>
<td>3</td>
</tr>
<tr>
<td>CIV 280 Introduction to Environment Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
</tr>
</tbody>
</table>

Total credits for the Site Development Career Studies Certificate = 26–27

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.

Recommended Preparation: Satisfactory aptitude in visual art.

Two Years Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 101 History and Appreciation of Art I</td>
<td>3</td>
</tr>
<tr>
<td>ART 121 Drawing I or ART 131 Fundamentals of Design I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>201 Foreign Language</td>
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<tr>
<td>2</td>
<td>Social Science Elective</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
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<td>Total</td>
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</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ART 102 History and Appreciation of Art II</td>
<td>3</td>
</tr>
<tr>
<td>ART 122 Drafting II or ART 132 Fundamentals of Design II</td>
<td>4</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
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<tr>
<td>1</td>
<td>202 Foreign Language</td>
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<td>2</td>
<td>Social Science Elective</td>
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<table>
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<tr>
<th>3rd Semester</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CST 110 Intro. to Communication</td>
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</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
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<td>5</td>
<td>Physical or Life Science Elective w/Lab</td>
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<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
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</tr>
<tr>
<td>2</td>
<td>Social Science Elective</td>
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4th Semester Credits

| 1 | Art or General Elective | 3 |
| MTH 152 Mathematics for the Liberal Arts II | 3 |
| 5 | Physical or Life Science Elective w/Lab | 4 |
| 2 | Social Science Elective | 3 |
| Total | 13 |

Total credits for the A.A. Degree in Fine Arts = 60

1 Students completing the A.A. in Fine Arts must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Placement testing determines initial foreign language level. Students completing 101–102 foreign language may use those credits to meet general elective requirements. Waivers or credit by exam (through CLEP) for previous experience is available for some languages. Students whose native language is not English may substitute general electives for foreign language upon the approval of the advising academic dean.

2 See social/behavioral science courses listed under General Education Electives.

3 May substitute the SDV 101 Orientation section related to this program.

4 May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

5 See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component listed under General Education Electives. Some four-year colleges require a two-semester sequence.

Fine Arts
Associate of Arts Degree

Offered through AL, AN, LO, MA, WO, ELI

Purpose: The curriculum is designed for students who plan to transfer to a four-year program in a professional school or to a college or university baccalaureate degree program in fine arts.

Transfer Information: Students are advised to work closely with the academic advising and counseling staff for program and course scheduling. Electives should be chosen carefully to meet requirements of transfer institution. The responsibility for proper course selection rests with the student.

Recommended Preparation: Satisfactory aptitude in visual art.

Two Years Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 101 History and Appreciation of Art I</td>
<td>3</td>
</tr>
<tr>
<td>ART 121 Drawing I or ART 131 Fundamentals of Design I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>201 Foreign Language</td>
</tr>
<tr>
<td>2</td>
<td>Social Science Elective</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 102 History and Appreciation of Art II</td>
<td>3</td>
</tr>
<tr>
<td>ART 122 Drafting II or ART 132 Fundamentals of Design II</td>
<td>4</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>202 Foreign Language</td>
</tr>
<tr>
<td>2</td>
<td>Social Science Elective</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
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</table>

<table>
<thead>
<tr>
<th>3rd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>Physical or Life Science Elective w/Lab</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Social Science Elective</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4th Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART or General Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH 152 Mathematics for the Liberal Arts II</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>Physical or Life Science Elective w/Lab</td>
</tr>
<tr>
<td>2</td>
<td>Social Science Elective</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
</tr>
</tbody>
</table>

Total credits for the A.A. Degree in Fine Arts = 60

1 Students completing the A.A. in Fine Arts must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Placement testing determines initial foreign language level. Students completing 101–102 foreign language may use those credits to meet general elective requirements. Waivers or credit by exam (through CLEP) for previous experience is available for some languages. Students whose native language is not English may substitute general electives for foreign language upon the approval of the advising academic dean.

2 See social/behavioral science courses listed under General Education Electives.

3 May substitute the SDV 101 Orientation section related to this program.

4 May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

5 See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component listed under General Education Electives. Some four-year colleges require a two-semester sequence.

Fine Arts
Associate of Applied Arts Degree

Offered through AL, AN, LO, MA, WO

Purpose: The curriculum is designed for students who seek employment in the applied arts field.

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:** Satisfactory aptitude in visual art.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ART 101 History and Appreciation of Art I</td>
<td>3</td>
</tr>
<tr>
<td>ART 121 Drawing I</td>
<td>4</td>
</tr>
<tr>
<td>ART 131 Fundamentals of Design I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>ART 102 History and Appreciation of Art II</td>
<td>3</td>
</tr>
<tr>
<td>ART 122 Drawing II</td>
<td>4</td>
</tr>
<tr>
<td>ART 132 Fundamentals of Design II</td>
<td>4</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>ART 221 Drawing III or ART 253 Design III or PHT 101 Photography I</td>
<td>3–4</td>
</tr>
<tr>
<td>ART Studio or General Elective</td>
<td>6</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15–16</strong></td>
</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
<tr>
<td>ART 222 Drawing IV or ART 254 Design IV or PHT 102 Photography II</td>
<td>3–4</td>
</tr>
<tr>
<td>ART Studio or General Elective</td>
<td>4</td>
</tr>
<tr>
<td>CST 110 Intro to Communication</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>PED/RPK Elective</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14–15</strong></td>
</tr>
</tbody>
</table>

**Total credits for the A.A.A. Degree in Fine Arts = 65–67**

1. See social/behavioral science courses listed under General Education Electives.
2. May substitute the SDV 101 Orientation section related to this program.
3. 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.
4. Recommended studio electives: painting, sculpture, printmaking, ceramics, computer graphics, advanced drawing and/or fine arts photography.
5. See humanities/fine arts courses listed under General Education Electives.

**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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ART 101 History and Appreciation of Art I</td>
<td>3</td>
</tr>
<tr>
<td>ART 121 Drawing I</td>
<td>4</td>
</tr>
<tr>
<td>ART 131 Fundamentals of Design I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>PHT 101 Photography I or PHT 103 Black and White Darkroom Photography I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>ART 102 History and Appreciation of Art II</td>
<td>3</td>
</tr>
<tr>
<td>ART 122 Drawing II</td>
<td>4</td>
</tr>
<tr>
<td>ART 132 Fundamentals of Design II</td>
<td>4</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>PHT 102 Photography II or PHT 104 Black and White Darkroom Photography II</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>PHT or General Elective</td>
<td>4</td>
</tr>
<tr>
<td>PHT 110 History of Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHT 270 Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
<tr>
<td>CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH 251 Mathematics for the Liberal Arts I or Physical or Life Science Elective w/Lab</td>
<td>3–4</td>
</tr>
<tr>
<td>PED/RPK Elective</td>
<td>1</td>
</tr>
<tr>
<td>PHT Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13–14</strong></td>
</tr>
</tbody>
</table>

**Total credits for the A.A.A. Degree in Fine Arts with a Specialization in Photography = 65–66**

1. May take a film or digital course without being in a course sequence.
2. May substitute the SDV 101 Orientation section related to this program.
3. 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.
4. See humanities/fine arts courses listed under General Education Electives.
5. See social/behavioral science courses listed under General Education Electives.
6. See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.

**Fine Arts: Photography Specialization**

**Associate of Applied Arts Degree**

**Offered through AL, WO**

**Purpose:** This program is designed for students who seek employment in the applied arts field. Coursework will stress both technical and aesthetic elements, enabling students to solve a wide range of visual problems with imagination and originality.
Fire Science Technology
Associate of Applied Science Degree
Offered through AN, ELI

Purpose: The overall goal of the program is to prepare individuals for entry or advancement in the fire service or a related field by providing them with knowledge of the fire protection profession and giving them the general education necessary to function and advance in one of these professions.

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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>FST 100 Principles of Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>1 MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>2 PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>3 Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>SDV 101 Orientation to Fire Science</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>4 ENG 115 Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>FST 112 Hazardous Materials Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>5 FST 115 Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>6 ITE 115 Intro to Computer Applications and Concepts or Elective</td>
<td>3</td>
</tr>
<tr>
<td>3 Social Science Elective</td>
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<tr>
<td>Total</td>
<td>18</td>
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<tr>
<td>3rd Semester</td>
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<tr>
<td>7 CST/FST Elective</td>
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<tr>
<td>8 FST 210 Legal Aspects of Fire Service</td>
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<td>9 FST 240 Fire Administration</td>
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<tr>
<td>10 Humanities/Fine Arts Elective</td>
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<tr>
<td>4th Semester</td>
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<tr>
<td>1 FST 205 Fire Protection Hydraulics and Water Supply</td>
<td>3</td>
</tr>
<tr>
<td>2 FST 215 Fire Protection Systems</td>
<td>3</td>
</tr>
<tr>
<td>3 FST 220 Building Construction for Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>4 FST 235 Firefighting Strategy and Tactics</td>
<td>3</td>
</tr>
<tr>
<td>5 FST 245 Fire and Risk Analysis</td>
<td>3</td>
</tr>
<tr>
<td>6 PED/RPK Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Fire Science Technology = 67

1 May substitute a higher-level mathematics course. Consult an academic advisor to make the appropriate selection.
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. Active duty firefighters can substitute other credits to meet the PED requirement based on the Credit for Prior Learning Manual.
3 See social/behavioral science courses listed under General Education Electives. Fire Science students are encouraged to choose from psychology or sociology.
4 May substitute ENG 112, ENG 116, ENG 125, ENG 131, or ENG 205.
5 May substitute FST 120.
6 May also select from CSC, GIS, ITP, ITD, ITF courses, or HIM 130.
7 May choose from CST 100, CST 110, or FST 135.
8 May substitute FST 255.
9 See humanities/fine arts courses listed under General Education Electives.
10 Select from BIO 101, BIO 141, CHM 101, CHM 111, CHM 121, NAS 101, NAS 150, NAS 161, PHY 101, PHY 102, or PHY 201.

Fitness
Career Studies Certificate
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 place 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 Fitness Certificate advisor.

Completion Requirements: The following must be met to obtain the Fitness Career 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

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>1 BIO 141 Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>2 CST 110 Introduction to Communication or CST 126 Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>3 HLT 105 Cardiopulmonary Resuscitation or a current CPR card</td>
<td>1</td>
</tr>
<tr>
<td>4 PED 111 Weight Training I</td>
<td>1</td>
</tr>
<tr>
<td>5 PED 116 Lifetime Fitness and Wellness or HLT 110 Concepts of Personal &amp; Community Health</td>
<td>2–3</td>
</tr>
<tr>
<td>6 BUS, FIN, or MKT Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>14–15</td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>1 DIT 121 Nutrition I</td>
<td>3</td>
</tr>
<tr>
<td>2 HLT 206 Exercise Science</td>
<td>3</td>
</tr>
<tr>
<td>3 PED Elective</td>
<td>1</td>
</tr>
<tr>
<td>4 PED 168 Basic Personal Trainer Preparation</td>
<td>3</td>
</tr>
<tr>
<td>5 PED 220 Adult Health and Development</td>
<td>2–3</td>
</tr>
<tr>
<td>Total</td>
<td>12–13</td>
</tr>
</tbody>
</table>
Total credits for the Fitness Career Studies Certificate = 26–28

1 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.
2 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.
3 HLT 110 is recommended for transfer to Mason.
4 Approved Courses: BUS 100, BUS 116, BUS 165, BUS 201, FIN 107, MKT 215.
6 PED 190 Coordinated Internship (2 cr.) may be substituted with approval of a fitness advisor.

General Education Certificate

**Offered through AL, AN, LO, MA, WO, ELI**

**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 programs¹ who complete the requirements listed.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>2 Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>4 Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>5 Social/Behavioral Sciences Elective</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| ENG 112 College Composition II or ENG 125 Introduction to Literature or CST Oral Communication Elective | 3 |
| 2 Humanities/Fine Arts Elective | 3 |
| 4 Physical or Life Science Elective w/Lab | 4 |
| 5 Social/Behavioral Sciences Electives | 6 |
| **Total** | **16** |

Total credits for the General Education Certificate = 33

1 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.
2 See humanities/fine arts courses listed under General Education Electives.
3 May substitute higher-level mathematics courses.
4 See biology, chemistry, physics, ENV 121–122, 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 social/behavioral science courses listed under General Education Electives.
6 Oral communication elective may be chosen from CST 100, CST 110, CST 115, CST 127, CST 226, or CST 229.

General Studies

Associate of Science Degree

**Offered through AL, AN, LO, MA, WO, ELI**

**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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts or CSC 110 Intro. to Computing</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>1 Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>5 SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| CST Elective | 3 |
| 1 ENG 112 College Composition II | 3 |
| 7 HIS Elective | 3 |
| 5 Physical or Life Science Elective w/Lab | 4 |
| **Total** | **16** |

| 3rd Semester | |
| 4 General Electives | 9 |
| 6 Humanities/Fine Arts Elective | 3 |
| 9 Social Science Elective | 3 |
| **Total** | **15** |

| 4th Semester | |
| 4 General Electives | 12 |
| 8 Social Science Elective | 3 |
| **Total** | **15** |

Total credits for the A.S. Degree in General Studies = 60

1 May substitute any higher-level mathematics course.
2 See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives (excluding NAS 161–162). Some four-year colleges require a two-semester sequence.
3 May substitute the SDV 101 Orientation section related to this program.
4 Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
5 May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
6 See HIS courses listed under social/behavioral sciences under General Education Electives.
7 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.
8 If transfer to another college is planned, the elective courses should be selected based on the requirements of the transfer institution.
9 See social/behavioral science courses listed under General Education Electives.
**General Studies: Recreation, Parks, and Leisure Studies Specialization**

Associate of Science Degree

**Offered through AN**

**Purpose:** This program is designed to prepare students to transfer into baccalaureate programs in leisure studies and recreation and parks and to prepare students for entry-level employment in the profession.

**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.

### Two Years Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>RPK 100 Intro to Recreation, Parks, and Leisure Studies</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
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</tr>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>CST Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>RPK 201 Recreation and Parks Management</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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### 3rd Semester

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Humanities/Fine Arts Elective</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
</tr>
<tr>
<td>RPK 141 Leadership and Supervision or RPK 120 Outdoor Recreation</td>
</tr>
<tr>
<td>RPK 265 Risk Management</td>
</tr>
<tr>
<td>Social Science Elective</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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### 4th Semester

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I or MTH 241 Statistics I</td>
</tr>
<tr>
<td>RPK 135 Program Planning or RPK 125 Outdoor Education and Interpretation</td>
</tr>
<tr>
<td>Electives</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.S. Degree in General Studies with a Specialization in Recreation, Parks, and Leisure Studies = 61

---

1. See humanities/fine arts courses listed under General Education Electives. Elective should be selected with the 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. One of the selections should be a history course.
3. May substitute the SDV 101 Orientation section related to this program.
4. Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.

---

5. May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
6. See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
7. Any RPK courses listed in this Catalog are considered approved recreation electives.

---

**General Studies: Outdoor Recreation and Resource Management**

Career Studies Certificate

**Offered through AN**

**Purpose:** This program prepares students to incorporate stewardship practices and manage outdoor recreation resources at the municipal, state, and federal levels.

### One Year Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>RPK 100 Intro. to Recreation, Parks, and Leisure Studies</td>
<td>3</td>
</tr>
<tr>
<td>RPK 265 Risk Management</td>
<td>3</td>
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<td>Electives</td>
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<tr>
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<td><strong>16</strong></td>
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<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPK 120 Outdoor Recreation</td>
<td>3</td>
</tr>
<tr>
<td>RPK 125 Outdoor Education and Interpretive Services</td>
<td>3</td>
</tr>
<tr>
<td>RPK 140 Land Use Ethics</td>
<td>1</td>
</tr>
<tr>
<td>RPK 220 Ecotourism and Sustainable Practices</td>
<td>4</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

Total credits for the Career Studies Certificate in Outdoor Recreation and Resource Management = 29

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

---

8. Any RPK courses listed in this Catalog are considered approved recreation electives.

---

**General Studies: Recreation Programming and Administration**

Career Studies Certificate

**Offered through AN**

**Purpose:** This program is designed to prepare students who work in the recreation, parks, and leisure studies industry to develop leadership, program planning, and management knowledge and skills.

### One Year Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>RPK 100 Intro. to Recreation, Parks and Leisure Studies</td>
<td>3</td>
</tr>
<tr>
<td>RPK 135 Program Planning</td>
<td>3</td>
</tr>
<tr>
<td>RPK 141 Leadership and Supervision or RPK 265 Risk Management</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>
Programs of Study | NOVA Catalog 2016–2017

2nd Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPK 146</td>
<td>Recreation Facilities Management and Design</td>
<td>3</td>
</tr>
<tr>
<td>RPK 201</td>
<td>Recreation and Parks Management</td>
<td>3</td>
</tr>
<tr>
<td>RPK 255</td>
<td>Leisure Services for Persons with Disabilities</td>
<td>3</td>
</tr>
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<td>RPK Electives</td>
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<tr>
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<td>14</td>
</tr>
</tbody>
</table>

Total credits for the Career Studies Certificate in Recreation Programming and Administration = 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.

1 Any RPK courses listed in this Catalog are considered approved recreation electives.

Geographic Information Systems (GIS) Career Studies Certificate

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 Credits**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>ENG/CST Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GEO 220</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GIS 200</td>
<td>Geographic Information Systems I</td>
<td>3</td>
</tr>
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<td></td>
<td>Total</td>
<td></td>
<td>9</td>
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</table>

2nd Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIS 201</td>
<td>Geographic Information Systems II</td>
<td>3</td>
</tr>
<tr>
<td>GIS 255</td>
<td>Exploring Our Earth: Intro. to Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
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<td>9</td>
</tr>
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</table>

3rd Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIS 203</td>
<td>Intro. to Cartography</td>
<td>3</td>
</tr>
<tr>
<td>GIS 205</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Geophysical Analysis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GIS 290</td>
<td>Internship</td>
<td>1</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
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<tr>
<td>Total</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

Total credits for the Career Studies Certificate in Geographic Information Systems (GIS) = 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.

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 115, CST 126, CST 227, or CST 229.

2 Must be chosen from the following disciplines: BIO, CHM, EGR, Env, GEO, GOL, HIS, IT, MKT, MTH, and PHY.

3 Choose from the following: GIS 200-level course not specified in the certificate; GEO 200; GEO 210; ITD 110 (or higher ITD); ITN 101 (or higher ITN); ITP 112 (or higher ITP); MTH 163; or MTH 241.

Health Information Management A.A.S.

See Medical Education section

Health Information Technology Career Studies Certificate

See Medical Education section

Health Science Career Studies Certificate

Offered through AL, AN, LO, MA, MEC, WO, ELI

**Purpose:** The growth and development of the health professions as well as the changes in healthcare requires the healthcare provider be multi-skilled and well prepared. This program is designed for those individuals interested in entering the health professions. The program will enable students interested in healthcare professions to acquire an academic foundation to continue their education in one of the A.A.S. programs offered at the Medical Education Campus or prepare for entry to a variety of allied health baccalaureate programs. Students should consult an academic advisor in selecting electives to this curriculum.

**Occupational Objective:** Prepare students to enter allied health programs and, in turn, prepare students for entry into the health professions.

**One Year Credits**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>ENG 111</td>
<td>College Composition</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BIO 141</td>
<td>Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HIM 111</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social Science Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SDV 101</td>
<td>Orientation to Health Professions</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

2nd Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 142</td>
<td>Human Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MTH 151</td>
<td>Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

Total credits for the Health Science Career Studies Certificate = 28

1 BIO 141–142 must be completed with a grade of “C” or higher. Students preparing for entry to competitive placement programs (Nursing, Dental Hygiene, Diagnostic Medical Sonography, and...
Radiography) must earn a grade of “B” or higher.

2 See social/behavioral science courses listed under General Education Electives.

3 See humanities/fine arts courses listed under General Education Electives.

4 MTH 151 or higher-level mathematics course.

5 Electives may be chosen from general education program requirements and/or open enrollment major course headings. Students preparing for entry to the following programs may wish to consider these courses:

<table>
<thead>
<tr>
<th>Program</th>
<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>Dental Hygiene</td>
<td>BIO 205</td>
<td>General Microbiology</td>
</tr>
<tr>
<td>Diagnostic Medical Sonography</td>
<td>DMS 100</td>
<td>Introduction to DMS</td>
</tr>
<tr>
<td>Diagnostic Medical Sonography</td>
<td>PHY 101</td>
<td>Introduction to Physics</td>
</tr>
<tr>
<td>Health Information Management</td>
<td>CST 229</td>
<td>Intercultural Communication</td>
</tr>
<tr>
<td>Medical Laboratory Technology</td>
<td>CHM 111</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>Radiography</td>
<td>RAD 105</td>
<td>Introduction to Radiology, Protection, and Patient Care</td>
</tr>
<tr>
<td>Respiratory Therapy</td>
<td>RTH 120</td>
<td>Fundamental Theory for Respiratory Care</td>
</tr>
</tbody>
</table>

Homeland Security Specialization
See Administration of Justice

Horticulture Technology
Associate of Applied Science Degree

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

<table>
<thead>
<tr>
<th>Two Years</th>
<th>1st Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Credits</td>
</tr>
<tr>
<td>ENG 111</td>
<td>3</td>
</tr>
<tr>
<td>HRT 100</td>
<td>3</td>
</tr>
<tr>
<td>HRT 125</td>
<td>3</td>
</tr>
<tr>
<td>HRT 127</td>
<td>3</td>
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<tr>
<td>HRT 160</td>
<td>2</td>
</tr>
<tr>
<td>PED 116</td>
<td>1</td>
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<tr>
<td>SDV 100</td>
<td>1</td>
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2nd Semester

<table>
<thead>
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<tbody>
<tr>
<td>CST</td>
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<tr>
<td>HRT 115</td>
<td>3</td>
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<tr>
<td>HRT 120</td>
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<td>HRT 246</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
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<tr>
<td>HRT Elective</td>
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3rd Semester

<table>
<thead>
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<th>Credits</th>
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<tbody>
<tr>
<td>BUS</td>
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<tr>
<td>HRT 207</td>
<td>3</td>
</tr>
<tr>
<td>HRT 231</td>
<td>3</td>
</tr>
<tr>
<td>HRT 245</td>
<td>3</td>
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<td>HRT 269</td>
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<tr>
<td>Social Science Elective</td>
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4th Semester

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<tr>
<td>HRT 205</td>
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<td>HRT 247</td>
<td>2</td>
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<td>HRT 275</td>
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<td>HRT 290</td>
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<td>MTH 151</td>
<td>3–4</td>
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<tr>
<td>Total</td>
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</tr>
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</table>

Total credits for the A.A.S. Degree in Horticulture Technology = 67–68

1 May substitute the SDV 101 Orientation section related to this program.

2 Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.

3 See humanities/fine arts courses listed under General Education Electives. A 200-level course in Spanish is strongly recommended.

4 May be met by any horticulture class other than a required horticulture class.

5 Students may choose from any of the following business electives: BUS 100, BUS 116, BUS 117, BUS 165, BUS 200, BUS 260.

6 See social/behavioral science courses listed under General Education Electives.

7 BIO 101, CHM 111, ENV 121, GOL 105, GOL 225, NAS 125, or other course approved by the academic advisor.

Horticulture Technology: Landscape Design Specialization
Associate of Applied Science Degree

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 have the opportunity to gain career-related work experience through a Coordinated Internship, Cooperative Education, or Special Studio Project in the area of design.
Two Years  

<table>
<thead>
<tr>
<th>Credits</th>
<th>1st Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST Elective 3</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I 3</td>
<td></td>
</tr>
<tr>
<td>HRT 100 Intro. to Horticulture 3</td>
<td></td>
</tr>
<tr>
<td>HRT 160 Applied Mathematics for the Green Industry 2</td>
<td></td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness 1</td>
<td></td>
</tr>
<tr>
<td>SDV 100 College Success Skills 1</td>
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<td><strong>Total</strong> 16</td>
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<table>
<thead>
<tr>
<th>Credits</th>
<th>2nd Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities/Fine Arts Elective 3</td>
<td></td>
</tr>
<tr>
<td>HRT Elective 3</td>
<td></td>
</tr>
<tr>
<td>HRT 120 History of Garden Design 3</td>
<td></td>
</tr>
<tr>
<td>HRT 230 Site Analysis 2</td>
<td></td>
</tr>
<tr>
<td>HRT 246 Herbaceous Plants 3</td>
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<td><strong>Total</strong> 17-18</td>
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<table>
<thead>
<tr>
<th>Credits</th>
<th>3rd Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRI 251 Food and Beverage Cost Control I 3</td>
<td></td>
</tr>
<tr>
<td>HRI 255 Human Resources Management and Training for Hospitality and Tourism 3</td>
<td></td>
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<tr>
<td>HRI Elective 4</td>
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<tr>
<td>Humanities/Fine Arts Elective 3</td>
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<tr>
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<table>
<thead>
<tr>
<th>Credits</th>
<th>4th Semester</th>
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<tbody>
<tr>
<td>HRI 256 Principles and Applications of Catering 3</td>
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<tr>
<td>HRI 275 Hospitality Law 3</td>
<td></td>
</tr>
<tr>
<td>HRI Electives 6</td>
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<tr>
<td>Social Science Elective 3</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong> 15</td>
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</tr>
</tbody>
</table>

- Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.
- May be met by any horticulture class other than a required horticulture class.
- May substitute the SDV 101 Orientation section related to this program.
- See humanities/fine arts courses listed under General Education Electives. A 200-level course in Spanish is strongly recommended.
- BIO 101, CHM 111, ENV 121, GOL 105, GOL 225, NAS 125, or other course approved by the academic advisor.
- Students may choose from any of the following business electives: BUS 100, BUS 116, BUS 117, BUS 165, BUS 200, BUS 260.
- See social/behavioral science courses listed under General Education Electives.

The following HRT courses have prerequisites (listed in parentheses):
- HRT 205 (HRT 125)
- HRT 232 (HRT 231)
- HRT 251 (HRT 231 is a prerequisite or corequisite; HRT 230 is strongly recommended.)
- HRT 252 (HRT 231 and HRT 251; HRT 232 is a prerequisite or corequisite.)
- HRT 250 (HRT 245 or HRT 201)
Preapproved electives can be selected from any course offered with the HRI, TRV, and DIT prefix. See an academic advisor for alternative procedures.

See humanities/fine arts courses listed under General Education Electives.

See social/behavioral science courses listed under General Education Electives. Students who are planning to transfer to another college or university should select social science courses that will meet the other institution’s requirement.

---

### Hospitality Management: Food Service Management Specialization

**Associate of Applied Science Degree**

**Offered through AN**

**Purpose:** The curriculum is designed to enable the student to enter executive training and management positions in restaurants and food service operations in institutions, hotels, resorts, or private clubs. The curriculum specializes in the food service management phase of the hospitality industry.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ENS 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 101 Hotel-Restaurant Organization and Management I</td>
<td>3</td>
</tr>
<tr>
<td>1,2 HRI 120 Principles of Food Preparation</td>
<td>4</td>
</tr>
<tr>
<td>HRI 158 Sanitation and Safety</td>
<td>3</td>
</tr>
<tr>
<td>3 MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>4 SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
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<tr>
<td><strong>2nd Semester</strong></td>
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</tr>
<tr>
<td>CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>DIT 125 Current Concepts in Diet and Nutrition or DIT 121 Nutrition I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 102 Hotel Restaurant Organization and Management II</td>
<td>3</td>
</tr>
<tr>
<td>1,5 HRI 126 The Art of Garnishing</td>
<td>1</td>
</tr>
<tr>
<td>HRI 138 Commercial Food Production Management</td>
<td>3</td>
</tr>
<tr>
<td>6 PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>TRV 100 Introduction to the Travel Industry</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td><strong>3rd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>7 ACC 211 Principles of Accounting or 211 Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 225 Menu Planning/Dining Room Service</td>
<td>3</td>
</tr>
<tr>
<td>HRI 251 Food and Beverage Cost Control I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 255 Human Resources Management and Training for Hospitality and Tourism</td>
<td>3</td>
</tr>
<tr>
<td>4 PED/RPK Elective</td>
<td>1</td>
</tr>
<tr>
<td>8 Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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<tr>
<td><strong>4th Semester</strong></td>
<td></td>
</tr>
<tr>
<td>HRI 215 Food Purchasing</td>
<td>3</td>
</tr>
<tr>
<td>1 HRI 256 Principles and Applications of Catering</td>
<td>3</td>
</tr>
<tr>
<td>2 HRI 275 Hospitality Law</td>
<td>3</td>
</tr>
<tr>
<td>9 Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>8 Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

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**Total credits for the A.A.S. Degree in Hospitality Management with a Specialization in Food Service Management = 65**

1 Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student.
2 May substitute HRI 145.
3 Students who are planning to transfer to another college or university should select a math course that is equivalent to the transfer school’s requirement.

### Hospitality Management: Hotel Management Specialization

**Associate of Applied Science Degree**

**Offered through AN**

**Purpose:** The curriculum is designed to enable the student to enter executive training and management positions in hotels, motor inns, and clubs. The curriculum specializes in the hotel management phase of the hospitality industry.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ENS 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 101 Hotel-Restaurant Organization and Management I</td>
<td>3</td>
</tr>
<tr>
<td>1,2 HRI 120 Principles of Food Preparation</td>
<td>4</td>
</tr>
<tr>
<td>HRI 158 Sanitation and Safety</td>
<td>3</td>
</tr>
<tr>
<td>3 MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>4 SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>HRI 102 Hotel Restaurant Organization and Management II</td>
<td>3</td>
</tr>
<tr>
<td>HRI 138 Commercial Food Production Management</td>
<td>3</td>
</tr>
<tr>
<td>HRI 160 Executive House Keeping</td>
<td>3</td>
</tr>
<tr>
<td>HRI Elective</td>
<td>1</td>
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<tr>
<td>5 PED 116 Lifetime Fitness and Wellness</td>
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</tr>
<tr>
<td>TRV 100 Introduction to the Travel Industry</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td><strong>3rd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>5 ACC 211 Principles of Accounting or 211 Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 251 Food and Beverage Cost Control I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 255 Human Resources Management and Training for Hospitality and Tourism</td>
<td>3</td>
</tr>
<tr>
<td>HRI 265 Hotel Front Office Operations</td>
<td>3</td>
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<tr>
<td>6 PED/RPK Elective</td>
<td>1</td>
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<tr>
<td>7 Social Science Elective</td>
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<tr>
<td><strong>Total</strong></td>
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<tr>
<td><strong>4th Semester</strong></td>
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</tr>
<tr>
<td>HRI 235 Marketing of Hospitality Services</td>
<td>3</td>
</tr>
<tr>
<td>1 HRI 256 Principles and Applications of Catering</td>
<td>3</td>
</tr>
<tr>
<td>2 HRI 275 Hospitality Law</td>
<td>3</td>
</tr>
<tr>
<td>8 Humanities/Fine Arts Elective</td>
<td>3</td>
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<td>7 Social Science Elective</td>
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</tr>
<tr>
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</tbody>
</table>

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**Total credits for the A.A.S. Degree in Hospitality Management with a Specialization in Hotel Management = 65**

1 Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student.
2 May substitute HRI 106 and HRI 107.
3 Students who are planning to transfer to another college or university should select a math course that is equivalent to the transfer school’s requirement.
Hospitality Management: Nutrition Management Specialization  
Associate of Applied Science Degree

**Offered through AN**

**Purpose:** The curriculum is designed to prepare students for entry-level management positions in nutrition-related food service settings. Opportunities include delivery of nutrition services to schools, nursing homes, assisted living and retirement communities, hospitals, restaurants, wellness facilities, and community nutrition programs. The curriculum specializes in the nutritional aspects of food and food service in the hospitality industry.

### Two Years

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>DIT 121 Nutrition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 120 Principles of Food Preparation</td>
<td>4</td>
</tr>
<tr>
<td>HRI 158 Sanitation and Safety</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ACC 115 Applied Accounting or</td>
<td></td>
</tr>
<tr>
<td>211 Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>DIT 122 Nutrition II</td>
<td>3</td>
</tr>
<tr>
<td>HRI 138 Commercial Food Production Management</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
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<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td><strong>3rd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>HRI 225 Menu Planning and Dining Room Service</td>
<td>3</td>
</tr>
<tr>
<td>HRI 251 Food and Beverage Cost Control I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 255 Human Resources Management and Training for Hospitality and Tourism</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td><strong>4th Semester</strong></td>
<td></td>
</tr>
<tr>
<td>DIT 125 Current Concepts in Diet and Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HRI 215 Food Purchasing</td>
<td>3</td>
</tr>
<tr>
<td>HRI 256 Principles and Applications of Catering</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Total credits for the A.A.S. Degree in Hospitality Management with a Specialization in Nutrition Management = 65**

1. Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student.
3. Students who are planning to transfer to another college or university should select a math course that is equivalent to the transfer school’s requirement.
4. May substitute the SDV 101 Orientation section related to this program.
5. Students considering transfer should take ACC 211.
6. 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.
7. See social/behavioral science courses listed under General Education Electives. Students who are planning to transfer to another college or university should select social science courses that will meet the other institution’s requirement.
8. See humanities/fine arts courses listed under General Education Electives.
9. Preapproved electives can be selected from any course offered with the HRI, DIT, or TRV prefix. See an academic advisor for alternative procedures.

### Hospitality Management: Culinary Arts Certificate

**Offered through AN**

**Purpose:** The curriculum is designed for individuals seeking skills for employment in culinary positions and for those presently employed who wish to update their skills for the food service industry.

**Optional Program Information:** The Nation’s Capital Chef’s Association (NCCA), in cooperation with this program, offered an apprenticeship program that combines relevant classroom instruction with on-the-job training required for the National Apprenticeship Training Program of the American Culinary Federation (ACF). Please contact the HRI office for current program status.

### One Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 101 Hotel Restaurant Organization and Management I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 106 Principles of Culinary Arts I</td>
<td>3</td>
</tr>
<tr>
<td>HRI 145 Garde Manger</td>
<td>3</td>
</tr>
<tr>
<td>HRI 225 Menu Planning and Dining Room Services or HRI 251 Food and Beverage Cost Control I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
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</tr>
<tr>
<td>HRI 107 Principles of Culinary Arts II</td>
<td>3</td>
</tr>
<tr>
<td>HRI 128 Principles of Baking</td>
<td>3</td>
</tr>
<tr>
<td>HRI 158 Sanitation and Safety</td>
<td>3</td>
</tr>
<tr>
<td>HRI 215 Food Purchasing or DIT 121 Nutrition I or DIT 125 Current Concepts in Diet and Nutrition</td>
<td>3</td>
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<td><strong>Total</strong></td>
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</table>

**Total credits for the Culinary Arts Certificate = 31**

1. Special requirement for food laboratories: A white or classic chef uniform is the financial responsibility of the student.
2. Students may substitute the SDV 101 Orientation section related to this program.
3. See the social/behavioral science courses listed under General Education Electives. Students who are planning to transfer to another college or university should select social science courses that will meet the other institution’s requirement.
Hospitality Management: Meeting, Event, and Exhibition Management Certificate

Offered through AN

**Purpose:** The curriculum is designed for individuals seeking careers in the growing field of meeting management and to develop and update the skills of those presently employed in the field. Career opportunities exist in the 2,500 professional and trade associations in the metropolitan Washington region, as well as in the numerous multi-management companies serving the association market.

**One Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>ENG</th>
<th>HRI</th>
<th>HRI</th>
<th>HRI</th>
<th>SDV</th>
<th>TRV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>111 College Composition I</td>
<td>103 Intro. to Meeting Planning</td>
<td>190 Internship in Meeting Planning or HRI/TRV Elective</td>
<td>100 College Success Skills</td>
<td>111 Geography of Tourism I</td>
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</tr>
<tr>
<td>Credits</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
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**2nd Semester**

<table>
<thead>
<tr>
<th>ENG</th>
<th>HIS Elective</th>
<th>ITE</th>
<th>MTH</th>
<th>SDV</th>
<th>PED</th>
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</thead>
<tbody>
<tr>
<td>114 College Composition II</td>
<td>115 Intro. to Computer Applications and Concepts</td>
<td>163 Precalculus I or higher-level mathematics</td>
<td>100 College Success Skills</td>
<td>116 Lifetime Fitness and Wellness</td>
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<tr>
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<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
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</tbody>
</table>

Total credits for the Meeting, Event, and Exhibition Management Certificate = 33

1. May substitute the SDV 101 Orientation section related to this program.

[Information Technology-Related Programs]

See also Computer Science Associate of Science Degree and Cybersecurity Associate of Science Degree

**Information Technology**

Associate of Science Degree

Offered through AL, AN, LO, MA, W0, ELI

**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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ENG</td>
<td>111 College Composition I</td>
</tr>
<tr>
<td>HIS Elective</td>
<td></td>
</tr>
<tr>
<td>ITE</td>
<td>115 Intro. to Computer Applications and Concepts</td>
</tr>
<tr>
<td>MTH</td>
<td>163 Precalculus I or higher-level mathematics</td>
</tr>
<tr>
<td>SDV</td>
<td>100 College Success Skills</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
</tbody>
</table>

| **2nd Semester** | |
| ENG | 112 College Composition II |
| ITE | 170 Multimedia Software |
| ITN | 100 Intro. to Telecommunications |
| ITP | 100 Software Design |
| MTH | 271 Applied Calculus I |
| PED | 116 Lifetime Fitness and Wellness |
| Total | 16 |

**3rd Semester**

<table>
<thead>
<tr>
<th>CST</th>
<th>ITP</th>
<th>ITN</th>
<th>ITP</th>
</tr>
</thead>
<tbody>
<tr>
<td>110 Intro. to Communication</td>
<td>120 Java Programming I or ITP 132 C++ Programming I</td>
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<td>4</td>
<td>3</td>
<td>4</td>
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</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>Physical or Life Science Elective w/Lab</td>
<td></td>
<td></td>
</tr>
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**4th Semester**

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<th>ITP</th>
<th>ITD</th>
<th>ITP</th>
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</thead>
<tbody>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>256 Advanced Database Management</td>
<td>221 PC Hardware and OS Architecture</td>
<td>Physical or Life Science Elective w/Lab</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Social Science Elective</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total credits for the A.S. Degree in Information Technology = 62

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 121, or HIS 122. Other HIS courses may be taken after consultation with an academic advisor.

2. Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

3. May substitute the SDV 101 Orientation section related to this program.

4. See social/behavioral science courses listed under General Education Electives.

5. May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

6. Students with a qualifying placement test score may wish to take MTH 173 rather than MTH 271. Credit will not be awarded for both MTH 173 and MTH 271.

7. Students planning to transfer should contact their academic advisor to meet the requirements of the transfer institution.

8. Students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

9. Students planning to transfer should contact their academic advisor to meet the requirements of the transfer institution.

10. Students planning to transfer should contact their academic advisor to meet the requirements of the transfer institution.

11. May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

12. Students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

13. Students planning to transfer should contact their academic advisor to meet the requirements of the transfer institution.

14. Students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

15. Students planning to transfer should contact their academic advisor to meet the requirements of the transfer institution.

16. Students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

17. Students planning to transfer should contact their academic advisor to meet the requirements of the transfer institution.

18. Students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

19. Students planning to transfer should contact their academic advisor to meet the requirements of the transfer institution.

20. Students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

21. Students planning to transfer should contact their academic advisor to meet the requirements of the transfer institution.

22. Students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.
Information Systems Technology
Associate of Applied Science Degree

Offered through AL, AN, LO, MA, WO, ELI

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ITP 100 Software Design</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I or higher-level mathematics course</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>SDV 101 Orientation to Information Technology</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 100 Software Design</td>
<td>3</td>
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3rd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 112 Visual Basic .NET I or ITP 120 Java Programming I</td>
<td>4</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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</table>

4th Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 212 Visual Basic .NET II</td>
<td>4</td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Information Systems Technology = 67

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

1 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.
2 See social/behavioral science courses listed under General Education Electives.
3 See humanities/fine arts courses listed under General Education Electives.
4 Select from the following: ITP 112, ITP 120, ITP 130, ITP 132, ITP 136, or ITP 225.
5 Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, and CST 229.
6 The total of 15 credit hours of IT Electives must be met through any combination of IT courses (ITD, ITP, ITN, ITP) that are not already included in the degree.

Information Systems Technology:
Application Programming
Career Studies Certificate

Offered through LO, ELI

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 100 Software Design</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 120 Java Programming I or ITP 112 Visual Basic .NET I</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

3rd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 220 Java Programming II or ITP 212 Visual Basic .NET II</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

Total credits for the Career Studies Certificate in Application Programming = 11

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

1 To prepare for the MCP-Programming certification, ITP 112 must be completed. To prepare for Sun Certified Programming for Java 2 certification, ITP 120 must be completed.
2 To prepare for the MCP-Programming certification, ITP 212 must be completed. To prepare for Sun Certified Programming for Java 2 certification, ITP 220 must be completed.

Information Systems Technology:
Cybersecurity

See Cybersecurity section
Information Systems Technology: Database Specialist  
Career Studies Certificate  
Offered through MA

**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.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>ITD 132 Structured Query Language</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITP 100 Software Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td>ITD 134 PL/SQL Programming</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITP 260 Data Modeling and Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

**Total credits for the Career Studies Certificate in Database Specialist = 15**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

Information Systems Technology: IT Technical Support  
Career Studies Certificate  
Offered through 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+ Certification with Help Desk Specialization.

**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.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITN 106 Microcomputer Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITN 107 Personal Computer Hardware and Troubleshooting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td>ITE 180 Help Desk Support Skills</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITE 182 User Support/Help Desk Principles</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

**Total credits for the Career Studies Certificate in IT Technical Support = 15**

IT courses used for this program may not be more than 10 years old, unless approved by academic dean.

Information Systems Technology: Network Administration  
Career Studies Certificate  
Offered through AN, LO, ELI

**Purpose:** This program provides the student with a broad background in networking technologies, administration, and support. The material presented in the certificate provides the foundation knowledge covered in the 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.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITN 100 Intro. to Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITN 260 Network Security Basics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td>ITN 101 Intro. to Network Concepts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITN 200 Administration of Network Resources</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ITN 208 Protocols and Communications</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ITN 245 Network Troubleshooting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

**Total credits for the Career Studies Certificate in Network Administration = 22**

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.
Information Systems Technology: Network Engineering (Specialist)  
Career Studies Certificate

Offered through AL, AN, MA, WO, ELI

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 a network; optimize wide area networks (WANs) through Internet access solutions that reduce bandwidth and lower WAN costs; and provide remote access by integrating remote dial-up access with remote local area network (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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ITN 154 Networking Fundamentals – CISCO</td>
<td>4</td>
</tr>
<tr>
<td>ITN 155 Introductory Routing – CISCO</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

| 2nd Semester |
| ITN 156 Basic Switching and Routing – CISCO | 4 |
| ITN 157 WAN Technologies – CISCO | 4 |
| **Total** | **8** |

Total credits for the Career Studies Certificate in Network Engineering (Specialist) = 16

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 Systems Technology: Web Design and Development  
Career Studies Certificate

Offered through AL, MA, WO, ELI

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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ITD 110 Web Design I</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ITE 130 Intro. to Internet Services</td>
<td>3</td>
</tr>
<tr>
<td>ITP 100 Software Design</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

| 2nd Semester |
| ITD 210 Web Page Design II | 3 |
| ITE 170 Multimedia Software | 3 |
| ITN 100 Intro. to Telecommunications | 3 |
| ITP 225 Web Scripting Languages | 4 |
| **Total** | **13** |

Total credits for the Web Design and Development Career Studies Certificate = 25

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.

Interior Design  
Associate of Applied Science Degree

Offered through LO

Purpose: This program prepares students to become assistant designers or interior design technicians. 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. Students become knowledgeable in both residential and contract design. Career opportunities exist not only in the retail marketing of furniture, fabrics, and accessories, but also in commercial design firms as space planners, drafters, and technical support staff. The curriculum can be completed in two years; however, students may enroll on a part-time basis. There are no entry requirements, but many IDS courses have prerequisites to insure that students are properly prepared for advanced coursework.

Two Years

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ART 101 History and Appreciation of Art I</td>
<td>3</td>
</tr>
<tr>
<td>ART 131 Fundamentals of Design I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>IDS 100 Theory and Technology of Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>PSY 100 Principles of Applied Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
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<td><strong>Total</strong></td>
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</table>
Two Years

1st Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>201 Foreign Language</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST 110 Intro. to Communication or</td>
<td>3</td>
</tr>
<tr>
<td>CST 126 Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>202 Foreign Language</td>
</tr>
<tr>
<td>MTH 152 Mathematics for the Liberal Arts II</td>
<td>3</td>
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<td><strong>Total</strong></td>
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3rd Semester

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG Literature Elective</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>General Electives</td>
</tr>
<tr>
<td>8</td>
<td>HIS Elective</td>
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<tr>
<td>9</td>
<td>Social Science Elective</td>
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<tr>
<td><strong>Total</strong></td>
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4th Semester

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>General Elective</td>
</tr>
<tr>
<td>8</td>
<td>HIS Elective</td>
</tr>
<tr>
<td>10</td>
<td>Humanities/Fine Arts Elective</td>
</tr>
<tr>
<td>9</td>
<td>Social Science Elective</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.A. Degree in Interior Design = 65–66

1 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.
2 May substitute the SDV 101 Orientation section related to this program.
3 May be selected from Interior Design and curricula that offer complementary areas to Interior Design: Architecture Technology, Business Administration, Communication Design, Horticulture Technology, Art History, and Marketing.
4 See social/behavioral science courses listed under General Education Electives.
5 For those students interested in transfer, an IDS elective may be substituted (with division approval) for the internship.

Liberal Arts
Associate of Arts Degree

Offered through AL, AN, LO, MA, WO, ELI

Purpose: This program is designed for individuals who plan to transfer to a four-year institution to complete a bachelor of arts (B.A.).

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.
Liberal Arts: Art History Specialization
Associate of Arts Degree

Offered through AL, AN, LO, MA, WO

Purpose: This program is designed for students who plan to transfer to a college or university for a Bachelor of Arts in Art History.

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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ART 101 History and Appreciation of Art I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>201 Foreign Language</td>
</tr>
<tr>
<td>2</td>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| ART 102 History and Appreciation of Art II | 3 |
| CST 110 Intro. to Communication or | |
| CST 126 Interpersonal Communication | 3 |
| 4 | ENG 112 College Composition II | 3 |
| 1 | 202 Foreign Language | 3 |
| 2 | MTH 152 Mathematics for the Liberal Arts II | 3 |
| Total | 15 |

| 3rd Semester | |
| ART 211 History of American Art I or | |
| Art History Elective | 3 |
| 6 | ENG 200-Level Literature Elective | 3 |
| 7 | HIS Elective | 3 |
| 8 | Physical or Life Science Elective w/Lab | 4 |
| 9 | Social Science Elective | 3 |
| Total | 16 |

| 4th Semester | |
| ART 212 History of American Art II or | |
| Art History Elective or | |
| Foreign Language | 3–5 |
| 7 | HIS Elective | 3 |
| 8 | Physical or Life Science Elective w/Lab | 4 |
| 9 | Social Science Elective | 3 |
| Total | 16–18 |

Total credits for the A.A. Degree in Liberal Arts with a Specialization in Art History = 61–63

1 Students completing the A.A. in Liberal Arts must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Placement testing determines initial foreign language level. Students completing 101–102 foreign language may use those credits to meet general elective requirements. Waivers or credit by exam (through CLEP) for previous experience is available for some languages. Students whose native language is not English may substitute general electives for foreign language upon the approval of the advising academic dean.

2 May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

3 May substitute the SDV 101 Orientation section related to this program.

Liberal Arts: Communication Studies Specialization
Associate of Arts Degree

Offered through AL, AN, LO, MA, WO, ELI

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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>201 Foreign Language</td>
</tr>
<tr>
<td>2</td>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| CST Elective | 3 |
| ENG 112 College Composition II | 3 |
| 1 | 202 Foreign Language | 3 |
| 2 | MTH 152 Mathematics for the Liberal Arts II | 3 |
| Total | 16 |

| 3rd Semester | |
| CST Elective | 3 |
| ENG Literature Elective | 3 |
| HIS Elective | 3 |
| Social Science Elective | 3 |
| Total | 15 |
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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>1st Semester</td>
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</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>1  201 Foreign Language</td>
<td>3–5</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
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</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
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<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>1  Physical or Life Science Elective w/Lab</td>
<td>4</td>
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<tr>
<td>SDV 100 College Success Skills</td>
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<td>1st Semester</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ENG 202 Foreign Language</td>
<td>3–5</td>
</tr>
<tr>
<td>MTH 152 Mathematics for the Liberal Arts II</td>
<td>3</td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
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<tr>
<td>1  Physical or Life Science Elective w/Lab</td>
<td>4</td>
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<thead>
<tr>
<th>3rd Semester</th>
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<tbody>
<tr>
<td>CST 110 Intro. to Communication or</td>
<td>3</td>
</tr>
<tr>
<td>CST 126 Interpersonal Communication</td>
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<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>1  200-Level Literature Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENG</td>
<td>3</td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>1  General Education Elective</td>
<td>5</td>
</tr>
<tr>
<td>HIS</td>
<td>3</td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>1  Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>HIS</td>
<td>3</td>
</tr>
<tr>
<td>3rd Semester</td>
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<td>Total</td>
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<table>
<thead>
<tr>
<th>4th Semester</th>
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<tbody>
<tr>
<td>ENG 200-Level Literature Elective</td>
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</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
<tr>
<td>1  Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENG</td>
<td>3</td>
</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
<tr>
<td>1  Elective</td>
<td>3</td>
</tr>
<tr>
<td>HIS</td>
<td>3</td>
</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
<tr>
<td>1  Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>HIS</td>
<td>3</td>
</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

Total credits for the A.A. Degree in Liberal Arts with a Specialization in Communication Studies = 61

1. Students completing the A.A. in Liberal Arts must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Placement testing determines initial foreign language level.

2. May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

3. See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.

4. May substitute the SDV 101 Orientation section related to this program.

5. Select from the following: CST 100, CST 110, CST 115, CST 126, CST 227, or CST 229.

6. May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

7. Any 200-level literature course with an ENG prefix satisfies this requirement.

8. Students who need to take the 101–102 level of foreign language should use the General Elective to begin taking the language sequence.

9. See HIS courses listed under social/behavioral sciences under General Education Electives. HIS 101–102 or HIS 121–122 are recommended.

10. See social/behavioral science courses listed under General Education Electives.

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 the requirements of the transfer institution.

Liberal Arts: English Specialization
Associate of Arts Degree

Offered through AL, AN, LO, MA, 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.
Students who are interested in Literature: select from ENG 230, 236, 237, 241, 242, 243, 244, 245, 247, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 267, 270, 271, 272, 273, 274, 276, and 279. Students who are interested in Creative Writing: select ENG 212, ENG 215, ENG 216, ENG 217, ENG 218, ENG 219, ENG 261, or 262. Students who are in Writing and Rhetoric, select from any ENG 200-Linguistics or select from any ENG 295, ENG 250, ENG 280, ENG 221. Please note: Credit cannot be awarded for ENG 245/ENG 246 if taken along with ENG 243/ENG 244 or ENG 241/ENG 242.

Any 200-level literature course with an ENG prefix satisfies this requirement.

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

### Associate of Arts Degree

**Offered through AL, AN, LO, MA, WO, ELI**

**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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ENG</td>
<td>111 College Composition I</td>
</tr>
<tr>
<td>___</td>
<td>201 Foreign Language</td>
</tr>
<tr>
<td>MTH</td>
<td>151 Mathematics for the Liberal Arts I</td>
</tr>
<tr>
<td>PED</td>
<td>Physical or Life Science Elective w/Lab</td>
</tr>
<tr>
<td>SDV</td>
<td>100 College Success Skills</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ENG</td>
<td>112 College Composition II</td>
</tr>
<tr>
<td>___</td>
<td>202 Foreign Language</td>
</tr>
<tr>
<td>MTH</td>
<td>152 Mathematics for the Liberal Arts II</td>
</tr>
<tr>
<td>CST</td>
<td>Physical or Life Science Elective w/Lab</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td><strong>3rd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ECO</td>
<td>201 Principles of Economics I</td>
</tr>
<tr>
<td>ENG</td>
<td>Literature Elective</td>
</tr>
<tr>
<td>___</td>
<td>General Elective</td>
</tr>
<tr>
<td>HIS</td>
<td>Elective</td>
</tr>
<tr>
<td>___</td>
<td>Non-Western Requirement</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>4th Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ECO</td>
<td>202 Principles of Economics II</td>
</tr>
<tr>
<td>___</td>
<td>General Elective</td>
</tr>
<tr>
<td>HIS</td>
<td>Elective</td>
</tr>
<tr>
<td>___</td>
<td>Humanities/Fine Arts Elective</td>
</tr>
<tr>
<td>___</td>
<td>Non-Western Requirement</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

### Total credits for the A.A. Degree in Liberal Arts with a Specialization in International Studies = 61

1. Students completing the A.A. in Liberal Arts must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Placement testing determines initial foreign language level. Students completing 101–102 foreign language may use those credits to meet general elective requirements. Waivers or credit by exam (through CLEP) for previous experience is available for some languages. Students whose native language is not English may substitute general electives for foreign language upon the approval of the advising academic dean.
2. May substitute any higher-level mathematics course. See transfer requirements. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.
3. See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
4. May substitute the SDV 101 Orientation section related to this program.
5. May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
6. Any 200-level literature course with an ENG prefix satisfies this requirement.
7. Social science or humanities recommended. Suggested courses include HUM 201-202, HUM 231-232, or advanced language courses in history, literature, or civilization above the 202 designation (example: SPA 233-234). Consult an advisor.
8. See HIS courses listed under social/behavioral sciences under General Education Electives. HIS 101–102 or HIS 111–112 are recommended.
9. Select from ART 103–104, HIS 203, HIS 231–232, HIS 241–242, HIS 251–252, HIS 253–254, HIS 255, HIS 256, or REL 231–232, or other non-Western courses approved by advisor.
10. 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: Psychology Specialization

### Associate of Arts Degree

**Offered through AL, AN, LO, MA, WO**

**Purpose:** This program is designed for students who plan to transfer to a college or university for a Bachelor of Arts in Psychology.

