## Table of Contents

### Campus Location Maps
5

### Academic Calendars
8

### General Information
10

#### The College
10
- Accreditation and Governance
11
- Tidewater Community College Mission
11
- Tidewater Community College Educational Foundation, Inc
11
- Virginia Tidewater Consortium
11

#### Programs
11
- Career and Technical Education
11
- Tech Prep
11
- College Transfer Education
11
- Dual Enrollment
11
- International Study Abroad
12
- General Education
12
- Developmental Studies
12
- Continuing Education
12
- Workforce Development
12
- Registered Apprenticeship Programs
12
- Through TCC
12
- Distance Learning
12

#### Admission to the College
12
- Exceptions to General Admissions Policy
13

#### Classification of Students
14
- Curricular
14
- Non-Curricular
14
- Full-Time
14
- Part-Time
14
- Academic Load
14
- Student Level
14
- Campus of Record
14

#### Assessment and Placement Testing
14
- Required Testing
14
- Required Enrollment in Developmental Courses
15
- Ability to Benefit
15

#### Other Admission Requirements
15
- Admission Requirements for International Students
15
- Admission to Specific Courses
15
- Admission to Specific Curricula
15
- Curriculum Changes
15
- Admission Priorities
15
- Reapplication
15
- Senior Citizens Higher Education Act
16

### Credit for Other Education and Experience
16
- Transferring from Other Colleges
16
- Transcripts from Institutions Outside the U.S.
16
- Transfer Credit Appeals Procedure
16
- Credit by Examination
16
- Credit by Examination for Information Technologies Certifications
16
- Substitution of Curriculum Requirements
16
- Credit for Military Service Experience and Education
17
- Service-Members Opportunity Colleges
17

#### Registration Information
17
- Enrollment
17
- Online Enrollment
17
- Touchtone Enrollment
17
- Academic Load
17
- Academic Advisors and Counselors
17
- Minimum Enrollment Requirement for Classes
18
- Auditing a Course
18
- Change of Registration
18
- Types of Changes
18
- Course Withdrawal
18

### Financial Information
18
- Tuition and Fees
18
- Books and Materials
18
- Other Expenses
18
- Charges
18
- Student Domicile
18
- Refunds
19
- Services Denied for Debt
19

#### Student Financial Aid
19
- Grants
20
- Scholarships
20
- Employment
20
- Loans
20

#### Special Programs for Assistance
20
- Tax Credits
21

### Academic Regulations
21
- Degrees and Certificates
21
- Course Credits
21
- Course Numbering
21
- Grading System
21
- P-Pass
21
- S-Satisfactory
21
- U- Unsatisfactory
21
- R-Re-enroll
21
- W-Withdrawal
22

### Student Records Retention Policy
27
- Hold on Records
27
- Final grade appeal
22
- Cumulative GPA
22
- Repeated Course Policy
22
- Limit on Repeating a Course
22
- Final Grade Appeal
22

### Academic Standing
23
- Academic Warning
23
- Academic Probation
23
- Academic Suspension
23
- Academic Dismissal
23

### Academic Renewal Policy
24
- Academic Renewal Policy
24
- Academic Dismissal
23
- Academic Suspension
23
- Academic Probation
23
- Academic Warning
23

### General Education Requirements
25
- Required Computer Competencies
23
- Required Declaration of Curriculum
23
- Student Outcomes Assessment Requirement
24

### Course Prerequisites
23
- Course Prerequisites
23
- Course Co-requisites
23
- Required Declaration of Curriculum
23
- Examinations
23
- Course Attendance
23

### Graduation Requirements
24
- Catalog Determination and Degree Designation
24
- Application for Graduation
24
- Required Computer Competencies
24
- Student Outcomes Assessment Requirement
24

### General Education Requirements
25
- Associate Degree Requirements
26
- Certificate Requirements
26
- Second Degree or Certificate
26
- Commencement
26

### College Records Policies
26
- Student Address of Record
26
- Final Grade Reports
26
- Transcripts and Certifications
26
- Hold on Records
27
- Family Educational Rights and Privacy Act (FERPA)
27
- Directory Information Policy
27
- Student Records Retention Policy
27

### Student Records Retention Policy
27
- Student Records Retention Policy
27

### X-Audit
22
- X-Audit
22
- I-Incomplete
22
- Computing the GPA
22
- Semester GPA
22
- Curriculum GPA
22
- Cumulative GPA
22
- Repeated Course Policy
22
- Limit on Repeating a Course
22
- Final Grade Appeal
22

### Other Academic Regulations
23
- Course Prerequisites
23
- Course Co-requisites
23
- Required Declaration of Curriculum
23
- Examinations
23
- Course Attendance
23

### Academic Standing
23
- Academic Warning
23
- Academic Probation
23
- Academic Suspension
23
- Academic Dismissal
23

### Academic Renewal Policy
24
- Academic Renewal Policy
24
- Academic Dismissal
23
- Academic Suspension
23
- Academic Probation
23
- Academic Warning
23

### General Education Requirements
25
- Required Computer Competencies
23
- Required Declaration of Curriculum
23
- Student Outcomes Assessment Requirement
24

### Course Prerequisites
23
- Course Prerequisites
23
- Course Co-requisites
23
- Required Declaration of Curriculum
23
- Examinations
23
- Course Attendance
23

### Graduation Requirements
24
- Catalog Determination and Degree Designation
24
- Application for Graduation
24
- Required Computer Competencies
24
- Student Outcomes Assessment Requirement
24

### General Education Requirements
25
- Associate Degree Requirements
26
- Certificate Requirements
26
- Second Degree or Certificate
26
- Commencement
26

### College Records Policies
26
- Student Address of Record
26
- Final Grade Reports
26
- Transcripts and Certifications
26
- Hold on Records
27
- Family Educational Rights and Privacy Act (FERPA)
27
- Directory Information Policy
27
- Student Records Retention Policy
27

### Student Records Retention Policy
27
Major Field Course Requirements and Prerequisites..................33
General Electives........................................33

TRANSFER EDUCATION........................................34

Transfer Program Grid........................................34
College/University Transfer Programs ..................34
Liberal Arts...............................................34
Business Administration...............................35
Engineering...............................................36
General Studies..........................................37
Science....................................................37
Computer Science........................................38
Social Sciences...........................................39
General Education Certificate.........................39

CAREER AND TECHNICAL EDUCATION (CTE)......................41

CTE Program Grid (Alphabetical)..............................41
CTE Program Grid (by Academic Cluster)..................43

Accounting................................................46
Administration of Justice...............................47
Administrative Support Technology.....................48
Air Conditioning and Refrigeration.....................50
American Sign Language.................................51
Automotive Technology................................52
Civil Engineering Technology..........................55
Computer-Aided Drafting and Design Technology......57
Culinary Arts.............................................59
Customer Service.......................................61
Developmental Disabilities...............................61
Diagnostic Medical Sonography (Ultrasound).........61
Diesel......................................................63
Early Childhood Development........................63
Electromechanical Controls Technology...............65
Electronics Technology................................68
Emergency Medical Services..........................69
Financial Services.......................................72
Fire Science.............................................72
Funeral Services........................................73
Gerontology...............................................74
Graphic Design...........................................75
Health Information Management........................77
Horticulture..............................................78
Hospitality Management.................................80
Human Services..........................................82
Industrial Technology................................83
Information Systems Technology......................88
Interior Design..........................................95
Management..............................................97
Marine Gasoline Engine Technology.....................100

Medical Assisting........................................100
Music....................................................101
Nursing Program.........................................102
Occupational Therapy Assistant.......................103
Paralegal Studies.........................................104
Personal Training and Fitness.........................108
Phlebotomy...............................................108
Physical Therapist Assistant..........................108
Polysomnography........................................109
Radiography...............................................110
Respiratory Therapy.....................................111
Studio Arts..............................................112
Theatre Arts.............................................115
Truck Driving............................................116
Welding...................................................116

COURSE DESCRIPTIONS..................................118

General Usage Courses................................118

Accounting (ACC)........................................118
Acquisition and Procurement (ACQ).....................119
Administration of Justice (ADJ).........................119
Administrative Support Technology (AST).............124
Air Conditioning and Refrigeration (AIR).............120
American Sign Language (ASL).........................123
Architecture (ARC).....................................121
Art (ART)................................................122
Automotive (AUT).......................................125
Aviation (ARO)..........................................122
Biology (BIO)............................................126
Building (BLD)..........................................126
Business Management and Administration (BUS)....126
Chemistry (CHM).......................................131
Childhood Development (CHD)........................129
Chinese (CHI)..........................................131
Civil Engineering Technology (CIV).....................131
Communication Studies and Theatre (CST)...........133
Computer-Aided Drafting and Design (CAD)........128
Computer Science (CSC)................................133
Crafts (CRF)............................................132
Dance (DAN)...........................................134
Diagnostic Medical Sonography (DMS).................135
Diesel (DSL)............................................135
Dietetics (DIT)..........................................134
Economics (ECO).......................................136
Education (EDU).......................................136
Electrical Technology (ELE)............................138
Electronics Technology (ETR)..........................143
Emergency Medical Services (EMS)....................139
Energy Technology (ENE).............................140
Engineering (ERG)....................................137
# Table of Contents

- **English (ENG)** ............................................ 141
- **English as a Second Language (ESL)** ........... 142
- **Financial Services (FIN)** .............................................. 143
- **Fire Science Technology (FST)** ......................... 145
- **French (FRE)** .................................................. 145
- **Funeral Services (FNS)** ........................................ 144
- **Geographical Information Systems (GIS)** .......... 147
- **Geography (GEO)** ............................................. 146
- **Geophysical Sciences (GOL)** ................................. 147
- **German (GER)** .................................................. 147
- **Health (HLT)** .................................................... 149
- **Health Information Management (HIM)** .............. 148
- **History (HIS)** ................................................... 148
- **Horticulture (HRT)** ............................................ 153
- **Hotel-Restaurant-Institutional Management (HRM)** .................. 151
- **Humanities (HUM)** .......................................... 154
- **Human Services (HMS)** ....................................... 150
- **Industrial Engineering Technology (IND)** ........ 156
- **Information Technology Design & Database (ITD)** ............... 158
- **Information Technology Essentials (ITE)** ........... 159
- **Information Technology Networking (ITN)** ........ 160
- **Information Technology Programming (ITP)** ....... 163
- **Instrumentation (INS)** ........................................ 157
- **Interior Design (IDS)** .......................................... 155
- **Interpreter Education (INT)** ................................. 157
- **Japanese (JPN)** .................................................. 164
- **Legal Administration** ........................................... 164
- **(Paralegal Studies) (LGL)** ................................. 164
- **Library Technology (LBR)** ..................................... 164
- **Marine Science (MAR)** ........................................ 165
- **Marketing (MKT)** ............................................... 167
- **Mathematics (MTH)** ............................................ 169
- **Mechanical Engineering Technology (MEC)** ........ 167
- **Medical Assisting (MDA)** ..................................... 166
- **Medical Laboratory (MDL)** ................................. 167
- **Mental Health (MEN)** .......................................... 167
- **Military Science (MSC)** ........................................ 168
- **Music (MUS)** .................................................... 171
- **Natural Science (NAS)** ........................................ 172
- **Nursing (NUR)** ................................................... 172
- **Occupational Therapy (OCT)** .............................. 173
- **Philosophy (PHI)** ................................................ 176
- **Photography (PHT)** ............................................. 176
- **Physical Education (PED)** .................................... 174
- **Physical Therapist Assistant (PTH)** ................. 178
- **Physics (PHY)** ................................................... 176
- **Political Science (PLS)** ....................................... 177
- **Polysonomographic Technology (PSG)** ............. 177
- **Psychology (PSY)** ............................................... 177
- **Public Service (PBS)** ............................................ 174
- **Radiography (RAD)** ............................................ 179
- **Real Estate (REA)** .............................................. 180
- **Religion (REL)** ................................................... 181
- **Respiratory Therapy (RTH)** ............................... 181
- **Russian (RUS)** .................................................. 182
- **Safety (SAF)** ..................................................... 182
- **Social Science (SSC)** ......................................... 183
- **Sociology (SOC)** ................................................ 183
- **Spanish (SPA)** ................................................... 183
- **Student Development (SDV)** .............................. 182
- **Trucking (TRK)** .................................................. 184
- **Welding (WEL)** .................................................. 184
- **GOVERNANCE** .................................................... 186
- **State Board for Community Colleges** ............... 186
- **Tidewater Community College Board** ................. 186
- **Tidewater Community College President and Executive Staff** .................. 186
- **FACULTY AND STAFF** .......................................... 187
- **Administrative Staff** .......................................... 187
- **Emeriti** .......................................................... 191
- **Faculty** .......................................................... 192

This catalog and its companion publication, the TCC Student Handbook, constitute neither a contract, nor an offer to contract. This catalog is scheduled to be revised every year. In the interim period, the college reserves the right, consistent with Federal, state, and local legal authority, the requirements of accrediting bodies, and the best professional judgment of its faculty, staff, and administrators, to make changes in this catalog and the student handbook as circumstances warrant. Such changes may be made without notice, and it is the obligation of the student to remain abreast of such changes through contact with the relevant college offices. This catalog incorporates many provisions of the TCC Student Handbook.

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 and Board policy, the College does not discriminate on the basis of disability. Please contact Linda W. Harris, JD, Coordinator of College-Wide Disability Services at 757-822-1225 (voice) or 757-822-1248 (TDD) regarding equal access. Tidewater Community College is committed to equal access to its programs and services governed by this policy of non-discrimination. These programs and services include, but are not limited to, all employees, student governments, curricula and other programs sponsored by the College.

Tidewater Community College does not discriminate on the basis of race, color, religion, national origin, political affiliation, veteran status, gender, age, sexual orientation, or disability in its programs or activities. Please direct inquiries related to the college’s nondiscrimination policies to the Director of Human Resources, Post Office Box 9000, Norfolk, VA 23509-9000, 757-822-1708.
REGIONAL MAP
**ACADEMIC CALENDARS**

Web and Touchtone registration are available 24-hours per day, 7 days per week to students eligible to register. *Walk-in registration is available to eligible students during TCC’s official business hours.*

**SUMMER SESSION 2010**

**TEN-WEEK SESSION**

Returning students register for Summer classes* .................... April 12-16
New and returning students register for Summer classes* .... April 17-May 23
Tuition due ................................................................. May 13
Classes begin.................................................................. May 24
Last day to add or change for a ten-week course ............... May 28
Memorial Day (college closed) ....................................... May 31
Summer 2010 Graduation Application Deadline ................. June 1
(Applications not received by the deadline will be processed the following term.)
Last day to drop for tuition refund from a ten-week course .... June 3
Last day to withdraw without academic penalty from a ten-week course (see note) ......................... July 2
Independence Day Holiday (college closed - classes made up August 3) ....................... July 5
Last day of instruction (includes examinations)
Tuesday, August 3, is the make-up day for Monday, July 5, and represents the final Monday of the Summer ten-week session. ..................... August 3

**FALL SEMESTER 2010**

**SIXTEEN-WEEK REGULAR SESSION**

Returning students register for Fall classes* ..................... July 5-9
New and returning students register for Fall classes* ...... July 10-August 18
Faculty report ................................................................. August 16
Classes begin ................................................................. August 19
Last day to add or change for a sixteen-week course ........ August 26
Fall 2010 Graduation Application Deadline ..................... September 1
(Applications not received by the deadline will be processed the following term.)
Labor Day (college closed) ........................................... September 6
Last day to drop for tuition refund from a sixteen-week course ................................................ September 7
Last day to withdraw without academic penalty from a sixteen-week course (see note) ................. October 28
Thanksgiving Holiday (college closed) ......................... November 25, 26, 27
(Web and Touchtone registration are available for the Spring 2011 Semester.)
Last day of instruction .................................................. December 6
Final examinations ........................................................ December 7-13
Faculty Research Days ................................................ December 14, 15, 16
Graduation ................................................................. December 17
Holiday Break (college closed) ...................... December 24 - December 31, 2010
................................................................................................ January 1, 2011
(Web and Touchtone registration are available for the Spring 2011 Semester.)
Special Enrollment Day .............................................. December 29
(campuses open for enrollment activity)

**FIRST EIGHT-WEEK SESSION**

Returning students register for Fall classes* ..................... July 5-9
New and returning students register for Fall classes* ...... July 10-August 18
Classes begin ................................................................. August 19
Last day to add or change for a first eight-week course ........ August 26
Last day to drop for tuition refund from a first eight-week course ................................................ August 27
Fall 2010 Graduation Application Deadline ..................... September 1
(Applications not received by the deadline will be processed the following term.)
Labor Day (college closed) ........................................... September 6
Last day to withdraw without academic penalty from a first eight-week course (see note) ................. September 21
Last day of instruction (includes examinations) ................ October 13

**SECOND EIGHT-WEEK SESSION**

Returning students register for Fall classes* ..................... July 5-9
New and returning students register for Fall classes* ...... July 10-October 13
Classes begin ................................................................. October 14
Last day to add or change for a second eight-week course .... October 21
Last day to drop for tuition refund from a second eight-week course ........................................ October 22
Last day to withdraw without academic penalty from a second eight-week course (see note) ................. November 17
Thanksgiving Holiday (college closed) ......................... November 25, 26, 27
Last day of instruction (includes examinations) ................ December 10
Graduation ................................................................. December 17
SPRING SEMESTER 2011

SIXTEEN-WEEK REGULAR SESSION

Returning students register for Spring classes*............November 8-12, 2010

New and returning students
register for Spring classes*...........November 13, 2010-January 9, 2011

Classes begin.................................................................January 10

Spring 2011 Graduation Application Deadline..................January 15
(Applications not received by the deadline will be processed the following term.)