### 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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>BIO</td>
<td>101 General Biology I</td>
</tr>
<tr>
<td>ENG</td>
<td>111 College Composition I</td>
</tr>
<tr>
<td>MTH</td>
<td>151 Mathematics for the Liberal Arts I</td>
</tr>
<tr>
<td>PED</td>
<td>116 Lifetime Fitness and Wellness</td>
</tr>
<tr>
<td>PSY</td>
<td>201 Intro. to Psychology I</td>
</tr>
<tr>
<td>SDV</td>
<td>100 College Success Skills</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ENG</td>
<td>Literature Elective</td>
</tr>
<tr>
<td>___</td>
<td>General Elective</td>
</tr>
<tr>
<td>HIS</td>
<td>Elective</td>
</tr>
<tr>
<td>___</td>
<td>Humanities/Fine Arts Elective</td>
</tr>
<tr>
<td>___</td>
<td>Non-Western Requirement</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>
### Liberal Arts: Theatre

**Career Studies Certificate**

**Offered through AL, AN, LO, 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.

**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.

**Total credits for the Theatre 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.

**Marketing**

**Associate of Applied Science Degree**

**Offered through AN**

**Purpose:** The curriculum is designed for persons who seek full-time employment in areas involving the marketing and distribution of goods and for those presently in these fields who are seeking promotion. The occupational objectives include store manager, assistant manager, sales supervisor, department manager, sales and customer service representative, buyer and assistant buyer, promotion specialist, public relations coordinator, advertising account manager, media buyer, marketing research technician, international wholesaler, social media marketing specialist, and human resource manager.

<table>
<thead>
<tr>
<th>1st Semester</th>
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</thead>
<tbody>
<tr>
<td>1 CST Intro. to Communication or CST 100 Principles of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>1 CST 130 Intro. to Theatre or CST 141 Theatre Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>1 CST 131 Acting I</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>2nd Semester</th>
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<tbody>
<tr>
<td>1 CST 136 Theatre Workshop</td>
<td>3</td>
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<tr>
<td>1 CST Elective</td>
<td>3</td>
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<tr>
<td>1 CST Elective</td>
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#### One Year Credits

<table>
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<tr>
<th>2nd Semester</th>
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<tbody>
<tr>
<td>BID 102 General Biology II</td>
<td>4</td>
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<tr>
<td>CST 110 Intro. to Communication or CST 126 Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>MTH 152 Mathematics for the Liberal Arts II</td>
<td>3</td>
</tr>
<tr>
<td>PSY 202 Intro. to Psychology II</td>
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<tr>
<th>3rd Semester</th>
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<tr>
<td>ENG 200-Level Literature Elective</td>
<td>3</td>
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<tr>
<td>HIS Elective</td>
<td>3</td>
</tr>
<tr>
<td>PSY Research Methodology for Behavioral Sciences</td>
<td>3</td>
</tr>
<tr>
<td>PSY Any 200-level Psychology course</td>
<td>3</td>
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<thead>
<tr>
<th>4th Semester</th>
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<tbody>
<tr>
<td>ENG 202 Foreign Language</td>
<td>3</td>
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<td>HIS Elective</td>
<td>3</td>
</tr>
<tr>
<td>PSY Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>PSY Any 200-level Psychology course</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

**Total credits for the A.A. Degree in Liberal Arts with a Specialization in Psychology = 61**

Students planning to transfer to some B.S. degree programs may take any courses from the following list: MTH 181, MTH 182, MTH 241, MTH 242, MTH 173, MTH 174, MTH 270, MTH 271, MTH 272, MTH 273, MTH 274. Seek advice of a counselor or academic advisor to meet the requirements of other transfer institutions. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

Students cannot take the one semester version course and combine with the two semester version course. PSY 201 and PSY 202 cannot be combined with PSY 200. PSY 231 and PSY 232 cannot be combined with PSY 230, and PSY 231 cannot be combined with PSY 235.

May substitute the SDV 101 Orientation section related to this program.

May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

Students completing the A.A. in Liberal Arts must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Placement testing determines initial foreign language level. Students completing 101–102 foreign language may use those credits to meet general elective requirements. Waivers or credit by exam (through CLEP) for previous experience is available for some languages. Students whose native language is not English may substitute general electives for foreign language upon the approval of the advising academic dean.

Students completing the A.A. in Liberal Arts must possess a high proficiency in high school English and a strong background in basic arithmetic operations.

<table>
<thead>
<tr>
<th>1 CST Elective</th>
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<tbody>
<tr>
<td>1 CST Elective</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>
### Marketing: Social Media Career Studies Certificate

**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**

<table>
<thead>
<tr>
<th>mice</th>
<th>1st Semester</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG</td>
<td>111 College Composition I or ENG Elective</td>
<td>3</td>
</tr>
<tr>
<td>ITE</td>
<td>115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>MKT</td>
<td>201 Intro. to Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT</td>
<td>228 Promotion or MKT 221 Public Relations</td>
<td>3</td>
</tr>
<tr>
<td>SDV</td>
<td>100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>13</td>
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</tbody>
</table>

**2nd Semester**

<table>
<thead>
<tr>
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<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKT</td>
<td>200 Consumers, Marketing, and Society</td>
<td>3</td>
</tr>
<tr>
<td>MKT</td>
<td>215 Sales and Marketing Management</td>
<td>3</td>
</tr>
<tr>
<td>MKT</td>
<td>275 International Marketing or MKT 282 Principles of E-Commerce</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

**Total credits for the Social Media Career Studies Certificate = 22**

### Marketing: Promotion and Public Relations Career Studies Certificate

**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**

<table>
<thead>
<tr>
<th>mice</th>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG</td>
<td>111 College Composition I or ENG Elective</td>
<td>3</td>
</tr>
<tr>
<td>ITE</td>
<td>115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>MKT</td>
<td>201 Intro. to Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT</td>
<td>282 Principles of E-Commerce</td>
<td>3</td>
</tr>
<tr>
<td>SDV</td>
<td>100 College Success Skills</td>
<td>1</td>
</tr>
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<td>Total</td>
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</table>

**2nd Semester**

<table>
<thead>
<tr>
<th>mice</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>MKT</td>
<td>282 Principles of E-Commerce</td>
<td>3</td>
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<tr>
<td>MKT</td>
<td>284 Social Media Marketing</td>
<td>3</td>
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<tr>
<td>Total</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Total credits for the Social Media Career Studies Certificate = 16**
Marketing: Retail Management
Career Studies Certificate

Offered through AN

Purpose: This curriculum is designed to offer students already employed in retail management the opportunity for improving skills and advancement on the job. For students interested in exploring retail management as a career, this certificate program is designed to acquaint students with the fundamental skills.

Recommended Preparation: Students should possess a proficiency in high school English and a strong background in arithmetic operations.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MKT 216 Retail Organization and Management</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| ENG 111 College Composition I or ENG Elective | 3 |
| MKT 227 Merchandise Buying and Control or MKT Elective | 3 |
| Total | 6 |

Total credits for the Retail Management Career Studies Certificate = 16

Massage Therapy
Career Studies Certificate

Offered through WO

Purpose: This program is designed to prepare students for certification and employment as massage therapists in a wide variety of environments, including hospitals and clinics, doctor and chiropractic offices, sports and fitness facilities, corporate offices, and beauty and skin care salons and spas. Graduates will be prepared to take the National Certification Examination in Therapeutic Massage and Bodywork. The National Certification Board for Therapeutic Massage and Bodywork requires all applicants to have completed at least 500 in-class clock hours of formal training prior to taking the exam. Successful completion of the exam and certification is required to practice massage therapy in Virginia.

Accreditation: NOVA’s Massage Therapy Program has been approved by the AMTA, American Massage Therapy Association, and the NCBTMB, National Certification Board for Therapeutic Massage and Bodywork. The NCBTMB certifies students to take their national exam, which is used by all states as part of licensing individuals to practice massage. Individual states may have additional requirements for licensure.

Program Admission Requirements: Unless otherwise specified, applicants must meet all of the following requirements to be admitted to the program:

- Be admitted to NOVA.
- Be 18 years of age or older, or have assistant dean approval.
- Qualify for or have completed ENG 111.
- Complete HLT 170 with a grade of “C” or better.
- Complete NAS 150 or NAS 161 or BIO 141 with a grade of “C” or better.
- Provide evidence of good physical and mental health, as substantiated by a completed Pre-Admission Health History and Physical for Health Technology Form (125–007) signed by a licensed physician or nurse practitioner. This must be submitted prior to entering program courses. Applicants must be free of any physical and/or mental conditions that might adversely affect their acceptance or performance in the program. Students with pre-existing physical and/or mental conditions that might adversely affect their acceptance or performance in the program who do not self-disclose this information will be subject to dismissal from the program.
- Provide full disclosure of any criminal background. Students with criminal convictions who do not self-disclose this information are subject to dismissal from the program.
- Complete a program information session and/or interview with the assistant dean/designated instructor and signed program guidelines.

Responsibilities of Massage Therapy Program Students:

- Students must demonstrate absolute academic integrity both in the classroom and in clinical practice to prepare them for the high ethical standards required of massage therapists. Therefore, cheating, attempting to cheat, plagiarizing, lying, stealing academic work which includes secured tests or related materials, submitting papers purchased or written by others, or failing to report an occurrence of
academic dishonesty or any violation of this honor code may subject the student to the College’s disciplinary procedures as defined in the NOVA Student Handbook.

- Students in the Massage Therapy Program incur a variety of additional expenses. These include, but are not limited to, the cost of accessories and travel to clinical assignments. Students are also responsible for state certification and national accreditation application and testing fees.
- Students are required to complete learning experiences at local hospitals and clinics, doctor and chiropractic offices, sports and fitness facilities, corporation offices, and beauty and skin care salons, and spas and other community-based programs. Students may be required to attend both day and/or evening and weekend clinical assignments.
- Students must provide their own transportation to clinical assignments. Strict attendance is required at clinical sites.

**Continuation Requirements:** Program faculty and clinical affiliates reserve the right to recommend, through appropriate channels, withdrawal of any student who exhibits unsafe performance or non-adherence to prescribed clinical affiliate policies and procedures.

**Completion Requirements:** All courses in the program must be completed with a grade of “C” or better before taking the next course in the sequence and to satisfy graduation requirements.

### Prerequisites:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HLT 170 Intro. to Massage</td>
<td>1</td>
</tr>
<tr>
<td>NAS 150 Human Biology or NAS 161 Health Science I or BIO 141 Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
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### One Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>15</td>
</tr>
<tr>
<td>CST 126 Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>HLT 105 Cardiopulmonary Resuscitation</td>
<td>1</td>
</tr>
<tr>
<td>HLT 180 Therapeutic Massage I</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
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<tr>
<td>SDV 100 College Success Skills</td>
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<td>Total</td>
<td>7</td>
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### 2nd Semester

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HLT 190 Coordinated Internship</td>
<td>2</td>
</tr>
<tr>
<td>HLT 220 Concepts of Disease</td>
<td>3</td>
</tr>
<tr>
<td>HLT 280 Therapeutic Massage II</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
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<td>Total</td>
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</table>

### 3rd Semester

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HLT 195 Entrepreneurship for the Massage Therapist</td>
<td>1</td>
</tr>
<tr>
<td>HLT 281 Therapeutic Massage III</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total credits for the Massage Therapy Career Studies Certificate = 20 (25 including prerequisites)**

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 waived with proof of CPR certification. Another 1-credit course must be substituted.

Other courses not required but highly recommended for Massage Therapy students are

- PHI 227 Biomedical Ethics (2 credits)
- PTH 151 Musculoskeletal Structure and Function (5 credits)

### Medical Laboratory Technology A.A.S.

See Medical Education section

### Meeting, Event, and Exhibition Management Certificate

See Hospitality Management

### Music

**Associate of Arts Degree**

Offered through AL, AN, LO

**Purpose:** This curriculum offers an emphasis in fine arts. The program may be used by students who wish to transfer to a four-year college or university to complete the Bachelor of Arts in Music.

**Recommended Preparation:** An interview with the music faculty may be required before beginning the program.

**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.

**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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>15</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
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<tr>
<td>201 Foreign Language</td>
<td>3</td>
</tr>
<tr>
<td>MUS Applied Music (Major)</td>
<td>2</td>
</tr>
<tr>
<td>MUS Chorus/Band/Orchestra/Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>MUS 111 Music Theory I</td>
<td>4</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>
### Music

**Associate of Applied Arts Degree**

**Offered through AL, AN, LO**

#### Purpose:
This curriculum is designed for students who seek employment in the performing arts field. The degree offers a major in music and a specialization in jazz/popular music. Each program has a common first year.

#### 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.

### 1st Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CST 110</td>
<td>Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>MUS Chorus/Band/Orchestra/Ensemble</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Social Science Electives</td>
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#### 2nd Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MUS Applied Music (major)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>MUS Applied Music (minor)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MUS Chorus/Band/Orchestra/Ensemble</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MUS 112 Music Theory I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PED 116</td>
<td>Lifetime Fitness and Wellness</td>
<td>1</td>
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<tr>
<td>Social Science Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>100 College Success Skills</td>
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#### 3rd Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUS 111</td>
<td>Music Theory I</td>
<td>4</td>
</tr>
<tr>
<td>MUS Chorus/Band/Orchestra/Ensemble</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MUS 211 Advanced Music Theory I</td>
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<td></td>
</tr>
<tr>
<td>MUS 221 History of Music I</td>
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#### 4th Semester

<table>
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<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CST 110</td>
<td>Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>MUS Chorus/Band/Orchestra/Ensemble</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Social Science Electives</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

#### Total credits for the A.A.A. Degree in Music = 65

#### 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.

### 2nd Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUS 112 Advanced Music Theory II</td>
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<tr>
<td>MUS 222 History of Music II</td>
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#### Total 14

### 3rd Semester

<table>
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<tbody>
<tr>
<td>MUS 221 History of Music I</td>
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#### Total 17

### 4th Semester

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<tr>
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<td>MUS 212 Advanced Music Theory II</td>
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<tr>
<td>MUS 222 History of Music II</td>
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</tr>
</tbody>
</table>

#### Total 17

### Total credits for the A.A.A. Degree in Music = 65

#### Notes:
- Students completing the A.A. in Music must demonstrate intermediate college-level (201–202) proficiency in a language other than English. The 201–202 courses require a prerequisite proficiency equivalent to the 101–102 sequence in the language. Placement testing determines initial foreign language level.
- Students completing 101–102 foreign language may use those credits to meet general elective requirements. Waivers or credit by exam (through CLEP) for previous experience is available for some languages. Students whose native language is not English may substitute general electives for foreign language upon the approval of the advising academic dean.
- May substitute the SDV 101 Orientation section related to this program.
- May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
- Students who need to take the beginning level of foreign language may apply that credit toward the general elective. Other students may take any transfer-oriented course.
- See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
- See social/behavioral science courses listed under General Education Electives.
Music: Jazz/Popular Music Specialization
Associate of Applied Arts Degree

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 Credits
1st Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MUS</td>
<td>2</td>
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<tr>
<td>MUS Applied Music (major)</td>
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</tr>
<tr>
<td>MUS Applied Music (minor)</td>
<td>1</td>
</tr>
<tr>
<td>MUS Chorus/Band/Orchestra/Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>MUS 111 Music Theory I</td>
<td>4</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>MUS Applied Music (major)</td>
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</tr>
<tr>
<td>MUS Applied Music (minor)</td>
<td>1</td>
</tr>
<tr>
<td>MUS Chorus/Band/Orchestra/Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>MUS 112 Music Theory II</td>
<td>4</td>
</tr>
<tr>
<td>PED/RPK Elective</td>
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<tr>
<td>Social Science Elective</td>
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<td><strong>Total</strong></td>
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3rd Semester

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<tr>
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<th>Credits</th>
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<tbody>
<tr>
<td>CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>General Elective</td>
<td>2</td>
</tr>
<tr>
<td>MUS Applied Music (major)</td>
<td>2</td>
</tr>
<tr>
<td>MUS Applied Music (minor)</td>
<td>1</td>
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<tr>
<td>MUS Chorus/Band/Orchestra/Ensemble</td>
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<tr>
<td>MUS 159 Improvisational Techniques</td>
<td>3</td>
</tr>
<tr>
<td>MUS 213 Composition I</td>
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4th Semester

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<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Humanities/Fine Arts Elective</td>
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<tr>
<td>MUS Applied Music (major)</td>
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<td>MUS Applied Music (minor)</td>
<td>1</td>
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<tr>
<td>MUS Chorus/Band/Orchestra/Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>MUS 214 Composition II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 225 The History of Jazz</td>
<td>3</td>
</tr>
<tr>
<td>MUS 259 Advanced Improvisational Techniques</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

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 2-credit and a 2-credit course.
3. See social/behavioral science courses listed under General Education Electives.
4. May substitute the SDV 101 Orientation section related to this program.
5. 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

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 Credits
1st Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 130 Overview of the Recording Industry</td>
<td>1</td>
</tr>
<tr>
<td>MUS 140 Intro. to Recording Technology</td>
<td>3</td>
</tr>
<tr>
<td>MUS 157 Sound Studio Design</td>
<td>3</td>
</tr>
<tr>
<td>MUS 158 Recording Studio Electronics: Theory and Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 165 Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>CST Elective</td>
<td>3</td>
</tr>
<tr>
<td>MUS 179 Music Copyright Law</td>
<td>1</td>
</tr>
<tr>
<td>MUS 227 Editing and Mixdown Technology</td>
<td>3</td>
</tr>
<tr>
<td>MUS 235 Advanced Recording Technology</td>
<td>3</td>
</tr>
<tr>
<td>MUS 288 Recording Problems Seminar</td>
<td>2</td>
</tr>
<tr>
<td>PSY 120 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

3rd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 290 Coordinated Internship</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

Total credits for the Music Recording Technology Certificate = 38

1. May take SDV 100 or the SDV 101 Orientation section related to their particular program.
2. Select from the following: CST 110, CST 115, CST 126, CST 227, and CST 229.

Nursing A.A.S.

See Medical Education section
Paralegal Studies
Associate of Applied Science Degree

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 Legal 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 assistant dean 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.

Prerequisite: Students must complete a “C” or higher.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>LGL 110 Intro. to Law and the Legal Assistant</td>
<td>3</td>
</tr>
<tr>
<td>LGL 117 Family Law</td>
<td>3</td>
</tr>
<tr>
<td>LGL 125 Legal Research</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>PHI 115 Practical Reasoning</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

| 2nd Semester | |
| ENG 112 College Composition II | 3 |
| LGL 126 Legal Writing | 3 |
| LGL 215 Torts | 3 |
| LGL 218 Criminal Law | 3 |
| MTH 151 Mathematics for the Liberal Arts I | 3 |
| PED/RPK Elective | 1 |
| **Total** | **16** |

<table>
<thead>
<tr>
<th>3rd Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved Elective</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>LGL 115 Real Estate Law</td>
<td>3</td>
</tr>
<tr>
<td>LGL 217 Trial Practice and the Law of Evidence</td>
<td>3</td>
</tr>
<tr>
<td>LGL 235 Legal Aspects of Business Organization</td>
<td>3</td>
</tr>
<tr>
<td>PSY 201 Intro. to Psychology I or SOC 201 Intro. to Sociology I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>4th Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved Elective</td>
<td>2</td>
</tr>
<tr>
<td>CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>LGL 225 Estate Planning and Probate</td>
<td>3</td>
</tr>
<tr>
<td>LGL 230 Legal Transactions</td>
<td>3</td>
</tr>
<tr>
<td>PSY 202 Intro. to Psychology II or SOC 202 Intro. to Sociology II</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Paralegal Studies = 65
(includes 3 prerequisite credits)

1. 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.
2. May substitute a humanities/fine arts elective selected from the humanities/fine arts courses listed under General Education Electives. Humanities/fine arts course may be substituted after consultation with an academic advisor and should be chosen to further a student’s career and educational goals.
3. May substitute the SDV 101 Orientation section related to this program.
4. May substitute any higher-level mathematics course or a science course (BIO, CHM, ENV, GOL, NAS, PHY).
5. Elective courses should be selected after consultation with a counselor or academic advisor, and should be chosen to further a student’s career and educational goals.
6. May substitute a social science elective selected from the social/behavioral science courses listed under General Education Electives.

Phlebotomy Career Studies Certificate
See Medical Education section under Medical Laboratory Technology

Photography and Media
Associate of Applied Science Degree

Offered through AL

Purpose: The curriculum is designed to prepare students for diverse career options within the field of photography and digital imaging. Coursework will stress both technical and aesthetic elements,
enabling students to solve a wide range of visual problems with imagination and originality.

**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 Credits**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 121 Drawing I or ART 131 Fundamentals of Design I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>PHT 101 Photography I</td>
<td>3</td>
</tr>
<tr>
<td>PHT 110 History of Photography</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 101 History and Appreciation of Art I</td>
<td>3</td>
</tr>
<tr>
<td>ART 122 Drawing II or ART 132 Fundamentals of Design II</td>
<td>4</td>
</tr>
<tr>
<td>CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>PED/RPK Elective</td>
<td>1</td>
</tr>
<tr>
<td>PHT 102 Photography II</td>
<td>3</td>
</tr>
<tr>
<td>PHT 270 Digital Imaging I</td>
<td>3</td>
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<td><strong>Total</strong></td>
<td><strong>17</strong></td>
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<table>
<thead>
<tr>
<th>3rd Semester</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ART 102 History and Appreciation of Art II</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I or Physical or Life Science Elective w/ Lab</td>
<td>3–4</td>
</tr>
<tr>
<td>PHT 130 Video I</td>
<td>3</td>
</tr>
<tr>
<td>PHT 201 Advanced Photography I</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective or PHT Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15–16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4th Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Elective</td>
<td>3</td>
</tr>
<tr>
<td>PHT 202 Advanced Photography II</td>
<td>3</td>
</tr>
<tr>
<td>PHT 227 Photographic Careers</td>
<td>3</td>
</tr>
<tr>
<td>PHT Electives</td>
<td>6</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

**Total credits for the A.A.S. Degree in Photography and Media = 65–66**

1. 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.; PED 116, 1 cr. plus RP activities course. PED 116 is offered as both a 1-credit and a 2-credit course.
2. May substitute the SDV 101 Orientation section related to this program.
3. See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.
4. See social/behavioral science courses listed under General Education Electives.

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**Professional Writing Certificate**

**Offered through AL, AN, LO, MA, WO**

**Purpose:** The Professional Writing Certificate program prepares candidates to compose documents and manage professional communications for a variety of contemporary professions, including business, military, medicine, government, science, and industry. Writers will gain expertise in composing, designing, and editing electronic texts, as well as a comprehensive foundation in grammar and punctuation. Students may tailor their preparation for particular writing environments by selecting from a variety of elective courses in journalism, technical report writing, graphic design, writing for publication, writing for the Web, social media, and communications. Students may also incorporate a professional internship into the Certificate program. Students are strongly encouraged to meet with a professional writing advisor before enrolling in Certificate classes or as early as possible in their first semester of enrollment.

**Completion Requirements:** 31 total credits. All students must complete ENG 111 (or its equivalent) in the first semester of Certificate study. Students must complete a core of 18 credits of professional writing courses and 9 credits of elective courses. All students must complete the 3-credit ENG 298 (Seminar and Project) in the final semester of Certificate study.

**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.

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**One Year Credits**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST 110 Intro. to Communication or CST 227 Business and Professional Communications</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 115 Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114 Scientific Writing or 116 Writing for Business</td>
<td>3</td>
</tr>
<tr>
<td>Professional Writing Elective</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 205 Technical Editing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 123 Writing for the World Wide Web</td>
<td>3</td>
</tr>
<tr>
<td>Professional Writing Elective</td>
<td>3</td>
</tr>
<tr>
<td>Professional Writing Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENG 298 Seminar and Project</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

**Total credits for the Professional Writing for Business, Government, and Industry Certificate = 31**

1. Students must complete ENG 111 and (or its equivalent) in the first semester of their registration.
2. Should be selected in consultation with an academic advisor.
3. English approved electives are; ENG 114, ENG 116, ENG 121, ENG 131, ENG 135, ENG 200, ENG 210, ENG 280, and ENG 290. For Non-English approved elective: ART 209, ART 116, ART
251, ART 283 and ART 284, BUS 100, CST 115, LGL 126, MKT 201, MKT 221, MKT 284, and other courses that may relate to a specific area of professional writing.

3 May substitute the SDV 101 Orientation section related to this program.

4 Students must complete ENG 298 in their final semester of Certificate study.

Public History and Historic Preservation
Career Studies Certificate

Offered through LO

Purpose: This curriculum is designed for students seeking a solid foundation in the theories, methods, and skills in the complementary fields of public history and historic preservation.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>HIS 180 Historical Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>HIS 181 Intro. to Historic Preservation</td>
<td>3</td>
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<tr>
<td>Total</td>
<td>6</td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>HIS 188 Field Survey Techniques for Archaeology</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
</tr>
</tbody>
</table>

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 205, HIS 218 or HIS 281.

Radiography A.A.S.
See Medical Education section

Respiratory Therapy A.A.S.
See Medical Education section

Science
Associate of Science Degree

Offered through AL, AN, LO, MA, WO, ELI

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, home economics, nursing, 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.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>CSC 110 Intro. to Computing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH 271 Applied Calculus I or MTH 173 Calculus with Analytic Geometry I</td>
<td>3–5</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>17–19</td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>MTH 272 Applied Calculus II or MTH 174 Calculus with Analytic Geometry II</td>
<td>3–5</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>14–16</td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>General Education Elective</td>
<td>1</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
<tr>
<td>CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
</tr>
</tbody>
</table>

Total credits for the A.S. Degree in Science = 60–64

Twenty-four of these credits must be taken in laboratory science courses for transfer to a four-year institution with a major in science.

1 See HIS courses listed under social/behavioral science courses under General Education Electives. HIS 101–102 or HIS 11–112 are recommended.

2 MTH 173–174 is required for students planning a four-year major in physics or chemistry. MTH 271 plus one semester of statistics may be taken by biology majors. Students not adequately prepared for MTH 173 may be required to take MTH 166 or MTH 163–164. Students must see their counselor/advisor before choosing a math class, as transfer institutions have a wide range of requirements. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

3 Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution...
of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

The sciences elective with laboratory may be selected from the following: BIO 101–102, BIO 107, BIO 110, BIO 120, BIO 141–142, BIO 150, CHM 111–112, ENV 121–122, GOL 105–106, PHY 201–202, PHY 231–232, PHY 243, or any 200-level biology, chemistry, geology, or physics course.

Students who plan to major in chemistry should elect CHM 111–112 and CHM 241–242 and CHM 245–246 plus 2 two-semester sequences from the following: BIO 101–102, BIO 110, BIO 120, GOL 105–106, GOL 111–112, or any 200-level biology, chemistry, geology, or physics course. Students who plan to major in physics and engineering should select PHY 231–232 plus CHM 111–112 and 1 two-semester sequence from the following BIO 101–102, BIO 110–120, GOL 105–106, GOL 111–112, or any 200-level biology, chemistry, or geology course (physics majors include PHY 243).

May substitute the SDV 101 Orientation section related to this program.

May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

See social/behavioral science courses listed under General Education Electives. Students should base selection on requirements of the transfer institution.

See courses listed under General Education Electives.

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.

Science: Mathematics Specialization
Associate of Science Degree

Offered through AL, AN, LO, MA, WO, ELI

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.

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 110 Intro. to Computing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HIS Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH 173 Calculus with Analytic Geometry I</td>
<td>5</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
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<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
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<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 200 Intro. to Computer Science or MTH 286 Discrete Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>MTH 274 Calculus with Analytic Geometry II</td>
<td>5</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>3rd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH 277 Vector Calculus</td>
<td>4</td>
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<tr>
<td>MTH Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>4th Semester</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CST 110 Intro to Communication</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH Elective</td>
<td>3–4</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13–14</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.S. Degree in Science with a Specialization in Mathematics = 61–62

Twenty of these credits must be taken in MTH courses for transfer to a four-year institution with a major in science.

See HIS courses listed under social/behavioral science courses under General Education Electives. HIS 101–102 or HIS 111–112 are recommended.

Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

See social/behavioral science courses listed under General Education Electives. Students should base selection on requirements of the transfer institution.

May substitute the SDV 101 Orientation section related to this program.

May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

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.

Math electives should be chosen carefully from 200-level courses and after investigation of requirements of the transfer institution. Credit will not be awarded for both MTH 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.

Security Management Career Studies Certificate

See Administration of Justice
Social Sciences
Associate of Science Degree

Offered through AL, AN, LO, MA, WO, ELI

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 one of the social sciences. It also prepares students for some teacher certification programs. Students from the A.S. program major in a wide variety of fields, including anthropology, economics, government/political science, history, mass communications, pre-law, psychology, public administration, social work, and sociology.

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 Credits
1st Semester
ENG 111 College Composition I 3
1
HIS Elective 3
2
MTH 151 Mathematics for the Liberal Arts I or higher-level mathematics 3
2
PED 116 Lifetime Fitness and Wellness 1
3
Physical or Life Science Elective w/Lab 4
4
SDV 100 College Success Skills 1
Total 15

2nd Semester
ENG 112 College Composition II 3
1
ITE 115 Intro. to Computer Applications and Concepts 3
2
MTH 152 Mathematics for the Liberal Arts II or higher-level mathematics 3
2
Physical or Life Science Elective w/Lab 4
4
Social Science Elective 3
Total 15

3rd Semester
CST 110 Intro. to Communication or
CST 126 Interpersonal Communication or
CST 229 Intercultural Communication 3
7
Humanities/Fine Arts Elective 3
6
SOC Elective 3
6
Social Science Electives 6
Total 15

4th Semester
General Education Electives 9
1
Humanities/Fine Arts Elective 3
1
Social Science Electives 3
Total 15

Total credits for the A.S. Degree in Social Sciences = 61

Social Sciences: Deaf Studies Specialization
Associate of Science Degree

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.

### Specialization in Deaf Studies = 60

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>ASL 150 Working with Deaf and Hard of Hearing People</td>
<td>2</td>
</tr>
<tr>
<td>ASL 261 American Sign Language V</td>
<td>3</td>
</tr>
<tr>
<td>CST 110 Intro. to Communication or CST 126 Interpersonal Communication or CST 229 Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I or higher-level mathematics</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
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<td>15</td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>ASL 125 History and Culture of the Deaf Community</td>
<td>3</td>
</tr>
<tr>
<td>ASL 262 American Sign Language VI</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>MTH 152 Mathematics for the Liberal Arts II or higher-level mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>HIS Elective</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>SOC Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
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<tr>
<td>Total</td>
<td>16</td>
</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
<tr>
<td>ASL 225 Literature of the U.S. Deaf Community</td>
<td>3</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>Social Science Electives</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
</tr>
</tbody>
</table>

**Total credits for the A.S. Degree in Social Sciences with a Specialization in Deaf Studies = 60**

1. Many universities require MTH 151 or higher while others require MTH 163 or MTH 166 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 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.
2. May substitute the SDV 101 Orientation section related to this program.
3. May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
4. See social/behavioral science courses listed under General Education Electives. To meet requirements at many universities, students should enroll in at least one U.S. History course and one Western civilization course. Students should consult with a counselor to determine the appropriate social science courses for their intended transfer university.
5. See HIS courses listed under social/behavioral sciences under General Education Electives. HIS 101 or HIS 102 is recommended to meet the Western civilization requirement at many universities.
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.
7. SOC 200 or 201 is recommended to meet the sociology requirement at many universities.
8. See biology, chemistry, ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence.

### Social Sciences: Geospatial Specialization

#### Associate of Science Degree

<table>
<thead>
<tr>
<th>Offered through LO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose:</strong> 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 develop both the theoretical knowledge and a practical facility with geospatial systems.</td>
</tr>
<tr>
<td><strong>Transfer Information:</strong> Since four-year colleges can vary their course and GPA requirements, please consult a counselor or academic advisor regarding specific requirements and course selection.</td>
</tr>
<tr>
<td><strong>Preparation:</strong> 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.</td>
</tr>
</tbody>
</table>

#### Two Years Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>GIS 101 Intro. to Geospatial Technology I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I or higher-level mathematics course</td>
<td>3</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>GIS 200 Geographical Information Systems I</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts or CSC 110 Intro. to Computing</td>
<td>3</td>
</tr>
<tr>
<td>MTH 152 Mathematics for the Liberal Arts II or higher-level mathematics course</td>
<td>3</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>GIS 200 Geographical Information Systems I</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts or CSC 110 Intro. to Computing</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I or higher-level mathematics course</td>
<td>3</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
</tr>
<tr>
<td>4th Semester</td>
<td></td>
</tr>
<tr>
<td>ENG 200-Level Literature Elective</td>
<td>3</td>
</tr>
<tr>
<td>GIS 203 Cartography for GIS</td>
<td>3</td>
</tr>
<tr>
<td>GIS 205 GIS 3-Dimensional Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SOC Elective</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

**Total credits for the A.S. Degree in Social Sciences with a Specialization in Geospatial = 61**
Many universities require MTH 151 or higher while others require MTH 163 or MTH 166 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 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

See biology, chemistry (excluding CHM 101–102), ENV 121–122, physics, geology, or natural science courses with a lab component, listed under General Education Electives. Some four-year colleges require a two-semester sequence. Consult GIS faculty advisor for details.

May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

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 transfer institution. ART 101, ART 102, or CST 130 is recommended.

See HIS courses listed under the social/behavioral science courses under General Education Electives. HIS 111 or HIS 112 is recommended.

See social/behavioral science courses listed under General Education Electives.

Social Sciences: Political Science Specialization
Associate of Science Degree

Offered through AL, ELI, L0

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 Credits

1st Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HIS Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I or higher-level mathematics course</td>
<td>3</td>
</tr>
<tr>
<td>PLS 120 Intro. to Political Science</td>
<td>3</td>
</tr>
<tr>
<td>PLS 135 American National Politics or PLS 241 International Relations I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>MTH 152 Mathematics for the Liberal Arts II or higher-level mathematics course</td>
<td>3</td>
</tr>
<tr>
<td>PLS</td>
<td>4</td>
</tr>
<tr>
<td>PLS 136 State and Local Politics or see Footnote 3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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</table>

3rd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CST 110 Intro. to Speech Communication or CST 126 Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>CST 229 Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>Physical or Life Science Elective w/Lab</td>
<td>4</td>
</tr>
<tr>
<td>PLS Elective</td>
<td>3</td>
</tr>
<tr>
<td>SOC Elective</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

4th Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>General Education Elective</td>
<td>3</td>
</tr>
<tr>
<td>PLS Elective</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.S. Degree in Social Sciences with a Specialization in Political Science = 61

1 See HIS courses listed under social/behavioral sciences under General Education Electives. HIS 101–102 is recommended.

Many universities require MTH 151 or higher while others require MTH 163 or MTH 166 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 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.

Students who take PLS 135 must also take PLS 136. Students who take PLS 241 must also choose from one of the following courses: PLS 140, PLS 200, PLS 242, PLS 250, PLS 255, or SSC 115.

May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

See HIS courses listed under social/behavioral sciences under General Education Electives. HIS 101–102 is recommended.

May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

See humanities/fine arts courses listed under General Education Electives. Electives should be selected with advice of a counselor or academic advisor according to the requirements of the transfer institution.

See the sociology requirement at many universities. PLS electives include any of the following: PLS 135, PLS 136, PLS 140, PLS 200, PLS 211, PLS 212, PLS 220, PLS 225, PLS 230, PLS 241, PLS 242, PLS 250, PLS 255, and SSC 115.

May substitute the SDV 101 Orientation section related to this program.

Students who take PLS 241 must also choose from one of the following courses: PLS 140, PLS 200, PLS 242, PLS 250, PLS 255, or SSC 115.

Social Sciences: Psychology Specialization
Associate of Science Degree

Offered through AL, AN, L0, MA, W0

Purpose: This curriculum is designed for students who plan to transfer to a college or university for a Bachelor of Science in Psychology.

Transfer Information: Students are advised to work closely with the faculty and counseling staff for
Programs of Study

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>BIO 101 General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 181 Finite Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>PSY 201 Intro. to Psychology I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

| 2nd Semester |
| BIO 102 General Biology II | 4 |
| ENG 112 College Composition II | 3 |
| ITE 115 Intro. to Computer Applications and Concepts | 3 |
| MTH 182 Finite Mathematics II | 3 |
| PSY 202 Intro. to Psychology II | 3 |
| Total | 16 |

| 3rd Semester |
| CST 110 Intro. to Communication or CST 126 Interpersonal Communication | 3 |
| ENG 200-Level Literature Elective | 3 |
| HIS Elective | 3 |
| PSY 211 Research Methodology for Behavioral Sciences | 3 |
| PSY Any 200-level Psychology course | 3 |
| Total | 15 |

| 4th Semester |
| ENG 200-Level Literature Elective | 3 |
| Humanities/Fine Arts Elective | 3 |
| PSY 213 Statistics for Behavioral Sciences | 3 |
| PSY Any 200-level Psychology course | 3 |
| Social Science Elective | 3 |
| Total | 15 |

Total credits for the A.S. Degree in Social Sciences with a Specialization in Psychology = 61

1 May substitute two mathematics courses from the following: MTH 173 and MTH 174, MTH 241, MTH 270, MTH 271 and MTH 272, MTH 273, and MTH 274. Credit will not be awarded for both MTH 174 and MTH 272. Seek advice of a counselor or academic advisor to meet requirements of other transfer institutions.

2 Students cannot take the one semester version course and combine with the two semester version course. PSY 201 and PSY 202 cannot be combined with PSY 200, PSY 231 and PSY 232 cannot be combined with PSY 230, and PSY 231 cannot be combined with PSY 235.

3 May substitute the SDV 101 Orientation section related to this program.

4 May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.

5 Psychology majors may choose any two 200-level psychology courses (with the exception of PSY 200) to fulfill this requirement.

6 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.

7 See social/behavioral science courses listed under General Education Electives.

Social Sciences: Teacher Education Specialization

Associate of Science Degree

Offered through AL, AN, LO, MA, WO, ELI

Purpose: This curriculum prepares students to transfer to a four-year college or university teacher preparation program. It is specifically designed for students who plan to seek endorsement and licensure as teachers in PK-3, PK-6, middle school, or special education.

Transfer Information: Several senior institutions in Virginia helped develop this curriculum and have agreed to accept all courses required by it. Some of these universities will guarantee admission to graduates of this program who have a cumulative GPA of at least 2.5, earn at least a “C” in all English courses, and pass the Praxis core exam. Students are strongly encouraged to take the Praxis core exam...
shortly after completing their English composition and math requirements. The student, working directly with a NOVA Teacher Education Specialization advisor/counselor, must complete a transfer letter of agreement.

Two Years

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 101 General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HIS 121 United States History I</td>
<td>3</td>
</tr>
<tr>
<td>HLT 110 Concepts of Personal and Community Health</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151 Mathematics for the Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 101 Orientation to Education</td>
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</tr>
<tr>
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</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 102 General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
</tr>
<tr>
<td>HIS 122 United States History II</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Intro. to Computer Applications and Concepts or CSC 110 Intro. to Computing</td>
<td>3</td>
</tr>
<tr>
<td>MTH 152 Mathematics for the Liberal Arts II</td>
<td>3</td>
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<tr>
<td>Total</td>
<td>16</td>
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</table>

<table>
<thead>
<tr>
<th>3rd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>ECO 201 Principles of Macroeconomics or ECO 202 Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>EDU 200 Intro. to Teaching as a Profession</td>
<td>3</td>
</tr>
<tr>
<td>ENG 200-Level Literature Elective</td>
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</tr>
<tr>
<td>General Elective</td>
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</table>

<table>
<thead>
<tr>
<th>4th Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO 210 People and the Land: Intro. to Cultural Geography</td>
<td>3</td>
</tr>
<tr>
<td>HIS 101 History of Western Civilization I or HIS 102 History of Western Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>PLS 135 American National Politics</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

Total credits for the A.S. Degree in Social Sciences with a Specialization in Teacher Education = 63

Substance Abuse Rehabilitation Counselor Certificate

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.

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I or CST 110 Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>HMS 121 Basic Counseling Skills I</td>
<td>3</td>
</tr>
<tr>
<td>HMS 141 Group Dynamics I</td>
<td>3</td>
</tr>
<tr>
<td>HMS 251 Substance Abuse I</td>
<td>3</td>
</tr>
<tr>
<td>HMS 266 Counseling Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 232 Life Span Human Development II</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMS 142 Group Dynamics II</td>
<td>3</td>
</tr>
<tr>
<td>HMS 145 Effects of Psychoactive Drugs</td>
<td>3</td>
</tr>
<tr>
<td>HMS 252 Substance Abuse II</td>
<td>3</td>
</tr>
<tr>
<td>HMS 258 Case Management and Substance Abuse</td>
<td>3</td>
</tr>
<tr>
<td>HMS 290 Coordinated Internship</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
</tr>
</tbody>
</table>

Total credits for the Substance Abuse Rehabilitation Counselor Certificate = 37

1. 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 173 and MTH 271. Credit will not be awarded for both MTH 174 and MTH 272.
2. May substitute ENG 125 with the advice of a counselor or academic advisor according to the requirements of the transfer institution.
3. Select from ENG 241, ENG 242, ENG 243, ENG 244, ENG 251, or ENG 252.
4. Select based upon the requirements of the senior institution to which the student plans to transfer. Courses must be chosen from the list of approved electives under General Education Electives. Examples of courses recommended by some of the universities that helped develop this curriculum include ECO 201 or ECO 202, foreign language, PSY 230, REL 231, or REL 232.
5. Choose from ART 101, ART 102, ART 105, MUS 121, or MUS 122.

Teacher Education Specialization A.S.

See Social Sciences A.S.

Theatre Career Studies Certificate

See Liberal Arts

Veterinary Technology

Associate of Applied Science Degree

Offered through LO

**Purpose:** The curriculum will prepare the student for a career as a veterinary technician. Satisfactory completion of the curriculum will make the student eligible to take the national board examination (VTNE).
toward certification as a licensed veterinary technician. The curriculum is broad and includes both practical and theoretical coursework which prepares the student for employment in various areas of animal healthcare including veterinary hospitals and research and diagnostic laboratories. Students have two options for course delivery—a traditional, daytime option that offers full-time, on-site instruction or a part-time distance education program delivered through online lessons with on-site practical lab assessments.

Admission Requirements: The Veterinary Technology Program accepts an academically competitive cohort of students each year to both the on-site program and the online program. To be admitted to the Veterinary Technology Program, applicants must meet all of the following requirements:

1. Apply to NOVA for general admissions online and obtain a student ID number.
2. Apply separately and be admitted to NOVA in the Veterinary Technology Program at the Loudoun Campus.
3. Be 18 years of age or older at time of application.
4. Achieve satisfactory scores on NOVA placement tests for English and mathematics.
5. Complete one unit of high school-level algebra or equivalent.
6. Complete at least one unit of high school biology with a lab.
7. Complete at least one unit of high school chemistry with a lab.
8. Demonstrate past academic achievement in the above course requirements with a grade of “C” (70 percent) or better. Deficiencies may be corrected in the College’s developmental program before applying to the Veterinary Technology Program.
9. A student may elect to take general education and program-specific general elective courses (MTH 126, CHM 101, CHM 111 or CHM 121) listed in the program’s curriculum prior to seeking acceptance to the Veterinary Technology Program. These courses may be taken at any of the College’s campuses, including online through the Extended Learning Institute (ELI), or the requirement may be fulfilled using previous college credits transferred to NOVA from other accredited postsecondary institutions. Students must earn a cumulative grade point average (GPA) of 2.0 or better in all required general education and program-specific general elective courses taken before admission to the Veterinary Technology Program.
10. Students seeking admission to the Veterinary Technology program must indicate if they are applying to the traditional on-site program or the part-time online program. Applicants must arrange to have an in-person interview with the program head for the online program PRIOR to entering the program.
11. Students must include two (2) official copies of all high school and college transcripts in sealed, unopened envelopes to the Loudoun Campus Veterinary Technology Program as part of their application packet. Please DO NOT send transcripts separately. See the Veterinary Technology Program website for more details on downloading a current application packet: www.nvcc.edu/loudoun/divisions/natural/vettech/index.html
12. The following individuals will be given priority in the Veterinary Technology Program’s acceptance process: students currently working in the medical field, Virginia residents, students who have completed all general education courses, and students with a GPA of 3.0 or higher.

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 required continuing education (CE) seminars. 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 and CE seminars. 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 students may be employed in clinical veterinary medical facilities outside regular education hours provided that such work does not interfere with their academic responsibilities.

Veterinary Technology Program Continuation Requirements:

1. All courses in the program major must be completed with a grade of “C” or better before taking the next course in the sequence,
Students must currently work at an approved veterinary facility for an average minimum of 20 hours per week. This facility is expected to be registered with the Board of Veterinary Medicine.

2. Students must be supervised by a licensed veterinarian where they work. The student, the supervising veterinarian (also referred to as the mentor), and Program faculty complete the Memoranda of Agreement that outline the goals of the Program and expectations of each participant. The mentor has the option of appointing an assistant mentor, who must be another licensed veterinarian or licensed veterinary technician, to assist in supervising the student during any clinical assignments.

3. Students must physically attend scheduled lab sessions and practical exams at the Loudoun Campus at least two or three times per semester.

4. The online program requires three years (eight consecutive semesters) for completion. Students will enroll in two or three veterinary technology-specific courses per semester for eight semesters, including two summer sessions. Classes must be taken in the sequence laid out on the Veterinary Technology website at www.nvcc.edu/loudoun/divisions/natural/vettech/online/index.html.

The following curricular layout shows the sequence of courses for the on-campus program.

<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
</tr>
<tr>
<td>BIO 195 Anatomy and Physiology of Domestic Animals</td>
<td>4</td>
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<tr>
<td>CHM Elective</td>
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</tr>
<tr>
<td>MTH 126 Mathematics for Allied Health</td>
<td>2</td>
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<tr>
<td>SDV 101 Orientation to Veterinary Technology</td>
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<tr>
<td>VET 105 Intro. to Veterinary Technology</td>
<td>3</td>
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<tr>
<td>VET 121 Clinical Practices I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Special curriculum admission requirements (#1–12 above) and Veterinary Technology Program continuation requirements (#1–5 above) also pertain to the online program. Details for additional forms for Memo of Agreement and online program application checklist are available at www.nvcc.edu/loudoun/divisions/natural/vettech/online/index.html.
2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>VET 116</td>
<td>Animal Breeds and Behavior</td>
<td>3</td>
</tr>
<tr>
<td>VET 131</td>
<td>Clinical Pathology I</td>
<td>3</td>
</tr>
<tr>
<td>VET 135</td>
<td>Anesthesia of Domestic Animals</td>
<td>2</td>
</tr>
<tr>
<td>VET 214</td>
<td>Animal Dentistry</td>
<td>2</td>
</tr>
<tr>
<td>VET 216</td>
<td>Animal Pharmacology</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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</table>

3rd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>VET 211</td>
<td>Animal Diseases I</td>
<td>2</td>
</tr>
<tr>
<td>VET 290</td>
<td>A Preceptorship in Veterinary Technology</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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4th Semester

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>CST 110</td>
<td>Intro. to Communication</td>
<td>3</td>
</tr>
<tr>
<td>VET 122</td>
<td>Clinical Practices II</td>
<td>3</td>
</tr>
<tr>
<td>VET 132</td>
<td>Clinical Pathology II</td>
<td>3</td>
</tr>
<tr>
<td>VET 212</td>
<td>Animal Diseases II</td>
<td>2</td>
</tr>
<tr>
<td>VET 221</td>
<td>Advanced Clinical Practices III</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>15</strong></td>
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5th Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>PED 116</td>
<td>Lifetime Fitness and Wellness</td>
<td>1</td>
</tr>
<tr>
<td>VET 133</td>
<td>Clinical Pathology III</td>
<td>3</td>
</tr>
<tr>
<td>VET 217</td>
<td>Intro. to Laboratory, Zoo, and Wildlife Medicine</td>
<td>2</td>
</tr>
<tr>
<td>VET 235</td>
<td>Animal Hospital Management/Client Relations</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Veterinary Technology = 68

1. Students who have completed VET 111 do not need to take BIO 195.
2. Choose CHM 101, CHM 121, CHM 111, or other CHM courses approved by a student’s academic advisor.
3. Students in the online program may substitute with SDV 100.
4. May substitute CST 126.
5. See social/behavioral science courses listed under General Education Electives.
6. See humanities/fine arts courses listed under General Education Electives.

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**Web Design and Development Career Studies Certificate**

See Information Technology

**Web Design Specialist Career Studies Certificate**

See Communication Design

**Welding: Basic Techniques Career Studies Certificate**

*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.

<table>
<thead>
<tr>
<th>1st Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG/CST Elective</td>
<td>3</td>
</tr>
<tr>
<td>WEL 120 Introduction to Welding</td>
<td>2</td>
</tr>
<tr>
<td>WEL 121 Arc Welding</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

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 115, CST 126, CST 227, or CST 229.
The College offers numerous degrees and career studies certificate programs at the Medical Education Campus for those who wish to pursue careers in the health professions. Many of the programs are accredited by external accrediting agencies. Each program is designed with the advice of community health professionals to include a balance of technical and general education courses. The purpose of the Allied Health and Nursing Programs is to prepare caring, competent, adaptable, reflective, service-oriented healthcare professionals who can identify and use a variety of resources and technologies to function successfully in diverse and evolving healthcare practice environments.

Students are advised that NOVA’s Allied Health and Nursing Programs have been designed to prepare students for direct entry to health careers. However, programs may have articulated understandings with four-year colleges and universities that facilitate the partial or complete transfer of NOVA coursework to four-year degree programs. Students who wish to transfer to a baccalaureate program should consult the appropriate assistant dean early in the program of study.

Allied Health and Nursing Programs are based at the Medical Education Campus. Some core courses are available online or at locations other than the Medical Education Campus. Students may take general education support courses at any of the six College campuses. A prior college degree will not automatically waive English, math, science, and computer courses that may be required by a specific Allied Health program. These courses must be taken or the equivalent courses transferred in from an accredited U.S. institution, and must meet the specified grade requirement for the desired program. Science courses must have been taken within the past 10 years to be accepted. For more information on transferring courses, please see the current Credit for Prior Learning Manual.

Because of limited laboratory, classroom, and/or clinical space, certain Allied Health and Nursing Programs have limited enrollment. Acceptance to NOVA does not constitute acceptance into a specific Allied Health or Nursing Program. External accrediting and licensing agencies may specify program requirements.

The College maintains clinical affiliate agreements with a large number of healthcare facilities and community-based agencies for clinical instruction. These regulate the conditions under which NOVA Allied Health and Nursing students may obtain required clinical experience.

Each program has specific admission, program continuation, and program completion criteria. These are described under each program. Due to the unique responsibilities involved in health careers, the College reserves the right to require that any student who is unsuited for any Allied Health or Nursing Program be withdrawn and guided into a more suitable field of study.

Admission into an Allied Health or Nursing Program begins with application to the College, followed by attendance or review of an online information session. Please see the desired program for admission requirements and policies. Applications cannot be submitted until all requirements are completed. Applications must be submitted during the application period for each program. Please refer to the information session for the program deadline.

Students are accepted with priority given to
1. legal residents domiciled in the cities and counties supporting the College,
2. other Virginia legal residents,
3. out-of-state applicants, and
4. international students requiring an I-20.

For healthcare programs, “counties supporting the College” (Category 1 above) may include those in which clinical affiliates have contractual agreements with NOVA or students from other VCCS service areas whose community college does not offer the specific program.

An annual criminal background check and drug screening will be required as clinical affiliates mandate this requirement in affiliation agreements. Any student who does not pass the background check or drug screening must resolve this issue directly with the agency that conducted the search. Unresolved issues presented in the criminal background checks or drug screenings may result in denial of program placement or dismissal from the program. Such dismissed students will not be allowed admission in any other healthcare-related program.

Generally, the criteria to pass the background check are
- No felony convictions
- No misdemeanor convictions (except a single alcohol-related misdemeanor conviction more than five years ago, which may be waived)
General Information and Admission Requirements for Allied Health and Nursing Programs

The following chart lists the Allied Health and Nursing Programs and shows the program type and number of credits required for graduation from each.

| Allied Health and Nursing Degree and Career Studies Certificate (CSC) Programs |
|---|---|---|
| Program Name | Program Type | Credits |
| *Dental Hygiene | A.A.S. | 72 |
| *Diagnostic Medical Sonography | A.A.S. | 68 |
| Emergency Medical Services | A.A.S. | 67 |
| *Health Information Management | A.A.S. | 72 |
| *Medical Lab Technology | A.A.S. | 69 |
| *Nursing | A.A.S. | 69 |
| *Occupational Therapy Assistant | A.A.S. | 70 |
| *Physical Therapy Assistant | A.A.S. | 69 |
| *Radiography | A.A.S. | 70 |
| *Respiratory Therapy | A.A.S. | 71 |
| Clinical Data Coding | CSC | 29 |
| Dental Assisting | Certificate | 43 |
| Emergency Medical Technician–Basic | CSC | 12 |
| Emergency Medical Technician–Intermediate | CSC | 24 |
| Health Information Technology | CSC | 23 |
| Paramedic | CSC | 18 |
| Medical Transcription | CSC | 24 |
| Phlebotomy | CSC | 11 |

*These programs require students to successfully complete prerequisite courses prior to admission. See program description for specific details.

Responsibilities of Allied Health and Nursing Students

- To prepare students for the high ethical standards of the health professions, the College expects absolute academic integrity both in the classroom and in clinical practice. Therefore, cheating, attempting to cheat, plagiarizing, lying, stealing academic work which includes secured tests or related materials, submitting papers purchased or written by others, or failing to report an occurrence of academic dishonesty or any violation of this honor code may subject the student to the College’s disciplinary procedures as defined in the NOVA Student Handbook.
- Students in Allied Health and Nursing Programs incur a variety of expenses in addition to College tuition and fees. These include, but are not limited to, the cost of uniforms, accessories, and travel to clinical assignments. Students are also responsible for state licensure and national accreditation application and testing fees.
- In certain programs the College reserves the right to require students to obtain and maintain at their own expense liability/malpractice insurance with a carrier authorized to transact such business in the Commonwealth of Virginia. Whether or not insurance appropriate to the program is required, students are encouraged to carry such insurance on their own.
- A strict dress code is required in the clinical setting. Students may be dismissed if they fail to comply with this dress code.
- Students are required to complete learning experiences at local hospitals and/or other community-based agencies. Students may be required to attend day, evening, and/or weekend clinical assignments.
- Students must provide their own transportation to clinical assignments. Strict attendance is required at clinical sites.
- Students may utilize the resources of the assigned clinical affiliate for emergency medical treatment for injuries or illness that may occur during the time period when students are assigned to the healthcare facility. The student is responsible for any expenses incurred for this treatment.
- Students must comply with all clinical agreement protocols including immunization requirements, drug screening, background checks, and personal health insurance.
- Students must keep their CPR certifications and required immunizations current each year they are enrolled in an Allied Health or Nursing Program.
- 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. Allied Health and Nursing students may be employed in clinical facilities outside regular education hours provided that such work does not interfere with academic responsibilities. The work must be non-compulsory.
Continuation Requirements for Allied Health and Nursing Students
• To pass a course students must successfully complete both the didactic (classroom) and the clinical/lab requirements.
• Program faculty and clinical affiliates reserve the right to recommend, through appropriate channels, withdrawal of any student who exhibits unsafe performance or non-adherence to prescribed clinical affiliate policies and procedures.
• Students must be able to perform all essential functions of the program in which they are enrolled.

For Allied Health Students Only:
• Each course in the program major must be completed with a grade of “C” or better before taking the next course in the sequence and to satisfy graduation requirements, unless otherwise approved by the program assistant dean.
• All courses in the major must be taken in the sequence prescribed in the NOVA Catalog, unless otherwise approved by the program assistant dean.

Program Reenrollment Requirements for Allied Health and Nursing Students
If a student is dismissed, the student is no longer eligible for readmission. Any student who has voluntarily withdrawn or has been withdrawn due to unsatisfactory academic and/or clinical performance must see the Program Assistant Dean within 10 business days for an exit interview or to discuss possible options for continuing in the program. Students withdrawn for academic and/or clinical conduct issues will need to refer to the NOVA Student Handbook at http://www.nvcc.edu/students/handbook.

Medical Education – Allied Health and Nursing Curricula

Dental Hygiene
Associate of Applied Science Degree
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 Allied Health 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 NAS 161–162 Health Science I–II with a grade of “B” or higher prior to being admitted to the program.
• Pass ENG 111 College Composition I 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.

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 assistant dean 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 www.ada.org/100.aspx.
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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>NAS 161</td>
<td>Health Science I</td>
<td>4</td>
</tr>
<tr>
<td>NAS 162</td>
<td>Health Science II</td>
<td>4</td>
</tr>
<tr>
<td>SDV 101</td>
<td>Orientation to Healthcare</td>
<td>1</td>
</tr>
<tr>
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<td>12</td>
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Two Years

1st Semester

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DNH 111</td>
<td>Oral Anatomy</td>
<td>2</td>
</tr>
<tr>
<td>DNH 115</td>
<td>Histology/Head and Neck Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>DNH 130</td>
<td>Oral Radiography for the Dental Hygienist</td>
<td>3</td>
</tr>
<tr>
<td>DNH 141</td>
<td>Dental Hygiene I</td>
<td>5</td>
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2nd Semester

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNH 120</td>
<td>Management of Emergencies</td>
<td>2</td>
</tr>
<tr>
<td>DNH 142</td>
<td>Dental Hygiene II</td>
<td>5</td>
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<tr>
<td>DNH 145</td>
<td>General and Oral Pathology</td>
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<td>DNH 146</td>
<td>Periodontics for the Dental Hygienist</td>
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<td>Pharmacology</td>
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3rd Semester

<table>
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<tr>
<td>DNH 143</td>
<td>Dental Hygiene III</td>
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<td>DNH 214</td>
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4th Semester

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<tr>
<td>DNH 150</td>
<td>Nutrition</td>
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<td>DNH 226</td>
<td>Public Health Dental Hygiene I</td>
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<td>DNH 235</td>
<td>Management of Pain and Anxiety in the Dental Office</td>
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<td>DNH 244</td>
<td>Dental Hygiene IV</td>
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<td>PED 116</td>
<td>Lifetime Fitness and Wellness</td>
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<td>PSY 201</td>
<td>Introduction to Psychology I</td>
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5th Semester

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<tr>
<td>CST 229</td>
<td>Intercultural Communication</td>
<td>3</td>
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<tr>
<td>DNH 227</td>
<td>Public Health Dental Hygiene II</td>
<td>1</td>
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<tr>
<td>DNH 230</td>
<td>Office Practice and Ethics</td>
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<tr>
<td>DNH 245</td>
<td>Dental Hygiene V</td>
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<td>___</td>
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Total credits for the A.A.S. Degree in Dental Hygiene = 72 (includes 12 prerequisite credits)

1 Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum.

2 See humanities/fine arts courses listed under General Education Electives.
Dental Assisting
Certificate
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.
• Pass Algebra I or appropriate placement scores.
• Pass ENG 111 College Composition I, NAS 150 Human Biology, and SDV 101 Orientation to Health Care with a grade of “B” or higher prior to admission into the program.
• Pass NAS 150 Human Biology with a “B” or higher prior to admission into the program.
• Be willing to repeat courses or to complete evaluative testing for credits earned more than ten years ago.

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: www.ada.org/100.aspx.

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:

<table>
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<tr>
<th>Prerequisites</th>
<th>Credits</th>
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<tr>
<td>ENG 111 College Composition I</td>
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<tr>
<td>NAS 150 Human Biology</td>
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<td>SDV 101 Orientation to Healthcare</td>
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One Year Credits

<table>
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<tr>
<td>DNA 100 Intro. to Oral Health Professions</td>
<td>1</td>
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<tr>
<td>DNA 108 Dental Science</td>
<td>3</td>
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<tr>
<td>DNA 110 Dental Materials</td>
<td>3</td>
</tr>
<tr>
<td>DNA 113 Chairside Assisting I</td>
<td>3</td>
</tr>
<tr>
<td>DNA 134 Dental Radiation and Practicum</td>
<td>3</td>
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<td>PSY 201 Introduction to Psychology</td>
<td>3</td>
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</table>

2nd Semester

| 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

| DNA 190 Coordinated Internship | 3 |
| **Total** | **3** |

Total credits for the Certificate in Dental Assisting = 43 (Includes 8 prerequisite credits)

Diagnostic Medical Sonography
Associate of Applied Science Degree
Offered through MEC

Purpose: 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 areas of the 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 state-of-the-art scanning laboratory at the Medical Education Campus in Springfield, Virginia. Clinical experience is acquired at numerous area hospitals and private medical facility affiliates.

Upon successful completion of the degree requirements, the student will be eligible to apply to take the American Registry of Diagnostic Medical Sonography examination 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.

Specializations in Echocardiography and Vascular Sonography have been approved but are not being offered at this time.

**Admission Requirements:** Admission to the Diagnostic Medical Sonography program is competitive. Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- Review an online Diagnostic Medical Sonography information session at [www.nvcc.edu/medical/divisions/allied/sonography.html](http://www.nvcc.edu/medical/divisions/allied/sonography.html).
- Pass the DMS Computer Competency Exam with a grade of 70% or higher or pass HIM 130 or ITE 115.
- Complete BIO 141 and BIO 142 Anatomy and Physiology I–II with a “B” or higher.
- Complete DMS 100 Orientation to the Sonography Profession with a “B” or higher.
- Complete ENG 111 College Composition I with a grade of “B” or higher.
- Complete MTH 151 Mathematics for the Liberal Arts I or higher-level math with a “B” or higher.
- Complete PHY 195 or PHY 101 Introduction to Physics I with a “B” or higher.
- Complete SDV 101 Orientation to Healthcare with a “B” or higher.
- Complete all courses used to satisfy the science requirements within 10 years of the semester in which verification of the DMS admission process is completed.
- Complete HLT 141, PED 116, PSY 200 (or PSY 201–202) and the Humanities Elective with a “C” or higher.
- Have a minimum 2.5 cumulative GPA.

**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 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.

ARDMS conducts a “preapplication 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. Individuals may obtain additional information regarding the preapplication process along with the appropriate forms by visiting [www.ardms.org](http://www.ardms.org).

### Prerequisites:

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIO 141 Human Anatomy and Physiology I</td>
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<tr>
<td>BIO 142 Human Anatomy and Physiology II</td>
<td>4</td>
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<tr>
<td>DMS 100 Orientation to the Sonography Profession</td>
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<tr>
<td>ENG 111 College Composition I</td>
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<td>HLT 141 Intro. to Medical Terminology</td>
<td>1</td>
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<td>MTH 151 Mathematics for Liberal Arts I</td>
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<td>PED 116 Lifetime Fitness and Wellness</td>
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</tr>
<tr>
<td>PHY 195 Topics In: Acoustic Physics</td>
<td>2</td>
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<tr>
<td>PSY 200 Principles of Psychology</td>
<td>3</td>
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<td>SDV 101 Orientation to Healthcare</td>
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### Two Years

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<tr>
<td>DMS 190 Coordinated Internship</td>
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<tr>
<td>DMS 206 Intro. to Sonography</td>
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<tr>
<td>DMS 207 Sectional Anatomy</td>
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<td>DMS 208 Ultrasound Physics and Instrumentation I</td>
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<td>DMS 217 Sectional Anatomy Laboratory</td>
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<td>DMS 218 Ultrasound Physics and Instrumentation Lab I</td>
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<td>DMS 196 On-site Training in General Sonography</td>
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<td>DMS 209 Ultrasound Physics and Instrumentation II</td>
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<tr>
<td>DMS 211 Abdominal Sonography</td>
<td>4</td>
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<tr>
<td>DMS 212 Obstetrical and Gynecological Sonography</td>
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<td>DMS 219 Ultrasound Physics and Instrumentation Lab II</td>
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<tr>
<td>DMS 232 Clinical Education II</td>
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<td>DMS 243 Breast Sonography</td>
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<td>DMS 241 Advanced Abdominal Sonography</td>
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<td>DMS 242 Advanced Obstetrical and Gynecological Sonography</td>
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<td>DMS 290 Coordinated Internship</td>
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<td>DMS 299 Supervised Study</td>
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**Total credits for the A.A.S. Degree in Diagnostic Medical Sonography = 68 (includes 26 prerequisite credits)**

1. Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum.

2. Math 151 or higher.


4. See humanities/fine arts courses listed under General Education Electives.
Diagnostic Medical Sonography: Echocardiography Specialization
Associate of Applied Science Degree

Offered through MEC

This program has been approved for implementation at a later date. NOVA is not currently accepting students into this degree specialization.

Diagnostic Medical Sonography: Vascular Sonography Specialization
Associate of Applied Science Degree

Offered through MEC

This program has been approved for implementation at a later date. NOVA is not currently accepting students into this degree specialization.

Emergency Medical Services
Associate of Applied Science Degree

Offered through MEC

Purpose: The curriculum is designed to develop the competencies needed to prepare the student to be certified as a Nationally Registered Emergency Medical Technician–Intermediate and/or Paramedic.

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 Allied Health Programs.
- Attend a mandatory EMS department information session, held bi-monthly, or online. Check the website for dates: www.nvcc.edu/medical.
- Be 16 years of age for the EMT–Basic training (first semester); must be 18 years of age or older for EMT–Intermediate or 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.
- Be proficient in reading, writing, and speaking the English language, and attain satisfactory scores on the NOVA math and English placement assessments.
- 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 www.certifiedbackground.com, put in code “#OR21.” Bring the receipt to campus, to the EMS administrative assistant, or any EMS faculty member, for the drug screen form. Cost is approximately $100. This must be repeated annually.

Completion Requirements:
- Hold a current certification in CPR – Healthcare Provider. Must hold prior to first day of class and maintain throughout the time in the program.
- 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.
- Complete NAS 150 Human Biology or its equivalent with a grade of “C” or better prior to entry into second semester.

Special Program Completion Requirements: Students must successfully attain each certification level prior to continuing in the EMS sequence (EMT–Basic after first semester, EMT–Intermediate after third semester). Continuation to Paramedic Certification requires successful completion of EMT–Intermediate testing. After successful completion of the second year, the student is eligible for NREMT–Paramedic testing. Students entering program with prior certifications must attend an information session for specific course entry requirements.

Generally, EMS courses must be taken in sequence, but general studies courses may be taken in any order, and at any time. Exceptions to this policy are discussed in the monthly information sessions. All students continuing to Paramedic Certification are required to complete the A.A.S. degree requirements by their NREMT–P test date.

- 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.
• Students must receive a grade of “C” or higher in core EMS courses in order to be eligible for the National Registry certifying examinations.
• 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 Allied Health students.

Special Accreditation Status: The program is accredited by the Commission on the Accreditation of Allied Health Education Programs (CAAHEP) in cooperation with the Committee on Accreditation of Educational Programs for Emergency Medical Services Professions (CoAEMSP).

<table>
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<td>EMS 111 Emergency Medical Technician–Basic</td>
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<td>EMS 120 EMT–Basic Clinical</td>
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<td>ENG 111 College Composition I</td>
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<tr>
<td>NAS 150 Human Biology</td>
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<td>SDV 101 Orientation to Healthcare</td>
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2nd Semester

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<tr>
<td>EMS 151 Intro. to Advanced Life Support</td>
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<tr>
<td>EMS 153 Basic ECG Recognition</td>
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<td>EMS 157ALS—Trauma Care</td>
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<td>EMS 170 ALS Internship I (Clinical + Field)</td>
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<td>EMS 213 ALS Skills Development</td>
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3rd Semester

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<tr>
<td>EMS 155ALS—Medical Care</td>
<td>4</td>
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<td>EMS 159 EMS Special Populations</td>
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<td>EMS 172ALS Clinical Internship II</td>
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<td>EMS 173ALS Field Internship II</td>
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<td>EMS 201 EMS Professional Development</td>
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4th Semester

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<tr>
<td>EMS 205 Advanced Pathophysiology</td>
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<td>EMS 207 Advanced Patient Assessment</td>
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<td>EMS 242 ALS Clinical Internship III</td>
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5th Semester

<table>
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<tbody>
<tr>
<td>EMS 211 Operations</td>
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<td>EMS 216 Paramedic Review</td>
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<td>EMS 244ALS Clinical Internship IV</td>
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<td>EMS 151 Math for the Liberal Arts I</td>
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<td>Humanities Elective</td>
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Total credits for the A.A.S. Degree in Emergency Medical Services = 67

EMS-prefix courses must be taken in the sequence listed. General education courses may be taken in any order, but must be successfully completed, ensuring student eligibility for A.A.S. prior to NREMT–P testing, following the fifth semester.

1. NAS 150 Human Biology is the mandatory anatomy and physiology prerequisite to enter into the Advanced Life Support curriculum. This requirement can be met by any 4-credit anatomy and physiology course, such as BIO 141, NAS 161, or equivalent. However, if students take these courses, they must complete the sequence prior to graduation. Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum.

2. Orientation to Healthcare meets SDV requirement, which must be completed by the 16th credit. Any SDV course is acceptable for this requirement.

3. Students may substitute EMS 209 for HLT 250.

4. See social/behavioral sciences courses listed under General Education Electives.

5. Students are encouraged to take PHI 227.

Emergency Medical Services: Emergency Medical Technician–Basic
Career Studies Certificate

Offered through MEC

Purpose: This curriculum is designed to produce competent, entry-level Emergency Medical Technician–Basic (EMT–B) providers, who can function either in a volunteer or career fire and rescue department capacity, and service the community with basic life support care via the Emergency Medical Services (EMS) infrastructure. Upon successful completion of the program, students will be eligible for the Virginia Office of EMS written and practical certification exam. As certified EMT–B’s, under the direction of an operational medical director, they can then function with a rescue squad; fire and rescue department; emergency room; local, state or federal government agencies; ski patrol; humanitarian relief organizations; or other EMS-related roles.

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.

Admission Requirements: Prior to starting the program, applicants must do the following:
• Meet eligibility requirements as stipulated by the Virginia Office of Emergency Medical Services.
• Meet the College’s general admission requirements.
• Attend and/or watch the online version of the EMS program’s information session and adhere to the prerequisite requirements therein.

Accreditation: The EMS Program is accredited by the Commission on the Accreditation of Allied Health Education Programs (CAAHEP) in cooperation with the Committee on Accreditation of Educational Programs for Emergency Medical Services Professions (CoAEMSP).
**Physical Requirements:** An EMS provider is faced with many physical and psychological challenges. Please refer to the Virginia Office of EMS website for a more detailed functional job description to ensure being well suited for this challenging, yet rewarding pursuit: www.vdh.state.va.us/oems.

**Academic Requirements:** Students must complete each course with a grade of “C” or better in order to continue in the EMS sequence. Should any single grade of “D” or “F” be received, that course must be repeated before continuing in the EMS course sequence. Should a student receive two such grades, he/she will be removed for one year, and strongly encouraged to join a volunteer EMS rescue squad or get more committed to EMS in some other way. The student may then return to the EMS program, repeat the course in which a “D” or “F” was received and continue, as long as he/she passes the course on the second attempt. Should any course earn a “D” or “F” after a second attempt, the student will be removed permanently from the EMS program and counseled toward another allied health career.

**Clinical and Behavioral Requirements:** Clinical and internship courses are a critical component in any medical program, but the practice of medicine requires the strictest of safe and appropriate behaviors, when dealing with actual sick and injured patients. Students are always supervised by trained and certified professionals, and there is zero tolerance for inappropriate and/or unsafe actions or behaviors. Transportation to and from the multiple clinical and internship sites is solely the responsibility of the student. Punctuality and the wearing of appropriate uniforms are musts. Essential documentation of all patient care is also a critical element of each clinical and internship course, and grades in each course will be strongly based on each of these components.

**One Year Credits**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 111 Emergency Medical Technician: Basic</td>
<td>7</td>
</tr>
<tr>
<td>EMS 120 Emergency Medical Technician: Basic Clinical</td>
<td>1</td>
</tr>
<tr>
<td>NAS 150 Human Biology</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

**Emergency Medical Services:**

**Emergency Medical Technician–Intermediate**

Career Studies Certificate

**Offered through MEC**

**Purpose:** This curriculum is designed to produce competent, entry-level Emergency Medical Technician–Intermediate providers, who can function either in a volunteer or career fire and rescue department capacity, and service the community with advanced life support care via the Emergency Medical Services (EMS) infrastructure. Upon successful completion of the program, students will be eligible to sit for the National Registry Intermediate/99 written and practical certification exam. As certified EMT–Intermediate/99’s, under the direction of an operational medical director, graduates can then function as Advanced Life Support providers with a rescue squad, either in a volunteer or career capacity; fire and rescue department; emergency room; ambulance transport entity; local, state or federal government agency; ski patrol; humanitarian relief organization; or other EMS-related role.

**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.

**Admission Requirements:** Prior to starting the program, applicants must do the following:

- Meet eligibility requirements as stipulated by the Virginia Office of Emergency Medical Services.
- Meet the College’s general admission requirements.
- Attend and/or watch the online version of the EMS program’s information session and adhere to the prerequisite requirements therein, including the provision of:
  - current EMT–Basic certification
  - current healthcare provider certification
  - current health physical with appropriate immunizations
  - drug screening
  - current background check
- Have completed NAS 150 Human Biology with a grade of “C” or better.
Accreditation: The EMS Program is accredited by the Commission on the Accreditation of Allied Health Education Programs (CAAHEP) in cooperation with the Committee on Accreditation of Educational Programs for Emergency Medical Services Professions (CoAEMSP).

Physical Requirements: An EMS provider is faced with many physical and psychological challenges. Please refer to the Virginia Office of EMS website for a more detailed functional job description to ensure being well suited for this challenging, yet rewarding pursuit: www.vdh.state.va.us/oems.

Academic Requirements: Students must complete each course with a grade of “C” or better in order to continue in the EMS sequence. Should any single grade of “D” or “F” be received, that course must be repeated before continuing in the EMS course sequence. Should a student receive two such grades, he/she will be removed for one year, and strongly encouraged to join a volunteer EMS rescue squad or get more committed to EMS in some other way. The student may then return to the EMS program, repeat the courses in which a “D” or “F” was received and continue, as long as he/she passes them on second attempt. Should any course earn a “D” or “F” after a second attempt, the student will be removed permanently from the EMS program and counseled toward another allied health career.

Clinical and Behavioral Requirements: Clinical and internship courses are a critical component in any medical program, but the practice of medicine requires the strictest of safe and appropriate behaviors, when dealing with actual sick and injured patients. Students are always supervised by trained and certified professionals, and there is zero tolerance for inappropriate and/or unsafe actions or behaviors. Transportation to and from the multiple clinical and internship sites is solely the responsibility of the student. Punctuality and the wearing of appropriate uniforms are musts. Essential documentation of all patient care is also a critical element of each clinical and internship course, and grades in each course will be strongly based on each of these components.

One Year Credits
1st Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 151 Intro. to Advanced Life Support</td>
<td>4</td>
</tr>
<tr>
<td>EMS 153 Basic ECG Recognition</td>
<td>2</td>
</tr>
<tr>
<td>EMS 157 ALS: Trauma Care</td>
<td>3</td>
</tr>
<tr>
<td>EMS 170 ALS Internship I</td>
<td>1</td>
</tr>
<tr>
<td>EMS 213 ALS Skills Development</td>
<td>1</td>
</tr>
<tr>
<td>HLT 250 Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
</tr>
</tbody>
</table>

2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 155 ALS: Medical Care</td>
<td>4</td>
</tr>
<tr>
<td>EMS 159 ALS: Special Populations</td>
<td>3</td>
</tr>
<tr>
<td>EMS 172 ALS Clinical Internship II</td>
<td>2</td>
</tr>
<tr>
<td>EMS 173 ALS Field Internship II</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
</tr>
</tbody>
</table>

Total credits for the Emergency Medical Technician–Intermediate 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.

Students may substitute EMS 209 for HLT 250.

Special Notes:
- Since being a currently certified EMT–Basic is a mandatory prerequisite prior to enrollment in this program, those courses are not included.
- Courses must be taken in this sequence, and courses in each semester (except for Pharmacology) must be taken as corequisites.
- The EMS program offers all courses in both Fall and Spring Semesters, therefore program cohorts may start virtually year-round.
- A few EMS courses are offered during the Summer as well, but due to the compressed 12-week Summer Session, these courses do not constitute the “core” EMS curriculum, as a general rule.
- Credit for prior learning is available, at no cost, for students who have earned their EMT–Basic certification.

Emergency Medical Services: Paramedic Career Studies Certificate

Offered through MEC

Purpose: This curriculum is designed to produce competent, entry-level Paramedic providers, who can function either in a volunteer or career fire and rescue department capacity, and service the community with advanced life support care via the Emergency Medical Services (EMS) infrastructure. Upon successful completion of the program, students will be eligible for the National Registry Paramedic written and practical certification exam. As certified Paramedics, under the direction of an operational medical director, they can then function as Advanced Life Support providers with a volunteer or career rescue squad; fire and rescue department; emergency room; ambulance transport entity; local, state, or federal government agencies; ski patrol; humanitarian relief organizations; or other EMS-related roles.

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.
Admission Requirements: Prior to starting the program, applicants must do the following:

- Meet eligibility requirements as stipulated by the Virginia Office of Emergency Medical Services.
- Meet the College’s general admission requirements.
- Attend and/or watch the online version of the EMS program’s information session and adhere to the prerequisite requirements therein, including the provision of:
  > current EMT–Intermediate certification
  > current healthcare provider certification
  > current health physical with appropriate immunizations
  > drug screening
  > current background check
- Have completed NAS 150 Human Biology with a grade of “C” or better.
- Have completed HLT 250 Pharmacology with a grade of “C” or better.

Accreditation: The EMS Program is accredited by the Commission on the Accreditation of Allied Health Education Programs (CAAHEP) in cooperation with the Committee on Accreditation of Educational Programs for Emergency Medical Services Professions (CoAEMSP).

Physical Requirements: An EMS provider is faced with many physical and psychological challenges. Please refer to the Virginia Office of EMS website for a more detailed functional job description to ensure being well suited for this challenging, yet rewarding pursuit: www.vdh.state.va.us/oems.

Academic Requirements: Students must complete each course with a grade of “C” or better in order to continue in the EMS sequence. Should any single grade of “D” or “F” be received, that course must be repeated before continuing in the EMS course sequence. Should a student receive two such grades, he/she will be removed for one year, and strongly encouraged to join a volunteer EMS rescue squad or get more committed to EMS in some other way. The student may then return to the EMS program, repeat the courses in which a “D” or “F” was earned and continue, as long as he/she passes them on second attempt. Should any course earn a “D” or “F” after a second attempt, the student will be removed permanently from the EMS program and counseled toward another allied health career.

Clinical and Behavioral Requirements: Clinical and internship courses are a critical component in any medical program, but the practice of medicine requires the strictest of safe and appropriate behaviors, when dealing with actual sick and injured patients. Students are always supervised by trained and certified professionals, and there is zero tolerance for inappropriate and/or unsafe actions or behaviors. Transportation to and from the multiple clinical and internship sites is solely the responsibility of the student. Punctuality and the wearing of appropriate uniforms are musts. Essential documentation of all patient care is also a critical element of each clinical and internship course, and grades in each course will be strongly based on each of these components.

### One Year Credits

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>EMS 201</td>
<td>EMS Professional Development</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EMS 205</td>
<td>Advanced Pathophysiology</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>EMS 207</td>
<td>Advanced Patient Assessment</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EMS 242</td>
<td>ALS Clinical Internship III</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>EMS 243</td>
<td>ALS Field Internship III</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Semester</td>
<td>EMS 211</td>
<td>Operations</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>EMS 216</td>
<td>Paramedic Review</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>EMS 244</td>
<td>ALS Clinical Internship IV</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>EMS 245</td>
<td>ALS Field Internship IV</td>
<td>1</td>
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<td></td>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

Total credits for the Paramedic 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.

Special Notes:

- Courses must be taken in this sequence, and must be taken together as corequisites within a given semester.
- The EMS program offers all courses in both Fall and Spring Semesters, therefore program cohorts may start virtually year-round.
- A small contingent of EMS courses is also offered during the Summer, but due to the compressed 12-week Summer Session, these courses do not constitute the “core” EMS curriculum, as a general rule.
- Credit for prior learning is available, at no cost, for students who have earned their EMT–Basic and Intermediate certifications.

**Health Information Management**

Associate of Applied Science Degree

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.

Admission Requirements: Applicants must do the following:

- Comply with all general admission requirements for Allied Health Programs.
- Complete the prerequisite courses with a grade of "C" or higher in each course.
- Complete the Health Information Management online information session at www.nvcc.edu/medical/divisions/allied/him.html.
- Have satisfactory scores on the NOVA placement test to qualify for MTH 151 or higher or completion of unit 5 in an MTT course, and ENG 111.
- 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.

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 two 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:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 141 Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>CST 229 Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HIM 111 Medical Terminology</td>
<td>3</td>
</tr>
<tr>
<td>SDV 101 Orientation to Healthcare</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

Two Years  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 142 Human Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>HIM 110 Intro. to Human Pathology</td>
<td>3</td>
</tr>
<tr>
<td>HIM 130 Healthcare Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>HIM 141 Fundamentals of Health Information Systems I</td>
<td>3</td>
</tr>
<tr>
<td>PED 116 Lifetime Fitness and Wellness I</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

1st Semester  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM 142 Fundamentals of Health Information Systems II</td>
<td>3</td>
</tr>
<tr>
<td>HIM 220 Health Statistics</td>
<td>3</td>
</tr>
<tr>
<td>HIM 226 Legal Aspects of Health Record Documentation</td>
<td>2</td>
</tr>
<tr>
<td>HIM 260 Pharmacology for HIM</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

2nd Semester  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM 229 Performance Improvement in Health Care</td>
<td>2</td>
</tr>
<tr>
<td>HIM 230 Information Systems and Technology in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>HIM 249 Supervision and Management Practices for HIM</td>
<td>3</td>
</tr>
<tr>
<td>HIM 250 Health Data Classification Systems I (ICD-9-CM)</td>
<td>4</td>
</tr>
<tr>
<td>HIM 251 Clinical Practice I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

5th Semester  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM 233 Electronic Health Record Applications</td>
<td>3</td>
</tr>
<tr>
<td>HIM 252 Clinical Practice II</td>
<td>3</td>
</tr>
<tr>
<td>HIM 254 Advanced Coding and Reimbursement</td>
<td>3</td>
</tr>
<tr>
<td>HIM 255 Health Data Classification Systems II (CPT)</td>
<td>2</td>
</tr>
<tr>
<td>HIM 280 Capstone Course</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

Total credits for the A.A.S. Degree in Health Information Management = 72 (includes 14 prerequisite credits)

1 NAS 161 and 162 may be substituted for BIO 141 and 142, but individual courses may not be substituted.
2 Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student's curriculum.
3 See humanities/fine arts courses listed under General Education Electives.
4 See social/behavioral science courses listed under General Education Electives.

Health Information Management: Clinical Data Coding  
Career Studies Certificate  

**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-9-CM 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).

**Admission Requirements:** Applicants must do the following:
- Comply with all general admission requirements for Allied Health Programs.
- View a Clinical Data Coding information session online at [www.nvcc.edu/medical/divisions/allied/him.html](http://www.nvcc.edu/medical/divisions/allied/him.html).
- Have a NOVA application on file.
- Present evidence of a high school diploma or GED.
- Have completed or qualify for ENG 111.
- Provide evidence of good physical and mental health by submitting a physical exam form and CPR certification. Both must be completed before the start of clinical experience.

The curriculum includes one coordinated practice course. Students are expected to complete the courses in the sequence outlined below.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HIM 111 Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>HIM 141 Fundamentals of Health Information Systems I</td>
<td>3</td>
</tr>
<tr>
<td>HIM 250 Health Data Classification Systems I (ICD-9-CM)</td>
<td>4</td>
</tr>
<tr>
<td><strong>NAS 150 Human Biology</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>HIM 110 Intro. to Human Pathology</td>
<td>3</td>
</tr>
<tr>
<td>HIM 196 On-Site Training</td>
<td>1</td>
</tr>
<tr>
<td>HIM 254 Advanced Coding and Reimbursement</td>
<td>3</td>
</tr>
<tr>
<td>HIM 255 Health Data Classification Systems II (CPT)</td>
<td>2</td>
</tr>
<tr>
<td>HIM 260 Pharmacology for HIM</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>

Total credits for the Clinical Data Coding Career Studies Certificate = 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.

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**Health Information Technology Career Studies Certificate**

**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.

<table>
<thead>
<tr>
<th>One Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
</tr>
<tr>
<td>HIT 100 Intro. to the Healthcare Delivery System</td>
<td>1</td>
</tr>
<tr>
<td>HIT 130 Intro. to Computers in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>HIT 141 Intro. to Healthcare and Health-IT in the U.S.</td>
<td>3</td>
</tr>
<tr>
<td>HIT 132 Health-IT Infrastructure Development</td>
<td>3</td>
</tr>
<tr>
<td><strong>HLT 141 Intro. to Medical Terminology</strong></td>
<td>1</td>
</tr>
<tr>
<td>SDV 101 Orientation to Health Professions</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
<td></td>
</tr>
<tr>
<td>HIT 229 Performance Improvement and Data Usage in Healthcare</td>
<td>2</td>
</tr>
<tr>
<td>HIT 230 Computer Applications in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>HIT 233 Working with Electronic Health Records</td>
<td>3</td>
</tr>
<tr>
<td>HIT 235 Emerging Technologies in Health-IT</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

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.

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**Health Science Career Studies Certificate**

See Programs of Study under “H”

**Massage Therapy Career Studies Certificate**

See Programs of Study under “M”

**Medical Laboratory Technology Associate of Applied Science Degree**
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 163 as shown by satisfactory scores on NOVA placement tests.
- Complete with a grade of “C” or higher: BIO 141, CHM 111, ENG 111, and SDV 101.
- Complete the TEAS (Test of Essential Academic Skills) test.

- Document a GPA of at least 2.0 at the last school attended.

Continuation Requirements: Each course in the program major must be completed with a grade of “C” or better before taking the next course in the sequence.

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

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 141 Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>CHM 111 General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 101 Orientation to Healthcare</td>
<td>1</td>
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<td><strong>Total</strong></td>
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Two Years Credits

<table>
<thead>
<tr>
<th>1st Semester</th>
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<tbody>
<tr>
<td>BIO 142 Human Anatomy and Physiology II</td>
</tr>
<tr>
<td>CST 229 Intercultural Communication</td>
</tr>
<tr>
<td>HLT 141 Intro. to Medical Terminology</td>
</tr>
<tr>
<td>MDL 101 Intro. to Medical Laboratory Techniques</td>
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<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
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<table>
<thead>
<tr>
<th>2nd Semester</th>
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<tbody>
<tr>
<td>BIO 150 Intro. Microbiology or BIO 205 General Microbiology</td>
</tr>
<tr>
<td>MDL 127 Hematology</td>
</tr>
<tr>
<td>MDL 215 Immunology</td>
</tr>
<tr>
<td>MDL 261 Clinical/Chemistry/Instrumentation I</td>
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<th>3rd Semester</th>
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<tr>
<td>MDL 266 Clinical Chemistry Techniques</td>
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<tr>
<td>MDL 276 Clinical Hematology Techniques</td>
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<th>4th Semester</th>
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<tbody>
<tr>
<td>MDL 216 Blood Banking</td>
</tr>
<tr>
<td>MDL 243 Intro. to Clinical Molecular Diagnostics</td>
</tr>
<tr>
<td>MDL 251 Clinical Microbiology I</td>
</tr>
<tr>
<td>MDL 252 Clinical Microbiology II</td>
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<td>SOCIAL SCIENCE ELECTIVE</td>
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<tr>
<td>BIO 231 Humanities/Fine Arts Elective</td>
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<td>MDL 277 Clinical Immunohematology and Immunology Technique</td>
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<td>MDL 278 Clinical Microbiology Techniques II</td>
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<tr>
<td>MDL 281 Clinical Correlations</td>
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</table>

Total credits for the A.A.S. Degree in Medical Laboratory Technology = 69 (includes 12 prerequisite credits)

1. May substitute BIO 231.
2. Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum.
Medical Laboratory Technology: Phlebotomy
Career Studies Certificate

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 Allied Health 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 must be completed with a grade of “C” or better before taking the next course in the sequence.

One Semester Credits
1 ENG 111 College Composition I or CST 110 Intro. to Communication 3
2 HLT 141 Intro. to Medical Terminology 1
MDL 105 Phlebotomy 3
MDL 106 Clinical Phlebotomy 4
Total 11

Total credits for the Phlebotomy Career Studies Certificate = 11

1 May substitute ENG 112 or higher.
2 May substitute HIM 111.

Nursing
Associate of Applied Science Degree

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 take the National Council Licensure Examination (NCLEX) 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.

Students may follow one of two tracks to complete the Nursing Program:
• The traditional, four-semester track with no required classes in the Summer;
• The accelerated online/hybrid track, which includes four consecutive semesters (including Summer) and presents the didactic portion of the nursing courses online.

Complete information regarding each of these program tracks can be found at www.nvcc.edu/medical/divisions/nursing. Admission to the Nursing Program is competitive.

The application process is addressed in the online information session/orientation.

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 for the Traditional and Accelerated Online/Hybrid Tracks: Applicants must do the following:
• 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 of this Catalog.
• 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 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 151 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 NAS 161 and 162 with a “C” or higher. NAS 161 and 162 or any transferred courses used to satisfy this requirement must have been completed within 10 years of the semester in which verification of the Nursing admission checklist is completed.
> 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.
> Have minimum 2.5 cumulative GPA.
• Successfully complete and achieve satisfactory scores on the Nursing Pre-Admission Test. Students may take the test three times only. The latest result must be within three years of admission to the Nursing Program.
• Successfully complete the American Heart Association Healthcare Provider CPR course prior to registering for a 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, 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 “C” grade (78 or higher) in all nursing courses to continue in the program. This includes lecture, campus, and clinical components. In addition, students must achieve a “C” or higher in all general education courses. First-year students must complete HLT 141 no later than the first semester and HLT 250, PSY 201, and PSY 202 must be taken no later than the second semester, as corequisites to NUR 111, NUR 180, and NUR 201 respectively.

Special Accreditation Status: The Nursing Program is conditionally approved by the Virginia Board of Nursing, 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. To view NCLEX-RN pass rates for the last five years go to www.dhp.virginia.gov/nursing/nursing_edprogs.htm.

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: Advanced placement to the traditional track is available for licensed practical nurses (LPNs) wishing to enter the Nursing Program through the LPN to RN transition program. This advanced placement is designed to acknowledge the previously acquired skills of the LPN. LPNs must apply to the College and complete an LPN-RN information session online for detailed information.

LPN to RN applicants must successfully complete NUR 115 LPN Transition (3 credits) and NUR 116 Selected Nursing Concepts (1 credit). These courses are designed to bridge the gap between LPN training and the first semester of the Nursing Program and begin the development of professional nursing skills. A grade of “C” or higher is required in these courses. LPNs licensed in Virginia who are admitted to NOVA’s Nursing Program and who successfully complete NUR 115 LPN Transition and NUR 116 Selected Nursing Concepts will be substituted for NUR 111 Nursing I (8 credits). LPNs are admitted to the traditional track only.

Readmission: Students who leave the Nursing Program and wish to be readmitted 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 take and pass with a “C” or higher, the 2-credit version of NUR 116 Selected Nursing Concepts. Readmission is competitive and based on space availability.

Transfer from Other Institutions: Nursing credits earned at other institutions are reviewed by the assistant dean 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 will be required to satisfactorily complete the 2-credit version of NUR 116. Admission is competitive and based on space availability.
Nursing Program

Traditional Program: On Campus, Online, and Hybrid

Classes may be taken on campus or via a combination of synchronous (live) and asynchronous (anytime) online activities and in-person laboratory and clinical practice. Nursing courses must be taken in the order outlined.

Prerequisites:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
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<tr>
<td>1.2 NAS 161</td>
<td>Health Science I</td>
<td>4</td>
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<tr>
<td>1.2 NAS 162</td>
<td>Health Science II</td>
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<td>SDV 101</td>
<td>Orientation to Healthcare</td>
<td>1</td>
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Two Years

1st Semester

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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HLT 141</td>
<td>Intro. to Medical Terminology</td>
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</tr>
<tr>
<td>NUR 111</td>
<td>Nursing I</td>
<td>8</td>
</tr>
<tr>
<td>NUR 150</td>
<td>Community-Based Nursing in a Multicultural Environment</td>
<td>3</td>
</tr>
<tr>
<td>PSY 201</td>
<td>Intro. to Psychology I</td>
<td>3</td>
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2nd Semester

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<tr>
<td>HLT 250</td>
<td>General Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>NUR 180</td>
<td>Essentials of Maternal/Newborn Nursing</td>
<td>4</td>
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<tr>
<td>NUR 201</td>
<td>Psychiatric Nursing</td>
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<tr>
<td>PSY 202</td>
<td>Intro. to Psychology II</td>
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3rd Semester

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<tr>
<td>CST 229</td>
<td>Intercultural Communication or CST 110 Intro. to Communication or CST 115 Small Group Communication</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Humanities/Fine Arts Elective</td>
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</tr>
<tr>
<td>NUR 221</td>
<td>Second Level Nursing Principles and Concepts I</td>
<td>9</td>
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4th Semester

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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>NUR 222</td>
<td>Second Level Nursing Principles and Concepts II</td>
<td>9</td>
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<tr>
<td>NUR 254</td>
<td>Nursing Dimensions</td>
<td>1</td>
</tr>
<tr>
<td>NUR 255</td>
<td>Nursing Organization and Management</td>
<td>3</td>
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<td>Total</td>
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<td>13</td>
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</tbody>
</table>

The accelerated online/hybrid curriculum is the same as the traditional track but has no summer break.

Total credits for the A.A.S. Degree in Nursing = 69
(includes 12 prerequisite credits)

1. Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum.

2. Students may use one of the following course sequences to meet the NAS 161–162 requirement: NAS 161 and 162; or BIO 141, BIO 142, and BIO 150; or BIO 141, BIO 142, and BIO 205; or BIO 231, BIO 232, and BIO 150; or BIO 231, BIO 232, and BIO 205. Either the two-course sequence of NAS 161–162 or all three courses from a BIO sequence must be completed to be accepted by the Nursing division. Students may NOT mix classes from different sequences.

3. See humanities/fine arts courses listed under General Education Electives. Elective should be selected with the advice of a counselor or academic advisor to meet graduation requirements.

Occupational Therapy Assistant

Associate of Applied Science Degree

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 Allied Health Programs.
• Attend an in-person Occupational Therapy Assistant information session within one year of application. Visit the website at www.nvcc.edu/medical/divisions/allied/occupational-therapy-assistant.html.
• Be a high school graduate or have obtained a GED.
• Complete BIO 141–142 Human Anatomy and Physiology I–II, ENG 111 College Composition I, HLT 141 Introduction to Medical Terminology, and SDV 101 Orientation to Healthcare with a “C” or higher.
• Qualify for MTH 151 or higher on the NOVA math placement test. This requirement must be met prior to applying to the OTA program.
• 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 www.nvcc.edu/medical/divisions/allied/occupational-therapy-assistant.html.
• Complete a video interview for an interview 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 earned the Health Science Career Studies Certificate, if more than 25 hours of observation are accumulated, 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 are encouraged to attend a face-to-face information session. Dates can be found at www.nvcc.edu/medical/divisions/allied/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 Allied Health and Occupational Therapy Assistant students.

Transfer Placement: OTA credits earned at other institutions will be reviewed by the assistant dean 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 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814–3449. 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, most states require licensure in order to practice; however, state licenses are usually based on 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.

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>1 BIO 141 Human Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>1 BIO 142 Human Anatomy and Physiology II</td>
<td>4</td>
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<tr>
<td>ENG 111 College Composition I</td>
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<tr>
<td>HLT 141 Intro. to Medical Terminology</td>
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<td>SDV 101 Orientation to Healthcare</td>
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<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Two Years</th>
<th>Credits</th>
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<tbody>
<tr>
<td>1st Semester</td>
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<tr>
<td>Humanities/Fine Arts Elective</td>
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<tr>
<td>OCT 100 Intro. to Occupational Therapy</td>
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<tr>
<td>OCT 205 Therapeutic Media</td>
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<tr>
<td>OCT 225 Neurological Concepts for OTA</td>
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<tr>
<td>PED 116 Lifetime Fitness and Wellness</td>
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<td>PSY 200 Principles of Psychology</td>
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<tr>
<td>OCT 190 Coordinated Internship (Pediatrics)</td>
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<tr>
<td>OCT 203 Occupational Therapy with Developmental Disabilities</td>
<td>4</td>
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<tr>
<td>OCT 207 Therapeutic Skills</td>
<td>3</td>
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<td>PSY 231 Life Span Human Development I</td>
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<td>PSY 232 Life Span Human Development II</td>
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<tr>
<td>3rd Semester</td>
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<td>OCT 190 Coordinated Internship in OT (Psychosocial Dysfunction)</td>
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<tr>
<td>OCT 195 Topics in Evidence Based Practice in Occupational Therapy</td>
<td>1</td>
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<td>OCT 201 Occupational Therapy with Psychosocial Dysfunction</td>
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<td>4th Semester</td>
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<td>HIM 130 Health Information Systems</td>
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<tr>
<td>OCT 190 Coordinated Internship in OT (Physical Dysfunction)</td>
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<tr>
<td>OCT 202 Occupational Therapy and Physical Disability</td>
<td>4</td>
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<td>OCT 208 Occupational Therapy Service Management</td>
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<tr>
<td>OCT 210 Assistive Technology in Occupational Therapy</td>
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<td>5th Semester</td>
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<tr>
<td>OCT 290 Coordinated Internship in OT</td>
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<tr>
<td>OCT 290 Coordinated Internship in OT</td>
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<tr>
<td>OCT 295 Trends in Professional Issues in Occupational Therapy Practice</td>
<td>1</td>
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</table>
Total credits for the A.A.S. Degree in Occupational Therapy Assistant = 70 (includes 13 prerequisite credits)

1 Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum.

2 See humanities/fine arts courses listed under General Education Electives.

Phlebotomy Career Studies Certificate
See program under Medical Laboratory Technology

Physical Therapist Assistant
Associate of Applied Science Degree

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:

• Have a minimum 2.5 curricular GPA.
• Be 18 years of age.
• Complete ENG 111 with a grade of “B” or higher.
• Have satisfactory scores on NOVA’s placement tests to qualify for MTH 151.
• Successfully complete and achieve satisfactory scores on the TEAS (Test of Essential Academic Skills) test. Students may only take the test three times. The latest result must be within two 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), 111 North Fairfax Street, Alexandria, VA 22314; telephone: 703–706–3245; e-mail: accreditation@apta.org; website: www.capteonline.org.

Program Application Requirements: Completion of the above steps constitutes a completed PTA program application. Completed PTA program applications will be accepted via certified mail 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 Generic Abilities outlined in the PTA Program Handbook. Behavior inconsistent with the Standards of Ethical Conduct for the Physical Therapist Assistant and/or the Generic Abilities will result in dismissal from the program.

Additional Requirements: In addition to the admission requirements for Allied Health Programs, upon acceptance students must complete a basic first aid course prior to admission into the Physical Therapist Assistant Program.

Transfer Placement: PTA credits earned at other institutions are reviewed by the assistant dean 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 practice 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.

**Reenrollment:**
1. Students in good standing may be permitted to reenroll in the PTA curriculum on a space-available basis, with permission of the assistant dean.
2. Students who leave the program for one year or more 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.
3. 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 healthcare.

**Prerequisites: Credits**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition</td>
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<tr>
<td>HLT 141</td>
<td>Intro. to Medical Terminology</td>
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<tr>
<td>NAS 150</td>
<td>Human Biology</td>
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**Two Years**

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<tr>
<td>PTH 105</td>
<td>Intro. to Physical Therapy</td>
<td>3</td>
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<tr>
<td>PTH 121</td>
<td>Therapeutic Procedures I</td>
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<tr>
<td>PTH 151</td>
<td>Musculoskeletal Structure and Function</td>
<td>5</td>
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<td>SDV 101</td>
<td>Orientation to Healthcare</td>
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**2nd Semester**

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<tr>
<td>PED 220</td>
<td>Adult Health and Development</td>
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<tr>
<td>PSY 200</td>
<td>Principles of Psychology</td>
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<tr>
<td>PTH 115</td>
<td>Kinesiology for the Physical Therapist Assistant</td>
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<tr>
<td>PTH 122</td>
<td>Therapeutic Procedures II</td>
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**3rd Semester**

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<tr>
<td>MTH Elective</td>
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<tr>
<td>PTH 131</td>
<td>Clinical Education I</td>
<td>3</td>
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**4th Semester**

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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tr>
<td>Humanities/Fine Arts Elective</td>
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<td>3</td>
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<tr>
<td>PTH 225</td>
<td>Rehabilitation Procedures</td>
<td>5</td>
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<td>PTH 231</td>
<td>Clinical Education II</td>
<td>5</td>
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</table>

**Total credits for the A.A.S. Degree in Physical Therapist Assistant = 69 (includes 8 prerequisite credits)**

1 BIO 141–142 Human Anatomy and Physiology I–II may be substituted for NAS 150. Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum.

2 May substitute PSY 201–202.

3 Select from any MTH course 151 or above.

4 See humanities/fine arts courses listed under General Education Electives.

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**Radiation Oncology**

**Associate of Applied Science**

**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 Certificate Program. NOVA offers some of the required courses, and students will take the rest of the ROC courses through VWCC. 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. Students must enroll in the program through VWCC and, upon completion, students will be VWCC graduates. For more information, go to www.virginiawestern.edu/academics/health/oncology/index.php or call VWCC Health Professions Office at 540–857–7307.

**Radiography**

**Associate of Applied Science Degree**

**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 Allied Health Programs.
- Review the online information session at [www.nvcc.edu/medical/divisions/allied/radiography.html](http://www.nvcc.edu/medical/divisions/allied/radiography.html).
- Qualify for MTH 151.
- Have completed BIO 141 and BIO 142 with a grade of “B” or higher.
- Have completed ENG 111 with a “B” or higher.
- Have completed SDV 101 Orientation to Healthcare with a “B” or higher.
- Have completed RAD 105 with a “B” or higher.
- Have completed a clinical observation.

**Special Program Requirements:** The American Registry of Radiologic Technology requires an applicant to be of good moral character. “Generally, the conviction of either (a) felony or (b) any offense, misdemeanor, or felony involving moral turpitude indicates a lack of good moral character for registry purposes. Those who have been convicted of a crime may be eligible for registration if they have served their entire sentence, including probation and parole, and have had their civil rights restored.” For further information, contact the assistant dean.

All incomplete grades (“I”) must be resolved prior to taking the next course in the sequence.

**Prerequisites:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIO 141</td>
<td>Anatomy and Physiology I</td>
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<tr>
<td>BIO 142</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>RAD 105</td>
<td>Intro. to Radiology, Protection, and Patient Care</td>
<td>2</td>
</tr>
<tr>
<td>SDV 101</td>
<td>Orientation to Healthcare</td>
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Total 14

**Two Years Credits**

<table>
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<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
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<tbody>
<tr>
<td>1st Semester</td>
<td>PED 116 Lifetime Fitness and Wellness</td>
<td>1</td>
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<tr>
<td></td>
<td>RAD 121 Radiographic Procedures I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>RAD 125 Patient Care Procedures</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>RAD 141 Principles of Radiation Quality I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>RAD 196 On-Site Training</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>14</td>
</tr>
</tbody>
</table>

| 2nd Semester | RAD 131 Elementary Clinical Procedures I              | 3       |
|              | RAD 142 Principles of Radiation Quality II            | 4       |
|              | RAD 221 Radiographic Procedures II                    | 4       |
|              | Social Science Elective                               | 3       |
|              | Total                                                 | 14      |

Total credits for the A.A.S. Degree in Radiography = 70 (includes 14 prerequisite credits)

1 NAS 161–162 may be substituted but is not recommended for students who might wish to transfer to a baccalaureate program. Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum.

2 See social/behavioral science courses listed under General Education Electives.

3 RAD 135 meets for 40 hours a week for ten weeks.

4 See humanities/fine arts courses listed under General Education Electives.

**Respiratory Therapy**

**Associate of Applied Science Degree**

**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 assistant dean of the RTH program for individual counseling.

**Admission Requirements:** Applicants must do the following:
• Comply with all general admission requirements for Allied Health Programs.
• View a Respiratory Therapy information session online.
• Qualify for ENG 111 and MTH 151 through acceptable scores on NOVA’s placement tests.
• 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, NAS 161 (BIO 141) and NAS 162 (BIO 142), HLT 141, and SDV 101. Orientation to Healthcare or an SDV elective with a grade of “C” or higher.
• 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.

Continuation Requirement: Students must comply with all continuation requirements for Allied Health and Respiratory Therapy students.

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 assistant dean.
• 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 assistant dean of Respiratory Therapy prior to acceptance into the program.

Prerequisites: Credits
1. BIO 141 Anatomy and Physiology I or NAS 161 Health Science I 4
2. BIO 142 Anatomy and Physiology II or NAS 162 Health Science II 4
3. ENG 111 College Composition I 3
4. HLT 141 Medical Terminology 1
5. RTH 120 Fundamental Theory for Respiratory Care 2
6. SDV 101 Orientation to Healthcare 1
Total 15

Two Years Credits
1st Semester
1. RTH 102 Integrated Science for Respiratory Care II 3
2. RTH 111 Anatomy and Physiology of the Cardiopulmonary System 3
3. RTH 145 Pharmacology for Respiratory Care I 1
4. RTH 151 Fundamental Clinical Procedures 3
Total 13

2nd Semester
1. CST 229 Intercultural Communication or CST 110 Intro. to Communication or CST 115 Small Group Communication or CST 126 Interpersonal Communication 3
2. RTH 121 Cardiopulmonary Science I 3
3. RTH 131 Respiratory Care Theory and Procedures I 4
4. RTH 196 On-Site Training in Respiratory Care I 3
5. RTH 245 Pharmacology for Respiratory Care II 2
Total 15

3rd Semester
1. RTH 135 Diagnostic and Therapeutic Procedures 2
2. RTH 296 On-Site Training in Respiratory Care II 2
Total 4

4th Semester
1. RTH 215 Pulmonary Rehabilitation 1
2. RTH 222 Cardiopulmonary Science II 3
3. RTH 223 Cardiopulmonary Science III 2
4. RTH 236 Critical Care Monitoring 3
5. RTH 290 Coordinated Internship 3
Total 12

5th Semester
1. PED 116 Lifetime Fitness and Wellness 1
2. RTH 225 Neonatal and Pediatric Respiratory Procedures 3
3. RTH 227 Integrated Respiratory Therapy Skills II 2
4. RTH 290 Coordinated Internship 3
Total 12

Total credits for the A.A.S. Degree in Respiratory Therapy = 71 (includes 15 prerequisite credits)

1. Although students who have graduated with a transfer-oriented A.A., A.S., or A.A. & S. degree or any baccalaureate or higher degree from a regionally accredited United States institution of higher education will have most of their general education considered as fulfilled, they must meet the math and science requirements specified for this program. Exceptions must be approved by the academic dean responsible for the student’s curriculum.
2. See humanities/fine arts courses listed under General Education Electives.
3. CST 229 is recommended.
4. See social/behavioral science courses listed under General Education Electives.
 COURSE DESCRIPTIONS

Course Numbers
Courses numbered 1–9 are developmental courses. The credits earned in these courses are not applicable toward a degree or a certificate.