Martin Luther King, Jr. Day (college closed)...................January 17

Last day to add or change for a sixteen-week course........January 18

Last day to drop for tuition refund from a
sixteen-week course.....................................................January 27

Spring Break (no classes-college open)......................March 7-12

Last day to withdraw without academic penalty
from a sixteen-week course...........................................March 22

Last day of instruction.....................................................May 2

Final examinations.........................................................May 3-9

Faculty Research Days.....................................................May 10, 11, 12

Graduation............................................................................May 13

FIRST EIGHT-WEEK SESSION

Returning students register for Spring classes*............November 8-12, 2010

New and returning students
register for Spring classes*...........November 13, 2010-January 9, 2011

Classes begin.................................................................January 10

Spring 2011 Graduation Application Deadline..................January 15
(Applications not received by the deadline will be processed the following term.)

Martin Luther King, Jr. Day (college closed)...................January 17

Last day to add or change for a first eight-week course......January 18

Last day to drop for tuition refund from a
first eight-week course.................................................January 18

Last day to withdraw without academic penalty
from a first eight-week course (see note).........................February 11

Last day of instruction (includes examinations)..............March 4

SECOND EIGHT-WEEK SESSION

Returning students register for Spring classes*............November 8-12, 2010

New and returning students register
for Spring classes*......................................................November 13, 2010-March 13, 2011

Classes begin.................................................................March 14

Spring Break (no classes-college open)......................March 7-12

Last day to add or change for a second eight-week course..March 21

Last day to drop for tuition refund from a second eight-week course..................................................March 22

Last day to withdraw without academic penalty
from a second eight-week course (see note)....................April 15

Last day of instruction (includes examinations)..............May 6

Graduation............................................................................May 13

NOTE: Students who wish to withdraw without academic penalty should contact a counselor
to determine the appropriate procedure and date. Withdrawals through completion of
sixty percent of a session will result in a W grade. After sixty percent of a session is
completed, a withdrawal will result in a grade of F in a credit course or a grade of U in a
developmental course, except under mitigating circumstances that must be documented by
the instructor and approved by the academic dean.
The College

Tidewater Community College, founded in 1968, is one of twenty-three two-year colleges that make up the Virginia Community College System (VCCS). Serving the cities of Chesapeake, Norfolk, Portsmouth, Virginia Beach, and portions of Suffolk, the college offers a comprehensive range of programs designed to meet the educational and training needs of its service area. Programs of study lead to the associate degree or certificate; they include the first two years of university-parallel instruction and over 140 career and technical programs. The college also offers both credit and non-credit continuing education and special training programs.

TCC has grown from a single location to four campuses, as well as administrative offices, a regional visual arts center, a regional automotive center, a historical theater, and an advanced technology center. Classes are also offered at other off-campus locations.

TCC’s original location, the Portsmouth Campus, formerly the site of Frederick College, was donated by Fred W. Beazley and the Beazley Foundation and opened in the fall of 1968. Overlooking Hampton Roads harbor, the campus was located in what eventually became northern Suffolk. A statewide bond referendum in 2002 provided initial funding to relocate the campus into Portsmouth to better serve the educational needs of the city and the region while maintaining the comprehensive programmatic offerings of the campus. Working collaboratively with the City of Portsmouth, Portsmouth Public Schools, the Beazley Foundation, and the business community, TCC opened the Fred W. Beazley Portsmouth Campus in the Victory Village section of the city in January 2010. The campus consists of three academic and administrative buildings with state-of-the-art technology, instructional labs and equipment designed to provide a learning-centered environment, and a physical plant building.

In 1971, TCC established the Virginia Beach Campus in temporary quarters on Camp Pendleton, a state military reservation. After the City of Virginia Beach donated land to TCC, a permanent campus opened in 1974 at the city’s geographical center. Seven academic buildings, each named for a borough of Virginia Beach, house academic programs, a learning resources center, administrative offices, and student services. Recent additions to the campus include the Advanced Technology Center and the Science Building.

The Chesapeake Campus was established in 1973 when the City of Chesapeake purchased and donated the former Chesapeake College to TCC. The campus is located between the rapidly growing communities of Great Bridge and Deep Creek. The George B. Pass Building houses academic programs, administrative offices, laboratories, student services, and a learning resources center. The Marian P. Whitehurst Technology Center houses academic programs, administrative offices, laboratories, and a conference center.

The TCC Visual Arts Center, in Olde Towne Portsmouth, opened in the spring of 1995 as a regional center for the arts. The center contains the Belle B. Goodman Gallery, as well as classroom and studio facilities.

The Norfolk Campus opened January 1997 as a part of the city’s downtown redevelopment effort. The Martin Building, donated by the heirs of Alvah H. Martin, houses a learning resources center, classrooms, faculty and administrative offices, and training and conference facilities. The Mason C. Andrews Science Building houses the Ada R. Michaels Student Services Area, laboratories, classrooms, and faculty offices. The Stanley C. Walker Technologies Building houses computer laboratories, classrooms, and faculty offices. The TCC Jeanne and George Roper Center for Performing Arts houses a restored theater that seats over 800, classrooms, and computer laboratories.

A state-of-the-art Regional Automotive Center, located in the Oakbrooke Business and Technology Center in Chesapeake, opened for classes in fall 2008. As Hampton Roads’ only high tech educational facility for the automotive industry, the center includes classrooms, instructional garage bays, and an automotive “showroom” area.

TCC’s central offices are located in the Joseph N. Green, Jr. District Administration Building at 121 College Place, Norfolk. The facility houses the Office of the President and the offices of Academic and Student Affairs, Administrative Services, Development and the TCC Educational Foundation, Financial Services, Information Systems, and Institutional Effectiveness. Within those offices are the college’s central administrative staff in the functional areas of accounting & payroll, educational technology, emergency preparedness, facilities, financial aid, grants & sponsored programs, government & external relations, human resources, instructional resources, international programs, purchasing, safety & security, student records, and the Women’s Center. TCC’s Workforce Development offices are located on the fifth floor of the Martin Building on the Norfolk Campus.
ACCREDITATION AND GOVERNANCE
Tidewater Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools 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 Tidewater Community College.

The State Board for Community Colleges governs TCC, a member institution of the Virginia Community College System. The State Board and the TCC local advisory board approve the college’s curricula. The State Council of Higher Education for Virginia approves the college’s associate degree programs.

Certain curricula of the college are accredited by specialized accrediting organizations. They include the following:

The Culinary Arts program: accredited by the American Culinary Federation’s accrediting commission.

The Funeral Services program: accredited by the American Board of Funeral Service Education.

The Health Science programs: accredited by the Commission on Accreditation of Allied Health Education Programs through the American Association of Medical Assistants, the Accrediting Council for Occupational Therapy Education, the Commission on Accreditation for Health Informatics and Information Management Education, the Commission on Accreditation in Physical Therapy Education, the Joint Review Committee on Education in Diagnostic Medical Sonography, the Joint Review Committee on Education in Radiologic Technology, the Committee on Accreditation for Respiratory Care, the National League for Nursing Accrediting Commission, the Virginia Board of Nursing, and the Committee on Accreditation of Education Programs for Emergency Medical Services Professions.

TIDEWATER COMMUNITY COLLEGE MISSION STATEMENT
Tidewater Community College provides collegiate education and training to adults of all ages and backgrounds, helping them achieve their individual goals and contribute as citizens and workers to the vitality of an increasingly global community.

Commitments that Inform the Mission:
• Open access to high-quality, affordable education to prepare students for transfer to a four-year baccalaureate institution, as well as for entry or advancement in the workforce.
• Cultural diversity as a critically important strength for students to meet the changing needs of a pluralistic, democratic society.
• Lifelong learning to heighten the awareness of students to multiple paths for achievement, while helping them pursue the choices most conducive to their individual needs.
• Partnerships and proactive responsiveness to develop cutting-edge programs that meet the changing needs of students and industry, while contributing to the economic, civic and cultural vitality of the region, the Commonwealth, the nation, and the international community.
• A comprehensive range of programs and services recognized for excellence by leaders of business, industry, and government, and by educators in K-12 education and four-year colleges and universities.

TIDEWATER COMMUNITY COLLEGE EDUCATIONAL FOUNDATION, INC.
The Tidewater Community College Educational Foundation, Inc. accepts contributions and gifts that support the college, its programs, and its students. The Foundation is incorporated in the Commonwealth of Virginia and is approved by the Internal Revenue Service as a nonprofit, tax-exempt charitable organization.

Gifts and contributions to the foundation are tax deductible for the donor and can be made in the form of cash, negotiable securities, equipment, facilities, supplies, real estate, or buildings. Donors can designate the foundation as part of their estate planning and/or as a beneficiary in insurance policies; they may also establish memorial funds through the foundation on behalf of individuals and families.

VIRGINIA TIDEWATER CONSORTIUM
Tidewater Community College is a member of the Virginia Tidewater Consortium for Higher Education. For further information, contact Enrollment Services or visit www.vtc.odu.edu.

Programs
As a comprehensive institution of higher education, Tidewater Community College offers instructional programs generally extending no longer than two years beyond the high school level.

CAREER AND TECHNICAL EDUCATION
Career and technical education programs prepare students for employment. They are designed to meet regional demand for technicians, paraprofessionals, skilled craft workers, and specialized office workers in industry, business, government, and other professional fields. These programs normally require two years or less of training beyond high school to prepare students for success in meeting the demands in agriculture, business, engineering, health and medicine, industry, service, and other technical and occupational fields.

TECH PREP
Tech Prep Programs facilitate a seamless transition from high school to post-secondary education and into the job market. Participants take a sequence of courses that integrate academic and occupational preparation designed for a specific career cluster. Call (757) 822-7434 for additional information.

COLLEGE TRANSFER EDUCATION
The college transfer programs include first-year and second-year courses in arts and sciences and pre-professional programs designed to meet standards acceptable for transfer to baccalaureate (four-year) degree programs. TCC transfer courses are equivalent to those offered at four-year institutions to ensure maximum transferability.

DUAL ENROLLMENT
The dual enrollment program is an arrangement between local high schools and Tidewater Community College that allows students to meet high school graduation requirements while earning college credit. High school juniors and seniors may be eligible to participate in dual enrollment programs, provided they demonstrate readiness for college-level course work through the college’s mandatory placement testing program.
International Study Abroad

The International Programs Office coordinates a number of activities that both enhance curriculum and prepare students for a culturally diverse, technologically engaged, and interdependent world. In addition, students have a variety of opportunities during the summer or semester break to study abroad. Additional information is available at www.tcc.edu, search keywords: study abroad.

General Education

General education provides students with a collegiate experience that addresses the knowledge, skills, attitudes, and values characteristic of educated persons. It promotes multiple disciplines and honors the connections among bodies of knowledge. TCC degree graduates will demonstrate competency in the following general education areas:

- Communication
- Critical Thinking
- Cultural and Social Understanding
- Information Literacy
- Personal Development
- Quantitative Reasoning
- Scientific Reasoning

Both the college’s accrediting association and the State Board for Community Colleges require that all curricula include general education components.

Developmental Studies

Developmental courses prepare students for admission to the college’s various programs by helping them develop the basic skills and understanding necessary to succeed in college-level courses. Mandatory placement testing determines whether students are required to enroll in developmental courses.

Continuing Education

Continuing Education programs make lifelong learning possible for residents of the college’s service area. These programs include credit and non-credit courses and are offered during day, evening, and weekend hours. For additional information, go to www.tcc.edu/wd.

Workforce Development

Tidewater Community College offers training programs and courses for business, industry, and government clients to ensure their employees have the right knowledge and skills for optimum job performance. TCC’s workforce development programs assist businesses in retaining valuable associates by offering courses at the college’s or client’s on-site location. In addition, the college’s business, industry and government training centers offer customized training, as well as traditional credit courses, certification programs, collaboration services, teleconferencing, and other business-essential services. Call (757) 822-1234 for additional information.

Registered Apprenticeship Programs through TCC

TCC is a provider of Apprenticeship Related Instruction (ARI) for students participating in employer-sponsored registered apprenticeship programs. Sponsored programs can range in length from three to five years. In addition to TCC’s long-standing program with the Norfolk Naval Shipyard, TCC’s Apprenticeship Coordinator works with more than 50 sponsors to develop curriculum plans and monitor course offerings and student progress. After completing ARI coursework through TCC and on-the-job training provided by the registered employer/sponsor, the apprentice is awarded the journeyman certificate by the Virginia Department of Labor and Industry. For additional information about specific application periods and the programs and types of courses offered through TCC, call (757) 822-1122 or contact the apprenticeship office at (757) 822-1172.

Distance Learning

Tidewater Community College offers a variety of classes through distance delivery, including telecourses, teleconference classes, and online classes. Students may select from a wide range of courses taught by TCC faculty. These classes are of comparable academic quality, and if designed to transfer, transfer exactly like their classroom counterparts. For technical requirements, resources for students, student success strategies, and schedules of classes, visit the Distance Learning website at www.tcc.edu/students/dtls or call (757) 822-1122 for additional information.

Admission to the College

Individuals are eligible for general admission to Tidewater Community College as curricular students if they have a high school diploma or the equivalent, or if they are 18 years of age or older and are able to benefit from study at the college, based on the college’s placement testing policies and procedures. High school graduates (or General Educational Development diploma [GED] completers) who score below the college’s required scores must enroll in appropriate developmental courses and may enroll only in those college credit courses for which they meet developmental prerequisites. Applicants who have completed a home-school high school program are eligible for admission under the college’s general admissions policy.

Applicants 18 years of age or older who have not earned a high school diploma or GED, or who received a “Special Diploma” or “Certificate of Completion” from a Virginia public high school, and who score below the
College’s required placement test scores, may be admitted as non-curricular students and enroll only in those credit courses for which they meet developmental prerequisites. Non-curricular students may seek admission to a curricular program of study once developmental prerequisites are met.

Admission to the college does not guarantee admission to credit programs with restricted enrollments or competitive admissions requirements. Information on restricted admissions programs is available elsewhere in this Catalog and from campus division offices.

Applicants may submit applications in person, by mail, or online at www.tcc.edu. TCC advises all prospective students to consult with a counselor or academic advisor to discuss their educational interests and the requirements for admission to a specific program. Applicants may be admitted as curricular or non-curricular students.

Curricular students are those who have been admitted to one of the college’s academic programs. All curricular students are required to take placement tests and see a counselor for interpretation of the results. To be admitted as a curricular student, applicants must:

• Submit a complete official Application for Admission.
• Complete Student Assessment Program placement testing.
• Submit official transcripts from all colleges and universities attended.

(Nota: The VCCS Student Information System academic records are sufficient for students transferring course work within the VCCS.)

High school transcripts are not required if the record is more than 10 years old or if the college determines that high school transcripts are not necessary for admission to the college or to a particular curriculum.

Non-curricular students, or those who have not requested formal admission to a curriculum, must submit a complete official Application for Admission and may be required to complete Student Assessment Program placement testing.

By submitting an application to the college, students make a voluntary decision to participate in a collegiate experience and abide by the policies, rules, and regulations of TCC and the State Board for Community Colleges. In granting admission to an applicant, the college extends the privilege of joining the college community. Students may remain a part of that community as long as the required academic and behavior standards of the college and the VCCS are met.

Tidewater Community College does not discriminate on the basis of race, color, religion, national origin, political affiliation, veteran status, gender, age, sexual orientation, or disability in its programs or activities. Direct inquiries related to the college’s nondiscrimination policies to the Director of Human Resources, Post Office Box 9000, Norfolk, Virginia 23509-9000, (757) 822-1708.