Courses numbered 10–99 are freshman-level courses that may apply to certificate programs. The credits earned in these courses are not applicable toward an associate degree.

Courses numbered 100–299 are applicable toward associate degrees and certificate programs.

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

Course Hours
The number of lecture hours in class each week (including lecture, seminar, and discussion hours) and/or the number of laboratory hours in each week (including laboratory, shop, supervised practice, and cooperative work experiences) are indicated for each course in the course description. The number of lecture and laboratory hours in class each week is also called “contact” hours because it is time spent under the direct supervision of a faculty member. In addition to the lecture and laboratory hours in class each week, each student must spend some time on out-of-class assignments under his/her own direction. Usually each credit per course requires an average of three hours of in-class and out-of-class work each week.

Prerequisites and Corequisites
Prerequisites required before enrolling in a course are identified in the course description. Courses in sequences (usually identified by the numerals I–II) require that the preceding course in the sequence (or equivalent) be completed before one can enroll in the next course in the sequence. Usually corequisites must be taken at the same time. The prerequisites or their equivalent must be completed satisfactorily before enrolling in a course unless special permission is obtained from the division. NOVA’s Schedule of Classes lists additional information on special enrollment requirements.

Frequency of Offerings
The College is not obligated to offer, nor can it offer, all courses every semester. Courses are usually offered in the semesters indicated in the degree or certificate outline given in the “Programs of Study” chapter of this Catalog. NOVA’s Schedule of Classes lists the courses being offered for the respective semester or session.

General Usage Courses
The following general usage courses apply to multiple curricula and may carry a variety of prefix designations. The descriptions of the courses are identical for each different prefix and are as follows:

90–190–290  (1–5 CR.)
Coordinated Internship
Supervised on-the-job training in selected business, industrial, or service firms coordinated by the College. Credit/work ratio maximum 1:5 hrs. May be repeated for credit. Variable hours.

93–193–293 (1–5 CR.)
Studies In
Experimental courses to test their viability as permanent offerings. Each offering of the course must be approved by the academic dean. An experimental course may be offered twice, after which the course must be approved following VCCS processes for adding new courses to the Master Course File. Credit/work ratio maximum 1:5 hrs. May be repeated for credit. Variable hours.

95–195–295 (1–5 CR.)
Topics In
Exploration of topical areas of interest to or needed by students. May be used also for special Honors courses. May be repeated for credit. Variable hours.

96–196–296 (1–5 CR.)
On-Site Training In
Career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the College. Credit/work ratio not to exceed 1:5 hrs. May be repeated for credit. Variable hours.

97–197–297 (1–5 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.
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.

Supervised Study
Assignment of problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.

### Accounting

**ACC 115**  
**Applied Accounting**  
Presents practical accounting procedures for retail stores, professional individuals in firms, and personal service occupations. Covers the accounting cycle, journals, ledgers, preparation of financial statements and payroll, and checking account management. Lecture 3 hours per week.

**ACC 211**  
**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. Must be taken in sequence with ACC 212. Lecture 3 hours per week.

**ACC 212**  
**Principles of Accounting II**  
Prerequisite: 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**  
**Principles of Accounting Laboratory I**  
Corequisite: ACC 211 may be required. Provides problem solving experience to supplement instruction in ACC 211. Laboratory 2 hours per week.

**ACC 214**  
**Principles of Accounting Laboratory II**  
Corequisite: ACC 212 may be required. Provides problem-solving experience to supplement instruction in ACC 212. Laboratory 2 hours per week.

**ACC 215**  
**Computerized Accounting**  
Prerequisite: 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**  
**Governmental and Not-for-Profit Accounting**  
Prerequisite: 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**  
**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**  
**Intermediate Accounting I**  
Prerequisite: ACC 212 or equivalent. Covers accounting principles and theory, including a review of the accounting cycle and accounting for current assets, current liabilities, and investments. Introduces various accounting approaches and demonstrates the effect of these approaches on the financial statement users. Must be taken in sequence with ACC 222. Lecture 3 hours per week.

**ACC 222**  
**Intermediate Accounting II**  
Prerequisite: ACC 221. Continues accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long-term liabilities, and investments. Must be taken in sequence with ACC 221. Lecture 3 hours per week.

**ACC 230**  
**Advanced Accounting**  
Pre- 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: 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. Must be taken in sequence with ACC 232. Lecture 3 hours per week.

ACC 232 (3 CR.)
Cost Accounting II
Prerequisite: ACC 231 or equivalent. Studies profit analysis and other topics. Must be taken in sequence with ACC 231. Lecture 3 hours per week.

ACC 240 (3 CR.)
Fraud Examination
Covers the principles and methodology of fraud detection and deterrence. Provides an introduction to 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
Pre- or corequisite: ACC 222 or equivalent. Presents techniques of investigating, interpreting, and appraising accounting records and assertions. Studies internal control design and evaluation, evidence-gathering techniques, and other topics. Lecture 3 hours per week.

ACC 261 (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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Description” section.

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 (3 CR.)
Introduction to Law Enforcement
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 111–112 (3 CR.) (3 CR.)
Law Enforcement Organization and Administration I–II
Prerequisite for ADJ 112: division approval or ADJ 111. 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 118 (3 CR.)
Crisis Intervention and Critical Issues
Addresses basic problems involved in crisis intervention and current critical issues in law enforcement and the administration of justice;
emphasizes practical approaches to discover and implement solutions. Lecture 3 hours per week.

**ADJ 127 (3 CR.) Firearms and Marksmanship**
Prerequisite: 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 154 (3 CR.) Intelligence and Technology Analysis**
It is recommended that students have successfully completed or tested at ENG 111 level and have basic computer literacy skills. Introduces students to operational knowledge of intelligence gathering and analysis, including those through technology and pertinent to homeland security. Outlines basic intelligence policies and functions of the U.S. government and articulates the meaning and purpose of the Intelligence Reform and Terrorism Prevention Act of 2004. Evaluates dependability and reliability of source (including technology) information. Identifies methods and/or techniques for obtaining intelligence and its analysis and discusses various intelligence gathering techniques and threats to national and international safety and security. Lecture 3 hours per week.

**ADJ 157 (3 CR.) Computer Security**
Examines security concerns with access controls, shutdown alternatives, hardware and software protection, and data encryption. 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 161 (3 CR.) Introduction to Computer Crime**
Provides a basic introduction to the nature of computer crimes, computer criminals, relevant law, investigative techniques, and emerging trends. 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 165**  (1 CR.)  
**Crime Scene Photography**  
Introduces the selection and use of visual recording devices and their application to crime scene, interview, interrogation, and criminal investigation activities. Lecture 1 hour 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 171–172**  (4 CR.)  (4 CR.)  
**Forensic Science I–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 173–174**  (3 CR.)  (3 CR.)  
**Forensic Photography I–II**  
Surveys fundamental photographic skills—exposure, composition, film, filters, darkroom materials, and procedures. Emphasizes use of photography for law enforcement purposes and for courtroom presentation. Considers current status and trends in photographic law. Lecture 3 hours per week.

**ADJ 175**  (4 CR.)  
**Forensic Instrumental Analysis**  
Examines instrumental methods of analyzing physical evidence. Teaches the theoretical and practical applications of ultra-violet, visible, and infrared spectrophotometry, gas chromatography, thin-layer chromatography, electrophoresis, trace metals detection, X-ray, and atomic absorption analyses. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ADJ 176**  (1 CR.)  
**Forensic Serology**  
Teaches specific techniques used in the forensic examination of body fluids. Surveys blood grouping, blood typing, characterization of blood stains, and absorption elution techniques. Examines the practical applications of blood typing systems using A-B-O, M-N, rhesus, adenylate kinase isoenzymes and phosphoglucomutase, erythrocyte acid phosphatase. Lecture 1 hour per week.

**ADJ 186**  (3 CR.)  
**Forensic Psychology**  
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 211–212**  (3 CR.)  (3 CR.)  
**Criminal Law, Evidence, and Procedures I–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**  
Addresses judicial efforts against and involvement in corruption, drug, vice, and white-collar crimes, both individual and organized. Lecture 3 hours per week.

**ADJ 226**  (3 CR.)  
**Questioned Documents Examination**  
Introduces the concept of handwriting and handprinting identification. Teaches the standard techniques for handling, dating, and comparing writing and print materials. Presents an overview of the forms of paper manufacture and duplicating processes. Considers techniques of analyzing inks, paper fibers, and print procedures. Examines document photography. 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 232 (3 CR.)**  
**Domestic Violence**  
Addresses domestic violence as a form of interpersonal violence within our country directed at spouses, domestic partners, children, and the elderly. Lecture 3 hours per week.

**ADJ 233 (3 CR.)**  
**Digital Crime and Digital Terrorism**  
Prerequisite: permission of the instructor. Provides instruction in the techniques and practices used to identify incidents of digital crime and digital terrorism, methods of detection of incidents, methods of protection from digital crime and digital terrorism, and the future of digital crime and digital terrorism. Lecture 3 hours per week.

**ADJ 234 (3 CR.)**  
**Terrorism and Counter-Terrorism**  
Prerequisites: ADJ 100 and ADJ 107. 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 235 (3 CR.)**  
**Research in Criminal Justice**  
Presents research methodology—including the development of research questions, quantification techniques, collection procedures, analysis tools, and the means of establishing relationships among theory, policy, and practice. 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**  
Prerequisite: ADJ 236 or division approval. 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: 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 244 (3 CR.)**  
**Terrorism Response Planning**  
Builds an understanding of terrorism and the past, present, and future national and international responses to terrorism and the defense against it. Teaches the knowledge and skills necessary to assist state and local emergency managers in planning for and managing a response to a terrorist incident. 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 256 (3 CR.)
Information Security
Studies the means of protecting both government classified and private business information. Surveys techniques of storing, transmitting, destroying, and controlling access to sensitive information. Lecture 3 hours per week.

ADJ 257 (3 CR.)
Loss Prevention
Studies internal and external theft that affects all private and public operations, with focus on retail businesses. Examines and evaluates major loss prevention programs used by security operations, again with focus on retail security. 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.

ADJ 276 (3 CR.)
Hair and Fiber Morphology
Teaches identification and examination methods (analytical and comparative) for human and animal hair and natural and manmade fibers as physical evidence in criminal investigations and prosecutions. Lecture 3 hours per week.

ADJ 278 (3 CR.)
Firearms and Tool-Mark Identification
Introduces the role of the firearms examiner in forensic science. Teaches the examination techniques and procedures for identifying firearms, tool-marks, ammunition, projectiles, and projectile fragments. Instructs on the topics of determining muzzle-to-target distance; gunshot residue tests; firearms nomenclature; comparative micrography; serial number restoration; and the collecting, handling, and presenting of firearms and tool-mark evidence. Lecture 3 hours per week.

ADJ 289 (3 CR.)
Comparative Systems of Criminal Justice
Surveys administration of justice in a variety of nations, comparing workings and results of different law enforcement, judicial, and correctional components. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

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 121–122 (4 CR.) (4 CR.)
Air Conditioning and Refrigeration I–II
Prerequisite for AIR 122: AIR 121. Prerequisite or corequisite for AIR 121: 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 134**  
**Circuits and Controls I**  
Prerequisite: 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**  
**Heating Systems I**  
Prerequisite: 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 139**  
**Hydronics and Zoning**  
Prerequisite: 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 2 hours. Total 5 hours per week.

**AIR 107**  
**Heat Loads and Psychometrics**  
Prerequisite: 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**  
**Air Conditioning and Refrigeration Controls III**  
Prerequisite: 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**  
**Heat Pumps**  
Prerequisites: 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**  
**Advanced Troubleshooting and Service**  
Prerequisite: AIR 251. Presents advanced service techniques on a wide variety of equipment used in refrigeration, air conditioning, and phases of heating and ventilation and controls. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

**AIR 251**  
**Air Conditioning Systems I**  
Prerequisites: AIR 134 and AIR 122. 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**  
**Air Conditioning Systems II**  
Prerequisite: AIR 251. 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**  
**Gas-Fired Warm Air Furnaces**  
Prerequisite: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Description” section.

**American Sign Language**

Additional sign language courses are listed under Interpreter Education (INT).

**ASL 100**  
**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 101–102 (4 CR.) (4 CR.)**  
American Sign Language I–II  
Introduces the fundamentals of American Sign Language (ASL) used by the Deaf community, including basic vocabulary, syntax, fingerspelling, and grammatical nonmanual signals. Focuses on communicative competence. Develops gestural skills as a foundation for ASL enhancement. Introduces cultural knowledge and increases understanding of the Deaf community. Lecture 4 hours per week.

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

**ASL 125 (3 CR.)**  
History and Culture of the Deaf Community I  
Prerequisite: ASL 101. Presents an overview of various aspects of Deaf culture, including educational and legal issues. Examines the history of the Deaf community. Lecture 3 hours per week.

**ASL 150 (2 CR.)**  
Working with Deaf and Hard-of-Hearing People  
Prerequisite: ASL 101. 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 201–202 (4 CR.) (4 CR.)**  
American Sign Language III–IV  
Prerequisite: ASL 102 or permission of instructor. ASL 201 is the prerequisite for ASL 202. Develops vocabulary, conversational competence, and grammatical knowledge with a total immersion approach. Introduces increasingly complex grammatical aspects including those unique to ASL. Discusses culture and literature. Contact with the Deaf community is encouraged to enhance linguistic and cultural knowledge. Lecture 4 hours per week.

**ASL 208 (3 CR.)**  
ASL for Classroom Settings  
Prerequisite: 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: 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 212 (2 CR.)**  
Advanced Fingerspelling and Number Use  
Prerequisite: ASL 201 or permission of the instructor. Provides intensive practice in advanced comprehension and production of fingerspelled words and numbers with emphasis on clarity and accuracy. Focuses on lexicalized fingerspelling and numeral incorporation as used by native users of American Sign Language. Lecture 2 hours per week.

**ASL 220 (3 CR.)**  
Comparative Linguistics: ASL and English  
Prerequisite: 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  
Prerequisites: ASL 125, ASL 202, and ASL 220 or equivalent. Presents an overview of various aspects of literature common in the U.S. Deaf community, including those forms written in English and those forms signed in ASL. Applies the recurring themes and metaphors in the context of the history of the U.S. Deaf community. Lecture 3 hours per week.
ASL 261–262 (3 CR.) (3 CR.)
American Sign Language V–VI
Prerequisite: ASL 202. ASL 261 is the prerequisite for ASL 262. Develops advanced American Sign Language comprehension and production skills. Emphasizes advanced linguistic aspects of ASL. Presents ASL literary forms. Encourages contact with the Deaf community. Lecture 3 hours per week.

Anthropology

See Sociology (SOC).

Arabic

ARA 101–102 (5 CR.) (5 CR.)
Beginning Arabic I–II
Prerequisite for ARA 102: 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 5 hours per week.

ARA 103–104 (3 CR.) (3 CR.)
Basic Spoken Arabic I–II
Prerequisite for ARA 104: ARA 103. Teaches oral communication, and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

ARA 111–112 (3 CR.) (3 CR.)
Conversation in Arabic I–II
Prerequisite for ARA 112: ARA 111. Emphasizes spoken Arabic, stressing fluency and correctness of structure, pronunciation, and vocabulary. Lecture 3 hours per week.

ARA 201–202 (4 CR.) (4 CR.)
Intermediate Arabic I–II
Prerequisite: ARA 102. Prerequisite for ARA 202: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Architecture

ARC 124 (3 CR.)
Architectural Graphics II
Prerequisites: ARC 121 or ARC 123, DRF 201, and ARC 133. 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
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: ARC 133. 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 216  (3 CR.)
Manual Architectural Rendering and Presentation
Prerequisite: ARC 121 or equivalent. Presents techniques of rendering and principles of art as related to architectural presentation. Covers architectural lettering and layout, freehand sketching, and perspective drawing in various media, including pencil, ink, and tempera. Lecture 2 hours. Laboratory 3 hours. Total 5 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
Corequisite: ARC 121 or equivalent. 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: ARC 122 or ARC 124 or permission of instructor. 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: 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
Prerequisites: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

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. Lecture 3 hours per week.

ART 101–102  (3 CR.) (3 CR.)
History and Appreciation of Art I–II
Presents the history and interpretation of architecture, sculpture, and painting. Begins with prehistoric art and follows the development of Western civilization to the present. Lecture 3 hours per week.

ART 103–104  (3 CR.) (3 CR.)
History of Far Eastern Art I–II
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 105  (3 CR.)
Art in World Culture
Approaches the visual arts conceptually rather than historically. Develops a nontechnical understanding of spatial arts such as architecture and industrial design. Includes painting, sculpture, and graphics. Lecture 3 hours per week.

ART 106  (3 CR.)
History of Modern Art
Surveys the history of modern architecture, sculpture, painting, and graphic arts in representational and nonrepresentational forms. Focuses on the periods and movements that influenced the arts of the twentieth century. Emphasizes contemporary art forms,
particularly the interaction between art and society, industry, and design. 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: 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 121–122 (4 CR.) (4 CR.)**
*Drawing I–II*
Develops basic drawing skills and understanding of visual language through studio instruction/lecture. Introduces concepts such as proportion, space, perspective, tone, and composition as applied to still life, landscape, and the figure. Uses drawing media such as pencil, charcoal, ink wash, and color medium. Includes field trips and gallery assignments as appropriate. Lecture 2 hours. Studio instruction 4 hours. Total 6 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 4 hours. Total 4 hours per week.

**ART 131–132 (4 CR.) (4 CR.)**
*Fundamentals of Design I–II*
Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

**ART 134 (4 CR.)**
*Three Dimensional Design*
Prerequisite: ART 131. 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 2 hours. Laboratory 4 hours. Total 6 hours per week.

**ART 135 (3 CR.)**
*Visual Communications*
Prerequisite or corequisite: ART 131. 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: 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: 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 153–154**  
**Ceramics I–II**  
(4 CR.) (4 CR.)

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 2 hours. Studio instruction 4 hours. Total 6 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. This course is equivalent to PHT 150. Credit will not be awarded for both. 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. This course is equivalent to PHT 151. Credit will not be awarded for both. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ART 175**  
**(4 CR.)**

**Photography Workshop**  
Introduces basic camera operations and darkroom techniques. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

**ART 200**  
**(3 CR.)**

**Introduction to Primitive Art**  
Surveys the visual arts and crafts of prehistoric and early cultures. Includes primitive civilizations in Africa, the Americas, Oceania, and Australia. Lecture 3 hours per week.

**ART 203**  
**(3 CR.)**

**Animation I**  
Prerequisite: ART 121. 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**  
Prerequisites: ART 203, ART 207, and ART 121. 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**  
Prerequisites: 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 211–212**  
**(3 CR.) (3 CR.)**

**History of American Art I–II**  
Surveys the history of American art from the 1600’s to the present. Emphasizes architecture, sculpture, and painting. Includes crafts, decorative arts, and photography. Lecture 3 hours per week.

**ART 213–214**  
**(3 CR.) (3 CR.)**

**Italian Art I–II**  
Prerequisites: ART 101–102. Surveys Italian art from Cimabue to Canaletto. Includes sculpture, painting, and architecture. Lecture 3 hours per week.
ART 217  (3 CR.)
Graphic Design I
Prerequisites: ART 121, ART 131, ART 135, ART 140, and ART 141. Corequisites: ART 142 and ART 265. 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: 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 pre-press 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
Prerequisites: 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 221–222  (4 CR.) (4 CR.)
Drawing III–IV
Prerequisite for ART 221: ART 122. Prerequisite for ART 222: 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 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 223  (4 CR.)
Etching I
Prerequisite: ART 131. Develops skills in etching processes including aquatint, drypoint, and color printing. Includes field trips where applicable. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 230  (3 CR.)
Multimedia II
Prerequisites: 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 231–232  (4 CR.) (4 CR.)
Sculpture I–II
Prerequisite: 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 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 235  (4 CR.)
Functional Ceramics
Prerequisite: ART 154. Explores the design and production of functional ceramics, including handbuilding and use of the wheel. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 236  (4 CR.)
Sculptural Ceramics
Prerequisite: ART 154. Explores the design and production of sculptural ceramics, including handbuilding and use of the wheel. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 237  (4 CR.)
Ceramic Decoration
Prerequisite: ART 154. Explores ceramic decoration techniques used in functional and nonfunctional ceramics. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 241–242  (4 CR.) (4 CR.)
Painting I–II
Prerequisite: ART 122 or division approval. Introduces abstract and representational painting in acrylic and/or oil with emphasis on color, composition, and value. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 243–244  (4 CR.) (4 CR.)
Watercolor I–II
Prerequisite: ART 131 or division approval. Presents abstract and representational painting in watercolor with emphasis on design, color, composition, technique, and value. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 247  (3 CR.)
Painting Techniques for Illustrators
Prerequisites: 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 3 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 251–252  (3 CR.) (3 CR.)**
**Communication Design I–II**
Prerequisites: 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 253–254  (4 CR.) (4 CR.)**
**Design III–IV**
Prerequisites for ART 253: ART 131 and 132. Prerequisite for ART 254: ART 253. Applies basic design concepts to complex problems. Introduces related research as appropriate. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

**ART 263  (3 CR.)**
**Interactive Design I**
Prerequisites: ART 116, ART 121, ART 131, ART 135, ART 140, and ART 141. 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: ART 263. Corequisite: 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: ART 140. Corequisite: 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 266  (3 CR.)**
**Package Design**
Prerequisites: ART 140, ART 141, ART 142, ART 217, ART 218, or division approval. Studies the role of packaging in product identification, presentation, and production. Investigates the unique challenges of typography, illustration, and design from 2D to 3D forms. Researches business goals, marketing objectives, packaging structure, and display aesthetics. Applies the principles of design and foundations of typography in final production of products. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 267  (3 CR.)**
**Integrated Design Techniques**
Prerequisites: ART 140, ART 141, ART 142, ART 217, ART 218, ART 263, ART 264, or divisional approval. Studies the use of design and technology skills for development of visual ideas across an array of delivery platforms, such as web, print, and motion. Focuses on the development of holistic design ideas. Integrates techniques for the design, implementation, development, and production of print, web, motion, and interactive projects. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 268  (3 CR.)**
**Professional Practices in Communication Design**
Prerequisites: ART 135, ART 140, ART 140, ART 141, and ART 142. Corequisites: ART 217, ART 218 and/or ART 263, ART 264 or division approval. 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 269  (3 CR.)**
**Advanced Typography**
Prerequisites: ART 135, ART 140, ART 140, ART 141, and ART 142, or division approval. Focuses on the history, cultural, social, political, cognitive, ethical, and aesthetic contexts of typography in past and contemporary communications media. Emphasizes applications to specific design problems that builds on studies completed in ART 141 Typography I and ART 142 Typography II. Lecture 2 hours. Studio instruction 2 hours. Total 4 hours per week.

**ART 270  (3 CR.)**
**Motion Graphics I**
Prerequisites: ART 131 and 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 271–272**  
(4 CR.) (4 CR.)  
**Printmaking I–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 4 hours. Total 6 hours per week.

**ART 277**  
(4 CR.)  
**Advanced Printmaking**  
Provides additional opportunity for individual exploration in selected printmaking processes. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

**ART 278–279**  
(4 CR.) (4 CR.)  
**3D Computer Design I–II**  
Prerequisite for ART 278: ART 283. Prerequisite for ART 279: ART 278. Introduces fundamental concepts in 3D model building and animation: spline extrusion and motion, point editing, texture and mapping, ray tracing, rotoscoping, physical simulations, and forward and inverse kinematics. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

**ART 280**  
(3 CR.)  
**Graphic Design for Studio Arts**  
Prerequisites: 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**  
Prerequisites: ART 121, ART 131, ART 135, 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 283–284**  
(4 CR.) (4 CR.)  
**Computer Graphics I–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 2 hours. Studio instruction 4 hours. Total 6 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of the “Course Descriptions” section.

**Auto Body**

**AUB 106**  
(4 CR.)  
**Basic Sheet Metal Operations**  
Teaches the use of metal straightening tools, basic straightening operations, shrinking, filing, 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: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Automotive**

**AUT 111–112**  
**Automotive Engines I–II**  
Prerequisite for AUT 112: 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**  
**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**  
**Cylinder Head Service II**  
Prerequisite: 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 120**  
**Introduction to Automotive Machine Shop**  
Prerequisite or corequisite for all other machinist courses. Introduces automotive machining operations emphasizing shop safety and the use of machine shop tools. Surveys basic machining operations and specialized auto machining techniques necessary for reconditioning engine and chassis components. Requires basic set of machinist’s hand tools. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**AUT 121–122**  
**Automotive Fuel Systems I–II**  
Prerequisite for AUT 122: 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**  
**Introduction to Automotive Mechanics**  
(3 CR.)  
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**  
**Automotive Vehicle Inspection**  
(2 CR.)  
Introduces methods for performing automotive vehicle safety inspection. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**AUT 141–142**  
**Auto Power Trains I–II**  
(4 CR.) (4 CR.)  
Presents operation, design, construction, and repair of power train components, standard and automatic transmission. Includes clutches, propeller shaft, universal joints, rear axle assemblies, fluid couplings, torque converters, as well as 2-, 3-, and 4-speed standard, overdrive and automatic transmissions. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**AUT 215**  
**Emissions Systems Diagnosis and Repair**  
(2 CR.)  
Prerequisite: 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**  
**Automotive Emissions Inspection**  
(1 CR.)  
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**  
**Advanced ASM Emissions Diagnostics**  
(2 CR.)  
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. May be repeated as needed.
AUT 233  (4 CR.)  
Hybrid Electric Vehicle Technology  
Prerequisites: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

Biology

BIO 101  (4 CR.)  
General Biology I  
Prerequisite: Competency in Math Essentials Units MTT 1–3 as demonstrated through placement and diagnostic tests, or by completion through unit 3 in an MTT course. Competency in Math Essentials Units MTT 1–5 or equivalent is desirable. Focuses on foundations in 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 process of science, interdisciplinary approach, and relevance of biology to society. Part I of a two-course sequence. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

BIO 102  (4 CR.)  
General Biology II  
Prerequisite: BIO 101. Focuses on diversity of life, anatomy and physiology of organisms, and ecosystem organization and processes 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 process of science, interdisciplinary approach, and relevance of biology to society. Part II of a two-course sequence. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

BIO 107  (4 CR.)  
Biology of the Environment  
Prerequisite: placement into ENG 111. Presents the basic concepts of environmental science through a topical approach. Includes the scientific method, population growth and migration, use of natural resources and waste management, ecosystem simplification recovery, evolution, biogeochemical cycles, photosynthesis and global warming, geological formations, atmosphere and climate, and ozone depletion and acid deposition. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
and evolution. Considers the principles of genetics, ecology, and physiology. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 120** (4 CR.)
**General Zoology**
Prerequisite: placement into ENG 111. Presents basic biological principles, and emphasizes structure, physiology, and evolutionary relationships of invertebrates and vertebrates. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 141–142** (4 CR.) (4 CR.)
**Human Anatomy and Physiology I–II**
Prerequisite: Placement into ENG 111. Prerequisite for BIO 142: BIO 141 or division approval. Integrates anatomy and physiology of cells, tissues, organs, and systems of the human body. Integrates concepts of chemistry, physics, and pathology. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 146** (3 CR.)
**Human Heredity**
Surveys basic principles of classical and molecular genetics as applied to humans. Lecture 3 hours per week.

**BIO 147** (1 CR.)
**Basic Laboratory Calculations for Biotechnology**
Prerequisite: program placement, coenrollment 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.)
**Introductory Microbiology**
Prerequisite: BIO 101 or BIO 141. Studies the general characteristics of microorganisms. Emphasizes their relationships to individual and community health. 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**
Prerequisites: 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 173** (4 CR.)
**Biology for Biotechnology**
Introduces the student to biological concepts essential to the understanding of biotechnology. Focuses on the structural organization, function, and chemical nature of the cell. Studies cellular processes such as membrane transport, information processing, reproduction, and heredity. Emphasizes laboratory methods of biotechnology. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**BIO 180** (1 CR.)
**Introduction to Careers in Biotechnology**
Prerequisite: 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**
Prerequisites: CHM 111, CHM 112, and two of the following: BIO 101, BIO 102, BIO 110, BIO 120, BIO 141, BIO 142, or division approval. Examines morphology, genetics, physiology, ecology, and control of microorganisms. Emphasizes application of microbiological techniques to selected fields. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 206** (4 CR.)
**Cell Biology**
Prerequisites: BIO 101, CHM 111, and one of the following: CHM 112, BIO 102, BIO 110, BIO 120, BIO 141, BIO 142, or division approval. Introduces the ultrastructure and functions of cells. Emphasizes cell metabolism, cell division, and control of gene expression. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 226** (4 CR.)
**Vertebrate Zoology**
Prerequisites: BIO 101–102 or division approval. Focuses on structure, embryology, function, ecology, classification, and evolution of vertebrate animals. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.
**BIO 231–232**  
**Human Anatomy and Physiology I–II**  
Prerequisites: CHM 111, CHM 112, and two of the following: BIO 101, BIO 102, BIO 110, BIO 120, BIO 141, BIO 142, or division approval. Prerequisite for BIO 232: BIO 231 or division approval. Integrates the study of gross and microscopic anatomy with physiology, emphasizing the analysis and interpretation of physiological data. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 250**  
**Biotechnology Research Methods and Skills**  
Prerequisites: program placed and coenrollment in 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**  
**Protein Applications in Biotechnology**  
Prerequisites: 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**  
**Nucleic Acid Methods**  
Prerequisites: 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**  
**Biotechnology Concepts**  
Prerequisites: program placed, BIO 101 or BIO 173 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**  
**Capstone Seminar in Biotechnology**  
Prerequisites: 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**  
**Bioinformatics and Computer Applications in Biotechnology**  
Prerequisites: 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**  
**General Genetics**  
Prerequisites: any two of the following courses: BIO 101, BIO 102, BIO 110, BIO 120, BIO 141, BIO 142, or division approval. Explores the principles of genetics ranging from classical Mendelian inheritance to the most recent advances in the biochemical nature and function of the gene. Includes experimental design and statistical analysis. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

**BIO 270**  
**General Ecology**  
Prerequisites: 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. Recitation and laboratory 3 hours. Total 6 hours per week.
BIO 275 (4 CR.)
Marine Ecology
Prerequisites: any two of the following courses: BIO 101, BIO 102, BIO 110, BIO 120, or division approval. Applies ecosystem concepts to marine habitats. Includes laboratory and field work. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Broadcasting

BCS 140 (3 CR.)
Introduction to Mass Media
Prerequisite: placement into ENG 111. Studies the development of mass media communication, including the history and technological evolution of print and electronic media. Emphasizes mass communication in the United States. Lecture 3 hours per week.

Building

BLD 20 (2 CR.)
Introduction to Plumbing
Presents an introduction to the principles and practices of plumbing as related to light construction. Enables students to plan, prepare for, and install supply and waste lines, and install kitchen and bath fixtures. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

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 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 (2–3 CR.)
Sustainable Construction
Prerequisites: 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 2–3 hours per week.

BLD 215 (2 CR.)
OSHA 30 Construction Safety
Prerequisite: 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: 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 Managing 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.

BLD 249  (3 CR.)
**Carpentry II**
Presents advanced concepts of carpentry as they relate to residential/light construction, including theoretical and practical applications. Covers advanced framing techniques, finish and trim systems, and calculations commonly required in all phases of light construction. Lecture 3 hours per week.

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**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, percents, sales and property taxes, insurance, checkbook and cash records, wage and payroll computations, depreciation, overhead, inventory turnover and valuation, financial statements, ratio analysis, commercial discounts, markup, and markdown. Lecture 3 hours per week.

BUS 125  (3 CR.)
**Applied Business Mathematics**
Applies mathematical operations to business processes 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: 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: MTH 163 or division approval. Focuses on statistical methodology in the collection, organization, presentation, and analysis of data; concentrates on measures of central tendency, dispersion, probability concepts and distribution, sampling, statistical estimation, normal and T distribution, and hypotheses for means and proportions. Lecture 3 hours per week.

**BUS 222**  
(3 CR.)  
**Business Statistics II**  
Prerequisite: BUS 221 or division approval. Continues study of inferential statistics and application of statistical techniques and methodology in business. Includes analysis of variance, regression, and correlation measurement of business and economic activity through the use of index numbers, trend, cyclical, and seasonal effects and the Chi-square distribution and other nonparametric techniques. Lecture 3 hours per week.
BUS 224  (4 CR.)  Statistical Analysis for Business
Prerequisite: MTH 163 or division approval.
Discusses the business statistics topics typically covered in business degree programs. Covers frequency distributions, descriptive measures, probability concepts, probability distributions, sampling, hypotheses testing for means and proportions, Chi-square distribution, simple linear regression and briefly, multiple linear regression. Lecture 4 hours per week.

BUS 226  (3 CR.)  Computer Business Applications
Prerequisite: 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 241  (3 CR.)  Business Law I
Develops a basic understanding of the U.S. legal environment. Introduces property and contract law, agency and partnership liability, and government regulatory law. Students will be able to apply these legal principles to landlord/tenant disputes, consumer rights issues, employment relationships, and other business transactions. Lecture 3 hours per week.

BUS 242  (3 CR.)  Business Law II
Focuses on business organization and dissolution, bankruptcy, and Uniform Commercial Code. Introduces international law and the emerging fields of e-commerce and Internet law. Lecture 3 hours per week.

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 Dynamics in the Business Organization
Focuses on intra-and interpersonal effectiveness in the business organization. Includes topics such as planning and running effective meetings, networking and politicking, coaching and mentoring, making effective and ethical decisions, developing interpersonal skills that are essential to effective managers, and to improve skills in verbal, non-verbal, and written communication. Lecture 3 hours per week.

BUS 280  (3 CR.)  Introduction to International Business
Studies the problems, challenges, and opportunities that arise when business operations or organizations transcend national boundaries. Examines the functions of international business in the economy, international and transnational marketing, production, and financial operations. Lecture 3 hours per week.

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Chemistry

CHM 101–102  (4 CR.)  (4 CR.)  Introductory Chemistry I–II
CHM 101 prerequisites: satisfactory placement scores for MTH 151 (or completion of unit 5 in an MTT course) and ENG 111. Prerequisite for CHM 102: satisfactory completion of CHM 101 (or its equivalent). Designed for the non-science major. Emphasizes experimental and theoretical aspects of inorganic, organic, and biological chemistry. Discusses general chemistry concepts as they apply to issues within our society and environment. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

CHM 111–112  (4 CR.)  (4 CR.)  General Chemistry I–II
CHM 111 prerequisites: satisfactory placement scores for MTH 163 (or completion through unit 9 in an MTT course) and ENG 111. High school chemistry also strongly recommended. Prerequisite for CHM 112: satisfactory completion of CHM 111 (or its equivalent). 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.

CHM 121–122  (4 CR.)  (4 CR.)  Health Science Chemistry I–II
CHM 121 prerequisites: satisfactory placement scores for MTH 151 (or completion through unit 5 in an MTT course) and ENG 111. Prerequisite for
CHM 122: CHM 121. Introduces the health science student to concepts of inorganic, organic, and biological chemistry as applicable to the allied health profession. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

CHM 241–242 (3 CR.) (3 CR.)
Organic Chemistry I–II
Prerequisites for CHM 241: CHM 112 or equivalent and a satisfactory placement score for ENG 111. Prerequisite for CHM 242: CHM 241. Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Lecture 3 hours per week.

CHM 245–246 (2 CR.) (2 CR.)
Organic Chemistry Laboratory I–II
Prerequisite or corequisite for CHM 245: CHM 241. Prerequisite or corequisite for 246: CHM 242 and satisfactory completion of CHM 245. Is taken by chemistry and chemical engineering majors. Includes qualitative organic analysis. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

CHM 260 (3 CR.)
Introductory Biochemistry
Prerequisites: CHM 112 and a satisfactory placement score for ENG 111. Explores fundamentals of biological chemistry. Includes study of macromolecules, metabolic pathways, and biochemical genetics. Lecture 3 hours per week.

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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: 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, pre-kindergarten, kindergarten, and primary programs. Investigates classroom organization and procedures, and use of classroom time and materials, approaches to education for young children, professionalism, and curricular procedures. Lecture 3 hours per week.

CHD 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. One hour seminar. 4 hours field placement. Total 5 hours per week. May be taken
again for credit.

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 167 (3 CR.)
CDA Theories and Applications:
Resource File
Supports the student/CDA candidate in completing
the Professional Resource File and all documentation
required for the national CDA credential. 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 pro-
social 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 225 (3 CR.)
Curriculum Development for
School-Age Child Care
Explores the creative activities, techniques,
interactions, and program development that promote
positive social and emotional growth in school-age
children. Emphasizes positive development through
everyday programming and experiences. Lecture 3
hours per week.

CHD 230 (3 CR.)
Behavior Management for
School-Age Child Care
Discusses the development of social skills that
school-age children need for self-management,
including self-discipline, self-esteem, and coping with
stress and anger. Explores ways to effectively guide
discipline school-age children, focusing on how
adults can facilitate positive pro-social and self-
management skills. Lecture 3 hours per week.

CHD 235 (3 CR.)
Health and Recreation for
School-Age Child Care
Examines the physical growth of school-age children
and the role of health and recreation in school-age child
development. Explores the use of medication, misuse of
drugs, health issues of children, and the availability of
community resources. Lecture 3 hours per week.

CHD 265 (3 CR.)
Advanced Observation and Participation in
Early Childhood/Primary Settings
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. One hour seminar. 4 hours field placement.
Total 5 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.

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**Chinese**

**CHI 101–102 (5 CR.) (5 CR.)**

**Beginning Chinese I–II**
Prerequisite for CHI 102: CHI 101. Introduces understanding, speaking, reading, and writing skills and emphasizes basic Chinese sentence structure. Lecture 5 hours per week.

**CHI 103–104 (3 CR.) (3 CR.)**

**Beginning Spoken Chinese I–II**
Prerequisite for CHI 104: CHI 103. Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

**CHI 121–122 (3 CR.) (3 CR.)**

**Beginning Chinese Reading and Writing I–II**
Prerequisite or corequisite: CHI 103–104 or equivalent. Introduces the reading and writing of modern standard Chinese. Emphasizes vocabulary buildup and practice in reading and writing. May be taken in conjunction with Beginning Spoken Chinese. Lecture 3 hours per week.

**CHI 201–202 (4 CR.) (4 CR.)**

**Intermediate Chinese I–II**
Prerequisite for CHI 202: CHI 201. Offers intensive practice in comprehending and speaking Chinese, with emphasis on developing structure and fluency. Lecture 4 hours per week.

**Civil Engineering Technology**

**CIV 171**

**Surveying I**
Prerequisite: MTH 115. 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**

**Surveying II**
Prerequisite: 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**

**Structural Systems**
Prerequisite: 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**

**Soil Mechanics**
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 2 hours per week.

**CIV 226**

**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**

**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**

**Concrete Laboratory**
Focuses on mixing, curing, testing, and quality control of concrete. Laboratory 2 hours per week.

**CIV 256**

**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 261 (3 CR.)
Advanced Surveying
Prerequisite: CIV 172 or equivalent. Introduces layout of curves under complex field conditions. Explores route surveying, vertical curves, slope boundaries, legal aspects of surveying, original surveys and resurveys, public land surveys. Discusses topics in surveying, astronomy, and celestial observations. Provides drills in the use of theodolite and electronic equipment. Lecture 2 hours. Laboratory 3 hours. Total 5 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.

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Communication Studies and Theatre

CST 100 (3 CR.)
Principles of Public Speaking
Applies theory and principles of public address with emphasis on preparation and delivery. Lecture 3 hours per week.

CST 110 (3 CR.)
Introduction to Communication
Examines the elements affecting speech communication at the individual, small group, and public communication levels with emphasis on practice of communication at each level. Lecture 3 hours per week.

CST 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 116 (1–6 CR.)
Speech Workshop
Enables work in competitive speech activities such as debate, oratory, impromptu speaking, prose and poetry reading, and rhetorical criticism. May be repeated for credit. Variable hours per week. 1–6 credits (may be repeated for up to 6 credits.)

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. This course is equivalent to PHT 120. Credit will not be awarded for both. 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. Includes perception, self-concept, self-disclosure, listening and feedback, nonverbal communication, attitudes, assertiveness and other interpersonal skills. 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.
CST 131–132 (3 CR.) (3 CR.)
Acting I–II
Develops personal resources and explores performance skills through such activities as theatre games, role playing, improvisation, work on basic script units, and performance of scenes. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CST 136 (1–6 CR.)
Theatre Workshop
Enables students to work in various activities of play production. The student participates in performance, set design, stage carpentry, sound, costuming, lighting, stage managing, props, promotion, or stage crew. May be repeated for credit. Variable hours per week.

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.)
Stagecraft
Acquaints the student with fundamental methods, materials, and techniques of set construction for the stage. 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.

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 200 (3 CR.)
Advanced Public Speaking
Prerequisite: 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
Emphasizes the influence of culture on the communication process including differences in values, message systems, and communication rules. Lecture 3 hours per week.

CST 231–232 (3 CR.) (3 CR.)
History of Theatre I–II
Analyzes and studies theatre history to include architecture, performers and performance, playwrights, stage, production methods, and audience from the Greeks through modern drama. Lecture 3 hours per week.
CST 233–234  (4 CR.)  (4 CR.)
Rehearsal and Performance I–II
Explores various aspects of the theatre through involvement in College theatre production. Lecture/ laboratory 4 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 241–242  (3 CR.)  (3 CR.)
Introduction to Directing I–II
Prerequisites: CST 131–132 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 267  (3 CR.)
Creative Drama
Explores uses of drama through story dramatization, role-playing, and sensory exercises. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

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: 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 201  (4 CR.)
Computer Aided Drafting and Design I
Corequisite: 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: 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: CAD 202. 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: 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 238–239 (3 CR.)(3 CR.)
Computer Aided Modeling and Rendering I–II
Prerequisite for CAD 238: CAD 202. Prerequisite for CAD 239: 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 earthenwork volumes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Computer Science

CSC 100 (1 CR.)
Introduction to Computer Usage
Corequisites: CSC 201 and a satisfactory score on the proficiency examination for MTH 173 or equivalent or division approval. Teaches fundamental skills of computer operation and tools for programming, such as editor, compiler, and debugger. Examines hardware (processor, I/O, and memory), and operating systems. Lecture 1 hour per week.

CSC 110 (3 CR.)
Introduction to Computing
Introduces problem solving through computer applications and via a programming language. Examines development of computers, social and ethical implications of computers, and properties of programming languages. Covers input, storage, data manipulation, software, and hardware. Lecture 3 hours per week.

CSC 130 (3 CR.)
Scientific Programming
Prerequisite: readiness for ENG 111 and readiness for MTH 163/166 or equivalent. Introduces a science-oriented, high-level programming language. Studies the language and its application in problem solving. Lecture 3 hours per week.

CSC 185 (1 CR.)
Programming Tools
Prerequisite: a satisfactory score on the proficiency examination for MTH 166 or division approval. Corequisite: CSC 130 or CSC 201. Teaches tools for computer programming, such as editors, compilers, and debuggers. Teaches operating systems skills needed by computer science majors. (CSC 185 is an updated version of CSC 100 and required for students taking CSC 201. CSC 185 is not required for students who have already taken CSC 100.) Lecture 1 hour per week.

CSC 200 (4 CR.)
Introduction to Computer Science
Prerequisites: placement into ENG 111 and placement into MTH 163/166 or equivalent. Provides broad introduction to computer science. Discusses architecture and function of computer hardware, including networks and operating systems, data and instruction representation, and data organization. Covers software, algorithms, programming languages, and software engineering. Discusses artificial
intelligence and theory of computation. Includes a hands-on instructional component.

**CSC 201 Computer Science I**
(4 CR.)
Prerequisite: CSC 200 or CSC 130. Corequisite: MTH 173 or division approval. Introduces algorithm and problem-solving methods. Emphasizes structured and object-oriented programming concepts, data types, I/O, control structures, functions, data abstraction, objects, elementary data structures, and the study and use of a high-level programming language. Lecture 4 hours per week.

**CSC 202 Computer Science II**
(4 CR.)
Prerequisites: CSC 201 and MTH 173. Corequisite: MTH 174. Examines fundamental data structures and analyzes algorithms. Covers abstract data types and essential data structures such as arrays, stacks, queues, linked lists, and trees; introduces searching and sorting algorithms and algorithm analysis. Lecture 4 hours per week.

**CSC 205 Computer Organization**
(3 CR.)
Prerequisite: CSC 202. Examines the hierarchical structure of computer architecture. Focuses on multi-level machine organization using a simple assembly language. Includes processors, instruction execution, addressing techniques, data representation, and digital logic. Lecture 3 hours per week.

**CSC 206 Assembly Language**
(3 CR.)
Prerequisite: CSC 202 or permission of instructor. Examines assembly language programming. Includes the use of macros, linkers, loaders, assemblers, and interfacing of assembly language with hardware components. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

**Contracting**

**CON 100 Shaping Business Arrangements**
(3 CR.)
Provides an introduction to 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 Federal Acquisition Regulation (FAR) Fundamentals I**
(3 CR.)
Prerequisite: CON 104. Corequisite: CON 100. 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 Federal Acquisition Regulation (FAR) Fundamentals II**
(3 CR.)
Prerequisite: CON 104. Corequisite: 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 107 Contract Planning**
(3 CR.)
Corequisite: CON 100. Teaches the federal strategic acquisition planning processes. Focuses the student on understanding the customer’s needs, understanding the customer’s mission, understanding the contracting officer’s role as the primary business advisor, and developing a strategic acquisition plan that supports the agency’s mission. Lecture 3 hours per week.

**CON 110 Contract Support Planning**
(3 CR.)
Teaches contract support planning, which is a phase of the acquisition process where communication between the customer and acquisition professional is imperative. Introduces a process for knowing customers and their requirements from strategic and small business perspectives, supporting customers and providing them with what they need, when they need it, and at a reasonable price. Applies support in the contracting community of practice for information and resources to satisfy this requirement. Lecture 3 hours per week.

**CON 111 Contract Strategy Execution**
(3 CR.)
Teaches the contract strategy execution phase in the acquisition process where initial research and analysis of customers’ requirements are put into action. Describes the process by which the efforts of all personnel responsible for an acquisition are coordinated and integrated through a comprehensive
CON 112 (3 CR.)
**Contract Performance Assessment**
Provides information and resources necessary to identify and utilize appropriate performance metrics when evaluating contractor performance. Explores processes for working with the customer to ensure contract performance and assessment is satisfying customer’s strategic requirements. Discusses assessment strategies and performance remedies, how to make and process contract changes after award, how to handle disputes, and how to close out completed contracts. Lecture 3 hours per week.

CON 120–121 (3 CR.) (3 CR.)
**Strategic Focused Contracting I–II**
Prerequisite for CON 120: CON 100. Prerequisite for CON 121: CON 120. 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 124 (3 CR.)
**Contract Execution**
Prerequisite: CON 100. Corequisite: CON 107. Teaches students the federal contract execution process. Introduces students to executing acquisition plans through soliciting industry information, executing contract procedures for acquiring commodities, conducting market analysis, determining fair and reasonable prices, and executing the award of a government contract. Lecture 3 hours. Total 3 hours per week.

CON 127 (3 CR.)
**Contract Administration**
Prerequisite: CON 100. Corequisite: CON 107. Covers the fundamentals of federal contract management and administration procedures. Introduces the process of developing and implementing performance assessment strategies, how to make price contract changes after contract award, how to properly address contract disputes, and how to properly close-out contracts. Lecture 3 hours. Total 3 hours per week.

CON 170 (3 CR.)
**Fundamentals of Cost and Price Analysis**
Prerequisite: CON 100. Corequisite: CON 107. Teaches the fundamentals market research process, and analysis of contractor-pricing strategies. Introduces cost-volume-profit analysis, calculation of contribution margin estimates, and the process of developing cost estimating relationships for an effective price analysis pursuant to FAR subpart 15.4. Lecture 3 hours. Total 3 hours per week.

CON 214 (3 CR.)
**Business Decisions for Contracting**
Teaches pre-award business and contracting knowledge necessary to process complex procurements. Emphasizes the planning of successful contract support strategies and executing an acquisition that optimizes customer contract performance. Explains the techniques for building successful business relationships, the benefits of strategic sourcing and spend analysis, and details of providing contract financing. Discusses an in-depth look at subcontracting, how to conduct a formal source selection, and how to analyze the information necessary to determine contractor responsibility. Lecture 3 hours per week.

CON 215 (3 CR.)
**Intermediate Contracting Support**
Presents a series of case studies where students demonstrate their ability to develop and execute business strategies to meet customer requirements. Develops the techniques for building successful business relationships, the benefits of strategic sourcing and spend analysis, and details of providing contract financing will be incorporated. Presents an in-depth look at subcontracting, how to conduct a formal source selection, and how to analyze the information necessary to determine contractor responsibility and risk. 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.
CON 218 (3 CR.)
Advanced Contracting Support
Presents a series of case studies to teach the students contract administration skills, to demonstrate their ability to negotiate fair and reasonable prices and to consider the legal implications for various contract situations. Presents an opportunity to learn and apply critical thinking, cost analysis, problem solving, and negotiation skills to the process of contract administration. Applies the knowledge and skills gained in this course to cover an integrated case study approach for contract award. Lecture 3 hours per week.

CON 237 (3 CR.)
Simplified Acquisition Procedures
Prerequisite: CON 100. Teaches use of Simplified Acquisition Procedures (SAPs) utilizing Federal Acquisition Regulations (FAR), Parts 12 and 13. Covers procedures for planning a solicitation, evaluating quotes, and selecting a contractor for award. Lecture 3 hours per week.

Dental Assisting
Enrollment in DNA courses is restricted to students program-placed in the Dental Assisting Program.

DNA 100 (1 CR.)
Introduction to Oral Health Professions
Provides an introduction to the oral health profession and covers basic terminology, historical perspective, the credentialing process, accreditation, professional organizations, and legal and ethical considerations. 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, prosthestodontics, 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

Enrollment in DNH courses is restricted to students program-placed in the Dental Hygiene Program.

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 (2 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 2 hours per week.

DNH 130 (3 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 2 hours. Laboratory 3 hours. Total 5 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: 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 instrumentation skills. Introduces the student to dental assisting skills. Lecture 2 hours. Clinic 9 hours. Total 11 hours per week.

DNH 143 (4 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 6 hours. Total 8 hours per week.

DNH 145 (2 CR.)
General and Oral Pathology
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: 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
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: 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: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Diagnostic Medical Sonography

Enrollment in DMS courses (except DMS 100) is restricted to students program-placed in the Diagnostic Medical Sonography Program.

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
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
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 206 (2 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 2 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. Lecture 2 hours per week.
DMS 209 (2 CR.)
Ultrasound Physics and Instrumentation II
Prerequisite: 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 (3 CR.)
Obstetrical and Gynecological Sonography
Corequisite: 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 2 hours. Laboratory 3 hours. Total 5 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
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
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 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 9 hours per week.

DMS 232 (4 CR.)
Clinical Education II
Prerequisite: 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 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 9 hours per week.

DMS 240 (3 CR.)
Echocardiography Sectional Anatomy
An introduction to ultrasound sectional anatomy of the heart and great vessels. Anatomy will be presented in the transverse and sagittal planes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

DMS 241 (3 CR.)
Advanced Abdominal Sonography
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 3 hours. Total 5 hours per week.

DMS 242 (3 CR.)
Advanced Obstetrical and Gynecological Sonography
Prerequisite: 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 3 hours. Total 5 hours per week.

DMS 243 (1 CR.)
Breast Sonography
Presents the fundamentals of breast sonography, including case study review of normal anatomy, physiology, and pathological conditions of breast tissue and its visualization with real-time 2D and 3D imaging, and Doppler. Lecture 1 hour per week.

DMS 245 (3 CR.)
Vascular Ultrasound Sectional Anatomy
Presents ultrasound sectional anatomy of the peripheral vascular, cerebrovascular, and abdominal
vascular systems. Anatomy will be presented in the transverse, sagittal, and coronal planes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**DMS 250 (4 CR.)**
**Echocardiography II**
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**
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**
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**
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**
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 111 (2 CR.)**
**Introduction to Diesel Engine**
Studies the modern diesel engine, including its fuel, cooling, induction, and exhaust systems. Covers construction, fabrication, maintenance, tune-up, and minor repair and adjustment. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**DSL 123 (2 CR.)**
**Diesel Engine Systems I**
Studies basic operational theory of the two- and four-stroke cycle diesel engine used in public transportation vehicles. Covers the construction and function of the diesel engine and the major components as they relate to air, exhaust, and fuel systems. Emphasizes diesel engine tune-up and troubleshooting theory. Lecture 2 hours per week.