TCC is authorized under Federal Law to enroll non-immigrant alien students.

Applicants with disabilities are not required to identify themselves. However, students wishing to request special assistance or academic accommodations because of a disability or chronic health problem should contact Disability Services at their home campus 45 days prior to the first day of classes. Students seeking accommodations or program modifications must provide justification and documentation that is less than three years old.

Exceptions to general admissions policy

High school juniors and seniors who meet requirements for participation in the college’s dual enrollment programs may be admitted according to the Virginia Plan for Dual Enrollment. High school students are classified as non-curricular students; however, they may seek admission to a curricular program of study upon completion of high school. Dual enrollment in developmental courses is prohibited for most high school students because it takes the place of traditional experiences that are available through school systems, home schooling, or other agencies. However, high school seniors enrolled in their final term prior to their graduation may enroll in developmental courses when a need is indicated by placement test results.

High school students whose placement tests scores are not high enough to waive developmental courses ENG 1, ENG 3, ENG 4, and MTH 2 are not eligible for participation in dual enrollment classes. Applicants under the age of 18 who are not currently enrolled in a secondary program and have not earned a high school diploma or GED are not eligible for admission to the college.

All individuals applying for admission under special provisions must meet with a campus dean for student services (or designee) to review the appropriateness of the requested college credit course(s) as it relates to the student’s educational goals. Eligibility for continued enrollment will be reviewed each term, based on educational performance (the student must have completed all previous college courses with a grade point average of at least 2.0). The applicant who is admitted under special provisions will be classified as non-curricular until s/he qualifies for general admission.

Family Educational Rights and Privacy Act (FERPA) regulations must be discussed with the student and parent to clarify disclosure regulations concerning personally identifiable information.

Individuals who do not meet the college’s general admission requirements, but apply as an exception, may be considered, provided they meet one of the following criteria:

1. The applicant must have a written recommendation from the high school principal or designee, who must certify that the individual is eligible for enrollment at the high school and sufficiently prepared for a college-level course.
2. Applicants who are home-schooled must: a) provide a copy of their authorization to home-school as provided by the division school system; b) provide official evidence that they are performing at their appropriate grade level, as determined by the division superintendent (options include: results from the same or alternate forms of standardized achievement tests used in the Virginia State Assessment Program or results from other assessments which, in the judgment of the division superintendent, indicate that the student is achieving at an adequate level); and c) provide a written recommendation from their tutor or a teacher certifying that the applicant is performing at the required grade level.

Applicants will participate in the college’s placement testing program to demonstrate prerequisite academic preparedness. All applicants shall meet course prerequisites as determined by the college.

The college reserves the right to evaluate and document special cases and to refuse admission if the college determines that the applicant is a threat or potential danger to the college community or if such refusal is considered to be in the best interest of the college.
Classification of Students

CURRICULAR
A curricular student is either a full-time or a part-time student working toward completion of a certificate or an associate degree at the college. Students are classified as curricular students when they have been placed in one of the college’s specific programs of study, called a curriculum. To be placed in a curriculum, a student must be a high school graduate or have earned a General Educational Development diploma (GED), have completed required developmental courses, or have been otherwise qualified for admission. All information required for admission to the college must be retained in the student’s academic file.

NON-CURRICULAR
A student who has not requested admission to a curriculum is classified as a non-curricular student. There are numerous reasons why a student might opt for non-curricular status, including the following:
- to upgrade skills for a current job
- to develop skills for a new job
- to explore a new career
- to take classes for personal satisfaction or general knowledge
- to take classes at TCC while maintaining primary enrollment at another college or university
- to take classes at TCC for transfer to another college or university without completing graduation requirements for a TCC degree
- to take college-level classes as a high school student
- to enroll with special approval (usually for one semester) to meet general or specific admission requirements as stated in the TCC catalog
- to enroll in classes while waiting for admission to a program with restricted enrollment or competitive admissions

FULL-TIME
A full-time student enrolls in 12 or more credit hours of course work in a semester or summer session.

PART-TIME
A part-time student carries fewer than 12 credit hours during a semester or summer session.

ACADEMIC LOAD
The minimum full-time academic load is 12 credit hours. The maximum load, without special permission, is 18 credit hours.

STUDENT LEVEL
Students are classified as freshmen until they have completed 30 credits of course work in a degree program. Students are classified as sophomores after completing 30 credits of course work in a degree program.

CAMPUS OF RECORD
Applicants must select a campus of record—Chesapeake, Norfolk, Portsmouth, or Virginia Beach—when applying for admission. Students may take classes and perform many administrative functions at any of TCC’s four campuses, but the designated campus will maintain the student’s records. Except for students accepted into special admission programs (i.e., Federal Work Study, health professions, SOCNAV, trucking, Veterans affairs) or in situations deemed necessary by the campus Dean of Student Services, students shall not change the campus of record.

Assessment and Placement Testing

Students need fundamental skills in English (reading and writing) and mathematics to be successful at TCC. The college’s Student Assessment Program ensures students benefit from their courses by administering placement tests.

A series of computerized placement assessment tests —COMPASS—is used to evaluate students’ reading, writing, and mathematics skills. These tests are not admissions tests but are used to assist students in identifying academic strengths, recognizing specific skills that need further development, and planning the best sequence of courses. Students can take COMPASS tests on any campus. Prior to testing, students must pay a testing fee at the campus Business office and present a receipt and photo ID at the exam site.

Students with documented disabilities should contact Student Development or Disability Services for placement testing accommodations.

For more information on the Student Assessment Program, contact campus Enrollment Services.

REQUIRED TESTING
- New students who plan to complete an associate degree or a certificate program must take the English (reading and writing) and mathematics placement tests and see a counselor to review test results.
- Non-curricular students who plan to enroll in any English or history course must take the placement tests for English (reading and writing).
- Non-curricular students who plan to enroll in any mathematics course must take the mathematics placement test.
- Non-curricular students who have completed nine credit hours at TCC and have a grade point average below 2.0 must take the placement tests before enrolling in any additional credit course work.
- If English is not a student’s first language, s/he must document English proficiency or take the COMPASS/ESL placement test before enrolling in any courses at the college. If the test results indicate a need for ESL instruction, the student must successfully complete the required ESL courses before enrolling in any non-ESL courses. For more information on assessment testing, visit the website at www.tcc.edu, search keyword: compass, or contact the campus Welcome and Entry Center.
- Students applying for admission under special provisions must participate in the placement testing program to demonstrate prerequisite academic preparedness.
• With evidence of satisfactory performance (a grade of C or better) in English and mathematics courses taken at another higher education institution, students may be exempt from placement testing at TCC.
• Students may be exempt from placement testing based on the following scores on the ACT or SAT college entrance exams, provided the scores are less than three years old:
  - ACT Verbal (Writing and Reading), minimum score 21
  - ACT Mathematics, minimum score 21
  - SAT Verbal (Writing and Reading), minimum score 500
  - SAT Mathematics, minimum score 500

REQUIRED ENROLLMENT IN DEVELOPMENTAL COURSES
• Students who do not achieve the appropriate scores on the English placement tests must enroll in developmental and/or study skills courses and complete them successfully before enrolling in other English or history courses.
• Students who do not achieve the appropriate scores on the mathematics placement test must enroll in developmental courses and complete them successfully before enrolling in other mathematics courses.
• Students who do not achieve an appropriate score on the reading portion of the English placement test must successfully complete the required developmental reading and/or study skills courses before enrolling in most college-level courses.
• If a student’s COMPASS/ESL test results indicate a need for ESL instruction, s/he must successfully complete the prescribed ESL courses before enrolling in non-ESL courses.
• Students who do not achieve the required score on the ACT or SAT test must enroll in developmental courses and complete them successfully before enrolling in other college-level courses.

Developmental courses prescribed through the Student Assessment Program are considered prerequisites for college-level courses. The college reserves the right to withdraw a student from any class for which s/he did not complete the appropriate prerequisites.

ABILITY TO BENEFIT
Students who do not meet the general admission requirements are required to demonstrate ability to benefit from instruction at TCC if they apply for financial aid. Student Assessment Program test results may serve as official documentation of ability to benefit.

Other Admission Requirements

ADMISSION REQUIREMENTS FOR INTERNATIONAL STUDENTS
In addition to the general admission requirements of the college, all international applicants must also meet the admission requirements established by the International Student Services (ISS) office before enrolling at the college. If an international applicant has obtained a student visa to attend another college, s/he may be eligible for admission to TCC as a transfer student. Contact the International Student Services (ISS) office for information regarding F1 transfer applications. Non-immigrant students holding or seeking F1 status can obtain the necessary forms and instructions on how to apply for an I-20 from the ISS office. Prospective students in non-immigrant classes other than F1 are required to meet with the international student advisor to determine admission eligibility and/or limitations.

For more information and specific application deadlines, please visit the International Student Services office at the Virginia Beach Campus (757) 822-7342 or the ISS website at www.tcc.edu/students/iss.

ADMISSION TO SPECIFIC COURSES
Before enrolling in certain courses, students may be required to successfully complete prerequisite courses or meet other specific conditions. These prerequisites are listed in each semester’s TCC Schedule of Classes. Developmental courses prescribed through the Student Assessment Program are considered prerequisites for college-level courses. The college reserves the right to withdraw a student from any class for which s/he did not complete the appropriate prerequisites. The college’s Student Information System (SiS) may block a student from registering for a course if the prerequisites have not been met.

ADMISSION TO SPECIFIC CURRICULA
Students applying for admission to an associate degree program (Associate of Arts, Associate of Science, Associate of Applied Arts, or Associate of Applied Science) must have a high school diploma or equivalent, have completed prescribed developmental courses, or otherwise be considered eligible by the college. Students may also be required to submit additional information with the application to determine eligibility.

Some curricula may specify admission requirements in addition to the college’s general admission requirements. Students who do not meet all program admission requirements may be able to make up deficiencies by successfully completing prescribed developmental courses or other course prerequisites.

CURRICULUM CHANGES
To change programs, students should consult a counselor or academic advisor to make sure that all prerequisites for admission to the new program have been met. Students must also complete a Curricula Change form, available from campus Enrollment Services. Students certified for veteran’s benefits must also notify the Veterans Affairs office of the change at their campus of record.

ADMISSION PRIORITIES
When enrollments must be limited for any curriculum, priority shall be given to all qualified applicants who are residents of the political subdivisions supporting the college and to Virginia residents not having access to a given program at their local community college, provided such students apply for admission to the program prior to registration or by a deadline established by the college. In addition, residents of localities with which the college has clinical-site or other agreements may receive equal consideration for admission.

REAPPLICATION
Students who have interrupted their enrollment at the college for more than three years must reapply by submitting an updated application for admission to campus Enrollment Services.
### General Information

#### Senior Citizens Higher Education Act
Any person 60 years or older who has been living in Virginia for a minimum of one year and whose Virginia taxable income is not more than $15,000 qualifies for free tuition benefits for credit classes on a space available basis. Anyone 60 years or older, regardless of income level, who has been domiciled in Virginia for a minimum of one year qualifies for free tuition to audit credit classes or non-credit classes on a space available basis. For further information, contact Enrollment Services on any campus about credit classes, and contact Workforce Development for non-credit classes. Registration dates for these credit classes are restricted to those listed in the class schedule. For non-credit classes, registration is available on the first day the class meets.

#### Credit for Other Education and Experience

##### Transferring from Other Colleges
Normally, transfer students who are eligible for re-entrance at the last college they attended are also eligible for admission to Tidewater Community College. Students who are not eligible to return to a previous college may not be permitted to enroll at TCC.

Students enrolled in a curriculum or plan of study at TCC may request a transcript evaluation for the purpose of awarding advanced standing or transfer credit for coursework completed elsewhere. Credit is awarded based on the student’s plan of study. Credit awarded for one plan of study may not apply to a new curriculum, and a re-evaluation of transfer credits may be necessary. Students seeking a re-evaluation of credits after officially changing their plan of study may do so by making a request in writing to the college Registrar.

##### Transcripts from Institutions Outside the U.S.
Transfer credit may be awarded for coursework completed at international colleges and universities that are accredited or approved by the appropriate Ministry of Education or other governmental agency. Coursework is evaluated by one of the professional organizations or agencies that are members of the National Association of Credential Evaluators or is approved by the Virginia Department of Education.

##### Transfer Credit Appeals Procedure
The Central Records office notifies the student when it completes the evaluation of transfer credits. A student may appeal a decision regarding the transferability of a specific course(s) or the applicability of a specific course to program requirements in the student’s academic plan. The student must file the appeal in writing within 15 business days of the official notification of transcript evaluation results. Specific information on the transferability of credit and procedures for appealing transfer credit decisions is available from Enrollment Services or on the TCC website at www.tcc.edu, search keyword: transcripts.

##### Credit by Examination

**Students who hold industry-recognized certifications may feel prepared to challenge, for credit, a Tidewater Community College course. However, TCC’s courses provide instructional content that frequently goes beyond the scope of the knowledge and skills required for a particular certification. Students must complete the following local testing procedure before TCC will decide to award credit for a course:**

- Students who hold industry-recognized certification in information technology (such as Microsoft, Novell, etc.) must present the certification documentation to the appropriate campus academic dean for credit evaluation. In order to be eligible for such an evaluation, the student must be enrolled in one of the college’s Information Technology (IT) curricula.
  - Based on the information presented, the academic dean will determine what course(s) the student is eligible to challenge. The student will be informed of the objectives for the course that form the basis of the challenge examination.
  - In order to be granted credit for the course, the student must successfully pass a TCC examination that includes both a written and a hands-on component. A faculty member in the appropriate discipline will grade the examination.
  - If credit is awarded, no letter grade is assigned on the student’s transcript. Rather, a code will be placed on the transcript indicating credit was awarded by exam.
  - Upon recommendation of the faculty, the appropriate academic dean shall submit the necessary substitution form to the campus Enrollment Services office for the credit to be entered on the student’s record.

**Substitution of Curriculum Requirements**
Some students want to substitute a previously completed credit course for a required curriculum course. To do this a student must:
1. Consult a counselor or academic advisor
2. Complete a Course Substitution form
3. Submit the completed form to his/her academic dean for approval

The substituted course must cover the same content or otherwise meet the spirit of the course being replaced. Course substitutions granted for one curriculum may not apply to a new curriculum if the student changes his/ her plan of study.
CREDIT FOR MILITARY SERVICE EXPERIENCE AND EDUCATION

Credit may be allowed for courses completed in military service schools if such credit is recommended in the American Council on Education’s Guide to the Evaluation of Educational Experiences in the Armed Services, and if the work is applicable to the student’s program of study. To receive this credit, students enrolled in a curriculum must submit the appropriate documentation and an evaluation request to: TCC Central Records Office, P. O. Box 9000, Norfolk, VA 23509-9000.

In addition, students must also submit an online Request for Evaluation form at www.tcc.edu, search keywords: evaluation request. Veterans may also receive up to three credits of physical education/health credits for basic military training to satisfy the physical education/health credit requirement by submitting a discharge certificate or other appropriate certification to Enrollment Services or, in the case of students receiving veterans’ benefits, to the Veterans Affairs office.

SERVICE-MEMBERS OPPORTUNITY COLLEGES

Tidewater Community College is an institutional member of Service-members Opportunity College (SOC), a group of approximately 1,800 colleges and universities providing voluntary post-secondary education to members of the military throughout the world. This program is designed to ease the transfer of course credits, provide flexible academic residency requirements, and provide appropriate credit for learning received through military training and experiences.

Within the framework of SOC, TCC actively participates in the following programs: SOCAD (available for air force, army, army reserve, and National Guard personnel); SOCONAV (available for naval personnel); SOCOR (available for marine personnel); SOCCOAST (available for Army National Guard personnel); and SOCCO (available for U.S. Coast Guard personnel). These programs guarantee the transfer of comparable courses among participating colleges and universities. The college also participates in the Concurrent Admissions Program (CONAP) offered by SOC in cooperation with the U.S. Army or the U.S. Army Reserve. Students participating in these programs should apply for the applicable SOC contract. For more information, consult the Enrollment Services office at the Virginia Beach Campus (757) 822-7104.

Registration Information

ENROLLMENT

To take courses at TCC, students may enroll in a variety of ways:
- online, using the Student Information System (www.tcc.edu/sis)
- by phone, using the touchtone telephone enrollment system (757) 822-2000
- in person at any campus or off-campus enrollment site
- by mail, sending materials according to the instructions and the deadline listed in the TCC Schedule of Classes

Currently enrolled students in good academic and financial standing at the college should consult their counselor or academic advisor prior to the enrollment period to determine which classes to take.