**DSL 141 (2 CR.)**
**Transportation Electrical Systems I**
Studies basic operational theory of electrical systems used in public transportation vehicles. Covers electrical symbols, schematics, and troubleshooting procedures, as well as the function, construction, and operation of the electrical system and its components. Lecture 2 hours per week.

**DSL 143 (4 CR.)**
**Diesel Truck Electrical Systems**
Prerequisite: DSL 141 or instructor approval. Studies the theory and operation of various truck and tractor electrical systems. Covers preheating, starting, generating, and lighting systems. Uses modern test equipment for measurement, adjustment, and troubleshooting. Lecture 2 hours per week. Laboratory 4 hours per week. 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 152 (4 CR.)**
**Diesel Power Trains, Chassis, and Suspension**
Studies the chassis, suspension, steering, and brake systems found on medium and heavy-duty diesel trucks. Covers construction features, operating principles, and service procedures for power train components such as clutches, multi-speed transmissions, propeller shafts, and rear axles. Teaches operations of modern equipment to correct and adjust abnormalities. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

**DSL 153 (3 CR.)**
**Power Trains I**
Focuses on manual, hydrostatic, and heavy-duty automatic transmissions. Examines various types of power trains and their components, such as multidisc clutch, multi-speed transmissions, torques, drive lines, and differentials. Includes disassembly and
assembly of various components. Part I of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**DSL 155**
**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 160**
**Air Brake Systems**
Studies the basic operational theory of pneumatic and air brake systems as used in heavy-duty and public transportation vehicles. Covers various air control valves, test system components, and advanced air system schematics. Teaches proper service and preventative maintenance of systems. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**Dietetics**

**DIT 121**
**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**
**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**
**Current Concepts in Diet and Nutrition**
Studies the importance of diet to health and well-being 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**
**Therapeutic Nutrition**
Prerequisites: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Drafting**

See Computer Aided Drafting (CAD).

**Economics**

**ECO 110**
**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 115**
**Understanding Our Environment: An Economic Introduction**
Explores basic economic theory as it relates to the issues of environmental problems and natural resource use. Examines the approaches to local, state, and national environmental policy. Investigates issues of sustainability with a global perspective. Lecture 3 hours per week.

**ECO 120**
**Survey of Economics**
Presents a broad overview of economic theory, history, development, and application. Introduces terms, definitions, policies, and philosophies of market economies. Provides some comparison with other economic systems. Includes some degree of exposure to microeconomic and macroeconomic concepts. Lecture 3 hours per week.

**ECO 201**
**Principles of Macroeconomics**
Introduces macroeconomics including the study of Keynesian, classical, monetarist principles and theories, the study of national economic growth, inflation, recession, unemployment, financial markets, money and banking, the role of government spending and taxation, along with international trade and investments. Lecture 3 hours per week.
ECO 202  
**Principles of Microeconomics**  
Introduces the basic concepts of microeconomics. Explores the free market concepts with coverage of economic models and graphs, scarcity and choices, supply and demand, elasticities, marginal benefits and costs, profits, and production and distribution. Lecture 3 hours per week.

ECO 210  
**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  
**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.

ECO 245  
**Contemporary Economic Issues**  
Prerequisite: ECO 201. Presents major contemporary economic issues of the day. May focus on issues such as energy, the environment, the farmer, the national debt, taxes, international trade, consumerism, and economic trends. Emphasizes proper analysis of economic problems and formulation of corrective policy. Develops the student’s critical faculties by exposure to opinions of eminent economists and may offer open classroom debate. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Education**

EDU 114  
**Driver Task Analysis**  
Prerequisite: Successful completion of ENF 1 or ENF 2, under the Virginia Placement Test, or ESL 51. 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  
**Introduction to Teaching as a Profession**  
No prerequisites. However, depending upon the program in which the student is enrolled (i.e., “Career Switcher” vs. VCCS Teacher Preparation AAS), the student may need to have achieved a satisfactory score on Praxis CORE and Praxis II. Provides an orientation to the teaching profession in Virginia, including historical perspectives, current issues, and future trends in education on the national and state levels. Emphasizes information about teacher licensure examinations, steps to certification, teacher preparation and induction programs, and attention to critical shortage areas in Virginia. Includes supervised field placement (recommended: 40 clock hours) in a K-12 school. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EDU 214  
**Instructional Principles of Driver Education**  
Prerequisite: 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 225  
**Audiovisual Materials and Computer Software**  
Prepares students to construct graphic teaching aids, to select and develop materials for instructional support, and to operate, maintain, and use audiovisual equipment used in the classroom. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EDU 235  
**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 254  
**Teaching Basic Academic Skills to Exceptional Children**  
Prerequisite: successful completion of 24 hours of college courses preferably including ITE 115 and ENG 111 or equivalent. 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: Successful completion of 24 hours of college coursework preferably including ITE 115 and ENG 111 or equivalent. Explores the nature of autism and related developmental disorders. Details and discusses current evaluation and assessment measures in ASD. Discusses current intervention strategies and their implementation in the school setting. Part I of III. Lecture 3 hours per week.

**EDU 280 (3 CR.)**
**Technology Standards for Teachers**
Prerequisite: ITE 115 or instructor’s approval. Provides K-12 classroom teachers with the knowledge and skills needed to fulfill the Commonwealth of Virginia’s Technology Standards for Instructional Personnel. Certification is dependent upon the supervisor’s or employer’s approval. Lecture 3 hours per week.

**EDU 285 (3 CR.)**
**Teaching Online Program (TOP)**
Prerequisite: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

### Emergency Medical Services

Enrollment in EMS courses (except EMS 111 and EMS 120) is restricted to students program-placed in Emergency Medical Services Programs.

**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. Equivalent to HLT 105. Lecture 1 hour per week.

**EMS 111 (7 CR.)**
**Emergency Medical Technician: Basic**
Prerequisite: EMS 100 or CPR certification at the Healthcare Provider level. Corequisite: EMS 120. Prepares student for certification as a Virginia and National Registry EMT. 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 5 hours. Laboratory 4 hours. Total 9 hours per week.

**EMS 112 (4 CR.)**
**Emergency Medical Technician: Basic I**
Prerequisite: EMS 100 or CPR certification at the Healthcare Provider level. Corequisite: 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. May be repeated as needed. Lecture 2 hours per week.

**EMS 120 (1 CR.)**
**Emergency Medical Technician: Basic Clinical**
Observes in a program-approved clinical/field setting. Includes topics for both EMS 111 and EMS 112, dependent upon the program in which the student is participating and is a corequisite to both EMS 111 and EMS 112. Laboratory 2 hours per week.

**EMS 151 (4 CR.)**
**Introduction to Advanced Life Support**
Corequisite: 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. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**EMS 153**
**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.

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**EMS 155**
**ALS: Medical Care**
Prerequisites: 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.

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**EMS 157**
**ALS: Trauma Care**
Prerequisites: 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.

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**EMS 159**
**ALS: Special Populations**
Prerequisites: EMS 151 and EMS 153. Pre- 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.

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**EMS 161**
**Basic Trauma Life Support (BTLS)**
Prerequisite: 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**
**Pediatric Basic Trauma Life Support (PBTLS)**
Prerequisite: 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.

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**EMS 165**
**Advanced Cardiac Life Support (ACLS)**
Prerequisite: EMS 100, EMS 153, 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.

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**EMS 169**
**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.

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**EMS 170**
**ALS Internship I**
Corequisite: 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.

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**EMS 172**
**ALS Clinical Internship II**
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.

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**EMS 173**
**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 201  (3 CR.)  EMS Professional Development
Prepares students for Paramedic Certification at the National Registry Level by fulfilling community activism, personal wellness, resource management, ethical considerations in leadership, and research objectives in the Virginia Office of Emergency Medical Services Paramedic curriculum. Lecture 3 hours per week.

EMS 205  (4 CR.)  Advanced Pathophysiology
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 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 2 hours. Laboratory 2 hours. Total 5 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 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. May be repeated as needed. 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.
Engineering

EGR 115 (2 CR.)
Engineering Graphics
Applies principles of orthographic projection and multi-view drawings. Teaches descriptive geometry including relationships of points, lines, planes, and solids. Introduces sectioning, dimensioning, and computer graphic techniques. Includes instruction in computer aided drafting. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

EGR 120 (2 CR.)
Introduction to Engineering
Prerequisite: MTH 164, MTH 166, or testing into MTH 173 and ENG 111 as a corequisite. 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 126 (3 CR.)
Computer Programming for Engineers
Prerequisites: MTH 173 and EGR 120. 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: MTH 166 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)
Prerequisites: EGR 120, MTH 173, and PHY 231. Covers basic concepts of mechanics, systems of forces and couples, equilibrium of particles and rigid bodies, and internal forces and analysis of structures. Also includes trusses, frames, machines and beams, distributed forces, friction, centroids, and moments of inertia. Lecture 3 hours per week.

EGR 245 (3 CR.)
Engineering Mechanics—Dynamics
Prerequisites: MTH 277 and EGR 240. Presents approach to kinematics of particles in linear and curvilinear motion. Includes kinematics of rigid bodies in plane motion. Teaches Newton’s second law, work-energy and power, impulse and momentum, and problem solving using computers. Lecture 3 hours per week.

EGR 246 (3 CR.)
Mechanics of Materials
Prerequisite: EGR 240. Teaches concepts of stress, strain, deformation, internal equilibrium, and basic properties of engineering materials. Analyzes axial loads, torsion, bending, shear, and combined loading. Studies stress transformation and principle stresses, column analysis, and energy principles. Lecture 3 hours per week.

EGR 248 (3 CR.)
Thermodynamics for Engineering
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 251 (3 CR.)
Basic Electric Circuits I
Prerequisite: MTH 174. Corequisite: PHY 231. Teaches fundamentals of electric circuits. Includes circuit quantities of charge, current, potential, power, and energy. Teaches resistive circuit analysis; Ohm’s and Kirchoff’s laws; nodal and mesh analysis; network theorems; and RC, RL, and RLC circuit transient response with constant forcing functions. Teaches AC steady-state analysis, power, and three-phase circuits. Presents frequency domain analysis, resonance, Fourier series, inductively coupled circuits, Laplace transform applications, and circuit transfer functions. Introduces problem solving using computers. Lecture 3 hours per week.
<table>
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<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
</table>
| EGR 252 | 3 CR. | Basic Electric Circuits II  
Prerequisite: EGR 251. Teaches fundamentals of electric circuits. Includes circuit quantities of charge, current, potential, power, and energy. Teaches resistive circuit analysis; Ohm’s and Kirchoff’s laws; nodal and mesh analysis; network theorems; and RC, RL, and RLC circuit transient response with constant forcing functions. Teaches AC steady-state analysis, power, and three-phase circuits. Presents frequency domain analysis, resonance, Fourier series, inductively coupled circuits, Laplace transform applications, and circuit transfer functions. Introduces problem solving using computers. Lecture 3 hours per week. |
| EGR 255 | 1 CR. | Electric Circuits Laboratory  
Corequisite: EGR 252. Teaches principles and operation of laboratory instruments such as VOM, electronic voltmeters, digital multimeters, oscilloscopes, counters, wave generators, and power supplies. Presents application to circuit measurements, including transient and steady-state response of simple networks with laboratory applications of laws and theories of circuits plus measurement of AC quantities. Laboratory 3 hours per week. |
| EGR 265 | 4 CR. | Digital Electronics and Logic Design  
Teaches number representation in digital systems; Boolean algebra; and design of digital circuits, including gates, flip-flops, counters, registers, architecture, microprocessors, and input-output devices. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week. |
| EGR 266 | 3 CR. | Linear Electronics  
Prerequisite: EGR 252. Presents theory of solid-state materials, electronic devices, and device applications. Teaches fundamentals of electronics circuits. Includes electronics circuit design, diodes and waveshaping circuits, transistors as linear devices, BJT-based circuit modules, FET-based circuit modules, AC amplifiers, frequency response of AC amplifiers, negative feedback, distortion, amplifiers performance, and linear applications of operational amplifiers. Also includes design with IC OP amps, sine wave oscillators, and communication systems. Lecture 3 hours per week. |

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.
English

**ENG 100  (3 CR.)**  
**Basic Occupational Communication**  
Prerequisite: qualifying English testing score for ENG 100 or equivalent. 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 108  (3 CR.)**  
**Critical Reading and Study Skills**  
Prerequisite: successful completion of ENF 1 or ENF 2, under the Virginia Placement Test, or equivalent. Helps students improve their reading and learning processes. Includes advanced comprehension strategies and study skills such as time management, note-taking, studying from textbooks and other reading materials, taking examinations, and using the library. Lecture 3 hours per week.

**ENG 111  (3 CR.)**  
**College Composition I**  
Prerequisite: students must achieve satisfactory scores on placement tests, SATs, or ACTs as established by the VCCS and adopted by the College, or ENF 1 or ENF 2 under the Virginia Placement Test. Introduces students to critical thinking and the fundamentals of academic writing. Through the writing process, students refine topics; develop and support ideas; investigate, evaluate, and incorporate appropriate resources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences, and purposes. Writing activities will include exposition and argumentation with at least one researched essay. Lecture 3 hours per week.

**ENG 112  (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.

**ENG 114  (3 CR.)**  
**Scientific Writing**  
Prerequisite: 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**  
Prerequisite: ENG 111 or division approval. 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**  
Prerequisite: ENG 111 or division approval. 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 121–122  (3 CR.)**  
**Introduction to Journalism I–II**  
Prerequisite: ENG 111 or 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: 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: 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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisite(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 131</td>
<td>Technical Report Writing I</td>
<td>3</td>
<td>ENG 111 or equivalent or division approval.</td>
<td>Offers a review of organizational skills including paragraph writing and basic forms of technical communications, various forms of business correspondence, and basic procedures for research writing. Includes instruction and practice in oral communication skills. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>ENG 135</td>
<td>Applied Grammar</td>
<td>3</td>
<td>ENG 111 or division approval.</td>
<td>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.</td>
</tr>
<tr>
<td>ENG 139</td>
<td>College Grammar</td>
<td>3</td>
<td>English language skills equivalent to placement into ENG 111, or ENG 139 under COMPASS or ENF 3 under the Virginia Placement Test.</td>
<td>Studies formal English grammar and effective expression with attention to recognizing and employing appropriately the various levels of English usage, thinking logically, speaking and writing effectively, editing, evaluating content and intent of both spoken and written English, and punctuating correctly. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>ENG 200</td>
<td>Introduction to Linguistics</td>
<td>3</td>
<td>ENG 111.</td>
<td>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.</td>
</tr>
<tr>
<td>ENG 205</td>
<td>Technical Editing</td>
<td>3</td>
<td>ENG 111 or equivalent.</td>
<td>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.</td>
</tr>
<tr>
<td>ENG 210</td>
<td>Advanced Composition</td>
<td>3</td>
<td>ENG 112 or ENG 125, or division approval.</td>
<td>Helps students refine skills in writing nonfiction prose. Guides development of individual voice and style. Introduces procedures for publication. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>ENG 211–212</td>
<td>Creative Writing I–II</td>
<td>3</td>
<td>ENG 112 or ENG 125, or division approval.</td>
<td>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.</td>
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<tr>
<td>ENG 215–216</td>
<td>Creative Writing: Fiction I–II</td>
<td>3</td>
<td>ENG 215 or division approval.</td>
<td>Introduces the student, in a workshop setting, to the fundamentals and techniques of writing short and long fiction. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>ENG 217–218</td>
<td>Creative Writing: Poetry I–II</td>
<td>3</td>
<td>ENG 217 or division approval.</td>
<td>Introduces the student, in a workshop setting, to the fundamentals and techniques of writing poetry. Lecture or workshop 3 hours per week.</td>
</tr>
<tr>
<td>ENG 219</td>
<td>Creative Writing: Drama</td>
<td>3</td>
<td>ENG 112 or ENG 125, or equivalent, or division approval.</td>
<td>Introduces the student to the fundamentals and techniques of writing plays. Lecture 3 hours per week.</td>
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<tr>
<td>ENG 221–222</td>
<td>Advanced Journalism I–II</td>
<td>3</td>
<td>ENG 121, ENG 122, or equivalent courses, or division approval.</td>
<td>Provides instruction in news and feature writing and other aspects of journalism. Lecture 3 hours per week.</td>
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<tr>
<td>ENG 230</td>
<td>Mystery in Literature and Film</td>
<td>3</td>
<td>ENG 112 or ENG 125, or division approval.</td>
<td>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.</td>
</tr>
<tr>
<td>ENG 236</td>
<td>Introduction to the Short Story</td>
<td>3</td>
<td>ENG 112 or ENG 125, or division approval.</td>
<td>Examines selected short stories emphasizing the history of the genre. Involves critical reading and writing. Lecture 3 hours per week.</td>
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</tbody>
</table>
ENG 237
Introduction to Poetry
Prerequisite: 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 241–242 (3 CR.) (3 CR.)
Survey of American Literature I–II
Prerequisite: ENG 112 or ENG 125, or division approval. Examines American literary works from colonial times to the present, emphasizing the ideas and characteristics of our national literature. Involves critical reading and writing. Lecture 3 hours per week.

ENG 243–244 (3 CR.) (3 CR.)
Survey of English Literature I–II
Prerequisite: ENG 112 or ENG 125, or division approval. Studies major English works from the Anglo-Saxon period to the present, emphasizing ideas and characteristics of the British literary tradition. Involves critical reading and writing. Lecture 3 hours per week.

ENG 245 (3 CR.)
Major English Writers
Prerequisite: ENG 112 or ENG 125, or division approval. Examines major writers in English literary history. Involves critical reading and writing. Lecture 3 hours per week.

ENG 246 (3 CR.)
Major American Writers
Prerequisite: ENG 112 or ENG 125, or division approval. Examines major writers of American literary history. Involves critical reading and writing. Lecture 3 hours per week.

ENG 247 (3 CR.)
Survey of Popular Culture
Prerequisite: 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 249 (3 CR.)
Survey of Asian-American Literature
Prerequisite: ENG 112 or ENG 125, or division approval. Covers major works by Asian-American writers from 1900 to the present. Examines the formation of Asian-American subjectivities across the axes of ethnicity, gender, sexuality, and class. Develops student critical reading, writing, and thinking skills via texts, films, and cultural studies theories. Lecture 3 hours per week.

ENG 250 (3 CR.)
Children’s Literature
Prerequisite: 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 251–252 (3 CR.) (3 CR.)
Survey of World Literature I–II
Prerequisite: ENG 112 or ENG 125, or division approval. Examines major works of world literature. Involves critical reading and writing. Lecture 3 hours per week.

ENG 253–254 (3 CR.) (3 CR.)
Survey of African-American Literature I–II
Prerequisite: ENG 112 or ENG 125, or division approval. Examines selected works by African-American writers from the colonial period to the present. Involves critical reading and writing. Lecture 3 hours per week.

ENG 255 (3 CR.)
Major Writers in World Literature
Prerequisite: ENG 112 or ENG 125, or division approval. Examines major writers selected from a variety of literary traditions. Involves critical reading and writing. Lecture 3 hours per week.

ENG 256 (3 CR.)
Literature of Scientific Fiction
Prerequisite: 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: 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.)
Jane Austen: Selected Works
Prerequisite: ENG 112. Examines the historical and social aspects of England during the early 1800's. Focuses on an in-depth analysis of several of Austen's published works leading to a thorough understanding of the Edwardian and Georgian periods of literature. Lecture 3 hours. Total 3 hours per week.
ENG 261–262  (3 CR.) (3 CR.)
Advanced Creative Writing I–II
Prerequisite: 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 267  (3 CR.)
The Modern Novel
Prerequisite: ENG 112 or ENG 125, or division approval. Studies the modern novel. Emphasizes appreciation and interpretation of selected novels. Requires critical reading and writing. Lecture 3 hours per week.

ENG 270  (3 CR.)
Non-Western Literature in Global Context
Prerequisite: ENG 112 or ENG 125, or division approval. Examines non-Western popular culture, written texts, film, and mythology through the lens of comparative literature and the shifting horizons brought on by dynamic changes in global social and cultural values. Lecture 3 hours per week.

ENG 271–272  (3 CR.) (3 CR.)
The Works of Shakespeare I–II
Prerequisite: ENG 112 or ENG 125, or division approval. Examines selected works of Shakespeare. Involves critical reading and writing. Lecture 3 hours per week.

ENG 273–274  (3 CR.) (3 CR.)
Women in Literature I–II
Prerequisite: ENG 112 or ENG 125, or division approval. Examines literature by and about women. Involves critical reading and writing. Lecture 3 hours per week.

ENG 276  (3 CR.)
Southern Literature
Prerequisite: ENG 112 or ENG 125, or division approval. Examines the themes and techniques of selected writers dealing with the American South as a distinctive cultural entity. Involves critical reading and writing. Lecture 3 hours per week.

ENG 279  (3 CR.)
Film and Literature
Prerequisite: 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 280  (3 CR.)
Writing User Manuals
Prerequisite: ENG 112 or ENG 125, or division approval. Provides instruction on how to design, write, and test a manual. Focuses on the principles used in writing technical manuals, the document process, design and drafting procedures, and finally, testing and revising the manual. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

English as a Second Language

A comprehensive English Proficiency Test (EPT) is required for all English as a Second Language (ESL) classes.

ESL 20  (10 CR.)
English as a Second Language II
Prerequisite: An English placement test recommendation for ESL Level 2. Provides intensive instruction and practice at the low intermediate level. Provides an introduction to the sound system, stress, intonation, 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
Prerequisite: ESL Placement Test recommendation for ESL Provides instruction in writing at the low-intermediate level. 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
Prerequisite: ESL Placement Test recommendation for ESL Provides instruction in reading 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
Prerequisite: An English placement test recommendation for ESL Level 2. 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: An English placement test recommendation for ESL Level 3 or 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: An English placement test recommendation for ESL Level 3 or 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: An English placement test recommendation for ESL Level 3 or 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: An English placement test recommendation for ESL Level 3 or higher or 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: An English placement test recommendation for ESL Level 4 or 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: An English placement test recommendation for ESL Level 4 or 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: An English placement test recommendation for ESL Level 4 or higher or 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: 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: An English placement test recommendation for ESL Level 5 or 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: An English placement test recommendation for ESL Level 5 or 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: 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: An English placement test recommendation for ESL Level 3 or higher or 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: An English placement test recommendation for ESL Level 3 or higher or 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 (4 CR.)**

*General Environmental Science I*
Prerequisite: Satisfactory placement score for ENG 111. 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. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ENV 122 (4 CR.)**

*General Environmental Science II*
Prerequisite: Satisfactory placement score for ENG 111. 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 124 (4 CR.)**

*Cross-Disciplinary Explorations in Science and Society*
Provides multidisciplinary environmental science applications, primarily for nonscience majors. Integrates environmental science with topics from biology, chemistry, and geology. Addresses other scientific concepts according to the expertise of the instructor. Focuses on scientific investigations centered on a particular integrated, contemporary theme. Lecture 3 hours. Recitation and 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.

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ENV 227  (3 CR.)  
Environmental Law
Prerequisite: 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
Prerequisites: ENG 4 under the COMPASS test, or successful completion of ENF 2, or placement recommendation for ENF 3 under the Virginia Placement Test, GIS 200 and competency in Math Essentials Units MTE 1–3 as demonstrated through placement and diagnostic test, or by completion through unit 3 in an MTT course. 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

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
Provides an introduction to 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: 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: 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: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

FST 100  (3 CR.)  
Principles of Emergency Services
This course provides an overview to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/
service; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; and introduction to fire strategy and tactics. Lecture 3 hours per week.

FST 110  (3 CR.)
Fire Behavior and Combustion
Prerequisite or corequisite: MTH 151. This course explores the theories and fundamentals of how and why fires start, spread, and how they are controlled. Lecture 3 hours per week.

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

FST 112  (3 CR.)
Hazardous Materials Chemistry
This course provides basic fire chemistry relating to the categories of hazardous materials including problems of recognition, reactivity, and health encountered by firefighters. Lecture 3 hours per week.

FST 115  (3 CR.)
Fire Prevention
This course provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, the relationships of fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education. Lecture 3 hours per week.

FST 120  (3 CR.)
Occupational Safety and Health for the Fire Service
Prerequisite: FST 100. This course introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk evaluation and control procedures for fire stations, training sites, emergency vehicles, and emergency situations involving fire, EMS, hazardous materials, and technical rescue. Upon completion of this course, students should be able to establish and manage a safety program in an emergency service organization. Lecture 3 hours per week.

FST 121  (3 CR.)
Principles of Fire and Emergency Services Safety and Survival
Introduces basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services. Lecture 3 hours per week.

FST 135  (3 CR.)
Fire Instructor I
Emphasizes development of teaching methods and aids, including role-playing, small group discussion, and development of individual learning methods and materials. Requires students to develop lesson plans and make presentations on appropriate topics. Based on current requirements of NFPA 1041, Standards for Fire Instructor Professional Qualifications, and prepares student for certification as Fire Instructor I. Lecture 3 hours per week.

FST 205  (3 CR.)
Fire Protection Hydraulics and Water Supply
Prerequisite: MTH 120. This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. Lecture 3 hours per week.

FST 210  (3 CR.)
Legal Aspects of Fire Service
Prerequisite: FST 100. This course introduces the federal, state, and local laws that regulate emergency services, national standards influencing emergency services, standard of care, tort, liability, and a review of relevant court cases. Lecture 3 hours per week.

FST 215  (3 CR.)
Fire Protection Systems
Prerequisite: MTH 151 or higher, FST 100, FST 110, and FST 115. This course provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. Lecture 3 hours per week.

FST 220  (3 CR.)
Building Construction for Fire Protection
This course provides the components of building construction that relate to fire and life safety. The focus of this course is on firefighter safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. Lecture 3 hours per week.
FST 235  (3 CR.)  
**Strategy and Tactics**  
Prerequisite: FST 100. Provides an in-depth analysis of the principles of fire control through utilization of personnel, equipment, and extinguishing agents on the fire ground. Lecture 3 hours per week.

FST 237  (3 CR.)  
**Emergency Service Supervision**  
Teaches the history of modern management theories, including scientific management and behavioral scientist approach. Introduces concepts of group dynamics, leadership, communication, stress and time management, and personnel evaluation techniques. Discusses the legal and ethical considerations of personnel management in the emergency service. Lecture 3 hours per week.

FST 240  (3 CR.)  
**Fire Administration**  
Prerequisite or corequisite: FST 100. This course introduces the student to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasis on fire service leadership from the perspective of the company officer. Lecture 3 hours per week.

FST 245  (3 CR.)  
**Fire and Risk Analysis**  
Prerequisite: FST 240. Presents a study of current urban fire problems with emphasis on solutions based upon current available technology. Includes master planning, as well as methods of identifying, analyzing, and measuring accompanying risk and loss possibilities. Lecture 3 hours per week.

FST 255  (3 CR.)  
**Fire Officer III**  
Prerequisite: FST 250 or Certification as Fire Officer II. Presents the material and testing required for certification as a Fire Officer III under the National Standard for Fire Officer Professional Qualifications, NFPA 1021. Includes instruction for those serving in or preparing for middle and upper ranks of large fire departments. Includes community awareness and public relations, human resource development, budget information management, public education, emergency service delivery, and firefighter safety. Lecture 3 hours per week.

FRE 101–102  (5 CR.) (5 CR.)  
**Beginning French I–II**  
Prerequisite for FRE 102: FRE 101. Introduces understanding, speaking, reading, and writing skills; emphasizes basic French sentence structure. Lecture 5 hours per week.

FRE 103–104  (3 CR.) (3 CR.)  
**Basic Spoken French I–II**  
Prerequisite for FRE 104: FRE 103. Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

FRE 111–112  (3 CR.) (3 CR.)  
**Conversation in French I–II**  
Prerequisite for FRE 112: FRE 111. Emphasizes the spoken language, stressing correctness of structure, pronunciation, fluency, and vocabulary. Lecture 3 hours per week.

FRE 201–202  (3 CR.) (3 CR.)  
**Intermediate French I–II**  
Prerequisite for FRE 202: FRE 201. Continues to develop understanding, speaking, reading, and writing skills. French is used in the classroom. Lecture 3 hours per week.

FRE 211–212  (3 CR.) (3 CR.)  
**Intermediate French Conversation I–II**  
Prerequisite for FRE 212: FRE 211. Continues to develop fluency through emphasis on idioms and other complex sentence structures. Lecture 3 hours per week.

FRE 233  (3 CR.)  
**Introduction to the Culture and Literature of France I**  
Prerequisite: FRE 202. Introduces the student to French culture and literature through reading and discussing selected texts in the French language. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Geographic Information Systems**

GIS 101  (3 CR.)  
**Introduction to Geospatial Technology**  
Prerequisite: basic computer literacy. Provides an introduction to 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  (3 CR.)
Geographical Information Systems I
Prerequisite: ITE 115 or instructor approval. Provides hands-on introduction to a dynamic desktop GIS (Geographic Information System). Introduces the components of a desktop GIS and their functionality. Emphasizes manipulation of data for the purpose of analysis, presentation, and decision-making. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

GIS 201  (3 CR.)
Geographical Information Systems II
Prerequisite: GIS 200. Provides a continuation of GIS 200, with emphasis on advanced topics in problem-solving, decision-making, modeling, programming, and data management. Covers map projections and data formats, and methods for solving the problems they create. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

GIS 203  (3 CR.)
Cartography For GIS
Prerequisite: 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  (3 CR.)
Geographical Information Systems: 3-Dimensional Analysis
Prerequisite: GIS 201. Introduces GIS 3D (three-dimensional) concepts and practices with a concentration on displaying, creating, and analyzing spatial GIS data using 3D. Covers 3D shape files, 3D data formats such as Tin’s, DEM’s, grids, and controlling the perspective and scale of 3D data through rotating. Lecture 2 hours. Laboratory 2 hours. Total 4 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 215  (4 CR.)
New GIS Software Platforms and Applications
Assists users with the transition to newer GIS software platforms and applications. Students will learn concepts and terminology needed to become proficient in the latest GIS software. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

GIS 220  (4 CR.)
Introduction to Urban and Regional Planning
Provides students with a basic understanding of urban and regional planning concepts and tasks, and how they can be managed using GIS. After completing the course, students will be able to use GIS software to address real-world social, economic, and environmental planning problems. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

GIS 225  (4 CR.)
GIS Applications for Tax Assessors
Provides an introduction to 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
Prerequisites: ENG 4 under the COMPASS test, or successful completion of ENF 2, or placement recommendation for ENF 3 under the Virginia Placement Test, GIS 200 and competency in Math Essentials Units MTE 1–3 as demonstrated through placement and diagnostic test, or by completion through unit 3 in an MTT course. 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: 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**

Studies major elements of the natural environment including earth-sun relationship, landforms, weather and climate, natural types of vegetation, and soils. Introduces the student to types and uses of maps. Lecture 3 hours per week.

**GEO 210** *(3 CR.)*

**People and the Land: An Introduction to Cultural Geography**

Focuses on the relationship between culture and geography. Presents a survey of modern demographics, landscape modification, material and nonmaterial culture, language, race and ethnicity, religion, politics, and economic activities. Introduces the student to types and uses of maps. Lecture 3 hours per week.

**GEO 220** *(3 CR.)*

**World Regional Geography**

Studies physical and cultural characteristics of selected geographical regions of the world. Focuses upon significant problems within each of the regions, and examines the geographical background of those problems. Introduces the student to types and uses of maps. Lecture 3 hours per week.

**GEO 221** *(3 CR.)*

**Regions of the World I**

Presents an overview of physical and cultural characteristics of selected geographical regions of the world. Focuses upon significant problems within each of the regions. Studies the European cultural sphere including Europe, Soviet Union, the Americas, and Australia and the emerging nations in Africa, Southwest Asia, and the Orient. Introduces the student to types and uses of maps. Part I of II. Lecture 3 hours per week.

**GEO 222** *(3 CR.)*

**Regions of the World II**

Presents an overview of physical and cultural characteristics of selected geographical regions of the world. Focuses upon significant problems within each of the regions. Studies the European cultural sphere including Europe, Soviet Union, the Americas, and Australia and the emerging nations in Africa, Southwest Asia, and the Orient. Introduces the student to types and uses of maps. Part II of II. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

### 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. 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.

**GOL 111–112** *(4 CR.)*

**Oceanography I–II**

GOL 112 prerequisite: 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: 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: 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.

**GOL 225 (4 CR.)**

**Environmental Geology**

Prerequisite: GOL 105. Explores the interaction between man and his physical environment. Stresses geologic hazards and environmental pollution utilizing case histories. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**German**

**GER 101–102 (5 CR.) (5 CR.)**

**Beginning German I–II**

Prerequisite for GER 102: GER 101. Introduces understanding, speaking, reading, and writing skills and emphasizes basic German sentence structures. Lecture 5 hours per week.

**GER 103 (3 CR.)**

**Basic Spoken German I**

Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

**GER 111–112 (3 CR.) (3 CR.)**

**Conversation in German I–II**

Prerequisite for GER 111: GER 102 or equivalent. Prerequisite for GER 112: GER 111. Emphasizes the spoken language, stressing correctness of structure, pronunciation, fluency, and vocabulary. Lecture 3 hours per week.

**GER 201–202 (3 CR.) (3 CR.)**

**Intermediate German I–II**

Prerequisite for GER 201: GER 102 or equivalent. Prerequisite for GER 202: GER 201. Continues to develop understanding, speaking, reading, and writing skills. German is used in the classroom. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Greek**

**GRE 101–102 (3 CR.) (3 CR.)**

**Introduction to Ancient Greek I–II**

Prerequisite for GRE 102: GRE 101. Introduces the ancient Greek language. Designed to prepare the student for early readings in Hellenic or Hellenistic literature. Lecture 3 hours per week.

**GRE 201–202 (3 CR.) (3 CR.)**

**Intermediate Ancient Greek I–II**

Prerequisites for GRE 201: GRE 101–102. Prerequisite for GRE 202: GRE 201. Introduces the reading of classical and Koine Greek with a review of Greek grammar, forms, and syntax. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Health**

**HLT 105 (1 CR.)**

**Cardiopulmonary Resuscitation**

Provides training in coordinated mouth-to-mouth artificial ventilation and chest compression techniques, includes life-saving practices for choking, life-threatening emergencies, and sudden illness. Lecture 1 hour per week.

**HLT 106 (2 CR.)**

**First Aid and Safety**

Focuses on the principles and techniques of safety and first aid. Lecture 2 hours per week.

**HLT 110 (3 CR.)**

**Concepts of Personal and Community Health**

Studies the concepts related to the maintenance of health, safety, and the prevention of illness at the personal and community level. Lecture 3 hours per week.
HLT 138  (2 CR.)
Principles of Nutrition
Focuses on medical terminology for students preparing for careers in the health professions. Lecture 2 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 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 170  (1 CR.)
Introduction to Massage
Introduces the student to the field of massage therapy. Student practices basic Swedish massage strokes, aromatherapy, effleurage, petressage and friction, as well as indications and contra-indications for massage. Lecture 1 hour per week.

HLT 180  (3 CR.)
Therapeutic Massage I
Prerequisites: HLT 170 and either NAS 150 or NAS 161–162 or BIO 141–142. Introduces the student to the history and requirements for massage therapy. Covers the terms and practice of massage with introduction to equipment, safety, and ethics as well as massage movements and techniques. Includes information about the benefits of massage, contra-indications, client interview, client-therapist relationship, draping, good body mechanics, and anatomical landmarks. Basic massage techniques are blended into a relaxing, health enhancing full-body session preparing the student for their student clinical experience. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

HLT 200  (3 CR.)
Human Sexuality
Provides a basic understanding of human sexuality. Includes anatomy, physiology, pregnancy, family planning, venereal diseases, and sexual variations. Lecture 3 hours per week.

HLT 206  (3 CR.)
Exercise Science
Surveys scientific principles, methodologies, and research as applied to exercise and physical fitness. Emphasizes physiological responses and adaptions to exercise. Addresses basic elements of kinesiology, biomechanics, and motor learning. Presents an introduction to the physical fitness industry. Lecture 3 hours per week.

HLT 215  (3 CR.)
Personal Stress and Stress Management
Provides a basic understanding of stress and its physical, psychological, and social effects. Includes the relationships between stress and change, self-evaluation, sources of stress, and current coping skills for handling stress. Lecture 3 hours per week.

HLT 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 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.

HLT 271  (3 CR.)
Physical Care Management of the Older Adult
Introduces the physiology of aging; integrates caretaker guidelines; demonstrates skills to care for aging at a variety of functional levels. Prerequisite: Admission to the Program. Lecture 3 hours per week.

HLT 272  (3 CR.)
Medical Management of the Older Adult
Introduces common medical problems associated with the aging; examines preventive and restorative care associated with common illnesses. Focuses on assessments, evaluation, and safe administration of medications. Includes emergency care and CPR. Lecture 3 hours per week.

HLT 280  (3 CR.)
Therapeutic Massage II
Prerequisite: HLT 180. Introduces the concepts and techniques of deep bodywork, focusing, and sports massage including the principles of health-related fitness core exercises, pre- and post-event massage, and hydrotherapy. Concentrates on the integration of musculoskeletal anatomy and physiology into massage techniques. Includes discussion of therapist wellness principles and self-care and the integration of massage therapy into the healthcare fields. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.
HLT 281  (3 CR.)
Therapeutic Massage III
Prerequisites: HLT 280 and PTH 151. Introduces the concept of consultation, client management, session design, and integration of specific therapeutic approaches into a full-body session. Students learn to give specific therapeutic attention to the regions of the back, neck, and torso. Using knowledge of muscle anatomy, students perform more advanced massage techniques to address hypertonicity, chronic ischemia, trigger points, fibrotic tissue, adhesions and scar tissue. Includes common clinical applications in the body regions covered and the integration of specific techniques into a full body session. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Health Information Management

Enrollment in HIM courses (except HIM 100) is restricted to students program-placed in Health Information Management programs.

HIM 100  (1 CR.)
Introduction to the Healthcare Delivery System
Introduces the organization of the healthcare delivery system with emphasis on types of providers and the role that accrediting and licensing bodies play in the delivery of healthcare. Lecture 1 hour per week.

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: 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: 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: 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**  
*Health Data Classification Systems*  
Prerequisites: HIM 110 and BIO 141 or NAS 150 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**  
*Health Statistics*  
Prerequisites: HIM 130 and 141 or permission of instructor. Introduces the student to basic statistical principles and calculations as applied in the healthcare environment. Focuses on procedures for collection and reporting vital statistics, basic quality control population statistical information. In addition, students will learn the fundamentals of standard deviation, normal distribution, and histograms. Lecture 3 hours per week.

**HIM 225**  
*Quality Assurance in Healthcare*  
Prerequisites: 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**  
*Legal Aspects of Health Record Documentation*  
Prerequisites: 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**  
*Performance Improvement in Healthcare Settings*  
Prerequisite: 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**  
*Information Systems and Technology in Healthcare*  
Prerequisites: 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**  
*Electronic Health Records Management*  
Prerequisite: 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**  
*Supervision and Management Practices for HIM*  
Prerequisite: 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**  
*Health Data Classification Systems I: ICD-9-CM*  
Prerequisites: HIM 110, HIM 142, HIM 260 and BIO 142. Focuses on disease and procedure classification using ICD-9-CM. This system is currently utilized for collecting health data for the purpose of statistical research and financial reporting. Lecture 4 hours per week.

**HIM 251**  
*Clinical Practice I*  
Prerequisite: HIM 226. Supervises student practice in health information activities conducted in a variety of clinical settings. Clinical 6 hours per week.

**HIM 252**  
*Clinical Practice II*  
Prerequisites: HIM 250 and HIM 251. Corequisites: 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**  
*Advanced Coding and Reimbursement*  
Prerequisite: HIM 250. Corequisite: 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**
Prerequisites: HIM 110, HIM 111, and HIM 250 plus either BIO 141–142 or NAS 150 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**
Prerequisites/corequisites: HIM 110, HIM 111, BIO 142, NAS 150 (CDC only). 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: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**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 various health professionals, issues in healthcare industry. Covers the role 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 in Explores the history and development of the performance improvement process. Address 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 patient, promote safety, and improve patient care. Discuss legal issues created by implementation of the electronic health record. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Hindi

HIN 101 (5 CR.)
Beginning Hindi I
Develops the understanding, speaking, reading, and writing of Hindi, and emphasizes the structure of the language. Lecture 5 hours per week.

HIN 102 (5 CR.)
Beginning Hindi II
Prerequisite: HIN 101. Continues with developing the understanding, speaking, reading, and writing of Hindi, and emphasizes the structure of the language. Lecture 5 hours per week.

HIN 201 (3 CR.)
Intermediate Hindi I
Prerequisite: HIN 102 or instructor approval. Continues the development of the skills of understanding, speaking, reading, and writing of Hindi. Classes are conducted in Hindi. Lecture 3 hours per week.

HIN 202 (3 CR.)
Intermediate Hindi II
Prerequisite: HIN 201. Utilizes the development of skills of understanding, speaking, reading, and writing of Hindi covered in HIN 201. Classes are conducted in Hindi. Lecture 3 hours per week.

History

HIS 101–102 (3 CR.) (3 CR.)
History of Western Civilization I–II
Examines the development of Western civilization from ancient times to the present. The first semester ends with the 17th century; the second semester continues through modern times. Lecture 3 hours per week.

HIS 111–112 (3 CR.) (3 CR.)
History of World Civilization I–II
Surveys Asian, African, Latin American, and European civilizations from the ancient period to the present. Lecture 3 hours per week.

HIS 121–122 (3 CR.) (3 CR.)
United States History I–II
Surveys United States history from its beginning to the present. Lecture 3 hours per week.

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 141–142 (3 CR.) (3 CR.)
African-American History I–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 188 (3 CR.)
Field Survey Techniques for Archaeology
Provides an introduction to basic field techniques used in surveying archaeological and architectural sites. Emphasizes hands-on experience in both classroom and fieldwork. Includes methods to identify and record archaeological sites and standing structures; to nominate sites to the National Register of Historic Places; to address relevant preservation laws; and to preserve, mark, and catalogue artifacts in the laboratory. Lecture 3 hours per week.

HIS 199 (1–5 CR.)
Supervised Study/Independent Project
See General Usage Course section at the beginning of the Course Descriptions.

HIS 203–204 (3 CR.) (3 CR.)
History of African Civilization I–II
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 211–212 (3 CR.) (3 CR.)
History of England I–II
Surveys the history of the British Isles from pre-Celtic times to the present. Lecture 3 hours per week.

HIS 214 (3 CR.)
History of Scotland
Examines topics in Scottish history from ancient times to the present. Includes major social, economic, political, and religious developments. 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 225–226 (3 CR.) (3 CR.)
Topics in European History I–II
Examines selected topics in the history of Europe from ancient times to the present. Lecture 3 hours per week.

HIS 231–232 (3 CR.) (3 CR.)
History of Latin American Civilizations I–II
Examines Latin American civilizations from pre-Columbian origins to the present. Lecture 3 hours per week.

HIS 241–242 (3 CR.) (3 CR.)
History of Russia I–II
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 251–252 (3 CR.) (3 CR.)
History of Middle East Civilization I–II
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 253–254 (3 CR.) (3 CR.)
History of Asian Civilizations I–II
Surveys the civilizations of Asia from their origins to the present. Lecture 3 hours per week.

HIS 255 (3 CR.)
History of Chinese Culture and Institutions
Examines traditional Chinese 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 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 261  (3 CR.)
Topics in Cultural Ethnicity I
Cultural experiences of various ethnic groups in the United States, e.g. the Irish, Italians, Jews, Germans, etc. Lecture 3 hours per week.

HIS 262  (3 CR.)
United States History in Film
Examines selected topics in the United States history that shaped the American experience, presented in film. Lecture 3 hours per week.

HIS 266  (3 CR.)
Military History of the Civil War
Analyzes military campaigns of the Civil War, including factors contributing to the defeat of the Confederacy and problems created by the war. May include field trips to Civil War sites in the region. 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 281–282  (3 CR.)  (3 CR.)
History of Virginia I–II
Examines the cultural, political, and economic history of the Commonwealth from its beginning to the present. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

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 115  (3 CR.)
Plant Propagation
Teaches principles and practices of plant propagation. Examines commercial and home practices. Provides experience in techniques using seed-spores, cuttings, grafting, budding, layering, and
HRT 117  (2 CR.)
Tools and Equipment
Introduces tools and equipment used in commercial horticulture. Emphasizes power-operated equipment including spreaders, sprayers, saws, and tractors. Stresses safety, maintenance, minor repair, and appropriate tool selection. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

HRT 118  (2 CR.)
Turf Pests
Covers identification, morphology, and life cycles of insects and other animals, including disease agents and weeds. Stresses diagnosis and management of specific turf pests. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

HRT 119  (3 CR.)
Irrigation Systems for Turf and Ornamentals
Explains why, when, and how irrigation systems are used by the grounds management industry. Includes component selection, system design, installation, operation, and maintenance. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 120  (3 CR.)
History of Garden Design
Studies the development of gardens as they chronicle the development of civilization. Introduces the periods, in both Europe and North America, beginning with settlement, on through industrial development, land and space utilization, to current environmental concerns. Explores physical and cultural influences on garden design and utilization. Lecture 3 hours per week.

HRT 121  (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 125  (3 CR.)
Chemicals in Horticulture
Emphasizes basic chemical principles and their application to horticulture. Introduces principles of inorganic and organic chemicals. Studies chemical activities of insecticides, fungicides, herbicides, fertilizers, and growth regulators. 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 205  (3 CR.)
Soils
Prerequisite: HRT 125. Teaches theoretical and practical aspects of soils and other growing media. Examines media components, chemical and physical properties, and soil organisms. Discusses management and conservation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 206  (2 CR.)
Pesticides in Horticulture
Discusses pesticide selection, mixing, application, storage, and disposal. Stresses safety, environmental considerations, and legal restrictions. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

HRT 207  (3 CR.)
Plant Pest Management
Teaches principles of plant pest management. Covers morphology and life cycles of insects and other small animal pests and plant pathogens. Lab stresses diagnosis, chemical and nonchemical control of specific pests, and pesticide safety. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 230  (2 CR.)
Site Analysis
Examines basic landscape and site planning techniques, environmental considerations, and construction principles. Lecture 1 hour. Laboratory 2 hours. Total 3 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: 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 244 (3 CR.)**  
**Computer Aided Drafting and Design (CADD) for Landscape Designers**  
Prerequisite: HRT 231. Corequisite: HRT 232. Provides instruction in the use of computer-aided drafting and design software for developing landscape plans and supporting information for drawings such as dimensions and area calculations. Lecture 3 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 246 (3 CR.)**  
**Herbaceous Plants**  
Studies identification, culture, and uses of herbaceous plants in landscaping. Includes perennials, biennials, common bulbs, and annuals. Teaches scientific and common names of plants. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 247 (2 CR.)**  
**Indoor Plants**  
Studies identification, culture, and uses of indoor plants in interior landscaping. Includes tropical, subtropical, and non-hardy temperate plants. Teaches scientific and common names of plants. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**HRT 250 (2 CR.)**  
**Plant Composition**  
Prerequisite: HRT 245 or HRT 201. Applies basic identification and landscape traits of woody plants to the creation of groupings/combinations for effect in design. Lecture 2 hours per week.

**HRT 251 (3 CR.)**  
**Site Engineering for Landscape Design**  
Pre- or corequisite: HRT 231. It is also recommended, but not required, that the student take HRT 230 prior to taking this course. Applies skill sets and knowledge from planting design to the principles of engineering relating to the site. Includes developing topographical drawings, turning radius for vehicles, structural details, and other structural requirements with the design. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**HRT 252 (3 CR.)**  
**Landscape Construction Drawings**  
Prerequisites: HRT 231 and HRT 251. Pre- or corequisite: HRT 232. Applies skill sets and knowledge from the prerequisite foundation classes in Planting Design and Site Engineering to prepare a completed set of construction drawings and specifications. Combines basic drawing skills with the site analysis and engineering to develop drawings and specifications that can be reasonably implemented by contractors. 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: 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 267 (2 CR.)**  
**Silk and Dried Flower Arranging**  
Teaches skills required for composition of silk or dried floral arrangements. Includes a discussion of silk floral materials, supplies needed, and use of appropriate dried flowers. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

**HRT 268 (3 CR.)**  
**Advanced Floral Design Applications**  
Teaches skills required for the composition of large floral arrangements. Includes wedding, funeral, and special occasion designs for the home as well as public areas. 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.

HRT 275  (3 CR.)  
**Landscape Construction and Maintenance**
Examines practical applications of commercial landscape construction techniques, and materials used. Covers construction, planting, and maintenance. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

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.

VEN 110  (3 CR.)  
**Vineyard Establishment**
Reviews sites, soils, and other factors that affect the planting of grapes. Covers vineyard designs, varieties, and the training of newly planted vines. Includes weed control and pest management of new vines. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

VEN 140  (3 CR.)  
**Viticulture Pest and Disease Management**
Investigates grape diseases, grape insects, and grape pests. Studies and evaluates methods of disease and pest control with an investigation of natural and chemical measures. Provides field experience in pest and disease management. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

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**Hospitality Management**

HRI 101–102  (3 CR.) (3 CR.)  
**Hotel-Restaurant Organization and Management I–II**
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 103  (3 CR.)  
**Introduction to Meeting Planning**
Focuses on basic aspects and skills involved in planning and managing meetings and conventions. Covers the entire spectrum of the meeting industry, treating all aspects with a broad approach. Emphasizes types of meetings, meeting markets, industry suppliers and affiliates, budget and program planning, site selection and contract negotiations, registration and housing, food and meeting functions, audiovisual and signage requirements, and post-meeting analysis. Lecture 3 hours per week.

HRI 104  (3 CR.)  
**Introduction to Association Management**
Focuses on the basic management aspects and organizational structures common to the “association” industry. The course will emphasize staff, board, and member relations; standing and special interest committees; legal and political considerations; communications; finance; and other pertinent areas. Lecture 3 hours per week.

HRI 106–107  (3 CR.) (3 CR.)  
**Principles of Culinary Arts I–II**
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 120  (4 CR.)  
**Principles of Food Preparation**
Applies scientific principles and techniques to the preparation of food, including carbohydrates, such as fruits, vegetables, sugars, and starches; fats, including both animal and vegetable, as well as natural and manufactured; and proteins, such as milk, cheese, eggs, meats, legumes, fish, and shellfish. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

HRI 126  (1 CR.)  
**The Art of Garnishing**
Focuses on the relationship between colors and shapes and how they pertain to garnishes. Provides student with knowledge to create impressive presentations. Lecture 1 hour per week.

HRI 128  (3 CR.)  
**Principles of Baking**
Instructs the student in the preparation of breads, pastries, baked desserts, candies, frozen confections, and sugar work. Applies scientific principles and techniques of baking. Promotes the knowledge/skills required to prepare baked items, pastries, and
confections. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**HRI 138**  
**Commercial Food Production Management**  
(3 CR.)  
Prerequisite: HRI 120 or approval of instructor.  
Teaches commercial cooking. Studies management’s role in setting up and running commercial cooking operations, menu planning, menu evaluation, standardization of recipes, and scheduling of manpower. Lecture 3 hours per week.

**HRI 145**  
**Garde Manger**  
(3 CR.)  
Studies garde manger, the art of decorative cold food preparation and presentation. Provides a detailed practical study of cold food preparation and artistic combination and display of cold foods. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**HRI 150**  
**Introduction to Hospitality Ownership**  
(3 CR.)  
Presents growth, development, present status, and trends of the food and lodging industry. Includes special problems of operating small and medium sized establishments. Introduces credit and accounting procedures, management of staff, marketing, advertising, and security, as well as personal attitudes, qualifications, and ethics. Lecture 3 hours per week.

**HRI 158**  
**Sanitation and Safety**  
(3 CR.)  
Covers the moral and legal responsibilities of management to insure a sanitary and safe environment in a food service operation. Emphasizes the causes and prevention of 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 160**  
**Executive Housekeeping**  
(3 CR.)  
Studies the housekeeping department with emphasis on organization, staffing and scheduling, staff development, work methods improvements, equipment, cleaning materials and cleaning procedures; maintenance and refurbishing; room design and safety engineering. Lecture 3 hours per week.

**HRI 215**  
**Food Purchasing**  
(3 CR.)  
Presents the method and procedures for purchasing food for hotels, restaurants, and institutions. Deals with markets, federal and trade grades, governmental regulations, packaging, comparative versus price buying, yields, and quality control. Lecture 3 hours per week.

**HRI 225**  
**Menu Planning and Dining Room Service**  
(3 CR.)  
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 229**  
**Principles of Meeting Planning**  
(3 CR.)  
Prerequisite: HRI 103. Focuses on planning and managing meetings. Examines entire sequence of events, from conceptual stage of first meeting plan through completion of the event. Emphasizes technical planning skills including site selection, negotiating with suppliers, meeting specifications, preparation, budgeting, special event planning, and working with facility staff to manage a successful meeting. Lecture 3 hours per week.

**HRI 230**  
**Exhibition Management**  
(3 CR.)  
Prerequisite: HRI 229 or meeting management experience. Studies management of trade shows and expositions. Addresses the basic structure of exhibit organizations, attendee and exhibitor needs, purposes and types of shows, facilities, promotion, trends, and employment opportunities. Lecture 3 hours per week.