Students with academic blocks on their records due to academic suspension or dismissal may NOT register until granted readmission. Students with administrative blocks on their records—holds resulting from unpaid library charges, financial aid overpayments, or other student debts to the college—may NOT register until their record is cleared.

Students are encouraged to enroll prior to the first day of classes. Students who add a class or register after the first day of classes are counted absent from class meetings missed as a result of late registration.

Complete enrollment procedures are outlined in the TCC Schedule of Classes published each semester, and assistance is available on each campus.

ONLINE ENROLLMENT

The Student Information System (SIS) (www.tcc.edu/sis) enables students to access information and complete a number of tasks over the Internet. Eligible students can register online, add or drop classes, check their schedules, find open sections of classes, and pay tuition and fees using MasterCard and Visa.

Through SIS, students also have access to their personal information: address, financial aid and payment history, unofficial transcript, and transfer credit evaluation.

TOUCHTONE ENROLLMENT

The touchtone response system enables students with counselor approval to enroll or drop and add courses from any touchtone phone. The system also provides information on course availability in case the student’s first choice is not available. Once registered, students can use an approved credit card to pay tuition by touchtone.

The touchtone system has a special security feature that allows students to choose a PIN number, providing easy access to personal as well as general college information. Students can review their address, class schedule, and financial information, as well as graduation application deadlines, computer competency graduation requirements, and other important announcements.

ACADEMIC LOAD

The full-time course load is 12 to 18 credit hours. Students should consult a counselor to plan an academic load that will be compatible with their work schedule, family responsibilities, health, and other obligations. As a rule, one credit hour of course work requires at least two hours of study outside of class each week.

Students who wish to take more than 18 credit hours of course work in a session must obtain the approval of the campus provost or designee.

Students who have received an academic warning or are on academic probation may be required to take a reduced course load for the next semester.

ACADEMIC ADVISORS AND COUNSELORS

Counselors are professional staff located in the campus student development or counseling centers. Academic advisors are faculty members who help students plan a course of study in their academic area. Both are available to act as academic consultants and can assist students with planning a program of study for graduation, employment, or transfer. Students are encouraged to consult their counselors or academic advisors before each registration period and to confer with them frequently during the semester regarding academic matters. The student is responsible, however, for ensuring that graduation requirements are fulfilled.
MINIMUM ENROLLMENT REQUIREMENT FOR CLASSES
Each course is offered on condition of adequate enrollment. The college reserves the right to cancel or discontinue any course offered, either because of inadequate enrollment or for any other reason deemed appropriate by the college.

AUDITING A COURSE
To audit a course (attend class without taking examinations or receiving credit), students must obtain permission from the appropriate academic dean or designee on the campus where the course is taught. Students must then register for the course and pay full tuition.

To change the status of a course from audit to credit, or from credit to audit, students must complete the change by the end of the add/drop period for the course. Advanced standing credit will not be awarded for a previously audited course.

Audited courses are not counted as part of the student’s academic load when full-time or part-time status is reported to the Financial Aid office or to an external party such as the Social Security Administration, an employer, health insurance carrier, the Immigration and Naturalization Service, or the Department of Veterans Affairs.

CHANGE OF REGISTRATION
After the initial enrollment in classes, students must follow established procedures for making any changes to their course schedule or plan of study. A change is not official until the student completes all required procedures online, through the touchtone system, in person, or by providing written permission to a representative authorized to act on behalf of the student. To prevent any problems with permanent college records, financial aid status, or veterans’ benefits, students are encouraged to consult a counselor or an academic advisor before making changes to their enrollment.

TYPES OF CHANGES
The deadlines for adding and dropping courses and withdrawing without academic penalty from regular session courses are published every semester in the TCC Schedule of Classes and the college calendar. Adding a course means enrolling in a new course during the published add/drop period. Students may need special permission from a provost or designee to add a course after the first class meeting.

Dropping a course means officially cancelling the registration for a course on or before the last drop date and allows for a tuition refund. Enrollment in the course will not appear on the student’s college record, and the student will not receive a grade for the course.

Contact Enrollment Services for the last date to withdraw from special session courses.

COURSE WITHDRAWAL
Withdrawing from a course means a student officially leaves the course after the refund period. Students may withdraw from a course without academic penalty during the first 60 percent of a session and receive a grade of W (withdrawal). The last day to withdraw without academic penalty is published in the TCC Schedule of Classes. (Contact Enrollment Services for the last day to withdraw from special session courses.) After that date, students will receive a failing grade of F or U if they withdraw or are administratively withdrawn from a course. (The college reserves the right to withdraw a student for just cause.)

Exceptions to this policy may be made if all of the following conditions are met:
• The instructor initiates a withdrawal approved by the academic dean.
• The student is able to document mitigating circumstances.
• The student was making satisfactory progress in the course.

Students should not stop attending college without officially withdrawing from all classes. Failure to properly withdraw from college may result in the assignment of F or U grade(s) to the permanent record. Please see a counselor or an academic advisor to consider options before withdrawing from college.

Financial Information
TUITION AND FEES
Tuition is subject to change by action of the State Board for Community Colleges. Call (757) 822-1122 for current tuition and fee rates.

The college assesses all students an institutional, technology, and student activity fee, payable with tuition on a per credit hour basis up to a maximum of 15 credit hours per semester. To cover licensing fees and administration costs, TCC also charges a fee for Student Assessment Program testing.

BOOKS AND MATERIALS
Students are expected to buy all books, supplies, and consumable materials needed for their studies, with an estimated cost of $500 per semester for a full-time student. Barnes and Noble at Tidewater Community College serves all TCC locations, with the main bookstore located at MacArthur Center in Norfolk, a satellite bookstore at the Virginia Beach Campus, and kiosks at the Chesapeake and Portsmouth campuses. During peak book-selling periods, on-campus Distribution Stores operate on the Chesapeake and Portsmouth campuses. Books and supplies may be ordered online. For additional information go the bookstore’s website at www.tcc.bncollege.com.

OTHER EXPENSES
Students may be required to pay facilities and equipment fees for physical education instruction in specific instances. Students may also have to pay transportation, admission, and other expenses related to field trips.

CHARGES
Students are expected to pay charges for any property (such as laboratory or shop equipment, supplies, library books, and materials) that they damage or lose. For more information, see Services Denied for Debt. Students will also be charged a fee of $20.00 for each returned check.

STUDENT DOMICILE
The college determines the student’s eligibility for in-state tuition rates based on information supplied on the Application for Admission. This determination is made under provisions of Section 23-7.4 of the Code of Virginia. A copy of State Council of Higher Education for Virginia’s Guidelines for Determining Domicile and Eligibility for In-State Tuition
Student Financial Aid

Financial assistance is provided for students through one or more of the following sources: grants, scholarships, loans, and work study. The college does not discriminate on the basis of race, color, religion, national origin, political affiliation, veteran status, gender, age, sexual orientation, or disability.

To be considered for most financial aid programs, students must apply for financial aid as soon as possible after January 1 and demonstrate need every school year. Campus-based aid is initially awarded on a first-come, first-served basis for Fall and Spring until funds are depleted. If a student does not attend the first semester, all awards will be cancelled and the student must submit written documentation to have his/her financial aid awards re-processed. Depending on the availability of funds, campus-based aid probably will not be re-awarded. To remain eligible for most programs, students must comply with Standards of Satisfactory Progress. Applications are available at each campus Financial aid office or can be filed electronically on the internet at www.fafsa.ed.gov. If the student does not have a Department of Education PIN number, the signature page must be downloaded and mailed, or the application will not be considered.

If a student withdraws from all classes, federal regulations require that a portion of tuition and fees covered by a financial aid program be refunded to that program. The percentage refunded to the program depends on the withdrawal date. The college may also retain an administrative fee when refunds are calculated.

Financial aid personnel are available on each campus to provide information about programs, application procedures, and eligibility. The financial aid program employs the following criteria and procedures in administering the financial aid programs described:
GRANTS

**Federal Pell Grant (PELL):** A federal grant designed to assist students with the cost of attending college. Awards are gift aid and do not have to be repaid. Funds must be used for education-related expenses including tuition, books, supplies, transportation, and miscellaneous expenses. Awards are pro-rated based on enrollment. Eligibility for this grant is determined by the U.S. Department of Education upon completion of the Free Application for Federal Student Aid (FAFSA).

**Federal Supplemental Educational Opportunity Grant (SEOG):** A federal grant program designed to provide assistance to students demonstrating the highest level of financial need. Awards are gift aid and do not have to be repaid. Eligibility for this grant is determined by Tidewater Community College and awards are made on a first-come, first-served basis.

**Commonwealth Award (CONA):** A state financial aid program for students who are domiciled Virginia residents who demonstrate financial need. Awards are gift aid and do not have to be repaid. Eligibility for this grant is determined by Tidewater Community College and awards are made on a first-come, first-served basis. Awards cannot exceed the cost of tuition and fees.

**College Scholarship Assistance Program (CSAP):** A state financial aid program for students who are domiciled Virginia residents who demonstrate financial need. Awards are gift aid and do not have to be repaid. Eligibility for this grant is determined by Tidewater Community College and awards are made on a first-come, first-served basis. Students must be enrolled at least half-time in order to receive this grant. Students cannot be enrolled in a program leading to a second associate degree or a bachelor's degree.

**VCCS Grant:** A state financial aid program for students who are domiciled Virginia residents who demonstrate financial need. Awards are gift aid and do not have to be repaid. Eligibility for this grant is determined by Tidewater Community College and awards are made on a first-come, first-served basis.

**Part-Time Tuition Assistance Program (PTAP):** A state financial aid program for students who are domiciled Virginia residents who demonstrate financial need. Awards are gift aid and do not have to be repaid. Eligibility for this grant is determined by Tidewater Community College and awards are made on a first-come, first-served basis. Students must enroll in eight or less credit hours in order to receive this grant.

**Virginia Guaranteed Assistance Program (VGAP):** A state financial aid program for students who are domiciled Virginia residents, first-time freshmen in college, a graduate of any Virginia high school with a minimum 2.5 grade point average, enrolled full-time in an eligible program, and demonstrate financial need as determined from the Free Application for Federal Student Aid (FAFSA). Students must submit a final high school transcript for consideration. Eligibility for this grant is determined by Tidewater Community College and awards are made on a first-come, first-served basis. Awards may be renewed for a second academic year if the student has maintained continuous, full-time enrollment.

**Higher Education Teacher Assistance Program (HTAP):** A state financial aid program for students who are domiciled Virginia residents and who are enrolled in a K-12 teacher preparation program. Eligibility for this grant is determined by Tidewater Community College and awards are made on a first-come, first-served basis. Students are nominated by a faculty member and must be enrolled full time. A minimum cumulative grade point average of 2.5 is required in order to receive this grant.

SCHOLARSHIPS

**Private Scholarships:** These awards are made by local citizens, businesses, and organizations. While most scholarships are designated to specific students by the donors, a few may be available on a competitive basis. Visit your campus Financial Aid office for more information.

**Nursing Scholarships:** Students in the nursing curriculum are eligible to apply for state nursing scholarships. Applications and information are available at the Financial Aid office on the Portsmouth and Virginia Beach campuses.

**Institutional Scholarships:** Several types of scholarships and awards are made available from TCC local funds. Visit your campus Financial Aid office for more details.

**Foundation Scholarships:** The TCC Educational Foundation provides a variety of scholarship opportunities. Visit your campus Financial Aid office or visit the college’s website at www.tcc.edu for more details.

EMPLOYMENT

**Federal Work-Study Program:** The Federal Work-Study Program provides part-time jobs for students who demonstrate financial need. Employment may be on or off campus, and hourly wages comply with minimum wage laws. Students are paid twice per month. Students average fifteen to twenty hours of work per week.

LOANS

**Federal Direct Student Loans:** TCC participates in the William D. Ford Federal Direct Student Loan Program. Students and parents may borrow funds from the government in order to help meet their cost of attendance. More information on Direct Loans is available on the college’s website at www.tcc.edu.

Special Programs for Assistance

**Rehabilitative Services.** The college cooperates with the State Department of Rehabilitative Services in providing education and training for qualified students with disabilities.

**Virginia National Guard Tuition Assistance.** Based on available funds, members of the National Guard who have been prior participants in the program may be considered for additional grants. Direct inquiries to the Unit Commander.

**Virginia Program for Children and Spouses of Deceased Law Enforcement, Firefighting, Rescue Squad, and Military Personnel.** The Commonwealth of Virginia provides financial assistance for attendance at public higher education institutions to children or spouses of the following local, state, or federal employees who were killed in the line of duty: law enforcement officers; firefighters or rescue squad members; sworn law enforcement officers; special agents of the Department of Alcohol Beverage Control; state correctional, regional, or local jail officers; Sheriffs; Deputy Sheriffs; or members of the Virginia National Guard serving in the Virginia National Guard or as members of the United States Armed Forces. This assistance covers the cost of tuition and required fees. For more information, contact your campus Business Manager.
Virginia War Orphans Education Program. The Virginia War Orphans Education Program provides educational assistance for surviving children of certain veterans. Individuals entitled to this benefit may use it to pursue any vocational, technical, undergraduate or graduate program of instruction. Applications are available in the Veterans Affairs office on each campus. Submit applications at least four months before the expected date of enrollment.

TAX CREDITS
Tax credits provide benefits for community college students. The HOPE Scholarship tax credit may apply to the first two years of a college or vocational school program. The Lifetime Learning tax credit is for adults who want to return to school, change careers, or upgrade skills. Consult your tax advisor to determine your eligibility for these credits.

Academic Regulations

DEGREES AND CERTIFICATES
The college offers the following degrees and certificates upon successful completion of an approved program.

The Associate of Arts Degree (AA) is awarded to students majoring in liberal arts who may plan to transfer to a four-year college or university after completing their community college program.

The Associate of Science Degree (AS) is awarded to students majoring in specialized pre-professional programs who may plan to transfer to a four-year college or university after completing their community college program.

The Associate of Applied Arts Degree (AAA) is awarded to students majoring in one of the career and technical curricula who may plan to obtain full-time employment immediately upon graduation from college.

The Associate of Applied Science Degree (AAS) is awarded to students majoring in one of the career and technical curricula who may plan to obtain full-time employment immediately upon graduation from college.

The Certificate is awarded to students who complete one of the approved non-degree curricula consisting of a minimum of 30 semester credit hours in an occupational area.

The Career Studies Certificate is awarded to students who complete one of the approved non-degree curricula consisting of 9-29 semester credit hours in an occupational area.

Degrees and certificates are awarded three times each year following the fall, spring and summer sessions. Commencement exercises are held twice each year after the fall and spring semesters.

COURSE CREDITS
The semester-hour credit for each course is listed in the TCC Schedule of Classes and with the course description in the TCC Catalog.

Each semester-hour of credit given for a course is based on one academic hour (50 minutes) of formalized, structured instructional time per week for fifteen weeks. This totals 750 minutes of instruction. In addition, each course requires an examination/evaluation period. Courses may consist of lectures, out-of-class study, laboratory and/or shop study, or combinations thereof, with credit awarded as follows:

- **Lecture**: One academic hour of lecture (including lecture, seminar, discussion or other similar activities) per week for 15 weeks plus the examination/evaluation period equals one collegiate semester-hour credit.
- **Laboratory**: Two to five academic hours (depending on the discipline) of laboratory, clinical training, supervised work experience, coordinated internship, or other similar activities per week for 15 weeks, plus the examination/evaluation period equals one collegiate semester-hour credit.
- **Asynchronous Distance Learning Courses**: Traditional contact hours combined with learning activities in which students and faculty are separated by time and place; content is equivalent to that of traditional lecture/laboratory classes.

COURSE NUMBERING
Courses numbered less than 100, ESL courses numbered 2 through 20, and developmental courses numbered 1-9 are not applicable toward associate degree programs. Some developmental courses, with the approval of the Vice President for Academic and Student Affairs (or designee), may provide credit applicable to certificate programs.

Courses numbered 10 through 99 (except for approved ESL courses) are basic occupational courses for certificate programs. The credits earned in these courses are applicable toward certificate programs, but are not applicable toward an associate degree and do not qualify for federal financial aid.

Courses numbered 100 through 299 are freshman and sophomore courses applicable toward associate degree and certificate programs.

GRADING SYSTEM
The quality of performance in any academic course is reported by a letter grade, which the instructor is responsible for assigning.

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.

P - PASS
No grade point credit. This grade applies only to non-developmental specialized courses and seminars approved by the appropriate academic dean. A maximum of seven semester credit hours with a P grade may be applied toward a degree or certificate.