**HRI 231**  
**Principles of Event Planning and Management**  
(3 CR.)  
Focuses on the detailed aspects of how to produce, stage, script, and manage special events within the context of achieving organizational goals. Emphasizes the five critical stages in planning and managing special events: research needs and make goal assessments; design events to meet organizational purposes; planning the effective event; coordination and on-site management; and post-event evaluation. Lecture 3 hours per week.

**HRI 232**  
**Meeting and Exhibition Law and Ethics**  
(3 CR.)  
Prerequisite: HRI 229 or meeting planning or trade show work experience. Focuses on legal principles and precedents and ethical considerations as they apply to exposition and convention management. Reviews laws dealing with letters of agreement, contracts, torts, and other considerations peculiar to
the meeting and exhibition industry. Covers legal and ethical aspects regarding tax, intellectual property, insurance, employment, antitrust, and liquor liability. Lecture 3 hours per week.

HRI 233  (3 CR.)
Meeting and Exhibition Marketing
Prerequisite: HRI 229 or meeting planning experience. Examines all the major marketing tools used to attract attendees to an event, promote seminar attendance, and sell booth space to exhibitors at a trade show or exposition. Concentrates on the fundamentals of marketing that will enable the meeting manager to practice a total marketing approach including research, planning, budgeting, direct mail, advertising, public relations, direct selling, and sales promotion. Lecture 3 hours per week.

HRI 235  (3 CR.)
Marketing of Hospitality Services
Studies principles and practices of marketing the services of the hotel and restaurant industry. Emphasizes the marketing concept with applications leading to customer satisfaction. Reviews methods of external and internal stimulation of sales. May include a practical sales/marketing exercise and computer applications. Lecture 3 hours per week.

HRI 245  (3 CR.)
Labor Cost Control
Focuses on position analysis and description. Considers employee scheduling, forecasting, and staffing needs as related to sales for the labor intensive hospitality industry. Covers interpretation and analysis of payroll to maximize efficiency and productivity. Uses problem-solving techniques to illustrate payroll procedures. Includes explanation of payroll deductions, tip credits, and tip-sales allocation. 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.

HRI 256  (3 CR.)
Principles and Applications of Catering
Prerequisite: HRI 138 or approval of instructor. Analyzes and compares the principles of on-premise and off-premise catering. Includes student presentations in a series of catered functions where they assume typical managerial/employee positions emphasizing planning, organizing, operating, managing, and evaluating. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 265  (3 CR.)
Hotel Front Office Operations
Analyzes hotel front office positions and the procedures involved in reservation registration, accounting for and checking out guests, and principles and practices of night auditing. Covers the complete guest operation in both traditional and computerized operations. Lecture 3 hours per week.

HRI 270  (3 CR.)
Strategic Lodging Management
Prerequisites: HRI 101, HRI 102, or instructor’s approval. Presents lodging management principles, focusing on strategic planning as the foundation for operational effectiveness. Synthesizes management practices which can be used by entry-level, mid-level, and executive management. Lecture 3 hours per week.

HRI 275  (3 CR.)
Hospitality Law
Studies legal principles governing hospitality operations. Includes applications of common law and statutory decisions, discussion of legal theory, and regulations governing management of hospitality enterprise. Lecture 3 hours per week.

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Human Services

HMS 100  (3 CR.)
Introduction to Human Services
Introduces human service agencies, roles, and careers. Presents a historical perspective of the field as it relates to human services today. Additional topics include values clarification and needs of target populations. Lecture 3 hours per week.
HMS 109  (3 CR.)  
**Structured Career Planning in Human Services**
Overviews human services as a career field. Teaches career development skills for personal career planning and for use with clients. Includes nine-hour computer component (word processing). Lecture 3 hours per week.

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 252  (3 CR.)  
**Substance Abuse II**
Prerequisite: HMS 251. Expands knowledge and skill in working with the substance abuser. Focuses on assisting substance abusers in individual and group settings and explores client treatment modalities. May provide opportunities for field experience in treatment centers. Lecture 3 hours per week.

HMS 258  (3 CR.)  
**Case Management and Substance Abuse**
Focuses on the process for interviewing substance abuse clients. Includes intake, assessment, handling denial, and ending the interview. Teaches skills for writing short-term goals and treatment plans with emphasis on accountability. Examines various reporting devices. Lecture 3 hours per week.

HMS 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.

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**Humanities**

HUM 111–112  (3 CR.)  (3 CR.)  
**Great Books I–II**
Introduces selected great works of philosophy and literature, with emphasis on close analysis of the text. Lecture 3 hours per week.

HUM 165  (3 CR.)  
**Controversial Issues in Contemporary American Culture**
Introduces students to selected issues in contemporary American culture. Includes topic areas ranging from welfare reform, economic development, privacy, environmental protection and conservation, evolution vs. creation, to family values, and special interest lobbying in our state and national governments. Focuses on the development of the student’s critical thinking skills by analyzing, evaluating, and reflecting on opposite sides of the same issue as expressed by public leaders, special interest groups, and academicians. Lecture 3 hours per week.

HUM 201  (3 CR.)  
**Survey of Western Culture I**
Studies thought, values, and arts of Western culture, integrating major developments in art, architecture, literature, music, and philosophy. Covers the following periods: Ancient and Classical, Early Christian and Byzantine, Medieval, and Early Renaissance. Lecture 3 hours per week.
HUM 202  (3 CR.)  
Survey of Western Culture II  
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.

HUM 210  (3 CR.)  
Introduction to Women in Humanities  
Prerequisite: ENG 111. Introduces interdisciplinary and cross-cultural theories that explore gender, race, and class issues relating to women's lives, past and present. Lecture 3 hours per week.

HUM 211–212  (3 CR.) (3 CR.)  
Survey of American Culture I–II  
Examines elements of our national culture as they evolved from the first European explorations through colonizations and independence to the present day. Lecture 3 hours per week.

HUM 218  (3 CR.)  
Survey of Horror  
Surveys and analyzes the horror genre, focusing on the psychological, anthropological, and historical background of monsters. Acquaints students with recurring horror themes in literature, art, and popular culture from around the world. Lecture 3 hours per week.

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. Lecture 3 hours per week.

HUM 235  (3 CR.)  
Filipino-American Culture  
Surveys the cultural history of Filipinos in the United States from early immigration until the present. Studies history, cultural values, social and economic life, music, dance, art and literature, including acculturation and assimilation. Lecture 3 hours per week.

HUM 241–242  (3 CR.) (3 CR.)  
Interdisciplinary Principles of the Humanities I–II  
Integrates unifying principles of the humanities and related fields of study. Emphasizes the expansion of student’s intellectual perspective and development of concepts enabling the integration of knowledge from diverse fields into a unified whole. Lecture 3 hours per week.

HUM 256  (3 CR.)  
Mythology in Literature and the Arts  
Studies cultural expressions of mythology in literature and the arts. Considers several of the following mythologies, with emphasis on parallels and divergences: Egyptian, Near-Eastern, Greek, Roman, Celtic, Norse, Asian, and African. Lecture 3 hours per week.

HUM 259  (3 CR.)  
Greek Mythology  
Surveys and analyzes major stories from Greek mythology. Explores psychological, anthropological, and historical interpretations of the myths. Acquaints students with recurring mythological themes in language, art, music, and literature. Lecture 3 hours per week.

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Information Technology and Database Design

ITD 110  (3 CR.)  
Web Page Design I  
Prerequisite: ITE 115. 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  
Prerequisite: ITE 115. 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  
Prerequisite: ITD 132. 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 210 (3 CR.)  
**Web Page Design II**  
Prerequisite: 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 256 (3 CR.)  
**Advanced Database Management**  
Prerequisite: ITE 115. 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: ITE 115. 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**  
Prerequisite: ITE 115. 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 115 (3 CR.)  
**Introduction to Computer Applications and Concepts**  
Recommended prerequisite: keyboarding skills. Covers computer concepts and Internet skills and uses a computer software suite that includes word processing, spreadsheet, database, and presentation software to demonstrate skills required for computer literacy. Lecture 3 hours per week.

ITE 126 (1 CR.)  
**Operating System Fundamentals**  
Includes instruction in commonly used internal and external commands including the use of subdirectories and creating basic batch files. Lecture 1 hour per week.

ITE 130 (3 CR.)  
**Introduction to Internet Services**  
Prerequisite: working knowledge of Windows. Provides students with a working knowledge of Internet terminology and services including e-mail, WWW browsing, search engines, FTP, file compression, and other services using a variety of software packages. Provides instruction for basic web page construction. Lecture 3 hours per week.

ITE 140 (3 CR.)  
**Spreadsheet Software I**  
Prerequisite: ITE 115. Covers the use of spreadsheet software to create spreadsheets with formatted cells and cell ranges, control pages, multiple sheets, charts, and macros. Topics will include how to type and edit text in a cell, enter data on multiple worksheets, work with formulas and functions, create charts, pivot tables, and styles, insert headers and footers, and filter data. Covers MOS Excel objectives. Lecture 3 hours per week.

ITE 150 (3 CR.)  
**Desktop Database Software**  
Prerequisite: ITE 115. Incorporates instruction in planning, defining, and using a database; performing queries; producing reports; working with multiple files; and concepts of database programming. Course topics include database concepts, principles of table design and table relationships, entering data, creating and using forms, using data from different sources, filtering, creating mailing labels. Covers MOS Access certification objectives. Lecture 3 hours per week.

ITE 170 (3 CR.)  
**Multimedia Software**  
Prerequisite: ITE 115. 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: ITE 115. 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 181  (3 CR.)  
Technical Training Principles  
Provides instruction in training principles related to technology with an emphasis on methods of training and resource development. Requires development of a technical training lesson using instructor-led training and/or computer-based training. This course includes discussion on latest trends in training. Lecture 3 hours per week.

ITE 182  (3 CR.)  
User Support/Help Desk Principles  
Prerequisite: 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 215  (3 CR.)  
Advanced Computer Applications and Integration  
Prerequisite: ITE 115. Incorporates advanced computer concepts including the integration of a software suite. Lecture 3 hours per week.

ITE 221  (3 CR.)  
PC Hardware and OS Architecture  
Prerequisite: ITE 115. Covers instruction about processors, internal functions, peripheral devices, computer organization, memory management, architecture, instruction format, and basic OS architecture. Lecture 3 hours per week.

ITN 100  (3 CR.)  
Introduction to Telecommunications  
Prerequisite: ITE 115. 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: ITE 100. 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: ITN 100; pre- or corequisite: 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.)  
Networking Fundamentals: Cisco  
Provides introduction to networking using the OSI reference model. Includes data encapsulation, TCP/IP suite, routing, IP addressing, and structured cabling design and implementation. Lecture 4 hours per week.

ITN 155  (4 CR.)  
Introductory Routing: Cisco  
Prerequisite: ITN 154. Features an introduction to basic router configuration using Cisco IOS software. Includes system components, interface configuration, IP network design, troubleshooting techniques, configuration and verification of IP addresses, and router protocols. Lecture 4 hours per week.

ITN 156  (4 CR.)  
Basic Switching and Routing: Cisco  
Prerequisite: ITN 155. Centers instruction in LAN segmentation using bridges, routers, and switches. Includes fast Ethernet, access lists, routing protocols, spanning tree protocol, virtual LANs, and network management. Lecture 4 hours per week.

ITN 157  (4 CR.)  
WAN Technologies: Cisco  
Prerequisite: ITN 156. 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: ITN 100 or ITN 101. 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: ITE 115. Provides an introduction to 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: ITN 100 or 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 208 (4 CR.) Protocols and Communications TCP/IP**
Prerequisite: ITN 101. Centers on providing an understanding of the TCP/IP suite and the details of its implementation, which are treated by discussing IP addressing, the structure of frames, and protocol headers that enable communication between two computers. Discusses IP routing, tunneling, SNMP, and security. Lecture 4 hours per week.

**ITN 213 (3 CR.) Information Storage and Management**
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: ITN 100 or 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**
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 260 (3 CR.) Network Security Basics**
Prerequisites: ITN 100 and 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: 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: 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: 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 266 (3 CR.)**

*Network Security Layers*

Prerequisite: 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.)**

*Cyberlaw*

Prerequisite: read and write at a college level or instructor’s permission. 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 277 (3 CR.)**

*Computer Forensics II*

Prerequisite: 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.

**ITP 100 (3 CR.)**

*Software Design*

Pre- or corequisite: MTH 151 or higher. 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 112 (4 CR.)**

*Visual Basic .NET I*

Prerequisite: ITP 100. Teaches fundamentals of object-oriented programming using Visual Basic .NET and the .NET framework. Emphasizes program construction, algorithm development, coding, debugging, and documentation of graphical user interface applications. Lecture 4 hours per week.

**ITP 120 (4 CR.)**

*Java Programming I*

Prerequisite: ITP 100. 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 130 (4 CR.)**

*C Programming I*

Prerequisite: ITP 100. Teaches fundamentals of structured programming using C. Emphasizes program construction, algorithm development, coding, debugging, and documentation of console applications. Lecture 4 hours per week.

**ITP 132 (4 CR.)**

*C++ Programming I*

Prerequisite: ITP 100. 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 136 (4 CR.)
C# Programming I
Prerequisite: ITP 100. Presents instruction in fundamentals of object-oriented programming and design using C#. Course content emphasizes program construction, algorithm development, coding, debugging, and documentation of applications within the .NET framework. Lecture 4 hours per week.

ITP 137 (4 CR.)
Programming iOS Devices
Prerequisite: ITP 100. 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 165 (4 CR.)
Gaming and Simulation
Prerequisite: MTH 158. Corequisite: ITP 100. 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 225 (4 CR.)
Web Scripting Languages
Prerequisites: ITP 100 and ITD 110. 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 230 (4 CR.)
C Programming II
Prerequisite: 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 234 (4 CR.)
Visual C++ Programming II
Prerequisite: ITP 134. Instruction in advanced concepts of foundation classes for graphical user interfaces. Lecture 4 hours per week.

ITP 236 (4 CR.)
C# Programming II
Prerequisite: 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 244 (4 CR.)
ASP.NET: Server-Side Programming
Prerequisite: ITP 112 or ITP 136. Provides instruction in creation of ASP.NET web applications to deliver dynamic content to a website utilizing server controls, web forms, and web services to accomplish complex data access tasks. Lecture 4 hours per week.

ITP 246 (4 CR.)
Java: Server-Side Programming
Prerequisite: 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 251 (3 CR.)
Systems Analysis and Design
Prerequisite: ITE 115 and ITP 100. 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: permission of instructor. 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. Total 4 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

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  
Prerequisite: IDS 100. 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: 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: ART 101. Teaches history of furnishings and interiors from the ancient world to the present. Lecture 3 hours per week.

**IDS 205**  
(3 CR.)  
Materials and Sources  
Prerequisite: 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: 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  
Prerequisites: IDS 105, IDS 106, IDS 205, and IDS 206. 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  
Prerequisites: 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: 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  
Prerequisites: IDS 100, IDS 105, and ITE 115 or permission of instructor. 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  
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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

**Interpreter Education**

Additional sign language courses are listed under American Sign Language (ASL).
INT 105–106  (3 CR.)  (3 CR.)
Interpreting Foundations I–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: INT 105. 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: An 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: 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: 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: 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: 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
Prerequisites: 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
Prerequisites: 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 235  (3 CR.)
Interpreting in the Educational Setting
Prerequisites: ASL 102 and INT 130. Examines the role, responsibilities, and communication techniques in the educational setting. Provides information on the nature and needs of the Deaf student and methods used in working with students who are Deaf and hard-of-hearing. Describes various communication systems used for a variety of educational environments. Lecture 3 hours per week.
INT 236 (3 CR.)
Interpreting in Special Situations
Studies roles, responsibilities, and qualifications involved in interpreting in specific settings, such as medical, legal, conference, religious, and performing arts. Addresses specific linguistic and ethical concerns for each. Lecture 3 hours per week.

INT 237 (2 CR.)
Interpreting ASL in Safe Settings
Prerequisites: 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

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Italian
ITA 101–102 (5 CR.) (5 CR.)
Beginning Italian I–II
Prerequisite for ITA 102: ITA 101. Develops the understanding, speaking, reading, and writing of Italian, and emphasizes the structure of the language. Lecture 5 hours per week.

ITA 103–104 (3 CR.) (3 CR.)
Basic Spoken Italian I–II
Prerequisite for ITA 104: ITA 103. Teaches oral communication and introduces the student to cultural mores and customs. Recommended for students with no prior instruction in the language. Lecture 3 hours per week.

ITA 111 (3 CR.)
Conversation in Italian I
Prerequisite: ITA 102 or equivalent. Emphasizes the spoken language, stressing fluency and correctness of structure, pronunciation, and vocabulary. Introduces the student to cultural mores and customs. Lecture 3 hours per week.

Italian
ITA 201–202 (3 CR.) (3 CR.)
Intermediate Italian I–II
Prerequisite for ITA 201: ITA 102 or equivalent. Prerequisite for ITA 202: ITA 201. Continues development of skills of understanding, speaking, reading, and writing of Italian. Classes conducted in Italian. Lecture 3 hours per week.

Japanese
JPN 101–102 (5 CR.) (5 CR.)
Beginning Japanese I–II
Prerequisite for JPN 102: JPN 101. Develops the understanding, speaking, reading, and writing of Japanese, and emphasizes the structure of the language. Lecture 5 hours per week.

JPN 103–104 (3 CR.) (3 CR.)
Basic Spoken Japanese I–II
Prerequisite for JPN 104: JPN 103. Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

JPN 201–202 (4 CR.) (4 CR.)
Intermediate Japanese I–II
Prerequisite: JPN 102. Prerequisite for JPN 202: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Korean
KOR 101–102 (5 CR.) (5 CR.)
Beginning Korean I–II
Prerequisite for KOR 102: 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 101–102 (3 CR.) (3 CR.)
Elementary Latin I–II
Prerequisite for LAT 102: 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.
LAT 201–202 (3 CR.) (3 CR.)
**Intermediate Latin I–II**
Prerequisites: two years high school Latin or one year college Latin. Prerequisite for LAT 202: LAT 201. Introduces the reading of classical Latin with a review of Latin grammar, forms, and syntax. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

### Legal/Paralegal Studies

**LGL 110** (3 CR.)
**Introduction to Law and the Legal Assistant**
Introduces various areas of law in which a legal assistant may be employed. Includes study of the court system (Virginia and federal), as well as a brief overview of criminal law, torts, domestic relations, evidence, 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. Focuses on separation and prenuptial agreements, pleadings, and rules of procedure. 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, Shepard’s Citations, ALR, and other research tools. Includes overview of computer applications and writing projects. Lecture 3 hours per week.

**LGL 126** (3 CR.)
**Legal Writing**
Requires placement into ENG 111. 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: 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 215** (3 CR.)
**Torts**
Studies fundamental principles of the law of torts. May include preparation and use of pleadings and other documents involved in the trial of a civil action. Emphasizes personal injury, products liability, and medical malpractice cases. Lecture 3 hours per week.

**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 ABC Commission, State Corporation Commission, Division of Workers’ Compensation, Social Security Administration, the Virginia Employment Commission, and other administrative agencies. Lecture 3 hours per week.

**LGL 225** (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 234 (3 CR.)
Intellectual Property Law
Presents outline of federal copyright and federal and state trademark law. Examines the functions of legal assistants in preparing registrations as well as infringement litigation. Covers related areas of law including trade secrecy and differences between various types of intellectual property. Examines the basics of patent law. 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
Provides an introduction to 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Library Technology

LBR 105 (1 CR.)
Library Skills for Research
Introduces students to accessing, retrieving, evaluating, and applying a variety of digital and print information resources. Develops an understanding of the type of information provided in each of the information formats presented: reference, cataloged materials, magazines/journals, newspapers, and Internet sites. Provides background information, available resources, search techniques, sample searches, evaluation guides, and exams in each of the course units. Lecture 1 hour per week.

LBR 110 (1 CR.)
Effective Internet Searching
Prerequisite: a satisfactory score on the English proficiency exam. Teaches students how to access, utilize, and evaluate information on the World Wide Web using a variety of search tools. Also teaches students comparative analysis of search tool architecture and how to select the most appropriate tool for their information needs. Lecture 1 hour per week.

LBR 195 (1-5 CR.)
Topics in: Library Technology
Exploration of topical areas of interest to or needed by students. May be used also for special Honors courses. May be repeated for credit. Variable hours.

Marketing

MKT 200 (3 CR.)
Consumers, Marketing, and Society
Provides an overview of the marketing system as it applies to the needs and wants of consumers and the purchasing process; considers the role of government in consumer affairs. Assists the individual in becoming an informed consumer and better business manager through an understanding of rights and obligations in consumer transactions. Lecture 3 hours per week.

MKT 201 (3 CR.)
Introduction to Marketing
Introduces students to the discipline of marketing and the need to create customer value and customer relationships in the marketplace. Presents an overview of the marketing principles, concepts, management strategies and tactics, along with the analytical tools, used by organizations in the creation of a marketing plan to promote ideas, products, and/or services to selected target groups. Examines entrepreneurial e-marketing practices in today’s business environment. 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 216 (3 CR.)
Retail Organization and Management
Examines the organization of the retail establishment to accomplish its goals in an effective and efficient manner. Includes study of site location, internal layout, store operations, and security. Examines the retailing mix, the buying or procurement process, pricing, and selling. Studies retail advertising,
promotion, and publicity as a coordinated effort to increase store traffic. Lecture 3 hours per week.

**MKT 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 media kits. Lecture 3 hours per week.

**MKT 227 (3 CR.)**  
**Merchandise Buying and Control**  
Studies the merchandising cycle. Explores techniques used in the development of buying resources, merchandising plans, model stock, unit control, and inventory systems. Highlights merchandise selection, policy pricing strategies, and inventory control methods. Lecture 3 hours per week.

**MKT 228 (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 275 (3 CR.)**  
**International Marketing**  
Examines the role of the multinational firm, as well as the environments in which they operate. Covers such factors as exchange rates, government foreign trade policy, and social-cultural factors. Compares international market planning with domestic market planning. 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: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Mathematics: Developmental**

Students will study developmental mathematics topics in a technology-based setting to prepare for entrance into college-level mathematics courses and curricula. Students will register for MTT (Mathematics Technology-Based) courses and receive instruction in the developmental math units determined by their placement test results. Credits are not applicable toward graduation.

**BSK 1 (1 CR.)**  
**Whole Numbers**  
Covers whole number principles and computations. Credit is not applicable toward graduation. Lecture 1 hour per week.

**MTT 1 (1 CR.)**  
**Developmental Mathematics (Technology-Based) I**  
Prerequisite: placement scores requiring the student to complete one developmental math unit. Covers mathematics topics in a technology-based setting to prepare students for the study of college-level mathematics courses and curricula. Designed for the study of one developmental math unit prescribed by the student’s placement test results. Credits not applicable toward graduation. Lecture 1 hour per week.

**MTT 2 (2 CR.)**  
**Developmental Mathematics (Technology-Based) II**  
Prerequisite: placement scores requiring the student to complete two developmental math units. Covers mathematics topics in a technology-based setting to prepare students for the study of college-level mathematics courses and curricula. Designed for the study of any combination of two developmental math units prescribed by the student’s placement test results. Credits not applicable toward graduation. Lecture 2 hours per week.
MTT 3  
Developmental Mathematics  
(Technology-Based) III  
Prerequisite: placement scores requiring the student to complete three developmental math units. Covers mathematics topics in a technology-based setting to prepare students for the study of college-level mathematics courses and curricula. Designed for the study of any combination of three developmental math units prescribed by the student’s placement test results. Credits not applicable toward graduation. Lecture 3 hours per week.

MTT 4  
Developmental Mathematics  
(Technology-Based) IV  
Prerequisite: placement scores requiring the student to complete four developmental math units. Covers mathematics topics in a technology-based setting to prepare students for the study of college-level mathematics courses and curricula. Designed for the study of any combination of four developmental math units prescribed by the student’s placement test results. Credits not applicable toward graduation. Lecture 4 hours per week.

The following units make up the components of the MTT courses listed above:

Mathematics Essentials

MTE 1  
Operations with Positive Fractions  
Prerequisite: a qualifying placement score. Includes operations and problem-solving with proper fractions, improper fractions, and mixed numbers without the use of a calculator. Emphasizes applications and includes U.S. customary units of measure. Credit is not applicable toward graduation. Lecture 1 hour per week.

MTE 2  
Operations with Positive Decimals and Percents  
Prerequisite: MTE 1 or qualifying placement score. Includes operations and problem-solving with positive decimals and percents. Emphasizes applications and includes U.S. customary and metric units of measure. Credit is not applicable toward graduation. Lecture 1 hour per week.

MTE 3  
Algebra Basics  
Prerequisite: MTE 2 or qualifying placement score. Includes basic operations with algebraic expressions and solving simple algebraic equations using signed numbers with emphasis on applications. Credit is not applicable toward graduation. Lecture 1 hour per week.

MTE 4  
First Degree Equations and Inequalities in One Variable  
Prerequisite: MTE 3 or qualifying placement score. Includes solving first degree equations and inequalities containing one variable, and using them to solve application problems. Emphasizes applications and problem solving. Credit is not applicable toward graduation. Lecture 1 hour per week.

MTE 5  
Linear Equations, Inequalities, and Systems of Linear Equations in Two Variables  
Prerequisite: MTE 4 or qualifying placement score. Includes finding the equation of a line, graphing linear equations and inequalities in two variables and solving systems of two linear equations. Emphasizes writing and graphing equations using the slope of the line and points on the line, and applications. Credit is not applicable toward graduation. Lecture 1 hour per week.

MTE 6  
Exponents, Factoring, and Polynomial Equations  
Prerequisite: MTE 5 or qualifying placement score. Includes techniques of factoring polynomials and using these techniques to solve polynomial equations. Emphasizes applications using polynomial equations solved by factoring. Credit is not applicable toward graduation. Lecture 1 hour per week.

MTE 7  
Rational Expressions and Equations  
Prerequisite: MTE 6 or qualifying placement score. Includes simplifying rational algebraic expressions, solving rational algebraic equations, and solving applications that use rational algebraic equations. Credit is not applicable toward graduation. Lecture 1 hour per week.

MTE 8  
Rational Exponents and Radicals  
Prerequisite: MTE 7 or qualifying placement score. Includes simplifying radical expressions, using rational exponents, solving radical equations and solving applications using radical equations. Credit is not applicable toward graduation. Lecture 1 hour per week.

MTE 9  
Functions, Quadratic Equations, and Parabolas  
Prerequisite: MTE 8 or qualifying placement score. Includes an introduction to functions in ordered pair,
graph, and equation form. Also introduces quadratic functions, their properties and their graphs. Credit is not applicable toward graduation. Lecture 1 hour per week.

Mathematics

A placement test is required for MTH 115, MTH 126, MTH 150, MTH 151, MTH 152, and MTH 157. A student who provides official evidence of a minimum mathematics score of 520 on the SAT or a minimum score of 22 on the ACT taken within the last two years may register for these courses without taking the math placement test.

MTH 115 (3 CR.)
Technical Mathematics I
Prerequisites: competency in Math Essentials Units MTE 1–6 as demonstrated through the placement and diagnostic tests, or by completion through unit 6 in an MTT course. Designed for the technical student. Presents algebra through exponential and logarithmic functions, trigonometry, vectors, analytic geometry, and complex numbers. Lecture 3 hours per week.

MTH 126 (2 CR.)
Mathematics for Allied Health
Prerequisites: competency in Math Essentials Units MTE 1–3 as demonstrated through placement and diagnostic tests, or by completion through unit 3 in an MTT course. Competency in Math Essentials Units MTE 1–5 or equivalent is desirable. Presents scientific notation, precision and accuracy, decimals and percents, ratio and proportion, variation, simple equations, techniques of graphing, use of charts and tables, logarithms, and the metric system. Lecture 2 hours per week.

MTH 150 (3 CR.)
Topics in Geometry
Prerequisites: competency in Math Essentials Units MTE 1–5 as demonstrated through the placement and diagnostic tests, or by completion through unit 5 in an MTT course. Presents the fundamentals of plane and solid geometry and introduces non-Euclidean geometries and current topics. Lecture 3 hours per week.

MTH 151 (3 CR.)
Mathematics for the Liberal Arts I
Prerequisites: competency in Math Essentials Units MTE 1–5 as demonstrated through the placement and diagnostic tests, or by completion through unit 5 in an MTT course. A student who provides official evidence of a minimum mathematics score of 520 on the SAT or a minimum score of 22 on the ACT taken within the last two years may register for this course without taking the math placement test. MTH 151 and MTH 152 do not have to be taken in sequence. Lecture 3 hours per week.

MTH 152 (3 CR.)
Mathematics for the Liberal Arts II
Prerequisites: competency in Math Essentials Units MTE 1–5 as demonstrated through the placement and diagnostic tests, or by completion through unit 5 in an MTT course. A student who provides official evidence of a minimum mathematics score of 520 on the SAT or a minimum score of 22 on the ACT taken within the last two years may register for this course without taking the math placement test. MTH 151 and MTH 152 do not have to be taken in sequence. Presents topics in functions, combinatorics, probability, statistics, and algebraic systems. Lecture 3 hours per week.

MTH 157 (4 CR.)
Elementary Statistics
Prerequisites: competency in Math Essentials Units MTE 1–5 as demonstrated through the placement and diagnostic tests, or by completion through unit 5 in an MTT course. Presents elementary statistical methods and concepts, including descriptive statistics, estimation, hypothesis testing, linear regression, and categorical data analysis. (Credit will not be awarded for both MTH 157 and MTH 241.) Lecture 4 hours per week.

MTH 163 (3 CR.)
Precalculus I
Prerequisites: competency in Math Essentials Units MTE 1–9 as demonstrated through the placement and diagnostic tests, or by completion through unit 9 in an MTT course. Presents college algebra, matrices, and algebraic, exponential, and logarithmic functions. (Credit cannot be awarded for both MTH 163 and MTH 166.) Lecture 3 hours per week.

MTH 164 (3 CR.)
Precalculus II
Prerequisite: MTH 163. Presents trigonometry, analytic geometry, and sequences and series. (Credit cannot be awarded for both MTH 164 and MTH 166.) Lecture 3 hours per week.

MTH 166 (5 CR.)
Calculus with Trigonometry
Prerequisites: competency in Math Essentials Units MTE 1–9 as demonstrated through the placement and diagnostic tests, or by completion through unit 9 in an MTT course. Presents college algebra, analytic geometry, trigonometry, and algebraic, exponential, and logarithmic functions. (Credit cannot be awarded for both MTH 163 and MTH 166.) Lecture 5 hours per week.
MTH 173  (5 CR.)  
Calculus with Analytic Geometry I  
Prerequisites: MTH 166 or MTH 164 or two units of algebra, one unit of geometry, and one-half unit each of trigonometry and precalculus. Presents analytic geometry and the calculus of algebraic and transcendental functions including the study of limits, derivatives, differentials, and an introduction to integration along with their applications. Designed for mathematical, physical, and engineering science programs. (Credit will not be awarded for both MTH 173 and MTH 271.) Lecture 5 hours per week.

MTH 174  (5 CR.)  
Calculus with Analytic Geometry II  
Prerequisite: MTH 173 or equivalent. Continues the study of analytic geometry and the calculus of algebraic and transcendental functions including rectangular, polar, and parametric graphing, indefinite and definite integrals, methods of integration, and power series along with applications. Designed for mathematical, physical, and engineering science programs. (Credit will not be awarded for both MTH 174 and MTH 272.) Lecture 5 hours per week.

MTH 178  (2 CR.)  
Topics in Analytic Geometry  
Prerequisite: MTH 173. Corequisite: MTH 174. Covers conic sections, polar and parametric graphing. Designed for mathematical, physical, and engineering science programs. Lecture 2 hours per week.

MTH 181  (3 CR.)  
Finite Mathematics I  
Prerequisites: competency in Math Essentials Units MTE 1–6 as demonstrated through the placement and diagnostic tests, or by completion through unit 6 in an MTT course. Introduces set theory, systems of linear equations, matrices, linear programming, probability, and game theory. Lecture 3 hours per week.

MTH 182  (3 CR.)  
Finite Mathematics II  
Prerequisite: MTH 181 or equivalent. Introduces logic, counting techniques, probability and statistics, and mathematics of finance. Lecture 3 hours per week.

MTH 200  (3 CR.)  
Abstract Algebra  
Prerequisite: MTH 174 or permission of instructor. Topics covered include groups, rings, integral domains, fields, isomorphisms and homomorphisms. Designed to fulfill the abstract algebra requirement for the Virginia high school mathematics teaching endorsement. Lecture 3 hours per week.

MTH 241  (3 CR.)  
Statistics I  
Prerequisite: a satisfactory score on an appropriate proficiency examination or MTH 152 or MTH 163 or MTH 182 or permission of the division. Covers descriptive statistics, elementary probability, probability distributions, estimation, and hypothesis testing. Lecture 3 hours per week.

MTH 242  (3 CR.)  
Statistics II  
Prerequisite: MTH 241 or equivalent. Continues the study of estimation and hypothesis testing with emphasis on correlation and regression, analysis of variance, Chi-squared tests, and nonparametric methods. Lecture 3 hours per week.

MTH 243  (3 CR.)  
Probability and Statistics I  
Prerequisite: MTH 174 or equivalent. Corequisite: MTH 277. Uses calculus to develop the theory of probability and statistics including discrete and continuous distribution theory, Poisson processes, moment generating functions, central limit theorem, hypothesis testing, and estimation. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

MTH 244  (3 CR.)  
Probability and Statistics II  
Prerequisites: MTH 243 and MTH 285 or equivalent. Uses calculus, computer packages, and matrix methods to develop the theory of simple and multiple regression using matrices, analysis of variance, nonparametric, and Chi-squared procedures. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

MTH 250  (3 CR.)  
College Geometry  
Prerequisite: MTH 174 or division approval. Presents topics in Euclidean and non-Euclidean geometries chosen to prepare individuals for teaching geometry at the high school level. Studies Euclid’s geometry and its limitations, axiomatic systems, techniques of proof, and Hilbert’s geometry, including the parallel postulates for Euclidean, hyperbolic, and elliptic geometries. Lecture 3 hours per week.

MTH 271  (3 CR.)  
Applied Calculus I  
Prerequisites: satisfactory score on an appropriate proficiency examination and MTH 163 or MTH 166 or two units of algebra, one unit of geometry, and one-half unit of precalculus. Presents limits, continuity, differentiation of algebraic and transcendental functions with applications, and an introduction to
MTH 272  (3 CR.)
Applied Calculus II
Prerequisite: MTH 271 or equivalent. Covers techniques of integration, multivariable calculus, and an introduction to differential equations. (Credit will not be awarded for both MTH 174 and MTH 272.) Lecture 3 hours per week.

MTH 277  (4 CR.)
Vector Calculus
Prerequisite: MTH 174 or equivalent. Presents vector valued functions, partial derivatives, multiple integrals, and topics from the calculus of vectors. Designed for mathematical, physical, and engineering science programs. Lecture 4 hours per week.

MTH 285  (3 CR.)
Linear Algebra
Prerequisite: MTH 174. Covers matrices, vector spaces, determinants, solutions to systems of linear equations, basis and dimension, eigen values, and eigen vectors. Designed for mathematical, physical, and engineering science programs. Lecture 4 hours per week.

MTH 286  (4 CR.)
Discrete Mathematics
Prerequisite: MTH 174 or equivalent. Presents topics in discrete mathematical structures which are basic tools used in computer science. Covers sets, Boolean algebra, counting methods, generating functions and recurrence relations, graph theory, trees, and an introduction to finite state automata. Designed for mathematical, physical, and engineering science programs. Lecture 4 hours per week.

MTH 291  (3 CR.)
Differential Equations
Prerequisite: MTH 174 or equivalent. Introduces first order differential equations, linear differential equations, numerical methods, and applications. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

MTH 292  (3 CR.)
Topics in Differential Equations
Prerequisite: MTH 291 or equivalent. Presents power series solutions, Fourier series, Laplace transforms, partial differential equations, and boundary value problems. Designed for mathematical, physical, and engineering science programs. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

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: 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 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
Prerequisites: 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. Total 3 hours per week.

MEC 255  (3 CR.)
Thermodynamics
Corequisite: 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  
Prerequisite: MTH 166 or instructor's permission. 
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 295  (1 CR.)  
Topics in Thermodynamics  
Prerequisite: MTH 115. Corequisite: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

Medical Laboratory

Enrollment in MDL courses (except MDL 100) is restricted to students program-placed in the Medical Laboratory Program.

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  
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  
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  
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 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 243  (2 CR.)  
Introduction to Clinical Molecular Diagnostics  
Prerequisite: division 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 215  (2 CR.)  
Immunology  
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  
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 251–252  (3 CR.) (2 CR.)  
Clinical Microbiology I–II  
Teaches handling, isolation, and identification of pathogenic microorganisms. Emphasizes clinical techniques of bacteriology, mycology, parasitology, and virology. For MDL 251: Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. For MDL 252: Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

MDL 261  (4 CR.)  
Clinical Chemistry and Instrumentation I  
Introduces methods of performing biochemical analysis of clinical specimens. Teaches instrumentation involved in a clinical chemistry laboratory, quality control, and the ability to recognize technical problems. Lecture 3 hours. Laboratory 3 hours. Total 6 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: completion of MDL 261 with a grade “C” or better and be enrolled in the first year, third semester summer term, of the Medical Laboratory Technology A.A.S. Includes performing of clinical chemistry methodologies and operation of typical instrumentation in a clinical laboratory. Clinical 9 hours per week.

MDL 267  (3 CR.)
Clinical Hematology Techniques
Prerequisite: completion of MDL 127 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
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
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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Music

MUS 101–102  (3 CR.) (3 CR.)
Basic Musicianship I–II
Provides exercises leading to knowledge and skill in the rudiments of music. Includes rhythmic notation, as well as scales, keys, and intervals along with exercises in sight-reading and ear training. Lecture 3 hours per week.

MUS 111–112  (4 CR.) (4 CR.)
Music Theory I–II
Discusses elements of musical construction of scales, intervals, triads, and chord progressions. Develops 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 121–122  (3 CR.) (3 CR.)
Music Appreciation I–II
Increases the variety and depth of the student’s interest, knowledge, and involvement in music and related cultural activities. Acquaints the student with traditional and twentieth-century music literature, emphasizing the relationship music has as an art form with man and society. Increases the student’s awareness of the composers and performers of all eras through listening and concert experiences. Lecture 3 hours per week.

MUS 130  (1 CR.)
Overview of the Recording Industry
Prerequisite: 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 131–132  (2 CR.) (2 CR.)
Class Voice I–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 133–134  (3 CR.) (3 CR.)
Recording Systems Services I–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**  
Consists of performance from standard jazz and American songbook repertoires, including study of ensemble techniques, interpretation, and improvisation. Division approval required. May be repeated for credit. 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.

**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. May be repeated for credit. 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. May be repeated for credit. 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 141–142 (2 CR.) (2 CR.)**  
**Class Piano I–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. May be repeated for credit. Laboratory/rehearsal 3 hours per week.

**MUS 144 (1 CR.)**  
**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. May be repeated for credit. Laboratory/rehearsal 3 hours per week.

**MUS 145 (1–2 CR.)**  
**Applied Music: Keyboard ***  
Teaches piano, organ, harpsichord, or synthesizer. Studies the standard repertoire. One to two half-hour lessons per week; 4–8 hours practice required.

**MUS 146 (1 CR.)**  
**Percussion Ensemble**  
Consists of performance on a variety of percussion instruments. Studies performance techniques of various percussion instruments and interpretation of percussion parts and scores. May be repeated for credit. Laboratory/rehearsal 3 hours per week.

**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. May be repeated for credit. 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. May be repeated for credit. Laboratory 3–6 hours per week.

**MUS 151 (3 CR.)**  
**Music Technology**  
Teaches the basics of music notation software, computer music concepts, word processing, and spreadsheets for music instruction purposes. Studies presentation software, basic audio editing, basic music website design, and introduces music sequencing. Students may enroll in this course and MUS 140 for credit. Lecture 3 hours per week.
MUS 155 (1–2 CR.)
Applied Music: Woodwinds *
Teaches fundamentals of the woodwind instruments. Studies the standard repertoire. One to two half-hour lessons per week; 4–8 hours practice required.

MUS 157 (3 CR.)
Sound Studio Design
Prerequisite: 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: 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 163–164 (3 CR.) (3 CR.)
Guitar Theory and Practice I–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. One to two half-hour lessons per week, 4–8 hours practice required.

MUS 166 (2 CR.)
String Ensemble
Prerequisite: An audition may be required. Performs standard string ensemble repertoire. Studies ensemble techniques and interpretation. May be repeated for credit. Laboratory 6 hours per week.

MUS 175 (1–2 CR.)
Applied Music: Brass *
Teaches fundamentals of brass instruments. Studies the standard repertoire. One to two half-hour lessons per week; 4–8 hours practice required.

MUS 179 (1 CR.)
Music Copyright Law
Prerequisite: 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. One to two half-hour lessons per week; 4–8 hours practice required.

MUS 211–212 (4 CR.) (4 CR.)
Advanced Music Theory I–II
Prerequisites: MUS 111–112 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 213–214 (3 CR.) (3 CR.)
Composition I–II
Prerequisite: 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 221–222 (3 CR.) (3 CR.)
History of Music I–II
Presents the chronology of musical styles from antiquity to the present time. Relates the historical development of music to parallel movements in art, drama, and literature. Develops techniques for listening analytically and critically to music. Lecture 3 hours per week.
MUS 225  (3 CR.)
The History of Jazz
Studies the underlying elements of jazz, concentrating on its cultural and historical development from earliest stages to the present. No previous knowledge of music is required. Lecture 3 hours per week.

MUS 227  (3 CR.)
Editing and Mixdown Techniques
Prerequisite: completion of 100-level recording technology certificate courses. 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 231–232  (2 CR.) (2 CR.)
Advanced Class Voice I–II
Continues MUS 131–132. 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: 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. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required 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. May be repeated for credit. 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. May be repeated for credit. 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. May be repeated for credit. Laboratory/rehearsal 3 hours per week.

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. May be repeated for credit. Laboratory/rehearsal 3 hours per week.

MUS 241–242  (2 CR.) (2 CR.)
Advanced Class Piano I–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 twentieth and twenty-first 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. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required per week.
MUS 248  (1–2 CR.)
Orchestra **
Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Division approval required. May be repeated for credit. 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. May be repeated for credit. 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. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required per week.

MUS 259  (3 CR.)
Advanced Improvisational Techniques
Prerequisite: 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. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required per week.

MUS 266  (2 CR.)
Advanced String Ensemble
Prerequisite: MUS 166 or permission of instructor. Performs advanced string ensemble repertoire. Studies ensemble techniques and interpretation. May be repeated for credit. Laboratory 6 hours per week.

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. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required per week.

MUS 278  (2 CR.)
Multichannel Recording Workshop
Prerequisite: 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. All courses in applied music may be repeated for a total of 8 hours for the major and 4 hours for the minor; 4–8 hours practice required per week.

MUS 288  (2 CR.)
Recording Problems Seminar
Prerequisite: 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.

*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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.
Natural Science

NAS 101–102 (4 CR.) (4 CR.)
Natural Sciences I–II
Presents a multidisciplinary perspective integrating the main fields of science. Emphasizes the interaction of the scientific disciplines. (Primarily for nonscience majors.) Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

NAS 125 (4 CR.)
Meteorology
Prerequisite: placement into ENG 111 or division approval. 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. Recitation and laboratory 2 hours. Total 5 hours per week.

NAS 130 (see also PHY 150) (4 CR.)
Elements of Astronomy
Prerequisite: placement into ENG 111 or division approval. 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. Recitation and laboratory 3 hours. Total 6 hours per week.

NAS 145 (3 CR.)
Introduction to Natural History
Introduces developmental concepts and principles of natural history. Lecture 3 hours per week.

NAS 150 (4 CR.)
Human Biology
Prerequisite: placement into ENG 111 or division approval. 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.

NAS 161–162 (4 CR.) (4 CR.)
Health Science I–II
Prerequisite: placement into ENG 111 and either BIO 101, NAS 150, or high school biology within the last 10 years or division approval. Prerequisite for NAS 162 is NAS 161 or division approval. Presents an integrated approach to human anatomy and physiology, microbiology, and pathology. Includes chemistry and physics as related to health sciences. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Nursing

Enrollment in NUR courses is restricted to students program-placed in the Nursing Program.

NUR 111 (8 CR.)
First Level Nursing I
Corequisites: HLT 141, PSY 201, NUR 150.
Introduces nursing principles including concepts of health and wellness and the nursing process. Develops nursing skills to meet the biopsychosocial needs of individuals across the life span. Includes math computational skills, basic computer instruction related to the delivery of nursing care, communication skills, introduction to nursing, health, the healthcare system, legal aspects of nursing care, diagnostic testing, assessment, teaching and learning, asepsis, body mechanics and safety, personal care, activity/rest, wound care, nutrition, elimination, oxygenation, fluid and electrolytes, pain control, medication administration, aging populations, and pre/post-operative care. Provides supervised learning experiences in College nursing laboratories and/or cooperating agencies. Lecture 5 hours. Laboratory 9 hours. Total 14 hours per week.

NUR 115 (3 CR.)
LPN Transition
Introduces the role of the registered nurse through concepts and skill development in the discipline of professional nursing. This course serves as a bridge course for licensed practical nurses and is based upon individualized articulation agreements, mobility exams, or other assessment criteria as they relate to local programs and service areas. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Lecture 3 hours. Total 3 hours per week.

NUR 116 (1–2 CR.)
Selected Nursing Concepts
Introduces selected basic skills and concepts in the discipline of nursing and their incorporation into care to meet the changing standards of nursing practice. Intended as a transition/refresher course for transfer and returning students. The one-credit course is designed for the LPN transition to RN. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week. The two-credit course is designed for transfer students from other nursing programs or returning students. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

NUR 125 (3 CR.)
Historical Perspectives of Nursing
Prerequisite: placement into ENG 111. Examines the cultural, eco-political, and global development of professional nursing from ancient times to
present day as an historical retrospective. Lecture 3 hours per week.

**NUR 135 (2 CR.)**
**Drug Dosage Calculations**
Teaches apothecary, metric, household conversion; reading of drug orders and labels. Provides a practical approach to learning to calculate and prepare medications and solutions. Includes calculating intravenous flow rates and pediatric dosages. Lecture 2 hours per week.

**NUR 150 (3 CR.)**
**Community-Based Nursing in a Multicultural Environment**
Must be taken with NUR 111. Incorporates culture, family, and the community as a broad focus of health promotion and disease prevention. Includes interventions directed at the total population or at individuals, families, and groups in a multicultural society. Lecture 3 hours per week.

**NUR 180 (4 CR.)**
**Essentials of Maternal/Newborn Nursing**
Prerequisite: NUR 111. Corequisites are NUR 150, NUR 201, PSY 202. Utilizes the concepts of the nursing process in caring for families in the antepartum, intrapartum, and postpartum periods. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Provides supervised learning experiences in College nursing laboratories and/or cooperating agencies. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

**NUR 201 (4 CR.)**
**Psychiatric Nursing**
Prerequisites: NUR 111, SDV 101. Corequisites are NUR 150, NUR 180, PSY 202. Focuses on the care of individuals/families requiring clinical treatment. Uses all components of the nursing process with increasing degrees of skill. Includes math computational skills and basic computer instruction related to the delivery of nursing care; alterations in behavior, eating disorders, mood disorders, anxiety, chemical dependency and dementias. Provides supervised learning experiences in College nursing laboratories and/or cooperating agencies. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

**NUR 221 (9 CR.)**
**Second Level Nursing Principles and Concepts I**
Prerequisites: NUR 111, NUR 150, NUR 180, NUR 201, HLT 141, HLT 250, PSY 201–202. Corequisites: CST elective, humanities elective. Focuses on nursing care of individuals, families, and/or groups with multidimensional needs in a variety of settings. Uses all components of the nursing process with increasing degrees of skill. Includes math computational skills, basic computer instruction related to the delivery of nursing care and nursing care related to infectious, immunological, oncological, hematological, gastrointestinal, vascular, sensory, genitourinary, musculoskeletal, regulatory, endocrine, and women’s health disorders and pre/intra/post-operative care. Provides supervised learning experiences in College nursing laboratories and/or cooperating agencies. Lecture 4 hours. Laboratory 15 hours. Total 19 hours per week.

**NUR 222 (9 CR.)**
**Second Level Nursing Principles and Concepts II**
Prerequisite: NUR 221. Focuses on nursing care of individuals, families, and/or groups with multidimensional needs in a variety of settings. Uses all components of the nursing process with increasing degrees of skill. Includes math computation skills, basic computer instruction related to the delivery of nursing care and nursing care related to cardiac, respiratory, neurological disorders; emergency care; and leadership principles. Provides supervised learning experiences in College nursing laboratories and/or cooperating agencies. Lecture 4 hours. Laboratory 15 hours. Total 19 hours per week.

**NUR 250 (5 CR.)**
**Global and Rural Health Nursing**
Prerequisites: NUR 150 and a current U.S. passport. Corequisite: CST 229. Applies principles and concepts of transcultural nursing in relationship to health promotion and disease prevention in global vulnerable populations. Provides an international/rural public health experience, allowing the student to apply concepts of epidemiology, environmental and public health. Students will travel to rural areas in underserved areas outside or inside of the continental United States. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

**NUR 254 (1 CR.)**
**Nursing Dimensions**
Prerequisites: NUR 111, NUR 180, and NUR 201. Explores the role of the professional nurse. Emphasizes nursing organizations, legal and ethical implications, and addresses trends in management and organizational skills. Explores group dynamics, relationships, conflicts, and leadership styles. Lecture 1 hour per week.

**NUR 255 (3 CR.)**
**Nursing Organizations and Marketing**
Prerequisites: NUR 111, NUR 180, and NUR 201. Addresses management and organizational skills as they relate to nursing. Emphasizes group dynamics,
resolution of conflicts, and leadership styles. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Occupational Therapy

Enrollment in OCT courses is restricted to students program-placed in the Occupational Therapy Assistant Program.

OCT 100 (3 CR.)
Introduction to Occupational Therapy
Prerequisite: 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: 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: 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 207 (3 CR.)
Therapeutic Skills
Prerequisite: 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: 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
Prerequisites: 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.

**Paralegal Studies**

See Legal (LGL).

**Philosophy**

**PHI 101–102 (3 CR.) (3 CR.) Introduction to Philosophy I–II**
Introduces a broad spectrum of philosophical problems and perspectives with an emphasis on the systematic questioning of basic assumptions about meaning, knowledge, reality, and values. Lecture 3 hours per week.

**PHI 111 (3 CR.) Logic I**
Introduces inductive and deductive reasoning, with an emphasis on common errors and fallacies. Lecture 3 hours per week.

**PHI 112 (3 CR.) Logic II**
Evaluates deductive arguments utilizing methods of symbolic logic. Lecture 3 hours per week.

**PHI 115 (3 CR.) Practical Reasoning**
Studies informal logic and language techniques as they relate to reasoning and argument. Provides practice in analyzing arguments and constructing sound arguments. Lecture 3 hours per week.

**PHI 211–212 (3 CR.) (3 CR.) The History of Western Philosophy I–II**
Provides historical survey of representative philosophers from the pre-Socratics to the present. Introduces the student to development of philosophical thought through selected readings of original works and appropriate critical materials. Lecture 3 hours per week.

**PHI 220 (3 CR.) Ethics**
Provides a systematic study of representative ethical systems. Lecture 3 hours per week.

**PHI 225 (3 CR.) Selected Problems in Applied Ethics**
Analyzes and discusses significant contemporary ethical issues and problems existing throughout the various professions such as business, medicine, law, education, journalism, and public affairs. May be repeated for credit. Lecture 3 hours per week.

**PHI 226 (3 CR.) Social Ethics**
Provides a critical examination of moral problems, and studies the application of ethical concepts and principles to decision-making. Topics may include abortion, capital punishment, euthanasia, man and the state, sexuality, war and peace, and selected issues of personal concern. Lecture 3 hours per week.

**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.

**PHI 225 (3 CR.) Selected Problems in Applied Ethics**
Analyzes and discusses significant contemporary ethical issues and problems existing throughout the various professions such as business, medicine, law, education, journalism, and public affairs. May be repeated for credit. Lecture 3 hours per week.

**Photography**

**PHT 101–102 (3 CR.) (3 CR.) Photography I–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: 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: PHT 102 or equivalent. Provides weekly critiques of students' work. Centers on specific problems found in critiques. Includes working procedures and critical skills in looking at photographs. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 202 (3 CR.) Advanced Photography II
Prerequisite: PHT 102 or equivalent. Provides weekly critiques of students' work. Centers on specific problems found in critiques. Includes working procedures and critical skills in looking at photographs. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

PHT 211 (3 CR.) Color Photography I
Prerequisites: PHT 100, PHT 135, or permission of the instructor. 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: PHT 102 or equivalent. 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: PHT 102 or equivalent. 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.) Photographic Careers
Teaches the techniques of small photographic business operations. Includes portfolio preparation and presentation and basic marketing techniques. Covers theory of marketing, costing procedures and problems, legal accounting problems, copyright, and fundamentals of small photographic business operation. Lecture 3 hours per week.