S - SATISFACTORY
No grade point credit. The grade of S indicates satisfactory completion of course objectives in developmental studies and ESL courses.

U - UNSATISFACTORY
No grade point credit. The grade of U is assigned when the student has not made satisfactory progress in developmental studies, ESL courses, or courses taken on a Pass/Unsatisfactory basis.

R - RE-ENROLL
No grade point credit. The R grade may be used as a grade option, in developmental and ESL courses only, when the student has made satisfactory progress but has not completed all of the instructional objectives for developmental studies or ESL courses. Students must re-enroll in the course and pay the specified tuition to complete the course objectives.
To determine the grade point average, multiply the number of credits for completing the course by the grade received, and divide the total number of grade points earned by the number of credits attempted. Credits that do not generate grade points, such as credits for developmental courses, are not included in the calculation of credits attempted. Grades of P, R, S, U, and W (withdrawal), I (incomplete), or X (audit) do not receive grade points.

<table>
<thead>
<tr>
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<th>Points</th>
<th>Comment</th>
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</thead>
<tbody>
<tr>
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</tr>
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<td>B</td>
<td>3</td>
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<tr>
<td>C</td>
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<tr>
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<td>Poor</td>
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<tr>
<td>F</td>
<td>0</td>
<td>Failure</td>
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</tbody>
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COMPUTING THE GRADE POINT AVERAGE (GPA)

To determine the grade point average, multiply the number of credits for each class by the number of points awarded for the grade received and divide the total number of grade points earned by the number of credits attempted. Credits that do not generate grade points, such as credits for developmental courses, are not included in the calculation of credits attempted. Grades of P, R, S, U, and W (withdrawal), I (incomplete), or X (audit) do not receive grade points.

SEMESTER GPA
To determine a semester grade point average, divide the total number of grade points earned in all courses taken in a given semester by the total number of credits attempted for the semester.

CURRICULUM GPA
To determine a curriculum grade point average, divide the total number of grade points earned in all courses applicable to the student’s curriculum by the total number of credits attempted in courses applicable to that curriculum.

CUMULATIVE GPA
To determine a cumulative grade point average, divide the total number of grade points earned in all courses by the total number of credits attempted.

REPEATED COURSE POLICY
Beginning with the fall semester 1996, only the most recent attempt of a repeated course is used to calculate the cumulative GPA, and only credits earned in the most recent attempt are counted toward meeting curriculum requirements.

Some courses are exempt from consideration as repeats and adjustment to GPA is not made. Exempted courses are those numbered in the 90s, 93s, 95s, 96s, 97s, 98s, and 99s; courses identified by the phrase “may be repeated for credit”; and selected other courses. Periodically, the VCSC will rename or renumber courses, but they remain equivalent to the courses as previously named or numbered. In such cases, completion of a renumbered/renamed course may be determined to be a repeat of a course completed previously under a different department and/or course number. These determinations are made on a college-wide basis, and exceptions cannot be made for an individual student.

Implementation of this policy does not affect any GPA calculations for prior terms or any academic, financial, or administrative events that have occurred in the past. Direct any questions to the coordinator of Enrollment Services.

LIMIT ON REPEATING A COURSE
Students are limited to two attempts in the same credit or developmental course for the purpose of improving their grade. (Grades of A, B, C, D, F, I, P, R, S, U, X, and W count as attempts.) The appropriate academic dean must approve exceptions to this policy. This limitation does not apply to certain courses identified as repeatable for credit.

FINAL GRADE APPEAL
Faculty members at Tidewater Community College are responsible for assigning course grades and for advising students of the objective criteria used to determine the grades assigned. Most student disagreements regarding course grades are best resolved informally between the student and the faculty member. The college’s grade appeal procedure provides a fair and orderly process for students who wish to pursue a formal appeal of their final course grade.
The process for appealing a final course grade is outlined in the Student Handbook.

Other Academic Regulations

**COURSE PREREQUISITES**

Students must successfully complete some courses before enrolling in others. These prerequisites are listed in each semester’s TCC Schedule of Classes and may include developmental courses identified through the college’s Student Assessment Program. The college reserves the right to withdraw students from courses in which they have enrolled without successfully completing the appropriate prerequisites.

**COURSE CO-REQUISITES**

A co-requisite is a course that must be taken simultaneously with another course, unless the student has already completed it successfully. Co-requisites are listed in the TCC Schedule of Classes and may include developmental courses identified through the college’s Student Assessment Program. The college reserves the right to withdraw students from courses if they are not also enrolled in the co-requisite course or have not completed it successfully.

**REQUIRED DECLARATION OF CURRICULUM**

Students declare a curriculum by the time they have accumulated 24 semester hours of credit. Students who are uncertain about a curriculum should contact a counselor or academic advisor.

**EXAMINATIONS**

Students are expected to take examinations as scheduled. No exceptions will be made without the permission of the academic dean and the instructor of the course.

**COURSE ATTENDANCE**

Students should be present and on time for all scheduled class and laboratory meetings. Instructors do not have to admit students who arrive late. If a student adds a class or registers after the first day of classes, she is counted absent from all class meetings missed. When absences in a course equal the number of weekly class sessions of that course, the student’s standing in that class may be in jeopardy.

If a student is absent more than 20 percent of scheduled instructional time, attendance may be defined as unsatisfactory. This calculation includes absences occurring during the add/drop period.

Instructors may establish a more stringent attendance policy, and students are responsible for understanding the attendance requirements for each course in which they are enrolled.

When an instructor determines that absences constitute unsatisfactory attendance, she may withdraw a student from a course. The student will receive a grade of W during the first 60 percent of a course. If the student is withdrawn after 60 percent of the class, a grade of F (or U in the case of a developmental course) will be assigned unless the student can document mitigating circumstances. Students who are withdrawn from a class because of unsatisfactory attendance are not eligible for a refund of tuition and fees.

**ACADEMIC STANDING**

Students are considered to be “in good academic standing” if they maintain a semester minimum GPA of 2.00, meet eligibility requirements, and are not on academic suspension or dismissal status.

**ACADEMIC WARNING**

Students who fail to attain a minimum grade point average of 2.00 for any semester shall be placed on academic warning.

**ACADEMIC PROBATION**

Students who fail to maintain a cumulative grade point average of 1.50 after attempting 12 or more credit hours shall be on academic probation until their cumulative average rises to 1.50 or better.

The statement “Placed on Academic Probation” will appear on the student’s permanent record. Students on academic probation must consult a counselor before registering and will usually be required to carry a reduced course load the next semester.

(Note: Although a grade point average between 1.5 and 1.99 may not result in formal academic probation, students must earn a minimum of 2.0 in their curriculum to receive an associate degree.)

**ACADEMIC SUSPENSION**

Students on academic probation who fail to earn a minimum semester grade point average of 1.50 shall be placed on suspension only after they have attempted 24 semester credit hours.

The statement “Placed on Academic Suspension” will appear on the student’s permanent record. Academic Suspension normally shall be for one semester unless the student re-applies and is accepted for readmission to another curriculum. Whatever the time period, students on academic suspension may not re-enroll at the college until they are formally reinstated. To be considered for reinstatement, students must submit an Application for Readmission available from campus Enrollment Services.

Following reinstatement after academic suspension, students must earn a minimum 2.0 grade point average for the semester in which they return, and a minimum 1.5 grade point average in all subsequent semesters for which they are enrolled. Students remain on academic probation until the cumulative grade point average rises to a minimum of 1.5.

**ACADEMIC DISMISSAL**

Students on academic suspension who do not maintain at least a 2.00 grade point average for the semester of their reinstatement to the college shall be academically dismissed. Students previously placed on academic suspension who achieve a 2.00 for the semester of their reinstatement must maintain at least a cumulative 1.50 GPA in each subsequent semester of attendance. Students remain on probation until their cumulative GPA rises to a minimum of 1.50. Failure to attain a cumulative 1.50 GPA in each subsequent semester until the cumulative GPA reaches 1.50 shall result in academic dismissal.

The statement “Placed on Academic Dismissal” will appear on the student’s permanent record. Academic dismissal is normally permanent. With good cause, students may reapply by submitting an Application for Readmission and may be accepted under special considerations.
Academic Renewal Policy

Students who return to the college after a separation of five years or more may petition for academic renewal by submitting an Academic Renewal Petition Form to Enrollment Services.

If a student meets eligibility requirements for academic renewal, D and F grades earned prior to re-enrollment are not calculated into the cumulative and curriculum grade point averages, subject to the following conditions:

- Prior to petitioning for academic renewal, the student must demonstrate renewed academic interest and effort by earning at least a 2.5 GPA in the first 12 semester hours completed after re-enrollment.
- All grades received at the college will remain a part of the student’s official transcript.
- Students will receive degree credit only for courses in which grades of C or better were earned prior to academic renewal, providing that such courses meet current curriculum requirements.
- Total hours for graduation will be based on all course work taken at the college after re-admission, as well as former course work for which a grade of C or better was earned and credits transferred from other colleges or universities.
- Students may use the academic renewal policy only once, and it cannot be revoked once approved. The notice “Academic Renewal has been granted” and the effective dates will appear on the official transcript.

Graduation Requirements

The student is responsible for fulfilling all graduation requirements and meeting all conditions listed below.

CATALOG DETERMINATION AND DEGREE DESIGNATION

The catalog year used to determine graduation requirements is the one in effect at the time the student is admitted to the curriculum from which s/he plans to graduate, provided the catalog is not more than six years old (including the year in which the student plans to graduate). Students may choose to graduate under the requirements listed in any subsequent catalog as long as it is not more than six years old (including the year in which s/he plans to graduate).

Only the degree title appears on the student’s diploma when the award is conferred. The degree major and specialization(s), if any, appear on the student’s permanent record (transcript). Multiple specializations within the same degree appear on the transcript, provided students meet the additional requirements and apply to receive multiple specializations.

APPLICATION FOR GRADUATION

Students intending to graduate must officially apply for graduation by the application deadline. The college confers degrees and certificates in December, May, and August. The college holds commencement ceremonies in December and May. Details regarding deadlines and processes are located at www.tcc.edu, search keyword: graduation.

REQUIRED COMPUTER COMPETENCIES

Tidewater Community College endorses the principle of computer competency for all students intent on completing a curriculum in excess of 45 semester credits. Students must demonstrate all of the following competencies:

- Working knowledge of computing concepts, components, and operations to accomplish educational and career tasks.
- Use of the appropriate components of an integrated productivity software package involving word processing, spreadsheet, database, and communication applications.
- Ability to access, retrieve, and apply networked information resources (e.g., online catalog, virtual libraries, and the internet).
- Use of telecommunication software (e.g., electronic mail, listservs, bulletin boards, and/or news groups) to communicate with faculty, students, and information providers.

Contact the campus Enrollment Services office for information on the ways in which students may fulfill these requirements. Students with disabilities that may affect achieving and documenting computer competencies should contact the Disability Services representative at their campus of record. Successful completion of computer competency tests does not carry any academic credit.

STUDENT OUTCOMES ASSESSMENT REQUIREMENT

As a part of the college’s efforts to improve institutional effectiveness, students may be required to take tests or complete surveys designed to measure student achievement in general education or selected majors prior to graduation. These assessment activities evaluate the college’s academic programs. Test results are confidential and aggregated across programs. No minimum score or level of achievement is required for graduation.
General Education Requirements

General education requirements address the knowledge, skills, attitudes, and values characteristic of educated persons. They are unbound by disciplines and honor the connections among bodies of knowledge. TCC degree graduates will demonstrate competency in the following general education areas:

- Communication
- Critical Thinking
- Cultural and Social Understanding
- Information Literacy
- Personal Development
- Quantitative Reasoning
- Scientific Reasoning

TCC’s associate degree programs support a collegiate experience that focuses on the above definition and attendant areas. Degree graduates will demonstrate competency in the following general education areas:

1. Communication
A competent communicator can interact with others using all forms of communication, resulting in understanding and being understood. Degree graduates will demonstrate the ability to:
- understand and interpret complex materials;
- assimilate, organize, develop, and present an idea formally and informally;
- use standard English;
- use appropriate verbal and non-verbal responses in interpersonal relations and group discussions;
- use listening skills; and
- recognize the role of culture in communication.

2. Critical Thinking
A competent critical thinker evaluates evidence carefully and applies reasoning to decide what to believe and how to act. Degree graduates will demonstrate the ability to:
- 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.

3. Cultural and Social Understanding
A culturally and socially competent person possesses an awareness, understanding, and appreciation of the interconnectedness of the social and cultural dimensions within and across local, regional, state, national, and global communities. Degree graduates 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 world-wide social, economic, geopolitical, and cultural systems.

4. Information Literacy
A person who is competent in information literacy recognizes when information is needed and has the ability to locate, evaluate, and use it effectively. Degree graduates 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; and
- understand many of the economic, legal, and social issues surrounding the use of information and access and use information ethically and legally.

5. Personal Development
An individual engaged in personal development strives for physical well-being and emotional maturity. Degree graduates will demonstrate the ability to:
- 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.

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

7. Scientific Reasoning
A person who is competent in scientific reasoning adheres to a self-correcting system of inquiry (the scientific method) and relies on empirical evidence to describe, understand, predict, and control natural phenomena. Degree graduates will demonstrate the ability to:
- generate an empirically evidenced and logical argument;
- distinguish a scientific argument from a non-scientific argument;
- reason by deduction, induction, and analogy;
- distinguish between causal and correlational relationships; and
- recognize methods of inquiry that lead to scientific knowledge.
ASSOCIATE DEGREE REQUIREMENTS
To be awarded an associate degree from the college, the student must fulfill the following requirements:

- Fulfill all of the course and credit hour requirements of the degree curriculum, with a minimum of 25 percent of the credit hours earned in course work taken at Tidewater Community College;
- Earn a grade point average of at least 2.0 in all studies completed that are applicable toward graduation in the curriculum;
- Complete one course designated “international.” (Applies to AA and AS graduates only);
- Submit an Application for Graduation online at www.tcc.edu, search keyword: graduation, by the college’s published deadline. (Deadlines are published in the TCC Schedule of Classes);
- Satisfy computer competency requirements. For correct information on how to satisfy this computer competency requirement, see www.tcc.edu, search keywords: computer competencies;
- Resolve all financial obligations to the college and return all learning resources and other college materials; and
- Be certified by appropriate college officials for graduation.

CERTIFICATE REQUIREMENTS
To be eligible for graduation with a certificate from the college, the student must fulfill the following requirements:

- Fulfill all of the course and credit hour requirements of the certificate curriculum, with a minimum of 25 percent of the credit hours earned in course work taken at Tidewater Community College;
- Earn a grade point average of at least 2.0 in all studies completed that are applicable toward graduation in the curriculum;
- Submit an Application for Graduation online at www.tcc.edu, search keyword: graduates by the college’s published deadline. (Deadlines are published in the TCC Schedule of Classes);
- Resolve all financial obligations to the college and return all learning resources and other college materials; and
- Be certified by appropriate college officials for graduation.

Students graduating with a certificate consisting of more than 45 credit hours must also meet the college’s computer competency requirement. Information on how to satisfy this requirement is located on the College’s website at: www.tcc.edu/students/graduates/computer.htm.

SECOND DEGREE OR CERTIFICATE
In awarding students an additional certificate or degree, the college may grant credit for all previously completed applicable courses that are requirements of the additional degree or certificate. However, the awards must differ from one another by at least 25 percent of the credits required.

COMMENCEMENT
The college holds two formal commencement ceremonies each year for students who meet graduation requirements for one-year certificates and two-year degree programs. Attendance at these formal commencement ceremonies is strongly encouraged.

College Records Policies

STUDENT ADDRESS OF RECORD
The college sends official communications to the address the student gives to campus Enrollment Services, or to the student’s TCC e-mail account. To make address changes, students must complete a Student Data Change form and submit it to a campus Enrollment Services office.

FINAL GRADE REPORTS
Final grades for each term become a part of the student’s permanent record and are recorded on the official transcript. Term grade reports are available to the student via the college’s website (www.tcc.edu) through the Student Information System (SIS).

TRANSSCRIPTS AND CERTIFICATIONS
A transcript is a copy of a student’s permanent academic record. To receive a personal copy of their transcript or to send a copy of their transcript elsewhere, students must submit either a written or web request. Transcripts sent to educational institutions or agencies must be official and carry the college seal. Generally, transcripts given or mailed directly to a student will not bear the college seal and will be stamped “Issued to Student.” Students must settle all financial obligations with the college before a transcript will be released. Visit www.tcc.edu, search keyword: transcripts, for options for requesting official transcripts.

Official transcripts normally take three to five working days to process, or longer during heavy registration periods or grade processing times. Transcripts for students who have taken courses on the quarter system (prior to summer 1988) or through cross-registration may take longer to process.

Students can obtain an unofficial copy of their transcript by using the Student Information System (SIS) at www.tcc.edu.

To request a hard copy of the unofficial transcript, students must complete a request form and present the completed form and a picture ID to the Enrollment Services office. The college can provide most unofficial transcripts on the same day. Some requests must be sent to Central Records if the records are very old or involve cross-registration.

Certifications are letters or forms verifying a student’s enrollment status for health and auto insurance companies, military IDs, scholarships, job applications, promotion packages, etc. These requests normally take seven to fourteen working days or longer to process during heavy registration periods or grade processing times. Students must settle all financial obligations with the college before a certification will be released. Contact the campus Enrollment Services office to request certifications.

Students must present a picture ID to pick up transcripts or certifications. A third party may pick up a student’s transcript or certification, but only if the student has provided the college written permission, dated and signed by the student, to release the document to a specific individual. This specified individual must also present his or her picture ID.

Contact campus Enrollment Services for information and assistance with transcripts and certifications.
HOLD ON RECORDS
When a student’s records are put on hold, s/he will not be permitted to register, nor will the college issue transcripts, certificates, or degrees to a student until all financial obligations to the college have been settled.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)
The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. TCC policy governing a student’s right to access, challenge the accuracy, or request release of his/her education record and grades may be found at www.tcc.edu, search keyword: ferpa.

DIRECTORY INFORMATION POLICY
The following information is considered directory information, which may be released without student authorization unless the student notifies the Enrollment Services office in writing by the end of the first week of classes that the information should not be released:
1. Student’s name
2. Participation in officially recognized activities and sports
3. Address
4. Telephone listing
5. Weight and height of members of athletic teams
6. Electronic mail address
7. Degrees, honors and awards received
8. Major field of study
9. Dates of attendance
10. Grade level
11. The most recent educational agency or institution attended
12. Course credit load

The college must comply with judicial orders or lawfully issued subpoenas provided the institution makes a reasonable attempt to notify the student in advance of the compliance.

STUDENT RECORDS RETENTION POLICY
The permanent record is the only official document of a student’s academic history and the only official document used for record reconciliation. All other student documents are subject to disposal by the college in accordance with state policy.

Student Conduct
The chancellor of the VCCS is authorized by the State Board for Community Colleges to impose appropriate penalties, including expulsion from the college for student conduct which tends to discredit or injure the college. This authority has been delegated by the chancellor to the administration of each community college, subject to review by the chancellor or a delegated representative.

The VCCS guarantees to students the privilege of exercising their rights of citizenship under the Constitution of the United States without fear of prejudice and takes special care to ensure due process and to spell out defined routes of appeal when students feel their rights have been violated.

GENERAL INFORMATION
Students are considered to be responsible adults and are expected to maintain standards of conduct appropriate to membership in the college community. The college, therefore, emphasizes standards of student conduct rather than limits or restrictions on students. Guidelines and regulations governing student conduct usually are developed by representatives of the student body, faculty, counseling staff, and administration.

The college reserves the right to take disciplinary action compatible with its own best interest if such action is clearly necessary. Failure to meet standards of conduct acceptable to the college may result in disciplinary probation, suspension, dismissal, or other penalty depending upon the nature of the offense.

Students who are dismissed must reapply to the college. Readmission is not assured.

RIGHT TO ATTEND CLASS
Students have the right to attend duly assigned classes on any TCC campus. That right includes the right to attend the class without physical violence, fear of violence, psychological abuse, or racial, sexual, or other harassment.

Academic Conduct
ACADEMIC FREEDOM
Tidewater Community College is committed to the concept of academic freedom as presented in the American Association of University Professors policy statement.

Membership in the academic community imposes on students, faculty members, administrators, and trustees an obligation to respect the dignity of others, to acknowledge their right to express differing opinions, and to foster and defend intellectual honesty, freedom of inquiry and instruction, and free expression on and off the campus (AAUP Policy Documents & Reports, 1990 edition, 77).

Academic institutions exist for the transmission of knowledge, the pursuit of truth, the development of students, and the general well-being of society. Free inquiry and free expression are indispensable to the attainment of these goals. As members of the academic community, students should be encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth.

Freedom to teach and freedom to learn are inseparable facets of academic freedom. The freedom to learn depends upon appropriate opportunities and conditions in the classroom, on the campus, and the larger community. Students should exercise their freedom with responsibility.

The responsibility to secure and to respect general conditions conducive to the freedom to learn is shared by all members of the academic community (AAUP Policy Documents & Reports, 1990 edition, 153).

Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study in which they are enrolled.
Students should have protection through orderly procedures against prejudiced or capricious academic evaluation. At the same time, they are responsible for maintaining standards of academic performance established for each course in which they are enrolled (AAUP Policy Documents & Reports, 1990 edition, 154).

If a problem arises concerning class content and/or procedures, the student should discuss the issue with the faculty member before seeking an administrator’s help. If a student feels that s/he has been injured by an infringement of academic freedom, the Student Grievance Procedure provides an avenue for resolution. The purpose of the Student Grievance Procedure is to provide equitable and orderly process to resolve grievances, other than appeals of final grades, by students at TCC.

**ACADEMIC MISCONDUCT**

Academic misconduct includes, but is not limited to, the following actions:
- cheating on an examination or quiz—either giving or receiving information;
- copying information from another person on graded assignments;
- using unauthorized materials during tests;
- collaboration during examinations;
- buying, selling, or stealing examinations;
- arranging a substitute for oneself during examinations;
- substituting for another person, or arranging such a substitution;
- plagiarism—intentional or accidental;
- submission of work other than your own for written assignments;
- collusion with another person or persons in submitting work for credit, in class or lab, unless such collaboration is approved in advance by the instructor.

**FACULTY DISPOSITION OF ACADEMIC MISCONDUCT**

In a case of alleged academic misconduct for which the penalty sought is not dismissal from the college, the faculty member will (1) investigate the matter to gather reliable evidence of misconduct; and (2) review the facts of the incident and the proposed penalty with the appropriate academic dean.

The faculty member may then take one or more of the following actions:
- require the work to be accomplished again;
- give no credit for the test, paper or exercise;
- assign a grade of W or F for the course; or
- refer the matter to the campus Dean for Student Services or designee for possible disciplinary sanction through the college’s disciplinary procedure.

If the faculty member chooses to refer the matter to the campus dean or designee for disposition, the Plenary Disciplinary Procedure shall be followed, and the student’s dismissal from the college is a possibility.

Students may appeal a faculty penalty through the Student Final Grade Appeal Procedure when a final course grade is involved, or through the Student Grievance Procedure for penalties not involving final course grades.

**Student Misconduct**

Students may be subject to disciplinary action for on-campus or off-campus conduct, including academic misconduct. Federal, state and local laws apply on campus. Disciplinary action also may lead to criminal charges.

Disciplinary action by the college is not a criminal process, and the double jeopardy doctrine does not apply to student discipline. The college may elect to process a charge of misconduct even if the student may be or has been charged with a criminal offense arising out of the same act. The college will not delay its processing of a matter because of pending criminal charges, a trial, or an appeal.

The college places primary responsibility for student conduct on the student. Students are also responsible for the conduct of their guests at college events. Consult the TCC Student Handbook for additional information on acts that may result in disciplinary action or lead to criminal charges.

**ACCEPTABLE USE OF ELECTRONIC RESOURCES**

As part of its mission, the college provides access to the internet on each campus. In accordance with the American Library Association’s position, TCC offers the widest possible access to all resources of the internet without discriminating against any category of library user unless restricted by federal, state, local, and institutional laws and policies. These include laws dealing with copyright, libel, obscenity, and plagiarism. Since the internet is an unregulated information source, the college has no control over the information found therein and cautions that the internet may contain inaccurate materials or materials of a controversial nature. The staff reserves the right to monitor its computer resources to protect the integrity of the computing systems, to track problems, and to insure equal and appropriate access to all users (i.e., time limits can be imposed during high use periods). Computer users are asked to employ common sense and courtesy in their use of the college’s resources.

**COMPUTER ETHICS GUIDELINE**

State Law (Article 71 of Title 182 of the Code of Virginia) classifies damage to computer hardware or software (182-1524), unauthorized examination (182-1525), or unauthorized use (182-1526) of computer systems as (misdemeanor) crimes. Computer fraud (182-1523) and use of a computer as an instrument of forgery (182-1524) can be felonies. Internal procedures for enforcement of VCCS policy are independent of possible prosecution under the law. For additional information, see the TCC Student Handbook.

**DISCRIMINATION OR HARASSMENT**

It is the policy of Tidewater Community College to provide equal employment and educational opportunities for all persons without regard to race, color, religion, national origin, political affiliation, veteran status, gender, age, or sexual orientation and for all otherwise qualified persons with disabilities. This policy permits appropriate employment preferences for veterans and specifically prohibits discrimination against veterans.

TCC does not tolerate discrimination or harassment on the basis of race, color, religion, national origin, political affiliation, veteran status, gender, age, sexual orientation, or disability.
SEXUAL HARASSMENT
The harassment of students, faculty, or staff due to their sex is prohibited. College disciplinary or grievance procedures will be utilized when allegations of sexual harassment are made. The college will utilize the Notice of Investigative Guidance on Sexual Harassment, published by the U.S. Office of Education’s Office of Civil Rights, in addressing such matters.

Tidewater Community College’s position is that sexual assault and sexual harassment are forms of misconduct that undermine the integrity of the student and employment relationship. No student or employee—either male or female—should be subject to unsolicited and unwelcome sexual overtures or conduct, either verbal or physical. Sexual misconduct does not refer to occasional compliments of a socially acceptable nature. It refers to behavior that is not welcome, that is personally offensive, and that debilitates morale, and therefore, interferes with work and academic effectiveness. Such behavior may result in disciplinary action up to and including dismissal. Additionally, a student or employee charged with sexual misconduct can be prosecuted under Virginia criminal statutes.

SMOKING
Smoking and/or the use of any tobacco product is prohibited in all buildings at TCC and in state-owned vehicles.

WEAPONS AND FIREARMS
Tidewater Community College’s employees (including temporary workers provided by other employers), vendors, contractors, students, and volunteers are prohibited from carrying, maintaining, or storing a firearm or weapon on college property and in any college facility, even if the owner has a valid permit.

Any such individual who is reported or discovered to possess a firearm or weapon in violation of this policy will be asked to remove it immediately. Failure to comply may result in the imposition of appropriate employee or student sanctions, including disciplinary action, and/or arrest.

The college provides an exception to this prohibition for sworn law enforcement officials appointed pursuant to appropriate sections of the Code of Virginia and sworn federal law enforcement officers.

Academic Services
The college’s full range of academic services, including tutoring and other individual assistance with academic matters, is described more fully in the TCC Student Handbook.

LEARNING RESOURCES CENTERS (LRC)
Each campus houses a library and learning laboratory in a Learning Resources Center (LRC). A separate Slide and Print Library is located at the Visual Arts Center.

The Learning Resources Centers contain research materials in both print and electronic format to support the courses, curricula, and mission of the college. Library materials include books, newspapers, magazines, journals and an extensive collection of indexes, abstracts and full text databases. Materials in the LRC Laboratories include videotapes, audiotapes, films, cd-roms, computer files, and other audiovisual materials. In addition, faculty members may place materials on reserve in the Library or the Learning Laboratory for their students’ use. Library and Learning Laboratory staff members are available to help students take full advantage of the available resources. The Learning Resources Centers maintain a web site that provides access to the LRC catalog, the electronic research resources, and to many of the services the LRC provides.

Students must have a valid Tidewater Community College ID card in order to check out LRC materials for home use or to access materials in restricted LRC locations. Students are responsible for the LRC materials they use. Patrons who fail to return books/materials by the due date will receive 30 days notice prior to being submitted to the college collection office. Patrons will be charged for the cost of the materials as well as a collection fee. The college will use internal and external resources as necessary to ensure the collection of the debt. Student records will be sealed and no services will be provided until the entire debt is satisfied. Additional LRC policy documents are identified on the LRC website at www.tcc.edu, search keywords: LRC usage and are available in the campus LRCs.

SERVICE LEARNING
Some courses at TCC incorporate a form of active learning called Service Learning. Service Learning is a teaching method that prepares students for engaged citizenship through meaningful service in the community and structured reflection on that service. Students practice newly acquired skills and knowledge in real-life problem-solving situations and extend learning into the community to enhance the classroom experience and connect learning with civic values and responsibilities.

Student Services
Tidewater Community College’s student services programs are described in more detail in the TCC Student Handbook.

COUNSELING
Counselors are available by appointment or on a walk-in basis to assist students with academic, career, and life planning. They help students explore their interests and identify career goals. With a counselor’s assistance, students develop an educational plan to meet their goals whether it is to continue their education at a four-year college or university, to prepare for immediate entry into the job market, or to develop skills for career advancement or personal growth.

Counselors can help students address issues related to career indecision, academic difficulty, time management, low self-esteem, and other obstacles to academic success. They teach a variety of courses on study skills, career development, college survival skills, time management, and test-taking skills.

TCC counseling offices offer individual and group counseling to help students with these concerns. Referral to appropriate local resources is available if a student requires additional professional assistance.

TRANSFER COUNSELING
Transfer counselors can assist students with selecting a transfer institution and designing a program to maximize transferability of courses to public or private colleges and universities in Virginia or out-of-state.
CAREER DEVELOPMENT
The college offers a comprehensive program to help students develop, evaluate, and implement a career plan. This approach helps students become aware of their interests, skills, values, and life-style preferences and relate them to a career decision. Resources are available to direct students to accurate, up-to-date information about future job outlooks and salaries. Each campus offers individual career counseling and seminars, workshops, and short courses on career-related topics.

STUDENT DEVELOPMENT
The college offers a variety of activities to orient students to the college and help them acquire the skills necessary for success. All curricular students, except those in career studies certificate programs, shall participate in a course such as study skills, college success skills, career planning, or other student development class designed to foster student success. This course should be completed within the first 15 credit hours of enrollment, unless the requirement is waived. The requirement may be waived for students who hold an associate or bachelor’s degree from a regionally accredited institution. Other requests for a waiver may be considered on a case-by-case basis. Students must still successfully complete the required number of credits for their degree. Students should examine their curriculum to see if a particular Student Development (SDV) course is required. If not, students should choose the topic that best meets their orientation needs.

JOB REFERRAL SERVICE
The college offers an employment referral service designed to assist students and graduates in finding employment. Job listings are received from various employers (local companies, federal government, state and city agencies and many more), and posted online to the HireNet.net website. The college also provides additional services such as on-campus recruitment by local employers, assistance with resume writing, and interviewing skills. For additional information, contact a campus Student Employment Services office (757) 822-7228 or the Career Services office.

COOPERATIVE EDUCATION PROGRAM
The Cooperative Education Program is designed to provide students with practical work experience that carries college credit for participating in a coordinated, paid learning program with a cooperating employer. “Co-op” bridges the gap between theory and practice by allowing students to apply skills learned in the classroom on the job. With the assistance and advice from the Cooperative Education office, students can decide if cooperative education will enhance their academic program.

INTERNATIONAL STUDENT SERVICES
Non-immigrant students holding or seeking F-1 visa status can obtain the necessary forms and instructions on how to apply for an I-20 from the International Student Services office. Prospective students in non-immigrant classes other than F-1 are required to meet with the International Student Advisor to determine admission eligibility and/or limitations. Advising services for international students are available at the Virginia Beach Campus.

DISABILITY SERVICES
The mission of TCC’s Disabilities Services is to ensure compliance with state and federal law by providing eligible students with disabilities equal access to the curriculum, facilities, and support services. In furtherance of this mission, college-wide disabilities services promote awareness through the dissemination of information to the college community, including training and consultation with faculty.

A counselor is available on each campus to help students with physical, sensory, and/or learning disabilities, or chronic health problems that require assistance, academic accommodations, or program modifications. The Coordinator for Disability Services is based at the Norfolk Campus and maintains office hours at the other campuses. Students needing accommodations are encouraged to contact the disability counselor 45 days before classes begin. Telephone numbers for Disability Services are listed in the directory for each campus. All contacts and services are confidential.

FINANCIAL AID
Each campus maintains a Financial Aid office, where students can receive information about types of financial aid, application forms, and assistance in completing applications for financial assistance. The Financial Aid office also monitors students’ eligibility and coordinates disbursement of financial aid awards.