PHT 231 (3 CR.) Photojournalism I
Prerequisites: PHT 102 or PHT 135, or equivalent, and basic computer skills. 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
Prerequisites: 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: PHT 102 or equivalent. Explores manipulated imagery including traditional and nontraditional processes such as nonsilver 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 256 (3 CR.) Communicating through the Photographic Sequence
Prerequisites: PHT 101, PHT 102, PHT 211, PHT 270, or permission of instructor. Using experiences of sequencing, involves the student in creating a picture book composed of images that have been placed in a sequence that has special visual meaning. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.
PHT 270–271 (3 CR.)(3 CR.)
Digital Imaging I–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
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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

Physical Education and Recreation

PED 100 (1 CR.)
Pilates
Provides a method of mind-body exercise and physical movement designed to stretch, strengthen, balance the body, and improve posture and core stabilization while increasing body awareness. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 103 (1 CR.)
Aerobic Fitness I
Develops cardiovascular fitness through activities designed to elevate and sustain heart rates appropriate to age and physical condition. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 105 (1 CR.)
Aerobic Dance I
Focuses on physical fitness through dance exercises. Emphasizes the development of cardiovascular endurance, muscular endurance, and flexibility. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 107 (1 CR.)
Exercise and Nutrition
Provides the student with a full body workout through flexibility, strength, and cardiovascular endurance exercises. Includes fitness evaluation, nutrition analysis, and weight control. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

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 113 (1 CR.)
Lifetime Activities
Presents lifetime sports and activities. Teaches skills and methods of lifetime sports and activities appropriate to the local season and facilities available. 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 117 (1 CR.)
Fitness Walking
Teaches content and skills needed to design, implement, and evaluate an individualized program of walking, based upon fitness level. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 120 (2 CR.)
Yoga II
Prerequisite: PED 109. Focuses on the forms of yoga training emphasizing flexibility, breathing, and meditation. Laboratory 4 hours per week.
**PED 121**  
**Racquetball I**  
Teaches racquetball skills and strategies for team and individual play. Includes terminology, scoring, etiquette, equipment selection, and safety. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 123**  
**Tennis I**  
Teaches tennis skills with emphasis on stroke development and strategies for individual and team play. Includes rules, scoring, terminology, and etiquette. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 125**  
**Badminton**  
Introduces skills, techniques, strategies, rules, and scoring. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 126**  
**Archery**  
Teaches skills and techniques of target archery. Focuses on use and maintenance of equipment, terminology, and safety. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 127**  
**Cycling**  
Introduces cycling techniques, equipment selection, care and maintenance, safety, and physical conditioning. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 129**  
**Self-Defense**  
Examines history, techniques, and movements associated with self-defense. Introduces the skills and methods of self-defense emphasizing mental and physical discipline. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 131**  
**Fencing I**  
Presents the skills and techniques of foil fencing emphasizing footwork, terminology, rules, and strategies of offensive and defensive movements. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 133**  
**Golf I**  
Teaches basic skills of golf, rules, etiquette, scoring, terminology, equipment selection and use, and strategy. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 135**  
**Bowling I**  
Teaches basic bowling skills and techniques, scoring, rules, etiquette, and terminology. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 137-138**  
**Martial Arts I–II**  
Emphasizes forms, styles, and techniques of body control, physical and mental discipline, and physical fitness. Presents a brief history of development of martial arts theory and practice. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 139**  
**Ice Skating**  
Introduces the skills of figure skating with emphasis on form. Includes equipment selection and safety. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 141–142**  
**Swimming I–II**  
Prerequisite for PED 142: PED 141 or instructor’s permission. Introduces skills and methods of swimming strokes. Focuses on safety and physical conditioning. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 144**  
**Skin and Scuba Diving**  
Prerequisite: strong swimming skills. Emphasizes skills and methods of skin and scuba diving. Includes training with underwater breathing apparatus and focuses on safety procedures and selection, and use of equipment. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**PED 150**  
**Soccer**  
Emphasizes soccer skills and techniques, strategies, rules, equipment, and physical conditioning. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 152**  
**Basketball**  
Introduces basketball skills, techniques, rules, and strategies. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

**PED 154**  
**Volleyball**  
Introduces skills, techniques, strategies, rules, and scoring. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.
PED 155  (1 CR.)
Wallyball
Focuses on skills, techniques, strategies, rules, and scoring. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 160  (1 CR.)
Modern Dance
Teaches the basic techniques of creative dance. Skills include self-expression, contemporary routines, dance forms, and basic choreography. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 161  (1 CR.)
Dance Production I
Focuses on creating a dance performance. Teaches the basic skills in creating and producing a dance. Includes lighting, costumes, music, and choreography. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 163  (1 CR.)
Jazz I
Introduces dance through contemporary jazz movements. Includes floor stretches, isolations, dance patterns, and locomotor movements. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 164  (1 CR.)
Jazz II
Continues dance through contemporary jazz movements. Includes floor stretches, isolations, dance patterns and locomotor movements. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 166  (1 CR.)
Ballet
Teaches ballet as a discipline with correct alignment and ballet form. Expresses movement through traditional dance form with choreographic emphasis. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 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. 3 credit hours. 2 lecture hours. 2 lab hours. 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.

PED 172  (1 CR.)
Ballroom Dance II
Presents the basic step patterns, rhythmic patterns, and positions in ballroom dance. Includes techniques based upon traditional steps with basic choreographic patterns. Part II of II. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 173  (1 CR.)
Rock Climbing and Rappelling
Presents techniques and skills of climbing and rappelling with emphasis on safety, equipment, skills in knot tying, terminology and physical conditioning. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 181–182  (1 CR.) (1 CR.)
Downhill Skiing I–II
Prerequisite for PED 182: PED 181 or instructor’s permission. Teaches basic skills of downhill skiing, selection and use of equipment, terminology, and safety rules. Includes field experience. Lecture 0.5 hour. Laboratory 1 hour. Total 1.5 hours per week.

PED 183  (2 CR.)
Outdoor Adventures I
Introduces outdoor adventure activities with emphasis on basic skills, preparation, personal and group safety, equipment selection and use, ecology, and field experience. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 220  (2–3 CR.)
Adult Health and Development
Provides direct application of the theories of aging and physical activity. Teaches techniques for developing appropriate individualized fitness and activity programs for older adults. Focuses on physical, social, and mental well-being. Includes assessment and evaluation of physical fitness principles, role of exercise in disease prevention, leadership skills, and communication strategies. For PED 220—2 credits: Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week. For PED 220—3 credits: Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

PED 245  (2 CR.)
Lifeguard Training
Prerequisites: ability to (1) swim continuously for 500 yards for a minimum of 100 yards each of crawl/ freestyle, breaststroke, and sidestroke; (2) submerge to a minimum of 7 feet, retrieve a 10-pound object and return it to the surface; (3) tread water for 2 minutes using legs only; and (4) be 15 years of age by the first class. Introduces basic swimming and nonswimming rescues, swimming approaches and carries, water survival, and first aid and safety
practices. Focuses on preparation for the American Red Cross Lifeguard Certificate. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Physical Therapist Assistant

Enrollment in PTH courses is restricted to students program-placed in the Physical Therapist Assistant Program.

**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. Lab/clinical 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 121–122**  (5 CR.) (5 CR.)
**Therapeutic Procedures I–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 231–232**  (5 CR.) (5 CR.)
**Clinical Education II–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. For PTH 231—lecture 2 hours. Clinical 15 hours. Total 17 hours per week. For PTH 232—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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Physics

**PHY 101–102**  (4 CR.) (4 CR.)
**Introduction to Physics I–II**
Recommended prerequisite: satisfactory placement score for ENG 111. Prerequisite for PHY 102: PHY 101 and satisfactory placement score for ENG 111. Surveys general principles of physics. Includes topics such as force and motion, energy, heat, sound, (PHY 101) light, electricity and magnetism, and modern
physics (PHY 102). Involves using arithmetic and some simple algebra, mostly in laboratory. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**PHY 130 (3 CR.)**
**Survey of Applied Physics**
Surveys topics such as heat, electricity, and light with emphasis on practical applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**PHY 150 (4 CR.)**
**Elements of Astronomy**
Prerequisite: placement into ENG 111 or division approval. 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. Recitation and laboratory 3 hours. Total 6 hours per week.

**PHY 201–202 (4 CR.) (4 CR.)**
**General College Physics I–II**
Prerequisite: MTH 163 or equivalent and satisfactory placement score for ENG 111. Prerequisite for PHY 202: PHY 201 and satisfactory placement score for ENG 111. 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.

**PHY 231–232 (5 CR.) (5 CR.)**
**General University Physics I–II**
Prerequisites for PHY 231: MTH 173 or division approval and satisfactory placement score for ENG 111. Prerequisite for PHY 232: PHY 231, MTH 174, and satisfactory placement score for ENG 111 or division approval. Teaches principles of classical physics. Includes mechanics, wave phenomena, heat, electricity, magnetism, and optics, with extended coverage of selected topics. Includes recitation as part of the lecture. Lecture 4 hours (includes recitation). Laboratory 2 hours. Total 6 hours per week.

**PHY 243 (4 CR.)**
**Modern Physics**
Prerequisites: PHY 232 and satisfactory placement score for ENG 111. For majors requiring calculus-based physics. Teaches principles of modern physics. Includes in-depth coverage of relativity, quantum physics, and solid state and nuclear physics. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week. Additional 1 credit recitation hour recommended.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

### Political Science

**PLS 120 (3 CR.)**
**Introduction to Political Science**
Teaches basic concepts and methods of the discipline of political science through study of political dimensions of a selected topic. Lecture 3 hours per week.

**PLS 135 (3 CR.)**
**American National Politics**
Teaches political institutions and processes of the national government of the United States; focuses on the Congress, presidency, and the courts, and their interrelationships. Gives attention to public opinion, suffrage, elections, political parties, interest groups, civil rights, domestic policy, and foreign relations. Lecture 3 hours per week.

**PLS 136 (3 CR.)**
**State and Local Politics**
Teaches structure, powers, and functions of state and local government in the United States. 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. Lecture 3 hours per week.

**PLS 200 (3 CR.)**
**Political Ideologies**
Analyzes and critically evaluates many leading ideologies of the modern world, such as anarchism, nationalism, fascism, national socialism, classical liberalism, conservatism, Fabian socialism, Marxism-Leninism, and liberal democracy. Evaluates contemporary extremist ideologies of both left and right. Lecture 3 hours per week.

**PLS 211–212 (3 CR.) (3 CR.)**
**U.S. Government I–II**
Teaches structure, operation, and process of national, state, and local governments. Includes in-depth study of the three branches of the government and of public policy. Lecture 3 hours per week.

**PLS 220 (3 CR.)**
**Political Parties and Elections in the United States**
Teaches basic concepts of American political parties and elections. Lecture 3 hours per week.
PLS 225  (3 CR.)  The United States Presidency
Describes the modern American presidency. Focuses on the presidency and many issues related to that office: the people, the powers, and the current environment in which the presidents serve. Lecture 3 hours per week.

PLS 230  (3 CR.)  Congress of the United States Government
Teaches the creation and development of the legislative branch of American government, and how that branch—Congress—interacts with the presidency, judiciary, and other aspects of American politics, such as campaigns, elections, political parties, media, bureaucracy, domestic policy, and foreign policy. Lecture 3 hours per week.

PLS 241  (3 CR.)  International Relations I
Teaches geographic, demographic, economic, ideological, and other factors conditioning the policies of countries, and discusses conflicts and their adjustment. Lecture 3 hours per week.

PLS 242  (3 CR.)  International Relations II
Teaches foreign policies of the major powers in the world community with an emphasis on the role of the United States in international politics. Lecture 3 hours per week.

PLS 250  (3 CR.)  Introduction to Conflict Resolution
Teaches basic concepts and methods of conflict resolution, which includes the factors that lead to conflict, and how conflicts can be prevented or brought to an end through peaceful means. Focuses on national and international conflict resolution. Lecture 3 hours per week.

PLS 255  (3 CR.)  Introduction to Peace and Stability Operations
Introduces the concept of coordinated public, private, international, and nonprofit sector responses to conflict, post-conflict, and natural disaster international humanitarian emergencies with the objective of returning states and regions to peace and stability. Lecture 3 hours per week.

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Portuguese

POR 103–104  (3 CR.)  (3 CR.)  Basic Spoken Portuguese I–II
Prerequisite for POR 104: POR 103. Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 3 hours per week.

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 126  (3 CR.)  Psychology for Business and Industry
PSY 126 and BUS 201 cannot both be taken for credit toward graduation. Focuses on the application of psychology to interpersonal relations and the working environment. Includes topics such as group dynamics, motivation, employer/employee relationship, and interpersonal communications. May include techniques for selection and supervision of personnel. Lecture 3 hours per week.

PSY 166  (3 CR.)  Psychology of Marriage
Prerequisites: PSY 200 and satisfactory placement score for ENG III. PSY 201 is desired. Analyzes personality interactions in marriage and other intimate relationships. Examines theories of personal development and types of relationships resulting from interactions. 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.)

PSY 201–202 (3 CR.) (3 CR.)
Introduction to Psychology I–II
Prerequisite for PSY 202: PSY 201. Examines human and animal behavior, relating experimental studies to practical problems. Includes topics such as sensation/perception, learning, memory, motivation, emotion, stress, development, intelligence, personality, psychopathology, therapy, and social psychology. Lecture 3 hours per week. (Students who take either PSY 201 or PSY 202 cannot receive credit for PSY 200.)

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 211 (3 CR.)
Research Methodology for Behavioral Sciences
Prerequisites: PSY 201–202 or PSY 200. Introduces the principles and processes of various research procedures for applying the scientific method to understanding behavior. Includes preparation for conducting, understanding, and interpreting laboratory and field studies; documenting principles through research; and applying critical assessment to generic research. Lecture 3 hours per week.

PSY 213 (3 CR.)
Statistics for Behavioral Sciences
Prerequisites: PSY 201–202 or PSY 200. 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 3 hours per week.

PSY 215 (3 CR.)
Abnormal Psychology
Prerequisite: PSY 200, PSY 201, or 202 or permission of instructor. Explores historical views and current perspectives of abnormal behavior. Emphasizes major diagnostic categories and criteria, individual and social factors of maladaptive behavior, and types of therapy. Includes methods of clinical assessment and research strategies. Lecture 3 hours per week.

PSY 216 (3 CR.)
Social Psychology
Prerequisite: PSY 200, PSY 201, or PSY 202, or permission of instructor. Examines individuals in social contexts, social roles, group processes, and intergroup relations. Includes topics such as small group behavior, social behavior, social cognition, conformity, attitudes, and motivation. Lecture 3 hours per week. This course is also approved for offering as SOC.

PSY 219 (3 CR.)
Cross-Cultural Psychology
Prerequisite: PSY 200, PSY 201, or PSY 202. 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: PSY 200, PSY 201, or PSY 202, 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
Prerequisite: PSY 200 or PSY 201. Studies the development of the individual from conception to death. Follows a life-span perspective on the development of the person’s physical, cognitive, and psychosocial growth. Lecture 3 hours per week. (Students who take PSY 230 cannot receive credit for either PSY 231 or PSY 232.)

PSY 231–232 (3 CR.) (3 CR.)
Life Span Human Development I–II
Investigates human behavior through the life cycle. Describes physical, cognitive, and psycho-social aspects of human development from conception to death. Lecture 3 hours per week. (Students who take either PSY 231 or PSY 232 cannot receive credit for
PSY 230. Students who take PSY 231 cannot receive credit for PSY 235.

**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: PSY 200, PSY 201, 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 245 (3 CR.)**  
**Educational Psychology**  
Prerequisite: PSY 135, PSY 200, PSY 201, PSY 202, or PSY 235. Explores human behavior and learning in educational contexts. Investigates the nature of various mental characteristics, such as intelligence, interest, and knowledge. Examines their measurement and appraisal and their significance for educational goals. Lecture 3 hours per week.

**PSY 250 (3 CR.)**  
**Law Enforcement Psychology**  
Prerequisite: 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**  
Prerequisite: PSY 202 or approval of instructor. 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: 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 265 (3 CR.)**  
**Psychology of Men and Women**  
Prerequisites: PSY 125, PSY 200, PSY 201, or PSY 202 or approval of instructor. Examines the major determinants of sex differences. Emphasizes psychosexual differentiation and gender identity from sex and gender, biological, interpersonal, and sociocultural perspectives. Includes topics such as sex roles, socialization, rape, abuse, and androgyny. Lecture 3 hours per week.

**PSY 270 (3 CR.)**  
**Psychology of Human Sexuality**  
Prerequisite: PSY 200, PSY 201, or PSY 202, 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Public Service**

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

**PBS 105 (3 CR.)**  
**Personnel Management in the Public Sector**  
Studies modern public service, including personnel in government, personnel management, benefits and wages, staffing, and growth and development. Also
examines issues of public personnel management, motivation, productivity, labor management relations, equal opportunity through affirmative action, and professionalism. Lecture 3 hours per week.

**PBS 116**  
**Public Budgeting and Finance**  
Reviews history of different approaches to public budgeting and examines the budgeting process in government. Examines the development of public planning at all levels of government with an emphasis on budgetary process. Gives consideration to revenue sources, administration, and structure. Lecture 3 hours per week.

**PBS 140**  
**Principles of Emergency Management**  
Teaches a framework intended to guide emergency planners through the process of mitigation, preparedness, response, and recovery. Presents the concepts of emergency management, its integration of systems, identification of hazards and their analyses as well as the nature of local government emergency planning. Lecture 3 hours per week.

**PBS 240**  
**Constitutional Law**  
Surveys state and federal constitutional provisions pertinent to the relations between state and federal governments. Examines separation of powers, delegation of powers, interstate relations, commerce powers, civil rights, and liberties. Gives consideration to the establishment and interpretation of federal, state, and local regulations which implement public policy. Lecture 3 hours per week.

**ROC 131**  
**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**  
**Clinical Clerkship II**  
Prerequisite: 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**  
**Clinical Clerkship III**  
Prerequisite: 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**  
**Clinical Clerkship IV**  
Prerequisite: 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**

Enrollment in RAD courses (except RAD 105) is restricted to students program-placed in the Radiography Program.

**RAD 105**  
**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**  
**Principles of Magnetic Resonance Imaging**  
Prerequisite: 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 (3 CR.)
Patient Care Procedures
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: 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: 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. Discussed 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 231–232 (5 CR.) (5 CR.)
Advanced Clinical Procedures I–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: 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: 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

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.

REA 215  (3 CR.)
Real Estate Brokerage
Considers administrative principles and practices of real estate brokerage, financial control, and marketing of real property. Lecture 3 hours per week.

REA 216  (3 CR.)
Real Estate Appraisal
Explores fundamentals of real estate valuation. Introduces the Uniform Standards of Professional Appraisal Practice and the Uniform Residential Appraisal Report formulations, working problems, and reviewing actual appraisals. Includes the opportunities available in the appraisal field. Lecture 3 hours per week.

REA 217  (3 CR.)
Real Estate Finance
Presents principles and practices of financing real estate. Analyzes various types of note contracts and mortgage and deed of trust instruments. Covers underwriting of conventional and government insured and guaranteed loans. Lecture 3 hours per week.

REA 218  (3 CR.)
Appraising the Single Family Residence
Promotes an understanding and working knowledge of procedures and techniques used to estimate market value of vacant residential land and improved single-family residential properties. Emphasizes the proper application of valuation methods and techniques to residential properties and extraction of data from the market for use in sales comparison, cost, and income capitalization approaches to value. Lecture 3 hours per week.

REA 220  (3 CR.)
Income Property Valuation
Prerequisite: REA 216 or equivalent. Familiarizes the student with the techniques that are utilized to perform the appraisal of more complex income-producing properties. Focuses on income and expense forecasting, appropriate techniques for determining capitalization rates, and discounted cash flow method. Includes valuation of complex commercial properties such as apartment complexes, office buildings, shopping centers, industrial properties, hotels, and mixed use complexes. Lecture 3 hours per week.

REA 225  (3 CR.)
Real Property Management
Introduces the field of property management. Focuses on principles of tenant selection and retention, financial management, and building maintenance. Lecture 3 hours per week.

REA 226  (1 CR.)
State Certified Residential Appraiser
Concentrates on Appraisal Law in the state of Virginia, appraisal practices, principles, and theories with regard to their application to residential properties. Emphasizes the review of terms, concepts, and the valuation theories targeted to the residential examination. Lecture 1 hour per week.

REA 236  (1 CR.)
Professional Appraisal Standards
Examines the provisions and standard rules that govern professional appraisal practices. Covers the “Binding Requirements” and the “Specific Appraisal Guidelines” as required by the Uniform Standards of Professional Appraisal Practice. Lecture 1 hour per week.
REA 245  (3 CR.)  
Real Estate Law
Studies real estate law, including rights incidental to property ownership and management, agency, contracts, transfers of real property ownership, fair housing, and tax implications. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Recreation and Parks

RPK 100  (3 CR.)  
Introduction to Recreation, Parks, and Leisure Studies
Prerequisite: ENG 111. Includes history and philosophy of the recreation and parks movement. Discusses the theory of leisure and play. Analyzes leisure service delivery systems and career opportunities. Emphasizes the commercial, nonprofit and public sectors, armed forces, and therapeutic recreation, as well as volunteer service. Lecture 3 hours per week.

RPK 120  (3 CR.)  
Outdoor Recreation
Includes history and philosophy of conservation, preservation, and the development of outdoor recreation in the United States. Emphasizes development of practical skills in planning, instructing, and managing outdoor recreation programs and facilities, including youth resident camps, RV campgrounds, as well as resources in the urban setting. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

RPK 121  (3 CR.)  
Fundamentals of Camp Management
Includes the history and philosophy of the residential/day camp movement in the United States. Examines camp industry trends regarding specialty camps, camp organizations, programming and operation standards, marketing, insurance, risk management, administration, staffing, training and certification, and improving professional requirements through national certification. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

RPK 125  (3 CR.)  
Resource Interpretation and Education
Prerequisite: ENG 111 and completion of or concurrent enrollment in a CST course. Includes overview of the history of the outdoor education movement. Concentrates on the basic knowledge and skills necessary to design, implement, and present interpretive programs and develop outdoor educational tools. Includes design and construction of interpretive displays using varied materials and all forms of presentation media (print, audio-visual, and computer software). Students will be required to create and present an interpretive program or outdoor education instructional tool. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

RPK 130  (1 CR.)  
Caving
Introduces basic caving techniques, equipment, issues regarding karst resource protection and national organizations dedicated to resource protection, geology, and ecology, as well as cave safety. Laboratory 2 hours per week.

RPK 131  (1 CR.)  
Kayaking
Prerequisite: ability to swim. Introduces kayaking techniques, water classification, conditioning, safety and destination planning. Includes field experience involving kayaking in multiple environments: flat water, ocean, and whitewater (may require overnight stay). Laboratory 2 hours per week.

RPK 135  (3 CR.)  
Program Planning
Introduces principles of program planning in the recreation setting. Analyzes participants’ needs and demands, as well as social, physical, and psychological characteristics of participation. Explains how to organize and implement programs and special events. Requires a 32-hour service-learning project off campus. Lecture 3 hours per week.

RPK 140  (1 CR.)  
Land Use Ethics
Examines the impact of human activity on the outdoor environment, specifically lands used for backpacking, hiking, and camping. Addresses the history and philosophy of the Leave No Trace movement, regarding sustainable backcountry and “at-home” practices, visitor demands, and resource management challenges. Lecture 1 hour per week.

RPK 141  (3 CR.)  
Leadership and Supervision
Introduces leadership and supervision in the leisure services industry. Assesses leadership styles, traits and leadership theories, and provides the opportunity for students to assess their own individual styles. Addresses group dynamics, conflict, and issues relating specifically to leadership of volunteers. Includes a leadership practicum. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
RPK 146  (3 CR.)
Recreation Facilities Management and Design
Prerequisites: RPK 100 and ENG 111. Introduces concepts of facilities planning, site analysis, planning and zoning strategies, and landscape design. Emphasizes the creation and maintenance of “people-space.” Presents issues regarding community development, needs assessment, facility planning and design, geographic use patterns, and demographics. Includes field experience. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

RPK 150  (1 CR.)
Mountain Biking
Teaches the sport of mountain biking, equipment, techniques, basic bicycle repair, trail safety and etiquette, trail conflict management, trail development, and destination planning. Laboratory 2 hours per week.

RPK 151  (1 CR.)
Orienteering
Introduces orienteering, compass and GPS use, topography, and geocaching as a sport. Teaches map reading, using a compass, decision-making, and team work. Laboratory 2 hours per week.

RPK 152  (1 CR.)
Sports First Aid and Safety
Focuses on the introduction to first aid protocols, causes, signs and symptoms of injury for coaches, injury prevention, preseason physicals, fitness screenings, conditioning programs and return to play guidelines, injury prevention and risk management, as well as the design and implementation of a medical emergency plan. Course requires successful passage of National Certification Exam. Laboratory 2 hours per week.

RPK 160  (2 CR.)
Wilderness First Aid
Examines the role of outdoor professionals in wilderness medicine and the response, care, and rescue of outdoor participants in nonurban environments. Provides intensive, in-depth training in the areas of cardiopulmonary resuscitation, patient assessment system, body systems, environmental injuries/conditions, anaphylaxis, lifting/moving/ extrication, patient carries, and backcountry medicine. Course requires successful passage of National Certification Exam. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

RPK 170  (1 CR.)
Recreational Backpacking
Presents backpacking skills including destination selection, route planning, gear selection and preparation (individual and group), trip safety, packing techniques, wilderness medicine and backcountry protocols, food selection, cooking techniques, and clothing selection. Presents land use ethic of Leave No Trace, permitting requirements, and outdoor skills. Laboratory 2 hours per week.

RPK 171  (1 CR.)
Canoeing
Prerequisite: ability to swim. Introduces the history of canoeing, paddling techniques, safety, water conditions and trip planning related to canoe operation in a river, lake, or ocean environment. Laboratory 2 hours per week.

RPK 175  (1 CR.)
Rock Climbing
Covers fundamentals of rock climbing, belay skills, gear, and hardware specific to sport climbing. Presents climbing techniques, climbing and climb site safety, knots, and equipment care and maintenance. Laboratory 2 hours per week.

RPK 180  (3 CR.)
Youth Sports Administration
Prepares coaching professionals to develop and implement emotionally and physically healthful youth sports programs. Includes an analysis of the youth sports program planning process including philosophy development, learning styles and outcomes, managing parents and players, skills development, risk management, financial planning, strategic partnerships, and sports event management. Lecture 3 hours per week.

RPK 185  (1 CR.)
Recreational Camping
Presents camping skills including destination selection, route planning, gear selection and preparation (individual and group), trip safety, packing techniques (from car camping to “going light”), food selection, cooking techniques, and shelter selection. Presents land use ethic of Leave No Trace, permitting requirements, and outdoor skills. Laboratory 2 hours per week.

RPK 201  (3 CR.)
Recreation and Parks Management
Prerequisite: ENG 111 and/or concurrent enrollment in ENG 112. Examines the organization and management of recreation and parks agencies. Discusses theories and principles of management, organizational behavior, budget preparation, hiring practices, personnel management, budget preparation, documentation, and presentation. Examines software specific to recreation facility and program management. Lecture 3 hours per week.
RPK 202   (3 CR.)
Leisure Studies Practicum
Prerequisites: RPK 201 and GPA of 3.0. Examines the organization and management of recreation and parks agencies through hands-on experience in an internship placement within a leisure services agency. Develops students’ personal and professional needs and interests by working within a professional setting. Laboratory 6 hours per week.

RPK 206   (1 CR.)
Adventure Ropes Courses
Introduces programs which emphasize the development of self-concept, group cooperation, and physical abilities. Teaches a variety of rope course activities including new games, initiatives, and the high and low rope courses. Includes the use of ropes course apparatus, safety techniques, and sequencing. Laboratory 2 hours per week.

RPK 210   (3 CR.)
Principles and Psychology of Coaching
Provides an analysis of volunteer coaching and the coaching profession planning process including philosophy development, learning styles and outcomes, managing parents and players, skills development, risk management, financial planning, drugs, and eating disorders in sport and physical training. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

RPK 220   (4 CR.)
Ecotourism and Sustainable Practices
Examines the impacts of visitor behavior and ecotourism on natural resources and the management of ecotourism facilities and destinations (governmental and nongovernmental); national and international guidelines for ecotourism; and the response to the increasing growth of ecotourism and eco-travel in the U.S. and abroad and the resulting need for sustainable tourism practices. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

RPK 230   (4 CR.)
Wilderness Medicine
Examines the role of the outdoor professional in wilderness medicine and the response, care and rescue of outdoor participants in nonurban environments. This is an intensive 72-hour Wilderness First Responder (WFR) course, which provides in-depth training in the areas of cardiopulmonary resuscitation, patient assessment system, circulatory system, respiratory system, lifting, moving and extrication, fractures, stable injuries, nervous system, wounds, burns, principles of trauma, spine injuries, emergency childbirth, toxins, bites, stings, altitude/diving, hypo/hyperthermia, near drowning, frostbite, lightning, allergies, anaphylaxis, medical and legal issues, search and rescue, and personal preparedness. Course requires successful passage of National Certification Exam. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

RPK 255   (3 CR.)
Leisure Services for Persons with Disabilities
Prerequisites: RPK 100 and ENG 111. Provides historical perspective as well as current theory and practice regarding the delivery of leisure services to people with disabilities. Introduces competencies needed to design, implement, and direct leisure experiences for people of all abilities. Strategies for identifying and removing physical and programmatic barriers are discussed. Examines disability legislation, universal design principles, assistive technology, adaptation techniques and leadership skills. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

REL 100   (3 CR.)
Introduction to the Study of Religion
Explores various religious perspectives and ways of thinking about religious themes and religious experience. Lecture 3 hours per week.

REL 200   (3 CR.)
Survey of the Old Testament
Surveys books of the Old Testament, with emphasis on prophetic historical books. Examines the historical and geographical setting and place of the Israelites in the ancient Middle East as background to the writings. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.
REL 215  (3 CR.)
New Testament and Early Christianity
Surveys the history, literature, and theology of early
Christianity in the light of the New Testament. Lecture
3 hours per week.

REL 216  (3 CR.)
Life and Teachings of Jesus
Studies the major themes in the teachings of Jesus of
Nazareth as recorded in the Gospels, and examines
the events of his life in light of modern biblical and
historical scholarship. Lecture 3 hours per week.

REL 217  (3 CR.)
Life and Letters of Paul
Studies the journeys and religious thought of the
apostle Paul. Lecture 3 hours per week.

REL 225  (3 CR.)
Selected Topics in Biblical Studies
Examines a selected body of literature, a specific
book of the Bible, or a pervasive theme. Lecture 3
hours per week.

REL 231  (3 CR.)
Religions of the World I
Studies religions of the world with attention to origin,
history, and doctrine. Part I of II. Lecture 3 hours
per week.

REL 232  (3 CR.)
Religions of the World II
Studies religions of the world with attention to origin,
history, and doctrine. Part II of II. Lecture 3 hours
per week.

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 235  (3 CR.)
Major Religious Thinkers
Examines the works of one or more important people
in religious thought. Lecture 3 hours per week.

REL 240  (3 CR.)
Religions in America
Surveys various manifestations of religion in the
American experience. Emphasizes concepts,
problems, and issues of religious pluralism and
character of American religious life. Lecture 3 hours
per week.

REL 246  (3 CR.)
Christianity
Examines the origins and historical development of
Christianity, its basic metaphysical and theological
assumptions and essential doctrines; also examines
the present state of the church in the modern world.
Lecture 3 hours per week.

REL 255  (3 CR.)
Selected Problems and Issues in Religion
Examines selected problems and issues of current
interest in religion. May be repeated for credit.
Lecture 3 hours per week.

Please contact the appropriate division for the availability of
general usage courses, as described at the beginning of this
"Course Descriptions" section.

Respiratory Therapy

Enrollment in RTH courses is restricted to students
program-placed in the Respiratory Therapy Program.

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 therapeautic management of patients with cardiopulmonary disease. Lecture 1 hour per week. Laboratory 3 hours per week. Total 4 hours per week.

RTH 145  (2 CR.)
Pharmacology for Respiratory Care I
Presents selection criteria for the use of, and detailed information on, pharmacological agents used in pulmonary care. Lecture 2 hours 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 224  (2 CR.)
Integrated Respiratory Therapy Skills I
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 225  (3 CR.)
Neonatal and Pediatric Respiratory Procedures
Prerequisite: RTH 222 or permission of the assistant dean. 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: 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.

RTH 253  (3 CR.)
Advanced Clinical Procedures III
Offers clinical instruction in advanced patient care practice. Clinical 15 hours per week.

RTH 254  (3 CR.)
Advanced Clinical Procedures IV
Offers clinical instruction in advanced patient care practice. Clinical 15 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Russian

RUS 101–102  (5 CR.) (5 CR.)
Beginning Russian I–II
Prerequisite for RUS 102: RUS 101. Develops the understanding, speaking, reading, and writing of Russian, and emphasizes the structure of the language. Lecture 5 hours per week.

RUS 201–202  (3 CR.) (3 CR.)
Intermediate Russian I–II
Prerequisite for RUS 202: RUS 201. Develops the understanding, speaking, reading, and writing of Russian. Class conducted in Russian. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Sign Communications

See American Sign Language (ASL) or Interpreter Education (INT).
**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.

**SSC 205** *(3 CR.)*  
**Cultural and Social Study of Women**  
Analyzes historical and contemporary social, cultural, political, and economic factors affecting the role of women. Uses selected literature about women in the modern world as a basis for study and discussion. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Sociology**

**SOC 200** *(3 CR.)*  
**Principles of Sociology**  
Introduces fundamentals of social life. Presents significant research and theory in areas such as culture, social structure, socialization, deviance, social stratification, and social institutions. Lecture 3 hours per week.

**SOC 201–202** *(3 CR.) (3 CR.)*  
**Introduction to Sociology I–II**  
Introduces basic concepts and methods of sociology. Presents significant research and theory in areas such as socialization, group dynamics, gender roles, minority group relations, stratification, deviance, culture, and community studies. Includes research and theories on population; social change; and social institutions (family, education, religion, political system, economic system). Lecture 3 hours per week.

**SOC 207** *(3 CR.)*  
**Medical Sociology**  
Surveys the social, economic, cultural, and individual factors in health and illness. Examines issues of wellness, healthcare systems, physician-nurse-patient relationships, medical costs, ethics, and policy. Lecture 3 hours per week.

**SOC 211–212** *(3 CR.) (3 CR.)*  
**Principles of Anthropology I–II**  
Inquires into the origins, development, and diversification of human biology and human cultures. Includes fossil records, physical origins of human development, human population genetics, linguistics, cultures’ origins and variation, and historical and contemporary analysis of human societies. Lecture 3 hours per week.

**SOC 215** *(3 CR.)*  
**Sociology of the Family**  
Studies topics such as marriage and family in social and cultural context. Addresses the single scene, dating and marriage styles, child-rearing, husband and wife interaction, single parent families, and alternative lifestyles. Lecture 3 hours per week.

**SOC 225** *(3 CR.)*  
**Sociology of Gender**  
Analyzes influence of major social institutions and socialization in shaping and changing sex roles in contemporary society. Examines differential access to positions of public power and authority for men and women. Lecture 3 hours per week.

**SOC 235** *(3 CR.)*  
**Juvenile Delinquency**  
Studies demographic trends, casual theories, and control of juvenile delinquency. Presents juveniles’ interaction with family, schools, police, courts, treatment programs, and facilities. Lecture 3 hours per week.

**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 247** *(3 CR.)*  
**Death and Dying**  
SOC 247 and PSY 266 cannot both be taken for credit toward graduation. Studies theoretical, practical, and historical aspects of death. Focuses upon student’s own ideas, feelings, and attitudes toward death and dying and the significance and consequences of those attitudes. Lecture 3 hours per week.
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>SOC 255</td>
<td>Comparative Sociology</td>
<td>(3 CR.)</td>
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<td></td>
<td>Analyzes varieties of human behavior, beliefs,</td>
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<td>and values in Western and non-Western cultures.</td>
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<td>Emphasizes similarities and variations among</td>
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<td>social institutions such as family, law, religion,</td>
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<td>economics, and government. Lecture 3 hours per</td>
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<td>SOC 266</td>
<td>Race and Ethnicity</td>
<td>(3 CR.)</td>
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<td></td>
<td>Investigates minorities such as racial and ethnic</td>
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<td>groups. Addresses social and economic conditions</td>
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<td>promoting prejudice, racism, discrimination, and</td>
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<td>segregation. Lecture 3 hours per week.</td>
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<tr>
<td>SOC 268</td>
<td>Social Problems</td>
<td>(3 CR.)</td>
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<tr>
<td></td>
<td>Applies sociological concepts and methods to</td>
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<td>analysis of current social problems. Includes</td>
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<td>delinquency and crime, mental illness, drug</td>
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<td>addiction, alcoholism, sexual behavior,</td>
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<td>population crisis, race relations, family and</td>
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<td>community disorganization, poverty, automation,</td>
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<td>wars, and disarmament. Lecture 3 hours per</td>
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Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Spanish**

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SPA 17</td>
<td>Spanish for the Tourist</td>
<td>(3 CR.)</td>
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<tr>
<td></td>
<td>Introduces spoken Spanish to people intending</td>
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<td>to travel in a Spanish-speaking country. Lecture</td>
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<td>3 hours per week.</td>
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<tr>
<td>SPA 101–102</td>
<td>Beginning Spanish I–II</td>
<td>(5 CR.)</td>
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<td>Prerequisite for SPA 102: SPA 101. Introduces</td>
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<td>understanding, speaking, reading, and writing</td>
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<td>skills, and emphasizes basic Spanish sentence</td>
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<td>structure. Lecture 5 hours per week.</td>
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<tr>
<td>SPA 103–104</td>
<td>Basic Spoken Spanish I–II</td>
<td>(3 CR.)</td>
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<td></td>
<td>Prerequisite for SPA 104: SPA 103. Teaches oral</td>
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<td>communication and introduces cultural mores and</td>
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<td>customs to students with no prior instruction</td>
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<td>in the language. Lecture 3 hours per week.</td>
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<tr>
<td>SPA 111–112</td>
<td>Conversation in Spanish I–II</td>
<td>(3 CR.)</td>
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<td>Prerequisite for SPA 111: SPA 102 or equivalent.</td>
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<td>Prerequisite for SPA 112: SPA 111. Emphasizes the</td>
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<td>spoken language, stressing fluency and correct-</td>
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<td>ness of structure, pronunciation, and vocabulary.</td>
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<td>Lecture 3 hours per week.</td>
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<tr>
<td>SPA 150</td>
<td>Spanish for Law Enforcement</td>
<td>(3 CR.)</td>
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<td>Introduces Spanish to those in the criminal</td>
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<td>justice field. Emphasizes oral communication and</td>
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<td>practical firsthand police and justice vocabulary.</td>
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<td>May include oral drill and practice. Lecture 3</td>
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<td>hours per week.</td>
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<tr>
<td>SPA 163–164</td>
<td>Spanish for Health Professionals I–II</td>
<td>(3 CR.)</td>
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<tr>
<td></td>
<td>Prerequisite for SPA 164: SPA 163. Introduces</td>
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<td></td>
<td>Spanish to those in the health sciences. Emphasizes</td>
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<tr>
<td></td>
<td>oral communication and practical medical</td>
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<tr>
<td></td>
<td>vocabulary. May include oral drill and practice.</td>
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<tr>
<td></td>
<td>Lecture 3 hours per week.</td>
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<tr>
<td>SPA 201–202</td>
<td>Intermediate Spanish I–II</td>
<td>(3 CR.)</td>
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<tr>
<td></td>
<td>Prerequisite for SPA 201: SPA 102 or equivalent.</td>
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<td></td>
<td>Prerequisite for SPA 202: SPA 201. Continues to</td>
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<tr>
<td></td>
<td>develop understanding, speaking, reading, and</td>
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<td></td>
<td>writing skills. Spanish is used in the classroom.</td>
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<tr>
<td></td>
<td>Lecture 3 hours per week.</td>
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<tr>
<td>SPA 205–206</td>
<td>Spanish for Heritage Speakers I–II</td>
<td>(3 CR.)</td>
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<tr>
<td></td>
<td>Prerequisite for SPA 206: SPA 205. Fosters</td>
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<tr>
<td></td>
<td>appreciation of Hispanic cultural-linguistic</td>
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<td></td>
<td>heritage. Develops understanding, speaking,</td>
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<td></td>
<td>reading, and writing skills to native or near-</td>
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<td></td>
<td>native level. Focuses on reading development,</td>
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<td></td>
<td>orthography, lexical expansion, formal grammar,</td>
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<tr>
<td></td>
<td>facility in writing and composition, and an</td>
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<tr>
<td></td>
<td>introduction to selected representations of</td>
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<td></td>
<td>literary texts. Lecture 3 hours per week.</td>
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</tr>
<tr>
<td>SPA 211–212</td>
<td>Intermediate Spanish Conversation I–II</td>
<td>(3 CR.)</td>
</tr>
<tr>
<td></td>
<td>Prerequisite: SPA 202 or equivalent. Prerequisite</td>
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<tr>
<td></td>
<td>for SPA 212: SPA 211. Continues to develop</td>
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<tr>
<td></td>
<td>fluency through emphasis on idioms and other</td>
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<td>complex sentence structures. Lecture 3 hours per</td>
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<td></td>
<td>week.</td>
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<tr>
<td>SPA 233</td>
<td>Introduction to Spanish Civilization and</td>
<td>(3 CR.)</td>
</tr>
<tr>
<td></td>
<td>Literature I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prerequisite: SPA 202 or equivalent. Introduces</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the student to Spanish culture and literature.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Readings and discussions conducted in Spanish.</td>
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<tr>
<td></td>
<td>Lecture 3 hours per week.</td>
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</tr>
<tr>
<td>SPA 241–242</td>
<td>Intermediate Spanish Composition I–II</td>
<td>(3 CR.)</td>
</tr>
<tr>
<td></td>
<td>Prerequisite: SPA 202 or equivalent. Prerequisite</td>
<td></td>
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<tr>
<td></td>
<td>for SPA 242: SPA 241. Develops skills in written</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spanish, emphasizing grammatical correctness.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lecture 3 hours per week.</td>
<td></td>
</tr>
</tbody>
</table>
SPA 271–272 (3 CR.) (3 CR.)
**Introduction to Latin American Civilization and Literature I–II**
Prerequisite: SPA 202 or equivalent. Prerequisite for SPA 272: SPA 271. Introduces the student to Latin American culture and literature. Readings and discussions conducted in Spanish. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

**Speech and Drama**

See Communication Studies and Theatre (CST).

**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. Lecture 1 hour per week.

**SDV 106 (1 CR.)**
**Preparation for Employment**
Provides experience in resume writing, preparation of applications, letters of application, and successfully preparing for and completing the job interview. Assists students in identifying their marketable skills and aptitudes. Develops strategies for a successful employment search. Assists students in understanding effective human relations techniques and communication skills in job search. Lecture 1 hour per week.

**SDV 107 (2 CR.)**
**Career Education**
Surveys career options available to students. Stresses career development and assists in the understanding of self in the world of work. Assists students in applying decision-making to career choice. Lecture 2 hours per week.

**SDV 109 (1 CR.)**
**Student Leadership Development**
Provides opportunities for students to learn leadership theory and skills for application in campus organizations, committees, and groups. Lecture 1 hour per week.

**SDV 195 (1–5 CR.)**
**Topics In:**
Please refer to the current Schedule of Classes for the specific topics for these titles.

**SDV 295 (1–5 CR.)**
**Topics In:**
Please refer to the current Schedule of Classes for the specific topics for these titles.

**SDV 298 (1–5 CR.)**
**Seminar and Project:**
Please refer to the current Schedule of Classes for the specific topics for these titles.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this "Course Descriptions" section.

**Travel and Tourism**

See also Hospitality Management (HRI).

**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.

**TRV 111–112 (3 CR.) (3 CR.)**
**Geography of Tourism I–II**
Focuses on the geographic knowledge necessary to provide effective, efficient service to clients. Studies major Western hemisphere (Part I) and Eastern hemisphere (Part II) destinations. Emphasizes features of touristic importance, such as visit documentation, climate and physical features, accommodations and attractions, and accessibility. Lecture 3 hours per week.
TRV 125 (3 CR.)
Travel Sales and Customer Service
Prerequisite: TRV 100. Studies successful selling strategies in the travel business. Analyzes selling techniques by types of travel clientele and their needs. Emphasizes the development of basic selling skills through role playing exercises and sales presentations. Lecture 3 hours per week.

TRV 138–139 (3 CR.) (3 CR.)
Regional Tour Guiding I–II
Studies the knowledge and skills necessary to become a regional tour guide. Covers the practical elements of tour guiding including regulations, licensing procedures, and marketing as well as the information necessary to give tours in the regional area. Includes national and local history, regional geography, architecture, government and political history, museums, flora and fauna, local personalities, and major sites of tourist interest. Lecture 3 hours per week.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

Veterinary Technology

Enrollment in VET courses is restricted to students program-placed in the Veterinary Technology Program.

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: 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: 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
Prerequisites: VET 131 and 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: MTH 126 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 211–212 (2 CR.) (2 CR.)
Animal Diseases I–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: 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 and zoological medicine. Lecture 2 hours per week.

**VET 221  (4 CR.)**  
**Advanced Clinical Practices III**  
Prerequisites: VET 121–122, 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.

Please contact the appropriate division for the availability of general usage courses, as described at the beginning of this “Course Descriptions” section.

**Vietnamese**

**VTN 101–102  (5 CR.) (5 CR.)**  
**Beginning Vietnamese I–II**  
Prerequisite for VTN 102: VTN 101. Develops the understanding, speaking, reading, and writing of Vietnamese, and emphasizes the structure of the language. Lecture 5 hours per week.

**VTN 201–202  (3 CR.) (3 CR.)**  
**Intermediate Vietnamese I–II**  
Prerequisites for VTN 201: VTN 101–102. Prerequisite for VTN 202: VTN 201. Continues to develop understanding, speaking, reading, listening and writing skills. Classes conducted in Vietnamese. Lecture 3 hours per week.

**Viticulture and Enology**

Please see VEN courses under Horticulture.

**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: 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 126  (3 CR.)  
Pipe Welding I  
Prerequisite: WEL 122 or instructor's approval. 
Teaches metal arc welding processes including the 
welding of pressure piping in the horizontal, vertical, 
and horizontal-fixed positions in accordance with 
section IX of the ASME Code. Lecture 2 hours. 
Laboratory 3 hours. Total 5 hours per week.

WEL 127  (3 CR.)  
Pipe Welding II  
Prerequisite: WEL 126 or instructor's approval. 
Provides practice in the welding of pressure piping 
in the horizontal, vertical, and fixed positions. 
Laboratory 9 hours per week.

WEL 130  (3 CR.)  
Inert Gas Welding  
Introduces practical operations in the uses of inert-
gas-shield 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 141–142  (3 CR.) (3 CR.)  
Welder Qualification Tests I–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  
Prerequisites: WEL 122, WEL 141, WEL 150, and 
MTH 103 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  
Prerequisites: WEL 142, WEL 150, and MTH 103 
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 Processes  
Introduces semi-automatic welding processes with 
emphasis on practical application. Includes the study 
of filler wires, fluxes, and gases. Lecture 2 hours. 
Laboratory 3 hours. Total 5 hours per week.

Please contact the appropriate division for the availability of 
general usage courses, as described at the beginning of this 
“Course Descriptions” section.
The six campuses are indicated as follows: Alexandria (AL), Annandale (AN), Loudoun (LO), Manassas (MA), Medical Education (ME), and Woodbridge (WO). Those individuals with cross-campus responsibilities are indicated as College Staff (CS).