OPEN DOOR PROJECT
The Open Door Project is a federally funded Student Support Services/TRIO program that provides academic support and personal services to eligible students at the Norfolk and Portsmouth campuses. The goal of the project is to help participants improve their academic performance, stay in college, graduate from TCC, and transfer to a four-year college or university. For more information, contact the Open Door Project office at (757)-822-1218.

THE WOMEN’S CENTER
The TCC Women’s Center maintains an office on each campus to provide services that help women achieve their academic and personal goals. Among the services offered are workshops, counseling, weekly support groups, crisis intervention, and help in obtaining financial assistance. Contact a campus Women’s Center office for more information.

VETERANS AFFAIRS OFFICE
A Veterans Affairs office on each campus assists students in applying for VA benefits, in certifying eligibility, and in maintaining accurate enrollment and student status records.

MILITARY BASE REPRESENTATIVES
TCC provides comprehensive student enrollment and counseling services at the major military bases - Naval Station Norfolk, Joint Expeditionary Base, Naval Air Station Oceana, Dam Neck Annex and Naval Medical Center Portsmouth.

STUDENT ACTIVITIES
TCC provides a comprehensive student activities program that includes publications, intramural athletics, honor societies, campus and community-based cultural and social events, and student clubs and organizations recognized by the Student Government Association and approved by the appropriate college authorities.
COLLEGE GOVERNANCE
The collegial governance of Tidewater Community College is founded on the belief that the internal constituencies of the institution—administration, faculty, classified employees, and students—are to be genuinely represented and have a meaningful voice in the decisions affecting the operation, policy development, and strategic planning of the college. The purpose of the TCC Governance Structure is to define the roles that board members, administrators, faculty, classified staff, and students should play in shared responsibility and cooperative action. The design of the governance system adheres to two basic operating principles—that people’s time is a precious commodity that should not be wasted, and that people do their best work when there is a high expectation that their work will matter.

Mutual trust, good faith, support, and commitment to the institution and its students are essential to the success of shared governance. Because shared governance is intended to serve the entire college, it is incumbent upon all constituent groups, committees, and task forces to ensure that representation from all areas of the college is fair, timely, and inclusive.

For further information on college governance, visit the college website at www.tcc.edu, search keyword: governance.

Student Life Policies

CHILDREN ON CAMPUS
TCC has no facilities to provide care for the children of students or visitors. Children cannot be left unattended on the grounds, in automobiles, snack bars, lounge areas, administrative offices, registration sites, or Learning Resources Centers. Children cannot be taken into classrooms or laboratories. Failure to comply with this policy will lead to disciplinary action or, when warranted, referral to appropriate law enforcement officials.

HEALTH INSURANCE
Recognizing that comprehensive health care insurance is often vital to one’s efforts to maintain a healthy life-style, the college makes health care insurance available to TCC students who desire coverage. Students can obtain information and an application in the office of the campus Dean for Student Services. International students can obtain health insurance information from the International Student Services office on the Virginia Beach Campus.

DRUG AND ALCOHOL ABUSE PREVENTION
The unlawful possession, use, or distribution of drugs and alcohol by students and employees on college property or as a part of any college activity is prohibited.

The legal sanctions under federal and state law for unlawful possession, use, or distribution of illicit drugs and alcohol include fines and imprisonment.

Substantial health risks have long been associated with the use of illicit drugs and alcohol. These include death; severe impairment of respiratory, circulatory, and other systems; damage to various organs, including, but not limited to, the liver and the brain; and a host of other drug and alcohol induced health risks.

For further information on college governance, visit the college website at www.tcc.edu, search keyword: governance.

G E N E R A L  I N F O R M A T I O N

Drug and alcohol counseling, treatment, or rehabilitation programs are available by contacting each campus Counseling Center, or may be obtained from the Community Services Board in the student’s or employee’s city of residence, or from any private provider.

Students attending a community college may not possess, sell, use, give away, or otherwise distribute illegal drugs. Students violating this policy are subject to suspension, expulsion, or other appropriate discipline. College charges will be processed against students in the normal manner provided by the college rules.

Faculty members, staff members, or any employee of a community college may not possess, sell, use, give away, or otherwise distribute illegal drugs. Faculty members, staff members, or any employees of a community college violating this rule are subject to suspension or other appropriate discipline as provided in the policies, procedures and regulations of the State Board for Community Colleges and/or the State Personnel Statutes and/or the laws of the Commonwealth of Virginia, the counties, and city governments.

In cases where the president or the president’s designee believes that the continued presence of a person charged with possession, sale, use or distribution of illegal drugs presents a serious and immediate threat to the welfare of the college community, the students, faculty members, or staff members will be afforded due process and a hearing as soon as possible, after which appropriate action will be taken.

The college is pledged in every way possible to help individuals achieve a realistic understanding of the consequences of drug use for themselves and society. Only informed men and women can hope to make the responsible decisions required to prevent the proliferation of drug abuse. Literature concerning drugs is available from the counselors. Counseling assistance is also available on a confidential basis for any member of the college community who needs this help. Contact your campus Counseling office.

HEALTH SERVICES
TCC does not provide health services, emergency or otherwise. In case of emergency, call 911 or ask the campus switchboard operator to call 911.

INCLEMENT WEATHER CONDITIONS POLICY
When weather conditions make it necessary to delay opening, cancel classes, or close the college, one of the following notices will be provided by the TCC Information Center and local radio and television stations. Please do not call any other college telephone numbers.

Students can determine the college’s status by calling (757) 822-1122, checking the radio or television stations, or the college’s website (www.tcc.edu). One of the following notices will be provided:

1. **Message: The college is closed.**
   - The college is closed day and evening for students and staff.

2. **Message: The college will open/close at ( ).**
   - The college will open/close at designated time for students and staff.

3. **Message: The college will open at 4:00 p.m.**
   - The college will be closed for day classes and day staff, but will open for evening classes and evening staff.

4. **Message: Evening classes are cancelled.**
   - The college is closed for evening students and staff.
Tidewater Community College is a comprehensive institution of higher education offering programs of study generally extending no longer than two years beyond the high school level. Career and technical education programs (AAS and AAD degree programs, certificates, and Career Studies certificate options) prepare students for employment. The college transfer programs (AS and AA degree programs) offer freshman and sophomore courses in arts and sciences disciplines and pre-professional fields designed to meet standards acceptable for transfer to baccalaureate (four-year) degree programs.

STATE POLICY ON TRANSFER
In 1991, the State Council of Higher Education for Virginia (SCHEV) and the Virginia Community College System (VCCS) adopted the State Policy on Transfer to ensure transferability of the Associate of Arts and Associate of Science degrees from community colleges. Graduates of TCC’s university-parallel degree programs who are accepted into a baccalaureate degree program can expect to be classified as juniors and to have met lower-level general education requirements at public four-year colleges and universities in Virginia. Details on the state transfer policy are available at www.schev.edu.

Note: While TCC’s Associate of Science degree in General Studies may be transferable to many four-year institutions, the flexible design of the program is not intended to ensure the same ease of transferability as the other transfer degrees.

ARTICULATION AGREEMENTS
Tidewater Community College works with baccalaureate degree-granting institutions to develop articulation agreements that guarantee transfer students are treated on an equal basis with the receiving institution’s native students. The Virginia Community College System also negotiates agreements with four-year institutions that guarantee admission to qualified students enrolled in any community college in the VCCS.

TCC’s guaranteed admissions and articulation agreements apply only to graduates of the college’s university-parallel transfer degree programs. Students interested in transferring to a four-year institution prior to completing the associate degree must apply through the transfer institution’s competitive admissions process, and transferability of course work will be evaluated on a course-by-course basis.

TCC works continuously to create additional transfer options and enhance and update existing transfer agreements. Guaranteed admissions agreements are currently available with Christopher Newport University, the College of William and Mary, James Madison University, Longwood University, Norfolk State University, Old Dominion University, Radford University, the University of Mary Washington, the University of Virginia, the University of Virginia’s College at Wise, Virginia Commonwealth University, Virginia State University, and Virginia Tech’s colleges of Agriculture and Life Sciences and Engineering for students who meet the conditions outlined in the agreements. TCC or the VCCS also has signed agreements with Cappella University, ECPI College of Technology, Emory and Henry College, Ferrum College, Hampton University’s College at Virginia Beach, Hollins University, Liberty University, Lynchburg College, Mary Baldwin College, Randolph College, Regent University, Regis University, Saint Leo University, Strayer University, Sweet Briar College, the University of Phoenix, Virginia Wesleyan College, and Virginia Union University. Most general agreements guarantee admission to the university, but not necessarily to the student’s major of choice. Many programs have competitive admissions that require students to meet additional grade point average and course requirements for admission to the program.

Program-to-program articulation agreements provide benefits for students that go beyond the guarantees outlined in the State Policy on Transfer and the guaranteed admissions agreements. Details on the transfer agreements are available from a campus transfer counselor or academic advisor. Students are advised to consult frequently with an advisor or counselor to get the most accurate information on transfer and articulation.

TWO-YEAR TRANSFER GRANT
The Two-Year College Transfer Grant Program (CTG) was passed into law in Virginia in 2007. Under this program, qualified students who complete their associate’s degree at a Virginia two-year public college and then transfer to a participating Virginia four-year college or university may receive the new CTG award.

For more information, go to www.schev.edu (click on Financial Aid) or the Financial Aid office at your intended four-year transfer institution. Additional information is available from the Virginia Education Wizard at https://www.vawizard.org/vccs/Transfer.action.

GENERAL EDUCATION REQUIREMENTS
In selecting courses, students are expected to follow the curriculum outline for their intended major. While general education courses other than those designed specifically for transfer may be used to meet portions of the general education requirements, principles published by the Commission on Colleges of the Southern Association of Colleges and Schools require that general education courses be general in nature and not “…narrowly focused on those skills, techniques, and procedures peculiar to a particular occupation or profession.”

Credits transferred into TCC from an accredited institution may be used to satisfy these requirements, but students should request a transcript evaluation to determine which courses may be applied. With careful planning, some general education courses may also meet prerequisites for courses in the major. Students are advised to consult a TCC advisor or counselor and appropriate transfer guides to ensure that selected courses will meet TCC’s and the intended transfer institution’s requirements.
The following list is provided as a guide to planning and is not intended to be a comprehensive summary of TCC courses that may be used to meet general education requirements in associate degree programs. For the purposes of transfer, the list includes courses most commonly accepted to meet core requirements at public four-year institutions. While transfer students who complete the associate’s degree can expect to have met the lower-level general education requirements, transcripts for transfer students who do not complete the associate’s degree will be reviewed by the receiving institution on a course-by-course basis. Not all courses listed below will meet core requirements at all four-year institutions, but students may receive elective credit.

### College Composition
- ENG 111, ENG 112

### Speech/Communications
- CST 100, CST 110

### Humanities, Fine Arts, and Foreign Languages
- ART 201, ART 202, CST 130, CST 141, CST 142, CST 151, ENG 125, ENG 241, ENG 242, ENG 243, ENG 244, ENG 251, ENG 252, ENG 253, FSE 203, FRE 204, HUM 201, HUM 202, HUM 241, HUM 242, HUM 256, HUM 259, HUM 260, MUS 121, MUS 122, MUS 221, MUS 222, PHI 101, PHI 102, PHI 111, PHI 220, PHI 226, REL 200, REL 210, REL 215, REL 230, SPA 203, SPA 204

### Social and Behavioral Sciences
- ECO 120, ECO 201, ECO 202, GEO 200, GEO 210, GEO 220, GEO 221, GEO 222, GEO 225, HIS 101, HIS 102, HIS 111, HIS 112, HIS 121, HIS 122, PLS 130, PLS 211, PLS 212, PLS 241, PLS 242, PSY 200, PSY 201, PSY 202, PSY 215, PSY 216, PSY 230, SOC 201, SOC 202, SOC 211, SOC 212, SOC 268, SSC 210

### Natural Sciences
- BIO 101, BIO 102, BIO 141, BIO 142, CHM 111, CHM 112, GOL 105, GOL 106, GOL 110, GOL 111, GOL 112, NAS 125, NAS 130, NAS 131, NAS 132, PHY 201, PHY 202, PHY 241, PHY 242

### Mathematics
- MTH 1151, MTH 1161, MTH 152, MTH 158, MTH 163, MTH 166, MTH 173, MTH 240, MTH 270

### Health and Physical Education
- DIT 125, HLT 100, HLT 106, HLT 110, HLT 116, HLT 121, HLT 122, HLT 130, HLT 138, HLT 200, HLT 204, HLT 215, HLT 226, PED (any activity course)

### Student Development
- SDV 100 or other appropriate SDV course

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### AAS/AAS Degrees and Certificates
In selecting courses, students are expected to follow the curriculum outline for their intended major and specialization. Where appropriate, students may select courses from lists of approved courses provided by their division office to meet requirements in the major. While general education courses other than those designed specifically for transfer may be used to meet portions of the general education requirements, principles published by the Commission on Colleges of the Southern Association of Colleges and Schools require that general education courses be general in nature and not “…narrowly focused on those skills, techniques, and procedures peculiar to a particular occupation or profession.” AAS/AAS degrees generally are not designed for transfer, but students can increase the transferability of selected applied degree programs by substituting transfer courses where appropriate to meet program requirements.

### GENERAL ELECTIVES
In addition to general education and courses required for their major, students may also have the opportunity to enroll in a credit course as a general elective. The curriculum outline for each program lists specific courses students must take to complete the degree or certificate, and most programs limit student choice to lists of approved courses. Some programs, however, may provide flexibility for students to select any credit course at the 100- or 200-level in which they have an interest. Transfer students are advised to consult a TCC advisor or counselor and the transfer institution’s transfer guide to determine transferability of elective courses.

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1. May be used in applied programs only
2. VCCS/TCC requirements; generally not transferable or transferable as elective credit

### MAJOR FIELD COURSE REQUIREMENTS AND PREREQUISITES

#### AAS Degrees
In selecting courses, students are expected to follow the curriculum outline for their intended major and specialization. Students who plan to transfer to a four-year college or university are urged to acquaint themselves with the requirements of the institution and major department to which they intend to transfer. With careful planning, students may be able to meet both general education requirements and prerequisites for the major with the same course(s), allowing greater flexibility in selecting electives. Students should consult their advisor or counselor to select courses most appropriate for their curriculum. Many TCC courses are transferable as general electives even if they do not fulfill core requirements.
College/University Transfer Programs

### Associate of Arts Degree
- Liberal Arts

### Associate of Science Degree
- Business Administration
  - Specialization: International Business (see www.tcc.edu for details)
- Engineering
- General Studies
- Science
  - Specialization: Computer Science
- Social Sciences

### Certificate
- General Education

The Associate of Arts (A.A.) and the Associate of Science (A.S.) degree programs are designed for students who plan to transfer to four-year colleges or universities. Courses in these programs parallel those required during the freshman and sophomore years of four-year Bachelor of Arts (B.A.) and Bachelor of Science (B.S.) curricula. The college publishes a basic guide to transfer programs that is available at campus admissions offices.

Students planning to transfer should meet with a transfer counselor to plan their program of study and investigate the requirements of transfer institutions before choosing electives.

In addition to the college’s general admission requirements, students are required to complete placement tests in reading, composition, and mathematics. The college requires developmental courses for students who need assistance with developing the basic skills necessary to succeed in college-level courses.

In order to graduate with the A.A. or the A.S. degree, students must meet the college’s computer competency requirement and successfully complete a course classified as “international.” (Eligible international courses are identified in the TCC Schedule of Classes booklet each term.)

Beginning Fall Semester 2010, TCC will offer a specialization in International Business under the A.S. degree program in Business Administration. See www.tcc.edu for details.

### Liberal Arts

The Associate of Arts (A.A.) degree program is designed for students who plan to transfer to a four-year college or university to pursue a Bachelor of Arts (B.A.) degree program in the liberal arts. Four-year liberal arts programs prepare graduates for a wide variety of jobs in business, the arts, education, medical and legal professions, and in social and public service occupations. Liberal studies emphasize fine arts, language, literature, philosophy, mathematics, science, social science and analytical and critical thinking skills, all of which prepare students for lifelong learning and social, cultural, and technological change.

Courses required for the Liberal Arts degree are available on all four campuses.