Abdelbaki, Alaeidin H.
Associate Professor; Doctorate, University of Virginia; Master’s Degree, Virginia Commonwealth University; Bachelor’s Degree, University of Virginia; Mathematics (LO)

Abdirahman, Hussein Nur
Associate Instructor; Bachelor’s Degree, Foreign College/University; Mathematics (WO)

Acosta, Viridiana
Professional Faculty, Instructor; Master’s Degree, Azusa Pacific University; Professional Faculty (CS)

Adamson, Heidi B.
Administrative Faculty, Associate Professor; Master’s Degree, George Mason University; Bachelor’s Degree, George Mason University; Professional Faculty (MA)

Addison, Shawn W.
Professional Faculty, Associate Professor; Master’s Degree, Liberty University; Bachelor’s Degree, Liberty University; Professional Faculty (AN)

Addy, Tetteh Nee
Assistant Professor; Doctorate, Hampton University; Master’s Degree, Hampton University; Physics (MA)

Adkisson-Selby, Kiana Nichelle
Assistant Professor; Doctorate, University of Oklahoma Health Sciences Center; Veterinary Technology (LO)

Agnich, Joseph F.
Associate Professor; Master’s Degree, George Washington University; Bachelor’s Degree, Alderson-Broaddus College; Mathematics (LO)

Ahmad, Anwar
Assistant Professor; Master’s Degree, George Mason University; Computer Science (AN)

Ahmad, John G.
Associate Professor; Bachelor’s Degree, George Washington University; Master’s Degree, George Washington University; Accounting (AN)

Ahmadi, Shabrokh
Professor; Doctorate, University Maryland–College Park; Master’s Degree, West Virginia State University; Bachelor’s Degree, Virginia Polytechnic Institute and State University; Mathematics (MA)

Ahmadi, Sharis
Associate Professor; Master’s Degree, West Virginia State University; Bachelor’s Degree, West Virginia University Institute of Technology; Mathematics (LO)

Ahmed, Nauri D.
Associate Professor; Master’s Degree, Liberty University; Bachelor’s Degree, University of Maryland–University College; Bachelor’s Degree, Virginia Polytechnic Institute and State University; Accounting (WO)

Ahn, Mary T.
Professional Faculty, Instructor; Master’s Degree, Johns Hopkins–Post Baccalaureate; Bachelor’s Degree, University of Maryland–College Park; Professional Faculty (MA)

Al Jumaili, Teba A.
Assistant Professor; Master’s Degree, Marymount University; IT Essentials (AL)

Alexander, Melinda R.
Associate Professor; Doctorate, Arizona State University; Geography (AL)

Allen, Kendra A.
Administrative Faculty, Instructor; Master’s Degree, Webster University; Administrative Faculty (CS)

Allen, Stephanie T.
Professional Faculty, Instructor; Master’s Degree, George Mason University; Professional Faculty (CS)

Aller, Mary S.
Professor; Bachelor’s Degree, Virginia Polytechnic Institute and State University; Master’s Degree, Ohio State University–Columbus; Doctorate, Ohio State University–Columbus; Veterinary Technology (LO)

Alonso, Ana M.
Assistant Professor; Master’s Degree, George Mason University; Bachelor’s Degree, University of Florida; Spanish (AN)

Al-Tahrawi, Khalil A.
Assistant Professor; Doctorate, Nova Southeastern University; Arabic (WO)

Alvarez, Velderine F.
Professional Faculty, Assistant Instructor; Master’s Degree, Pennsylvania State University; Professional Faculty (LO)

Amato, Daria U.
Associate Professor; Master’s Degree, Catholic University of America; Bachelor’s Degree, Catholic University of America; Associate Degree, New York University; Nursing (MEC)

Amey, Michael Darin
Associate Professor; Doctorate, Foreign College/University; Master’s Degree, Foreign College/University; Bachelor’s Degree, Andrews University; English (AL)

Anderson, Annemarie K.
Professional Faculty, Associate Professor; Master’s Degree, American of University; Master’s Degree, Catholic University America; Bachelor’s Degree, St. Olaf College; Professional Faculty (AL)
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Degrees</th>
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<tbody>
<tr>
<td>Anderson, Elizabeth T.</td>
<td>Professional Faculty, Instructor; Master’s Degree</td>
<td>Marymount University; Bachelor’s Degree; Pennsylvania State University; Professional Faculty (CS-FA)</td>
</tr>
<tr>
<td>Anderson, Maria B.</td>
<td>Associate Professor; Master’s Degree</td>
<td>George Mason University; Master’s Degree; University of Phoenix; Bachelor’s Degree; George Mason University; Associate Degree; Germanna Community College; Spanish (WO)</td>
</tr>
<tr>
<td>Anwari, Hashem</td>
<td>Professor; Master’s Degree</td>
<td>North Carolina A&amp;T State University; Bachelor’s Degree, Tri-State Business Institute; IT Essentials (LO)</td>
</tr>
<tr>
<td>Aquila, Meredith</td>
<td>Assistant Professor; Master’s Degree</td>
<td>Cornell University; Bachelor’s Degree, Indiana University Bloomington; Communication Studies/Theatre (AL)</td>
</tr>
<tr>
<td>Aram, Diana Kim</td>
<td>Professional Faculty, Instructor; Master’s Degree</td>
<td>University of Maryland–College Park; Bachelor’s Degree, University of Florida; Administrative Faculty (AN)</td>
</tr>
<tr>
<td>Arevalo, Lauren Suzanne</td>
<td>Administrative Faculty, Instructor; Master’s Degree</td>
<td>Nazareth College of Rochester; Bachelor’s Degree, SUNY–Geneseo; English as a Second Language (LO)</td>
</tr>
<tr>
<td>Arias-Reyes, Aida Marisol</td>
<td>Professional Faculty, Assistant Instructor; Bachelor’s Degree</td>
<td>George Mason University; Associate Degree, Northern Virginia Community College; Professional Faculty (CS)</td>
</tr>
<tr>
<td>Arif, Mohammad A.</td>
<td>Assistant Professor; Doctorate</td>
<td>University of Missouri–Columbia; Physics (WO)</td>
</tr>
<tr>
<td>Arra, Christopher T.</td>
<td>Professor; Doctorate</td>
<td>Indiana University–Purdue University Columbus; Master’s Degree, University of Massachusetts–Amherst; Bachelor’s Degree, George Mason University; Psychology (WO)</td>
</tr>
<tr>
<td>Asekhuano, Cassandra M.</td>
<td>Professional Faculty, Instructor; Bachelor’s Degree</td>
<td>Virginia Polytechnic Institute and State University; Master’s Degree, Virginia Polytechnic Institute and State University; Professional Faculty (CS)</td>
</tr>
<tr>
<td>Atabong, Fonya C.</td>
<td>Assistant Professor; Doctorate</td>
<td>Case Western Reserve University; Master’s Degree, University of Michigan–Ann Arbor; Bachelor’s Degree, University of Michigan–Ann Arbor; Associate Degree, St. Clair County Community College; Nursing (MEC)</td>
</tr>
<tr>
<td>Backus, Gillian S.</td>
<td>Professor; Doctorate</td>
<td>University of North Carolina–Chapel Hill; Bachelor’s Degree, Mount Holyoke College; Biology (LO)</td>
</tr>
<tr>
<td>Baer, James A.</td>
<td>Professor; Doctorate</td>
<td>Rutgers University; Master’s Degree, Antioch College; Master’s Degree, Rutgers University; Bachelor’s Degree, Oberlin College; History (AL)</td>
</tr>
<tr>
<td>Bailey, Raymond C.</td>
<td>Professor; Doctorate</td>
<td>University of Georgia; Master’s Degree, University of Georgia; Bachelor’s Degree, Catawba College; History (MA)</td>
</tr>
<tr>
<td>Baker, Lisa A.</td>
<td>Assistant Professor; Doctorate</td>
<td>Temple University; Bachelor’s Degree, Kent State University–Kent; Administration of Justice (WO)</td>
</tr>
<tr>
<td>Balbuena, Kristin L.</td>
<td>Professional Faculty, Instructor; Master’s Degree</td>
<td>Marymount University; Bachelor’s Degree, Marymount University; Professional Faculty (CS)</td>
</tr>
<tr>
<td>Ball, Kristin F.</td>
<td>Associate Professor; Doctorate</td>
<td>University of Oklahoma; Master’s Degree, Bowling Green State University–Bowling Green; Bachelor’s Degree, Bowling Green State University–Bowling Green; Communication Studies/Theatre (AN)</td>
</tr>
<tr>
<td>Banas, Edward J.</td>
<td>Professor; Doctorate</td>
<td>Virginia Polytechnic Institute and State University; Accounting (WO)</td>
</tr>
<tr>
<td>Barr, Karen J.</td>
<td>Instructor; Master’s Degree</td>
<td>George Mason University; Bachelor’s Degree, SUNY–Albany; Mathematics (LO)</td>
</tr>
<tr>
<td>Bartley, Christian D.</td>
<td>Instructor; Master’s Degree</td>
<td>Old Dominion University; Biology (WO)</td>
</tr>
<tr>
<td>Bausch, Denise M.</td>
<td>Assistant Professor; Master’s Degree</td>
<td>Eastern Michigan University; English (WO)</td>
</tr>
<tr>
<td>Bausch, Robert C.</td>
<td>Professor; Master’s Degree</td>
<td>George Mason University; English (WO)</td>
</tr>
<tr>
<td>Bayraktar, Breana A.</td>
<td>Assistant Professor; Master’s Degree</td>
<td>George Mason University; English as a Second Language (WO)</td>
</tr>
<tr>
<td>Beattie, Mark C.</td>
<td>Professor; Doctorate</td>
<td>George Mason University; Master’s Degree, Foreign College/University; Computer Science (AN)</td>
</tr>
<tr>
<td>Beattie, Tracy</td>
<td>Professional Faculty, Instructor; Master’s Degree</td>
<td>George Washington University; Master’s Degree, University of Wisconsin Madison; Bachelor’s Degree, American University; Professional Faculty (AN)</td>
</tr>
<tr>
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</tbody>
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<thead>
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<td>Perantoni, Esther S.</td>
<td>Administrative Faculty, Instructor; Master’s Degree, Virginia Polytechnic Institute and State University; Administrative Faculty (CS)</td>
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<td>Peretti, Burton</td>
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<td>Perez, Ramon</td>
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<tr>
<td>Perrier, Gregory K.</td>
<td>Associate Professor; Doctorate, Utah State University; Master’s Degree, University of California–Davis; Bachelor’s Degree, University of California–Los Angeles; History (MA)</td>
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</tbody>
</table>
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<th>Name</th>
<th>Title/Position</th>
<th>Bachelor's, Master's, Doctorate Schools</th>
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<tr>
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Thornton-Grant, Stephanie
Instructor; Master’s Degree, American University; Arts (AN)

Thurston, Carole A.
Associate Professor; Doctorate, Georgetown University; Master’s Degree, George Washington University; Bachelor’s Degree, University of Virginia; English (AN)

Tibebu, Biniyam Assefa
Instructor; Master’s Degree, Foreign College/University; Mathematics (AL)

Tirpak, Philip C.
Instructor; Master’s Degree, University of Oklahoma; Bachelor’s Degree, Rutgers University; Communication Studies/Theatre (AN)

Todd, Matthew Michael
Administrative Faculty, Associate Professor; Master’s Degree, Foreign College/University; Master’s Degree, University of Wisconsin; Master’s Degree, Northwest University; Bachelor’s Degree, College of William and Mary; Administrative Faculty (AL)

Toepper, Jim P.
Assistant Professor; Master’s Degree, George Mason University; Master’s Degree, University of Illinois–Urbana; Bachelor’s Degree, University of Illinois–Urbana; English (AL)

Tong, Nicole F.
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Topalova, Snejana N.
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Topchubashova, Samira
Assistant Professor; Doctorate, Foreign College/University; Master’s Degree, Huntingdon College; Bachelor’s Degree, Foreign College/University; Biology (AN)

Treadway, Dwayne C.
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Trostle, Amanda Catherine
Assistant Professor; Master’s Degree, American University; Bachelor’s Degree, Oberlin College; Spanish (AL)

Troy, Frances R.
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Tucker, Alicia L.
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Tucker, Juneious
12-month Professional Professor; Doctorate, George Mason University; Master’s Degree, Illinois State University; Bachelor’s Degree, East Tennessee State University; Professional Faculty (AN)

Tupper, Todd A.
Professor; Doctorate, George Mason University; Master’s Degree, Southern Connecticut State University; Bachelor’s Degree, Richard Stockton College of New Jersey; Biology (AL)

Turner, Julia J.
Associate Professor; Master’s Degree, George Mason University; Bachelor’s Degree, Central Michigan University; Communication (LO)

Turner, Michael
Administrative Faculty, Associate Professor; Master’s Degree, Slippery Rock University; Administrative Faculty (WO)

Turner, Tildon L.
Assistant Professor; Master’s Degree, George Mason University; Bachelor’s Degree, George Mason University; English (AN)

Tyson, David
Assistant Professor; Master’s Degree, Case Western Reserve University; Master’s Degree, Park University; Bachelor’s Degree, Rowan University; Communication Studies/Theatre (WO)

Tyson, Lecha Nicole
Professional Faculty, Assistant Instructor; Bachelor’s Degree, Georgia Southwestern State University; Professional Faculty (AL)

Unger, Rudolf
Assistant Professor; Doctorate, Foreign College/University; Master’s Degree, Foreign College/University; Bachelor’s Degree, Foreign College/University; Mathematics (AN)

Usher, Kelly Dione
Assistant Professor; Master’s Degree, Central Michigan University; Bachelor’s Degree, Georgia Southern University; English (MA)

Vafier, James A.
Professor; Doctorate, Georgetown University; Bachelor’s Degree, George Mason University; English (MA)
Van Horn, Karen M.  
Instructor; Master’s Degree, Regent University; Bachelor’s Degree, Towson University; English (AN)

Vander Maten, Mary A.  
Professor; Doctorate, University of Kansas Medical Center; Bachelor’s Degree, Northwestern College; Biology (AN)

Vanderson, John A.  
Instructor; Master’s Degree, Virginia Polytechnic Institute and State University; Chemistry (Continuing Education) (AL)

Veney, M. Beatrice M.  
Administrative Faculty, Professor; Doctorate, Argosy University; Master’s Degree, Western Carolina University; Bachelor’s Degree, University of North Carolina–Charlotte; Certificate, Argosy University; Administrative Faculty (MEC)

Versluis, Tara A.  
Instructor; Bachelor’s Degree, Jefferson College of Health Sciences; Associate Degree, Virginia Western Community College; Radiography (MEC)

Vetrano, Jeffrey Allen  
Instructor; Master’s Degree, George Mason University; Bachelor’s Degree, James Madison University; Mathematics (AN)

Viale, Francesca  
Instructor; Master’s Degree, Foreign College/University; Physics (LO)

Vibert, Douglas T.  
Professional Faculty, Instructor; Master’s Degree, American University; Bachelor’s Degree, University of Massachusetts–Amherst; Associate Degree, Cape Cod Community College; Professional Faculty (AN)

Vick, Elizabeth J.  
Assistant Professor; Master’s Degree, Illinois State University; Bachelor’s Degree, Illinois State University; Communication (MA)

Victorine, Michael Andrew  
Assistant Professor; Master’s Degree, Indiana University East; Bachelor’s Degree, Drury University; Mathematics (LO)

Villagran-Glover, Frances  
Administrative Faculty, Professor; Master’s Degree, Northern Arizona University; Bachelor’s Degree, Texas A&M University; Administrative Faculty (AL)

Vutien, Phuongchi  
Instructor; Master’s Degree, SUNY–Buffalo; Bachelor’s Degree, Colgate University; Biology (LO)

Waeljen, Jarrod R.  
Professor; Master’s Degree, San Diego State University; Bachelor’s Degree, San Diego State University; English (AL)

Waguespack, Michael J.  
Associate Professor; Master’s Degree, Louisiana State University–Baton Rouge; Bachelor’s Degree, Louisiana State University–Baton Rouge; Certificate, George Mason University; English (AL)

Wahl, Bruce N.  
Professor; Doctorate, George Mason University; Master’s Degree, Northwestern University; Bachelor’s Degree, St. Olaf College; Mathematics (AL)

Wallace, Lauren N.  
Instructor; Master’s Degree, Texas Tech University; Bachelor’s Degree, James Madison University; English (AN)

Wallace, Michael D.  
Assistant Professor; Master’s Degree, University of Illinois–Urbana; Mathematics (LO)

Walters, Karen M.  
Professor; Doctorate, Kentucky State University; Master’s Degree, University of Hartford; Master’s Degree, Kentucky State University; Bachelor’s Degree, Dartmouth College; Mathematics (AN)

Wang, Amy H.  
Professor; Doctorate, Texas Christian University; Master’s Degree, Texas Christian University; Bachelor’s Degree, Foreign College/University; Mathematics (AL)

Wang, Ben B.  
Professor; Doctorate, University of Maryland–Baltimore; Bachelor’s Degree, University of Maryland–College Park; Chemistry (AN)

Wang, Hong  
Administrative Faculty, Associate Professor; Doctorate, Kansas State University–Manhattan; Master’s Degree, Kansas State University–Manhattan; Bachelor’s Degree, Foreign College/University; Administrative Faculty (CS)

Ward, Gloria M.  
Assistant Professor; Master’s Degree, San Diego State University; Bachelor’s Degree, University of Miami; English as a Second Language (AL)

Ward, Jennifer D.  
Professor; Doctorate, University of Denver; Master’s Degree, University of Denver; Bachelor’s Degree, Old Dominion University; English (AL)

Ward, Stephen Drew  
Assistant Professor; Master’s Degree, George Washington University; Master’s Degree, Troy State University–Troy; Bachelor’s Degree, University of Maryland–University College; IT Essentials (AL)

Warren Chinyani, Tamara Jean  
Assistant Professor; Doctorate, Howard University; Master’s Degree, Western Michigan University; Bachelor’s Degree, Michigan State University; Communication (Continuing Education) (WO)

Warren-Nickens, Vinita R.  
Professional Faculty, Instructor; Master’s Degree, Bowie State University; Bachelor’s Degree, East Carolina University; Professional Faculty (AN)

Washington, Derrick  
Professional Faculty, Instructor; Master’s Degree, Howard University; Bachelor’s Degree, Saint Leo University; Professional Faculty (MA)
Watson, Trasi M.
Professional Faculty, Instructor; Master's Degree, Slippery Rock University; Professional Faculty (AN)

Wax, Kathleen L.
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Wayman, Matthew L.
Instructor; Master's Degree, College of William and Mary; Welding (MA)

Weaver, Jacqueline M.
Instructor; Master's Degree, Nazareth College of Rochester; English as a Second Language (WO)

Webb, Jr., Robert S.
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Weber, Lucy
Instructor; Master's Degree, Virginia Commonwealth University; Bachelor's Degree, James Madison University; Arts (LO)

Wells, Christina M.
Professor; Doctorate, University of Maryland–College Park; Master's Degree, University of Arkansas–Little Rock; Bachelor's Degree, Henderson State University; English (AN)

Wertman, Ann E.
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Westerhoff, Matthew S.
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White, Jonathan W.
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White, LaTonia M.
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White, Tyler M.
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White, Vicky D.
Professional Faculty, Instructor; Master’s Degree, University of Maryland–Eastern Shore; Bachelor’s Degree, University of Maryland–Eastern Shore; Professional Faculty (AN)

Whitmire, Mark A.
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Wildblood, Margie G.
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Wilkerson, George J.
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Wilkins, Ashley Mason
Assistant Professor; Doctorate, University of Phoenix; Bachelor’s Degree, Clemson University; Education (MA)

Williams, Lisa D.
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Williams, Peter Edward
Assistant Professor; Doctorate, University of Texas–Arlington; Physics (AN)

Wilson, Cedric M.
Assistant Professor; Doctorate, Howard University; Master’s Degree, St. Thomas University; Master’s Degree, Howard University; Psychology (WO)

Wilson, Regina E.
Assistant Professor; Doctorate, Ohio State University; Bachelor’s Degree, Ohio State University; Veterinary Technology (LO)

Wimbush, Jr., Walter L.
Professor; Doctorate, Rice University; Master’s Degree, University of Notre Dame; Bachelor’s Degree, Iona College; Physics (AL)

Winner, Kristine A.
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Winters, Jennifer
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Wissing, Stephen R.
Associate Professor; Master’s Degree, Catholic University of America; Bachelor’s Degree, Loyola College; Physics (AN)

Wofsey, Stephen
Associate Professor; Doctorate, North Central University; Master’s Degree, University of Phoenix; Bachelor’s Degree, University of Maryland–College Park; Administration of Justice (AN)

Woldegorgis, Yared Endalamaw
Assistant Professor; Master’s Degree, Clemson University; Physics (AN)

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Woodard, William J.
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Woodke, Robert S.
Associate Professor; Master’s Degree, George Washington University; Bachelor’s Degree, Morningside College; Drafting (AN)

Wordoffa, Zenbaba
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Wright, Paul Tracy
Assistant Professor; Master’s Degree, Indiana University–Bloomington; Bachelor’s Degree, Purdue University–Calumet; Associate Degree, Purdue University–Calumet; Construction Management (AL)

Wright, Rebecca B.
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Wulf, John C.
Professor; Doctorate, George Mason University; Master’s Degree, Catholic University of America; Music (LO)

Wyne, Deborah E.
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Wynt, Eric K.
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Yan, Kathleen B.
Instructor; Master’s Degree, University of Georgia; Bachelor’s Degree, University of Virginia; Associate Degree, Northern Virginia Community College; Mathematics (AL)

Yasin, Tauheeda M.
Associate Professor; Master’s Degree, Long Island University–Brooklyn Campus; Bachelor’s Degree, Foreign College/University; Bachelor’s Degree, Sarah Lawrence College; English (AL)

Yazdani, Jami Bryan
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Young, Laura S.
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Professor; Doctorate, Brown University; Master’s Degree, Brown University; Master’s Degree, University of North Carolina–Chapel Hill; Bachelor’s Degree, Rensselaer Polytechnic Institute; Associate Degree, Hudson Valley Community College; Geology (AL)

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Instructor; Master’s Degree, Fairleigh Dickinson University–Madison; Bachelor’s Degree, Foreign College/University; Chemistry (LO)

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Zavala, Jaidee
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Zhu, Rong
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Zorin, Izanne D.
Professor; Doctorate, Johns Hopkins University; Bachelor’s Degree, University South Carolina–Columbia; Biology (AL)

Zuaso, Amy Vanessa
Professional Faculty, Assistant Instructor; Bachelor’s Degree, James Madison University; Associate Degree; Professional Faculty (WO)

Zuniga, Edward
Instructor; Master’s Degree, Georgetown University; Bachelor’s Degree, George Mason University; Chemistry (WO)
EMERITUS

To be eligible for the rank of emeritus, a retired member of the College (usually holding rank of associate professor or professor) has given a minimum of ten years of service in the Virginia Community College System and has made meritorious and significant contributions to the College.

President Emeritus
Ernst, Richard J.

Emeritus Faculty
Aiello, Nancy
Alford, Terry
Alfaro, Walter G.
Archer, Chalmers, Jr.
Atchison, Evelyn
Bachtell, Janice
Bailey, Sandra
Baker, Alison
Baldwin, Susan
Banks, Anne J.
Bassett, Max. L.
Bedont, Sally A.
Beene, Joe
Beeson, Sandra
Bigelow, John H.
Billups, Frederick H.
Bizer, Patricia
Blair, Katherine
Blois, Beverly, Jr.
Blunt, Rosalind
Bone, Gerald P.
Bradford, Arnold J.
Brantley, Jill Niebrugge
Brogan, Barbara
Bruner, Robert
Bulmer, Walter
Burgess, J. Fred
Burton, Jon
Cahoon, Lynn
Capps, John R.
Carter, Eltse B.
Carter, Joseph M.
Carter, Thomas E.
Casabianca, Lynn
Cavagnaro, Dorothy
Chambers, Barbara F.
Chen, Chih-Mei L.
Chu, Gen Sen
Coleman, Edward A.
Conerly, Brenda Faye
Cook, Gordon
Craig, Sheila
Croft, Blanton O.
Dearden, Z. Thomas
Delaney, Brian J.
Daron, Patricia R.
Delano, Willard A.
Delmore, Marian
DelPopolo, Anthony J., Sr.
Dennin, Marjorie C.
Denton, Irving L.
Depczenski, Robert G.
Devers, Donald
Dickson, Elizabeth
Dixit, Dhruv
Dixon, Elizabeth
Domenichetti, Madonna
Doyle, Terrence A.
Eckerlin, Ralph P.
Ellis, B.J.
Ellis, Tom
Elsberg, Constance
Emory, Winola Frances
Eyer, Patricia H.
Felt, David
Fiorillo, Rudolph
Flemming, Frederick F.
Flynn, Mary
Ford, Ann
Frantz, Donald H., Jr.
Freedman, Edward P.
Frieband, Michael
Frye, Sherman
Fuchsman, Alvin A.
Furcolow, Robert E.
Garrigan, George
Gary, Patricia Knight
Gibbs, Guy F.
Gillette, Pauline
Glueson, Nancy Beatty
Goldberg, Ellen
Gorham, Robin
Grant, Judith
Graves, Virginia H.
Gregory, Donald
Groff, Rebecca W.
Gronlund, Mildred C.
Grubb, Donald J.
Guandolo, Anne
Guntner, Talula
Hall, Janet Lee
Hamilton, Lander C.
Hammer, Elizabeth
Hansen, Brian
Hanson, Henry
Hardy, Thomas W.
Harmon, Henry C.
Harris, Richard
Harrison, Elizabeth
Harrison, Mary Inez
Harrison, William A.
Harwood, Velma E.
Hayden, J. Dunstan
Hecklinger, Fred J.
Heiges, Janice
Heneghan, Beverly
Heneghan, Michael
Hill, William C.
Hoagland, Nancy
Hoagland, Rosalind
Hogan, Jean
Holladay, Van Dale
Holley, Horace Clinton
Holt, Barbara
Horn, Jean
Horobetz, Joseph S.
Horowitz, Josef R.
Howson, Wilfred B., Jr.
Hinton-Jackson, Hortense B.
Huber, William E.
Huddleston, Thomas M.
Huston, F. Kenneth
Hutcheon, Wallace S.
Jay, Mary B.
Johnson, Ellen K.
Johnson, Mariette
Kallen, Vivian M.
Kamen, Rebecca
Kevorkian, George
Kheradmand, Bahman H.
Klimer, Robert
Kinnaman, Marjorie
Kinsella, William E., Jr.
Kirkbride, Eunice B.
Klinko, Ann Marie
Koberg, Robert W.
Kriehoff, Claudio
Laedtke, Elmer C.
Laws, Thomas F.
Leggat, John Bruce
Lembo, Frank J.
Lesansky, Helene T.
Lesman, Ann St. Clair
Lesman, Robert G.
Lieberman, Elizabeth S.
Lilley, Charles R.
Linville, Larry J.
Liu, Margaret K.
Lizondo, Mary Ann
Lobstein, Marion
Lunt, Patricia T.
Luquire, Karen
Marette, Michel
Marx, Barbara S.
Massie, Byron
May, Dennis
McCampbell, William
McCartney, Herbert E.
McDaniel, William
McElroy, Patricia
McFadden, Theresa K.
McGinnis, Wyatt
McNamara, Nancy
McVeigh, Paul
Michener, Randolph
Miller, Eula M.
Melton, Charles
Michel, Moses
Michaels, David
Miller, Ervinia (Venus)
Miller, Sara
Montero, Joseph G.
Moore, George C.
Mowbray, Carol
Mustachio, James A.
Narney, Pamela A.
Naclerio, June A.
Neal, Douglas A.
NeSmith, C. Mary B.
Netherton, Jean C.
Niner, Elaine
Noell, Laura K.
Oandasan, Carol
O’Connor, James A.
Painter, Harry F.
Palumbo, Leonard L.
Pape, Lynn
Partlow, Jack W.
Pearson, Nellie
Pellerin, Richard
Peterson, Betty L.
Petrella, Robert L.
Poland, Charles, Jr.
Popeck, John H.
Poulakis, Victoria
Primus, Virginia
Raphaeli, Ellen
Reed, Patrick
Reichbart, Howard E.
Reister, Rebecca
Reynolds, Daniel J.
Reynolds, Jimmie
Reynolds, R. Neil
Riggin, Judith M.
Riley, Daniel W.
Robinson, Percy E.
Rortvedt, Sylvia
Roth, Carolyn
Rynn, Maria
Sabol, Cathy E.
Sage, Henry (Jud)
Samuels, Joyce
Saperstone, Barbara
Sasscer, Larry
Sasscer, Monica F.
Selinger, Barry
Schran, Bill
Schurman, Lydia C.
Schwalje, John M.
Seaman, Barbara
Sellers, Martha W.
Serbousek, Jane
Seyler, Dorothy U.
Shahan, Michael E.
Shannon, William T.
Shapira, Lawrence
Sharpe, Susan
Shaw, Mary L.
Sheridan, Genevieve
Shuler, Cecil
Sichenze, Celeste M.
Simmons, Howard
Sinn, Leslie
Sinwell, Carol
Sipple, M. Noel
Smith, Lois H.
Smith, Robert L.
Smith, Vme Edom
Sparling, Beatrice
Stancil, William
Stites, Mary L.
Stukenbroeker, Fern
Sullivan, Carol
Sumner, Patsy
Swanson, A. Kenneth
Taochina, Agatha
Tardd, Anthony C.
Taylor, Alice
Taylor, David L.
Taylor, Jane B.
Taylor, Linda M.
Tebow, Duncan
Tebow, Elizabeth
Terry, Dawn
Terry, Gloria P.
Thomas, Ruth G.
Tiffany, James R.
Thompson, Bruce Leggat
Thompson, Diane P.
Thompson, Merle O’Rourke
Thompson, Richard
Trachtman, Sherry
Tredway, M’Kean
Trott, Edith
Tumminia, Patricia
Tychsen, Charles E.
Underwood, Larry S.
Vespucci, Paul
Vessey, Cyrilla M.
Vezina, Louise
Voss, Mary
Wade, Evelyn
Wagner, Susan
Walker, Edwin
Wall, James
Ward, Virginia
Warden, Marietta E.
Ware, Elizabeth
Watkins, Gladys
Weinfeld, Ann Marie
Wertman, Ellen R.
Westburg, Rosemarie
Wharff, Sherill A.
Wheeler, Lawrence
White, Dee Wayne
Wilan, Barbara S.
Wilan, Richard
Wilkin, Cathy
Wilkin, Jonathan L.
Wiltshire, Cecilia
Williams, Barbara Laime
Williams, David L.
Williams, Edith W.
Williams, Millicent J.
Wilson, Diane
Withers, Wistear M.
Wolfe, Clarence
Wooldridge, John B., Jr.
Wurzer, Dale
Wyles, Barbara
Zimmerman, Mary
The Classified Staff Emeriti Award is given to retired classified staff members who have provided outstanding service to the College or the Virginia Community College System and who have worked a minimum of ten years.

**Classified Staff Emeriti**

Ackerman, Claire
Bailey, Lin A.
Bender, Rita
Bixler, Joyce
Bowden, Julia I.
Bradley, Carol N.
Bridge, Geraldine
Brockman, Timothy
Brunner, Adella E.
Bush, Janet
Cain, Joyce
Campbell, Francina
Carro, Ann
Chambers, Henry
Chin, Rose S.
Chung, Yong
Cirillo, John
Clark, Maria Teresa
Clouser, Richard
Courtter, David E.
Creed, Cheryl
Davis, Ronald D.
Dennett, Johan E.
Diguiseppi, Virginia
Dudley, William
Ekstrom, LuAnn
Emery, Joyce
Farmer, Susan
Filanowski, Connie V.
Fisher, Marsha N.
Fochtman, Diane D.
Fritz, Eve
Fuller, Suzanne
Gargus, George L.
Gargus, Mary Ellen
Gentry, Bill
Gibson, Roger K.
Golding, John P.
Gordon, Fredericka H.
Gorey, Carol
Green, Ann M.
Gulbrandsen, Anita
Heffren, R. Jean
Henry, Nell C.
Herzfeld, Louise
Hill, Patti A.
Hineline, Doris A.
Horgan, Claire D.
Karstens, David K.
Kerns, Diana
Kilgore, Jerre
Koehnke, Lois
Krause, Mary W.
Krogh, Leslie A.
Lavis, David A.
Laws, Violet
Marr, Barbara
Martin, Danielle A.
Massey, Marjorie
McCleary, William
Meehan, Geraldine
Mirehouse, Marion
Miro, Jane B.
Montemerlo, Mary Beth
Mooney, Ann M.
Mullins, Bobbie J.
O'Connor, Doreen A.
Olofson, Doris B.
Payne, Patricia
Perlestein, Larry
Pohanka, Doris S.
Pruitt, E. Jean
Radford, Delores
Romano, Gwendolyn
Sadler, Diana B.
Scida, Merrilee
Seitz, Penny
Shaffer, Margaret M.
Shellington, Janis L.
Shue, Sharon
Smith, Barbara K.
Smith, Maren
Smith, Pearl
Smith, Steve
Smith, Thomas W.
Sorbello, Louise
Sorenson, Eileen M.
Stafford, Nancy N.
Stevenson, Susanne M.
Sutherland, Ella May
Tancreti, Roger J., Jr.
Tedros, Michael J.
Thomas, Rebecca
Vandevender, Donna M.
Vessey, Kathleen P.
Weaver, Claire A.
Wellman, Carolyn J.
Wichelt, Sonya
Woods, Joseph
Wyatt, Nancy V.
Vess, Rolland
Yellman, Edward
Ziolkowski, Margaret
ADVISORY COMMITTEES

Accounting

Janet Faughnan, Instructor, George Mason University
Jeanette M. Franzel, Board Member, Public Company Accounting Oversight Board
Dan George, Supervisory Senior Auditor, Cotton & Company
Joseph Harvey, Recruiting Manager, Robert Half
Finance Accounting
Joseph Kull, Director, Prince William County
Marshall McEwan, Senior Professional Accountant, Computer Science Corporation
Eileen M. Owen, Senior Audit Associate in the Federal Audit Practice, KPMG, LLP
Steve Saah, Director of Permanent Placement Service, Robert Half International, Inc.

Administration of Justice

Stan Berry, Sheriff, Fairfax County
Robert Carlisle, Chief of Police, Vienna Police Dept.
Maggie DeBoard, Chief of Police, Town of Herndon
David Gilmore, Chairman, Academic Programs, Washington Chapter ASIS
Glendell Hill, Sheriff, Prince William County
Cliff Jacobs, Security Administrator, Loral Federal Systems
Scott Leonard, Academy Curriculum Specialist, NVCJA
Donald McKinnon, Jr., Deputy Chief of Police, City of Manassas
Joseph Price, Chief of Police, City of Leesburg
Donald Richards, CPP, Government Program Manager, IriScan, Inc.
C.W. Rorrer, Jr., Chief Probation and Parole Officer, District 10

Air Conditioning/Refrigeration

Linda Couch, Chief Operating Officer, Parrish Services, Inc.
Merry Beth Hall, Director of Apprentice and Journeyman Training, PHCC Educational Foundation
Jim Kashickey, Branch Manager, United Refrigeration
Matt Kemp, Sales Manager, AIRECO Supply, Inc.
Roger Moore, HVACR/Electrical Department Manager
Charles Moran, III, Moran’s Refrigeration Services, Inc.

American Sign Language/Interpreting

Patricia Beech, ASL Instructor, Northern Virginia Resource Center
Dr. Keith Cagle, Associate Professor, Gallaudet University

Joan Ehrlich, Coordinator for Interpreting Services, Northern Virginia Community College
Suhad Keblawi, Lead Cued Speech Translator, Fairfax Public Schools
Marla Pollack, Lead Educational Interpreter, Fairfax County Public Schools
Paula Scanlon, Student, Northern Virginia Community College
Heather Stromgren, Student, Gallaudet University
Catherine Clough, Acting Program Head, Germanna Community College

Architecture Technology

Raj Barr-Kumar, President, Barr International LLC
Luis Boza, Dean of Admission, The Catholic University of America
Craig Deering, Principal, RTK Associates, Inc.
Henry Hollander, Coordinator for Outreach and Alumni Relations, Virginia Tech Washington-Alexandria Architectural Center
Tom Ilich, Retired, Turner Construction Company
Steven Reynolds, CAD Manager, Davis Carter Scott LTD
Bruce Zimmermann, President, Brackett-Zimmermann LLC

Automotive Technology

Alexandria Campus
Scott Freeman, Automotive Instructor, Faquier High School
Novis Pearson, Senior Lead Technician, Koons Ford
Kenneth M. Shepherd, UP & GM, Miller Toyota
Phillip Winston, Territory Manager, Standard Motor Products, Inc.

Manassas Campus
Raphael Alfred, Director, Technology and Business Operator
George Apperson, Compliance Officer, VA DEQ
Gene Brown, II, Shop Foreman, Stringer’s Exxon
Matthew Cooper, Retail Technician Manager, CarMax
Robert Crook, Service Manager, Miller Toyota
Jay Emery, District and Services Manager, American Honda Motors
Harry Houckes, SE Regional Representative, National Business Aviation Association
Kenneth Shepherd, General Manager, Miller Toyota
Michael Wang, Service Director, Chrysler Dodge Jeep Ram

Biotechnology

Steve Hargan, Business Development Manager, Loudoun Department of Economic Development
Sara Hooshangi, Director and Assistant Professor, George Washington University
Pamela Jarman, Lab Manager, The Bode Tech Group
Jason Jens, Development Supervisor and Senior Associate Scientist, Mediatech, Inc.
Dr. Vladimir Karginov, Chief Scientific Officer, Innovative Biologics, Inc.
Dr. Richard Lewis, CEO, Access Bio
Dr. Ed Otto, Assistant Director, Undergraduate Biology Program, George Mason University
Leslie Platt, Counsel, Pillsbury, Winthrop, Shaw and Pittman
Crystal Sullivan, Lab Coordinator, Howard Hughes Medical Institute
Amy VanMeter, Director, Aspiring Scientists, Summer Intern Program, George Mason University
George Wolfe, Director, LCPS Academy of Science, Loudoun County Public Schools

Business Management

Dr. Sultan Chaudhry, CEO, Adams Smile and Grove Dental
Kristin D’Amore, President, NVCTC
Eric L. Gentsch, Program Director, Logistics Management Institute
Taylor Devine, Founder, The CDI Group

Communication Design

Alexandria Campus
Karin Huggens, Illustrator, Animator, Graphic Designer
Eline Kramer, Adjunct Faculty, Northern Virginia Community College
Zenon Slawinski, Owner, Zenarts Design Studio
Eddie Sutton, Principal, JustPixels.com
Rashaan Williams, Web Designer/Developer, RCW Communication Design Inc.

Loudoun Campus
Steven Fleshman, Creative Director, DR2 LLC
Elena Mussari-Fugate, Adjunct Instructor, Northern Virginia Community College
Leslie Tharp, Team Lead/Graphic Designer/Video Editor, Scitor Corporation

Construction Management Technology

This committee is being restructured.

Contract Management

John Krieger, Professor, Contract Management, Executive Department, Defense Systems Management College
Michael Wooten, Special Assistant to the President, Defense Acquisition University

Cybersecurity

William Butler, Director, Critical Infrastructures and Cyberprotection Center, Capital Technical University
Brian DeMuth, Director, Cybersecurity Program Operations, ManTech
Lisa Foreman, Senior Information Assurance Consultant, ATO Consulting
Renee Forney, Director, Cyberskills Management Support Initiative, DHS
Christopher Magaha, Security Education Academic Liaison, National Security Agency
Keith Shoates, Director of Enterprise Information Technology, Integrity Applications Incorporated
Ryan Trost, Co-founder and CIO, ThreatQuotient, Inc.

Diesel Mechanics Technology

Paul Cupka, Maintenance Trainer, MV Transportation
Abraham Dickey, Diesel School Bus Mechanic, Prince William County
Blaine Eldridge, Assistant Superintendent, Fairfax County Department of Vehicle Service
Les Eszenyi, Heavy Construction, Contractors Association of Virginia
Gary Phares, Instructor, Automotive Tech, Northern Virginia Community College
Mike Thomas, William Hazel Construction

Early Childhood Development

Elisabeth Closter, Director of School Readiness Programs, Fairfax County Office for Children
Anne Goldstein, Director of School Age Child Care Programs, Fairfax County Office for Children
Rosemary Kendall, Ph.D., Parent Educator, Program Specialist, Fairfax County Public Schools
Tammy Mann, President/CEO, Campagna Center
Deborah Stepien, College Instructor/Adjunct, Northern Virginia Community College

Engineering Technology

Bernie Brien, Aerospace Engineer, Aerojet
James Cole, Department of Defense
Jeffrey Fernandez, Ph.D., PE, Managing Consultant, JF Associates, Inc.
Leslie F. Keelty, CEO, Founder, LEAD Consult, LLC
Peter Leitner, Professor, National Intelligence University
Bryan Neuhaus, Senior Consultant, LMI
Anitha Raj, President, ARAR Technology
Neal Schmeidlea, President, OMNI Engineering
Will Vehrs, Virginia Department of Business Assistance

Fine Arts

Cheryl Anne Colton, Regional Program Director, Alexandria Office of the Arts
Suzanne De Saix, Artist  
Jeffrey Mezlik, Sculptor  
Elizabeth “Skeeter” Scheid, Artist  
Trudi Van Dyke, Arts Management Consultant

### Fire Science Technology

This committee is being restructured.

### Fitness

Tamer Moumen, General Manager, Life Time Fitness, Inc.  
Douglas Vasiliadis, President, One To One Fitness, Inc.

### Geographic Information Systems

This committee is being restructured.

### Historic Preservation

Phyllis Cook-Taylor, Exception Research Specialist, Online Resource  
Richard Gillespie, Director, Mosby Heritage Area Association  
Michael Henry, Site Administrator, Fairfax County Park Authority  
Michael Leventhal, Historic Preservation Coordinator, Arlington County  
Constance Ramirez, Program Director, Federal Preservation Institute  
Jana Shafagot, Director of Preservation, Morven Park

### Horticulture Technology

Terri Aufmuth, Landscape Designer, Cornerstone Landscaping  
Deborah Chaves, Instructor/Environmental Plant Science/Biotech, Monroe Technology Center  
Kristen Conrad Buhls, Extension Agent ANR, Virginia Cooperative Extension Service  
Peter Deahl, Consulting Arborist, Fine Pruning  
Debbie Dillon, Landscape Extension Agent, Loudoun County Extension Services  
Richard Knapp, Vice President, Country Springs Gardens  
Jeff Minnich, Owner, Garden Design Inc.  
Beth Sastre, Commercial Horticulturist, VCE–Loudon Extension Office  
Keith Tomlinson, Manager, Meadowlark Botanical Gardens

### Hospitality Management

Michael Garcia, Operating Partner, Fleming’s Restaurant Group  
Dr. Mahmood Khan, Department Head, Virginia Tech Northern Virginia Center  
John V. Malixi, Assistant General Manager, Court Suites Hotel  
Ruth Kailani O’Rouke, Program Director, University of Maryland Eastern Shore at Shady Grove  
Robert Tate, Market Director of Human Resource, Crystal Gateway Marriott  
Jim Wordsworth, President, J.R.’s Good Times, Inc.

### Information Systems Technology

Sridhar Amudhanar, President, Maxys Corp.  
Christopher Barnett, Chief Security Architect, General Dynamics  
Thomas Edwards, Vice President for Regional Sales, FEITH Industry  
Donal Hogan, Management Analyst, PMO  
Srinivasa Kasturi, Information Security Life Cycle Specialist, Banyan Logic  
Anna Noteboom, Chief Information Assurance Architect-Federal Sector, Avaya, Inc.  
Ingrid Peterson, Senior Financial Analyst/Advanced Communication Engineer, Electronic Data Systems Corporation  
Satyam Priyadarshy, Ph.D., President and Chief Technologist, Solar  
Keith Shoates, Director, Enterprise Information Technology, Integrity Applications Inc.  
Ajoy Singh, Director, Technology Services, WorkForce Technologies

### Interior Design

Vincent Carter, NCIDQ, ASID, Principal, Vincent G. Carter Associates, Inc.  
Allison Mann, Allied Member ASID, Project Designer, Burch Builders Group, LLC  
Kay Sargent, IIDA, CID, LEED, AP, IA Interior Architects  
Skip Sroka, Principal, Sroka Designs, Inc.

### Marketing/Digital Media

Jacqui Barrineau, Editor, Mobile-Social Team, USA Today  
Debbie Capp, Director of Advertising, Merrifield Garden Center  
Jessica Clark, Vice President, Marketing and Customer Operations, Care Free Boats  
Jose Luis Cortes, Cloud Retention Manager – Latin America, SAP  
Larry Edwards, CEO, The LDE Group, Inc.  
Dixie Eng, General Manager, Old Towne Pet Resort  
Luisa Gaviria, Business Development/Marketing, The Boeing Co.  
James Hostetler, eCommerce Product Manager, Snagajob.com  
Joan Smith Sahigren, Senior Marketing Consultant  
Robert Sowell, Sr., Vice President of Community Relations, Apple Federal Credit Union
Dr. Pamela Stoessell, Professor of Fashion Design and Merchandising, Marymount University
Matt Warnock, Director of Communication, Marketing, and Digital Media, International Council of Air Shows

**Paralegal Studies**

Kelly Marie Ackert, Paralegal, Buonassissi, Henning and Lash, P.C.
Therese Antonio, Northern Virginia Community College Alumnus, Paralegal Program
Jean Galloway Ball, Attorney, Hale Ball Carlson Baumgartner Murphy, PLC
Candice Benvenuti, Educator, Fairfax County Public Schools
Emmitt Carlton, Special Counsel, Office of Intergovernmental Affairs
Monica Corry, Paralegal Specialist, US Postal Service
Karen Dunkley, Attorney, Law Office of Karen Dunkley
Angela Gaddis Moore, Attorney, MooreLaw, PLLC
Valarie R. Guzman, Medical Receptionist, Orthopedic Specialty Clinic
Kristine A. Heefner, Paralegal, Odin, Feldman and Pittleman, PC
Karen Johnson, Independent Consultant
Lori Jones, PACE Registered Paralegal for Adult Protective Services, Department of Family Services
Maureen Meyer, Adjunct Faculty, Northern Virginia Community College
Ann Price, Paralegal Specialist, Federal Bureau of Investigation
LaVerne Rayford, Independent Consultant
Maria Esther Smith, Senior Legal Analyst, Freddie Mac
Marie-Christine Webster, Legal Assistant/Paralegal, Blankingship & Keith, PC
Cassi Wickline, Paralegal Studies, Advisory Board, Woehrle, Franklin, Dahlberg, Jones
Loretta Morris Williams, Attorney, Hale Ball Carlson Baumgartner Murphy, PLC

**Professional Writing**

Susan Knob, Principal/Owner, Knob and Associates
Suzanne Nikolaus, Organizational Development Administrator, NOVEC, Manassas, Virginia

**Photography and Media**

Iwan Bagus, Assistant Professor, University of the District of Columbia
Peggy Feerick, Assistant Professor and Department Coordinator of Photography, George Mason University
Leena Jayaswal, Photography Professor, American University
Hannele Lahti, Freelance Photographer and Owner, Hannele Lahti Photography
Erika Liaison, Rental Liaison, Penn Camera
William McKenna, Producer, BBC World News America
Mike Morgan, Freelance Commercial Photographer
Lucien Perkins, Freelance Photographer/Photojournalist
Susana Raah, Freelance Documentary Photographer, Washington, D.C.
Azz Yardi, Associate, The Leica Store

**Recreation, Parks, and Leisure Studies**

Ryan Brookes, Recreation Specialist II, McLean Community Center
Mike Cadwallader, Manager, Audrey Moore Recreation Center
Jay Ellington, Adjunct, George Mason University
Christopher Goldbecker, Assistant Operations Manager, Audrey Moore Recreation Center
Susan M. Hansen, Chief of Interpretation and Education, National Park Service
Lawrence M. Smith, RPK Program Founding Faculty Member

**Substance Abuse**

Barbara G. Fornoff, Employee Assistance, Inova Hospital
Maria A. Hyton, Clinical Social Worker, Phillip I. Haber, LPC Associates in Counseling
Renee Bobbie Jaeger, Employee Assistance, Arlington EAP
Dr. Holly C. Mata, Associate Professor, George Mason University
Chandell Bey Miller, Addiction Counselor, Harrison House of Virginia
Joan Normandy-Dolberg, Director, Family Counseling of Springfield
Deanna Pruitt, Clinical Research Assistant, Defense and Veterans Brain Injury Center
Michael Ricker, Adjunct Faculty, Fairfax County Mental Health Emergency Services

**Veterinary Technology**

Veronica Acosta, LVT, Licensed Veterinary Technician (Animal Health), National Zoo, Park Conservation and Biology Instructor
Samantha-Jo Ashley, Laboratory Animal Technician, SoBran Inc.
Dr. Robert Brown, DVM, Cherrydale Veterinary Clinic
Azadeh Chegini, LVT, Key Business Manager, Zoetis Animal Health
Cheryl Collins, LVT, Operations Manager/Co-owner, Stonewall Veterinary Clinic
Amanda Compton, LVT, CVPM, Hospital Administrator, Animal Medical Center of Cascades
Gail Figgins, LVT, Marion DuPont Scott Equine Medical Center
Advisory Committees

Gary Hornbaker, LVT, Resource Coordinator, Farmer and Rural County
Marta Ishmael, LVT, Virginia Board of Health Professionals
Dr. Thomas Massie, DVM, Owner, Rose Hill Veterinary Practice, P.C.
Jane Naramore, LVT, Rose Hill Veterinary Practice
Katie NewBold, CEO, CVCA-Cardiac Care for Pets
Dr. Jeffery Newman, DVM, owner, Caring Hands Animal Hospital
Josh M. Parkins, Territory Manager, Elanco Animal Health
Jill Pemberton, LVT, Senior Territory Manager, Novartis Animal Health

Welding

This committee is being restructured.

Health Professions Advisory Committees

Dental Hygiene

Brad M. Freedman, General Dentist/Owner/President, Brad M. Freeman, DDS and Associates
Michelle Goode, Dental Hygienist, Virginia Dental Solutions
Wendy Hicks, Dental Assistant, Drs. Young and Ayati, Family Dentistry
Jeannette Jimenez, Office Manager, Harold A. Fleming, DDS, MS, PC
Dima Lakkis, DDS, MS, Periodontics
Janice O’Brien, Registered Dental Hygienist, Jansen Woo, DDS, PC
Rosario Palabrica, General Practice Dentist, Drs. Finnerty, Wu, and Palabrica, PC
Sheila Sheats, Clinical Hygienist, Bruce Markoff, DDS
Laurie Sizemore, Practice Administrative/Office Manager, Self-Employed Consultant

Diagnostic Medical Sonography

Neda Chehreh, Staff Sonographer, Fairfax Radiology Consultants
Karla J. Kenefake-Hymans, Director, Medical Imaging Services, Fauquier Hospital
Dimitrius Make, Sonography Equipment Account Specialist, Electric Medical Systems
Rebecca Miller, Sonography Student, Northern Virginia Community College
JoAnn Musselman, QC Lead Sonographer, Kaiser Permanente
Linda Zanin, Program Director, Montgomery College

Emergency Medical Services Technology

James Bonzano II, Chief, EMS Division, Arlington County Fire Department
Lynn Clancy, EMS Student, Northern Virginia Community College
Cyndi Currier, RN Clinical Preceptor, Sentara Northern Virginia Medical Center
Daniel Neal, Station Commander/Captain, Loudoun County Fire and Rescue
Kevin D. Richards, Firefighter/Paramedic Internship Coordinator, Prince William County Department of Fire and Rescue
Jose Salazar, Deputy Chief, EMS and Training, Loudoun County Department of Fire, Rescue, and Emergency Management
Edward Stern, Trauma Nurse Specialist, INOVA Fairfax Hospital
Margaret Zollman, RN Clinical Preceptor, INOVA Health Systems

Health Information Management

Marion Adineh, Director, HIM, Kaiser Permanente
Sharon Boggio, RHIA, Administrative Director, HIM, Bon Secours St. Mary’s Hospital
Richard Brown, Director, Medical Records, INOVA Mount Vernon Hospital
Mona Calhoun, Chair, HIM Program, Coppin State University
Zinethia Clemons, Senior Health Privacy Specialist, DHHS, Office of Civil Rights
Sheila Coverson, HIM Director/FOIA/Privacy Office
Victor Ellenfield, President/CEO, HVAdvance, Inc.
Beverly Foreman, Director, Healthy Information Services, Sentara Potomac Hospital
Terri McCray, Director, HIM/Privacy Officer, Virginia Hospital Center
Sandra Shiflet, Health Information Manager, Capital Caring
Peggy L. Taylor, MSN, RN, Vice President, Operations, LightHouse Healthcare, Inc.
Allison Viola, VP Policy and Government Affairs, eHealth Initiative

Medical Laboratory Technology

Lorraine Doucette, MT (ASCP), CLS (NCA), Medical Laboratory Program Coordinator, Anne Arundel Community College
Maureen Friedheim, MT (ASCP), Retired, Lab Operations Manager, Kaiser Permanente, Community Representative
Linda Lans, MT (ASCP), Manager, Technical Operations and Laboratory Services, Quest Diagnostics, Inc.
Elizabeth Martin, MD, Pathologist
Teresa Nadder, Ph.D., Chair, Clinical Laboratory Sciences Program, Virginia Commonwealth University
Cynthia Samuels, Laboratory Services Manager, INOVA Fairfax Hospital
Marybeth Waldeck, MT (ASCP), Laboratory Administrator, The Fauquier Hospital, Inc.

**Nursing**

Geraldine Boltitch-Hofler, Special Assistant to the President, Program Manager, NOVA HealthForce
Dr. Eileen Caulfield, Ph.D, RN, NEA-BC, Director, Nursing Practice, Education and Research, Prince William Hospital
Sibyl Goodwin, RN, Director of Nursing-Assisted Living Facility, Birmingham Green
Jeanne M. Hanes, MSN, RN, CWON, Clinical Nurse Specialist, Virginia Hospital Center
Kathy Howey, MSN, RN, Clinical Nurse Educator, Reston Hospital Center
Hyunjong (Lisa) Kim, RN, Assistant Director of Nursing, Heatherwood Retirement Community
Ann Marie Nayback-Beebe, Ph.D., FNP-BC, Director of Education, Training and Research, Fort Belvoir Community Hospital
David Packard, B.S., CNMT, Nursing Student, Northern Virginia Community College
Dr. Carol Urban, Ph.D, MSN, RN, Assistant Dean of Nursing, George Mason University

**Occupational Therapy Assistant**

Erica Alexander, OTD, OTR/L, Corporate Compliance Coordinator, Flagship Rehabilitation via Goodwin House
Kelly Hanik, MOTR/L, CBIS, Occupational Therapist, INOVA Mount Vernon Hospital
Sharon H. Harris, Occupational Therapist, Fort Belvoir Community Hospital
Lynda Hill, OTD, OTR/L, Occupational Therapist, Professor, Howard University
Kim Kelshian, OTR/L, CHT, Hand and Upper Extremity Rehabilitation Center, Virginia Hospital Center
Susan Nixon, MS, OTR/L, Fieldwork Education Coordinator, Fairfax County Public Schools
Raymond G. Pharaoh, COTA/L, LPTA, Adventist Rehabilitation Hospital
Mary Anne Rickabaugh, OTR/L, Director WMC Acute Care PT/OT/SLP Services, Winchester Medical Center
Vivian Swingle, OTR/L, Occupational Therapist, Fairfax County Public Schools
Krisztina Ware, OTR/L, Occupational Therapist, Greenspring

**Physical Therapist Assistant**

David Emerick, Physical Therapy Assistant, Fauquier Home Health
Margaret Guarino, Physical Therapy, Clinic Director, INOVA Rehabilitation Center
Cathleen Renkiewicz, Physical Therapy, Director of Rehabilitation, The Virginian
Sara Schmidt, Physical Therapy Assistant, ACAC Physical Therapy

**Radiography**

Deborah Berg, Radiology Manager, INOVA Healthplex
Randi Damron, Director of Radiology, INOVA Mount Vernon Hospital
James Finizio, Radiology Manager, Radiology Imaging Associates
George Gifford, Radiologic Tech/Clinical Instructor, INOVA Alexandria Hospital
Nicholas Gimmi, Clinical Operations Manager, INOVA Mount Vernon Hospital Lorton Complex
Precinda Nicely-Jallow, Clinical Coordinator, Virginia Hospital Center
Angela Pierce, Radiologic Technologist/Clinical Instructor, Kaiser Permanente
Estela Prieto, Retired Director of Radiology
Yanineht Ramos, Radiologic Technologist, INOVA Alexandria Hospital
Thomas Redman, Senior Director of Imaging Services, INOVA Fairfax Hospital
Thomas Schrack, Manager, MR Fairfax Radiology Consultants

**Respiratory Therapy**

Shane Blake, MA, RRT-NPS, Acting Director, Respiratory Care, INOVA Fairfax Hospital
James Lamberti, MD, Medical Director, Northern Virginia Pulmonary and Critical Care Associates
Joseph Lynott, MS, RRT, Director of Pulmonary Services, Washington Hospital Center
Thomas Malinowski, RCP, RRT, Director, Respiratory Care, Mary Washington Hospital
Honey Pezzimenti, Education Coordinator, Children’s National Health System
David Schwab, Pulmonary Coordinator, Respiratory Care Services, Virginia Hospital Center
## 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:

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<tr>
<td>5290</td>
<td>Fine Arts</td>
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<tr>
<td>6480</td>
<td>Liberal Arts</td>
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<tr>
<td>6489</td>
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<td>6482</td>
<td>Liberal Arts/Communication Studies</td>
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<td>6484</td>
<td>Liberal Arts/English Specialization</td>
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<td>Liberal Arts/International Studies</td>
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<td>Computer Science</td>
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<td>General Studies</td>
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<td>General Studies, Recreation, Parks, and Leisure Studies</td>
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<td>Social Sciences/Psychology</td>
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### Associate of Applied Arts:

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<tr>
<td>5300</td>
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<td>Fine Arts/Photography</td>
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<td>Music</td>
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<td>Music/Jazz/Popular Music</td>
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### Associate of Applied Science:

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<td>4001</td>
<td>Administration of Justice/Homeland Security</td>
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<td>Early Childhood Development</td>
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### Codes Certificate:

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<tr>
<td>9681</td>
<td>Engineering Technology/ Civil Engineering Technology/ Engineering Technology/Drafting</td>
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<td>Engineering Technology/ Mechanical Engineering Technology</td>
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<td>4270</td>
<td>Fire Science Technology</td>
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<td>3350</td>
<td>Horticulture Technology</td>
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<td>3353</td>
<td>Horticulture Technology/Landscape Design</td>
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<tr>
<td>7750</td>
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<td>7751</td>
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<tr>
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<td>2970</td>
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<tr>
<td>2650</td>
<td>Professional Writing</td>
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<tr>
<td>4030</td>
<td>Substance Abuse Rehabilitation Counselor</td>
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### Codes Career Studies Certificate:

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<td>221–299–06</td>
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<td>221–149–01</td>
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<td>221–729–01</td>
<td>Computer Aided Drafting and Design*</td>
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### 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 (6990) 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.

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*Program is not eligible for financial aid.
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AA – Associate of Arts  AS – Associate of Science  AAA – Associate of Applied Arts  AAS – Associate of Applied Science  C – Certificate  CSC – Career Studies Certificate
## Northern Virginia Community College

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**Note:**
- AA – Associate of Arts
- AS – Associate of Science
- AAA – Associate of Applied Arts
- AAS – Associate of Applied Science
- C – Certificate
- CSC – Career Studies Certificate