### ASSOCIATE OF ARTS DEGREE: LIBERAL ARTS

(Program Code: 648)

#### Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>HIS</td>
<td>History Elective(^3)</td>
<td>3</td>
<td>Placement into ENG 111</td>
</tr>
<tr>
<td>MTH 158</td>
<td>College Algebra (or MTH 163)</td>
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<td>CST 100</td>
<td>Principles of Public Speaking(^2)</td>
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**Semester Total** 17

#### Semester 2

<table>
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<th>Prerequisite</th>
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<td>ENG 112</td>
<td>College Composition II</td>
<td>3</td>
<td>ENG 111</td>
</tr>
<tr>
<td>HIS</td>
<td>History Elective(^3)</td>
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<td>MTH 240</td>
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<td>Beginning Foreign Language Sequence(^1)</td>
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**Semester Total** 18
## Transfer Education

### Semester 3

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<th>Prerequisite</th>
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<td>Intermediate Foreign</td>
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<td>Language Sequence¹</td>
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### Semester 4

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<td>Intermediate Foreign</td>
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<td>Language Sequence¹</td>
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Total Minimum Credits: 61

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. Students should consult an academic advisor or counselor to choose the appropriate course(s).
2. Students may substitute CST 110 for CST 100. Consult transfer institution to ensure that the substitution is appropriate for intended transfer program.
3. Students may select any of the following courses to meet this requirement: HIS 101, 102, 111, 112, 121, or 122.

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## Business Administration

The Associate of Science (A.S.) degree program in Business Administration is designed for students who plan to transfer to a four-year college or university to pursue a Bachelor of Science (B.S.) degree in business administration. Typical majors include accounting, economics, information systems, international business, finance, management, marketing, and public administration.

Courses required for the Business Administration degree are available on all four campuses.

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### Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ENG 111</td>
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<td>HIS</td>
<td>History Elective³</td>
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<td>Placement into ENG 111</td>
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<td>ITE 115</td>
<td>Introduction to Computer Applications and Concepts</td>
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<td>MTH 163</td>
<td>Precalculus I</td>
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<td>Placement</td>
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<td>College Success Skills</td>
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<td>History Elective³</td>
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<td>ENG 111</td>
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<td>MTH 270</td>
<td>Applied Calculus</td>
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### Semester 3

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<td>ECO 201</td>
<td>Principles of Macroeconomics</td>
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<tr>
<td>Health/Physical Education Elective¹</td>
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### Semester 4

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<th>Credits</th>
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<tbody>
<tr>
<td>ACC 212</td>
<td>Principles of Accounting II</td>
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<td>ACC 211</td>
</tr>
<tr>
<td>BUS 216</td>
<td>Probability and Statistics for Business and Economics</td>
<td>3</td>
<td>MTH 163 and ITE 115</td>
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<tr>
<td>ECO 202</td>
<td>Principles of Microeconomics</td>
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<td></td>
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<td></td>
<td>3</td>
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</tr>
<tr>
<td>Humanities Elective¹</td>
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</table>

Total Minimum Credits: 60

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. Students should consult an academic advisor or counselor to choose the appropriate course(s).
2. The following courses are recommended to satisfy the approved elective: BUS 100, BUS 280, ENG 131, ITP 100, ITP 132, PLS 241, CST 100 or CST 110.
3. Students may select any of the following courses to meet this requirement: HIS 101, 102, 111, 112, 121, or 122.
Engineering

The Associate of Science (A.S.) degree program in Engineering is designed for students who plan to transfer to a four-year college or university to pursue a Bachelor of Science (B.S.) degree in engineering in one of several fields. The Engineering degree program includes general education and engineering courses, which cover theoretical concepts and practical applications. Graduates with the baccalaureate degree find careers in aerospace, computer, environmental, civil, electrical/electronics, mechanical, mining/metallurgical, and nuclear engineering.

Admission to the Engineering program requires satisfactory completion of the following high school units or their equivalents: four units of English; four units of mathematics (two units of algebra, one unit of plane geometry, one unit of advanced mathematics or trigonometry and solid geometry); one unit of laboratory science and one unit of social studies.

Engineering courses required for the Engineering degree are available at the Chesapeake, Portsmouth, and Virginia Beach campuses. Only the Virginia Beach Campus offers all EGR courses required in the program.

ASSOCIATE OF SCIENCE DEGREE: ENGINEERING
(Program Code: 831)

Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>CHM 111</td>
<td>College Chemistry I</td>
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<tr>
<td>EGR 120</td>
<td>Introduction to Engineering</td>
<td>2</td>
<td>MTH 164, MTH 166 or Placement into MTH 173</td>
</tr>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>HIS</td>
<td>History Elective¹</td>
<td>3</td>
<td>Placement into ENG 111</td>
</tr>
<tr>
<td>MTH 173</td>
<td>Calculus with Analytic Geometry I</td>
<td>5</td>
<td>Placement</td>
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<tr>
<td>SDV 101</td>
<td>Orientation to Engineering and Technologies</td>
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</table>

Semester Total 18

Semester 2

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tr>
<td>CHM 112</td>
<td>College Chemistry II</td>
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<td>CHM 111</td>
</tr>
<tr>
<td>EGR 110</td>
<td>Engineering Graphics</td>
<td>3</td>
<td>MTH 164, MTH 166 or Placement into MTH 173</td>
</tr>
<tr>
<td>ENG 112</td>
<td>College Composition II</td>
<td>3</td>
<td>ENG 111</td>
</tr>
<tr>
<td>MTH 174</td>
<td>Calculus with Analytic Geometry II</td>
<td>4</td>
<td>MTH 173 or equivalent</td>
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<td></td>
<td>Approved Engineering Elective²</td>
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</table>

Semester Total 17

Semester 3

<table>
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<tr>
<th>Course No.</th>
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<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
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<td>EGR 125</td>
<td>Introduction to Engineering Methods (C++)</td>
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<td>EGR 110</td>
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<td>MTH 279</td>
<td>Ordinary Differential Equations</td>
<td>4</td>
<td>MTH 174 or equivalent</td>
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<td>PHY 241</td>
<td>University Physics I</td>
<td>4</td>
<td>MTH 173</td>
</tr>
<tr>
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<tr>
<td></td>
<td>Social Science Elective³</td>
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Semester Total 18

Semester 4

<table>
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<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tr>
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<td>MTH 174 or equivalent</td>
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<td>PHY 242</td>
<td>University Physics II</td>
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<td>PHY 241</td>
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<tr>
<td></td>
<td>Health/Physical Education Elective³</td>
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<td>Humanities Elective³</td>
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</table>

Semester Total 18

Total Minimum Credits 71

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. Students should consult a faculty advisor or counselor to choose the appropriate course(s).

2 Recommended courses for approved engineering electives:
   Old Dominion University:
   - Civil EGR 140 (3); EGR 245 (3); EGR 246 (3)
   Old Dominion University:
   - Computer EGR 260 (3); EGR 261 (3); EGR 262 (2); EGR 270 (4)
   Old Dominion University:
   - Electrical EGR 260 (3); EGR 261 (3); EGR 262 (2); EGR 270 (4)
   Old Dominion University:
   - Environmental EGR 140 (3); BIO 101 (4); EGR 246 (3)
   Old Dominion University:
   - Mechanical EGR 140 (3); EGR 245 (3); EGR 246 (3); EGR 247 (1)
   Virginia Tech:
   - Civil and Environmental EGR 140 (3); EGR 245 (3); EGR 246 (3)
   Virginia Tech:
   - Computer EGR 140 (3); EGR 260 (3); EGR 261 (3)
   Virginia Tech:
   - Electrical EGR 140 (3); EGR 260 (3); EGR 261 (3)
   Virginia Tech:
   - Mechanical EGR 140 (3); EGR 245 (3); EGR 246 (3)

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

4 Students who plan to transfer to Old Dominion University are advised to take ENG 131 in place of ENG 112.
General Studies

The Associate of Science (A.S.) degree in General Studies is a flexible transfer degree that offers the student an opportunity to combine courses to meet specific career goals as well as lower level general education requirements at a four-year college or university. The program consists of 44 credits of general education with 18 additional hours that may be selected in consultation with an advisor or counselor to ensure they are appropriate to meet the student’s transfer and educational goals.

This program is not meant to insure the same ease of transferability as the other transfer degrees, but through articulation agreements, students may use a limited number of courses from selected applied programs to transfer to corresponding professional programs at four-year colleges and universities.

Students can maximize the transferability of the General Studies degree by selecting courses from those listed under General Education Requirements on page 33.

Courses required for the General Studies degree are available on all four campuses.

ASSOCIATE OF SCIENCE DEGREE: GENERAL STUDIES (Program Code: 699)

Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ENG 111</td>
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<td>HIS</td>
<td>History Elective (^1)</td>
<td>3</td>
<td>Placement into ENG 111</td>
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<td>SDV 100</td>
<td>College Success Skills</td>
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<td></td>
<td>Mathematics Elective (^1)</td>
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<td>Placement</td>
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<td></td>
<td>Science with Lab Elective (^1)</td>
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<tr>
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<td>Social Science Elective (^1)</td>
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Semester 2

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<th>Credits</th>
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<tbody>
<tr>
<td>ENG 112</td>
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<td></td>
<td>Health/Physical Education Elective (^1)</td>
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<td>Science with Lab Elective (^1)</td>
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Semester 3

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<td>Approved Elective (^3)</td>
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Semester 4

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<td>Approved Elective (^3)</td>
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Total Minimum Credits 62

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. Students should consult an academic advisor or counselor to choose the appropriate course(s). MTH 103, MTH 121, and MTH 126 cannot be used to fulfill the mathematics requirement.

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

3. The “Approved Electives” may be satisfied with any mathematics, natural science, social science, humanities, or foreign language electives listed on page 33 of the 2010-2011 catalog, EDU 200, or ITE 200, without an approved waiver/substitution required.

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

Science

The Associate of Science (A.S.) degree program in Science prepares students to transfer to a four-year college or university to pursue a Bachelor of Science (B.S.) degree in science leading to careers in fields such as biology, chemistry, dental hygiene, forestry, general science, geophysical science, mathematics, medical technology, nuclear medicine, nursing, pharmacy, and physics. The program also prepares students for transfer into baccalaureate degrees leading to advanced studies in medicine, dentistry, and veterinary medicine.

Courses required for the Science degree are available on all four campuses.

ASSOCIATE OF SCIENCE DEGREE: SCIENCE

(Program Code: 880)

Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>HIS</td>
<td>History Elective (^3)</td>
<td>3</td>
<td>Placement into ENG 111</td>
</tr>
<tr>
<td>MTH 163</td>
<td>Precalculus I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Science with Lab Elective (^1)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Semester Total</td>
<td></td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>
### Computer Science

The Associate of Science (A.S.) degree in Science with a specialization in Computer Science is designed for students who plan to transfer to a four-year college or university to pursue a baccalaureate degree in computer science. This degree program also meets the needs of students seeking teacher certification in secondary mathematics or computer science.

Computer Science courses required for the Computer Science specialization are offered exclusively at the Virginia Beach Campus.

#### ASSOCIATE OF SCIENCE DEGREE: SCIENCE SPECIALIZATION: COMPUTER SCIENCE

(Program Code: 880.01)

<table>
<thead>
<tr>
<th>Semester 1 (Based on a Fall Semester start)</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 110</td>
<td>Introduction to Computing</td>
<td>3</td>
<td>Placement into MTH 173</td>
<td></td>
</tr>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement into ENG 111</td>
<td></td>
</tr>
<tr>
<td>HIS</td>
<td>History Elective</td>
<td>3</td>
<td>Placement into ENG 111</td>
<td></td>
</tr>
<tr>
<td>MTH 173</td>
<td>Calculus with Analytic Geometry I</td>
<td>5</td>
<td>Placement into ENG 111</td>
<td></td>
</tr>
<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semester Total</td>
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<table>
<thead>
<tr>
<th>Semester 2</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 201</td>
<td>Computer Science I</td>
<td>4</td>
<td>CSC 110</td>
<td></td>
</tr>
<tr>
<td>ENG 112</td>
<td>College Composition II</td>
<td>3</td>
<td>ENG 111</td>
<td></td>
</tr>
<tr>
<td>HIS</td>
<td>History Elective</td>
<td>3</td>
<td>Placement into ENG 111</td>
<td></td>
</tr>
<tr>
<td>MTH 174</td>
<td>Calculus with Analytic Geometry II</td>
<td>4</td>
<td>MTH 173</td>
<td></td>
</tr>
<tr>
<td>Semester Total</td>
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<td>14</td>
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</table>

<table>
<thead>
<tr>
<th>Semester 3</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 205</td>
<td>Computer Organization</td>
<td>3</td>
<td>CSC 110</td>
<td></td>
</tr>
<tr>
<td>CSC 210</td>
<td>Programming with C++</td>
<td>4</td>
<td>CSC 201</td>
<td></td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Semester Total</td>
<td></td>
<td>16</td>
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<table>
<thead>
<tr>
<th>Semester 4</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 215</td>
<td>Advanced Computer Organization</td>
<td>3</td>
<td>CSC 205</td>
<td></td>
</tr>
</tbody>
</table>

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. Students should consult an academic advisor or counselor to choose the appropriate course(s). Sequenced lab courses are required in natural and physical sciences.

2. Students may select any of the following courses to meet this requirement: HIS 101, 102, 111, 112, 121, or 122.
Social Sciences

The Associate of Science (A.S.) degree in Social Sciences is designed for students who plan to transfer to a four-year college or university to pursue a baccalaureate degree in one of the social or behavioral sciences. Social Sciences include academic disciplines such as anthropology, economics, geography, history, political science, sociology, and psychology. The A.S. in Social Sciences also prepares students for some teacher certification programs.

Courses required for the Social Sciences degree are available on all four campuses.

ASSOCIATE OF SCIENCE DEGREE: SOCIAL SCIENCES (Program Code: 882)

Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>HIS</td>
<td>History Elective¹</td>
<td>3</td>
<td>Placement into ENG 111</td>
</tr>
<tr>
<td>MTH 158</td>
<td>College Algebra (or MTH 163)</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health/Physical Education Elective¹</td>
<td>2</td>
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</tr>
<tr>
<td></td>
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Semester 2

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>College Composition II</td>
<td>3</td>
<td>ENG 111</td>
</tr>
<tr>
<td>HIS</td>
<td>History Elective¹</td>
<td>3</td>
<td>Placement into ENG 111</td>
</tr>
<tr>
<td>MTH 240</td>
<td>Statistics (or MTH 164)</td>
<td>3</td>
<td>MTH 158 or MTH 163</td>
</tr>
<tr>
<td></td>
<td>Science with Lab Elective¹</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Science Elective¹</td>
<td>3</td>
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</tr>
<tr>
<td>Semester Total</td>
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</table>

Semester 3

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>CST 100</td>
<td>Principles of Public Speaking²</td>
<td>3</td>
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</tr>
<tr>
<td>CST 100</td>
<td>Approved Elective¹</td>
<td>3</td>
<td></td>
</tr>
<tr>
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<td>Humanities Elective¹</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Science Elective¹</td>
<td>3</td>
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</tr>
<tr>
<td>Semester Total</td>
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Semester 4

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>Approved Elective¹</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approved Elective¹</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approved Elective¹</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective¹</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanities Elective¹</td>
<td>3</td>
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<td></td>
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<tr>
<td>Semester Total</td>
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<tr>
<td>Total Minimum Credits</td>
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</tr>
</tbody>
</table>

1 Eligible courses (including EDU 200 and ITE 200) are listed on page 33 in the 2010-2011 catalog. Students should consult an academic advisor or counselor to choose the appropriate course(s).
2 Students may substitute CST 110 for CST 100. Consult transfer institution to ensure that the substitution is appropriate for intended transfer program.
3 Students may select any of the following courses to meet this requirement: HIS 101, 102, 111, 112, 121, or 122.

General Education

The Certificate in General Education is a flexible program that offers the student an opportunity to combine courses to meet a subset of lower level general education requirements at a four-year college or university. The Certificate is not intended to represent a comprehensive general education core or to insure the same ease of transferability as the transfer degrees. The program consists of 37 credits that may be selected in consultation with an advisor or counselor to ensure they are appropriate to meet the student’s transfer and educational goals.

Federal financial aid cannot be used to enroll in the General Education Certificate program. Students intending to use financial aid should enroll in one of the college’s A.A. or A.S. transfer degree programs.

CERTIFICATE: GENERAL EDUCATION (Program Code: 695)

Communication - 6 credits; (select TWO courses)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>ENG 112</td>
<td>College Composition II</td>
<td>3</td>
<td>ENG 111</td>
</tr>
<tr>
<td>CST 100</td>
<td>Principles of Public Speaking</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CST 110</td>
<td>Introduction to Communication</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Mathematics - 3 credits; (select ONE course)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 152</td>
<td>Mathematics for the Liberal Arts II</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>MTH 158</td>
<td>College Algebra</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>MTH 163</td>
<td>Precalculus I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>MTH 173</td>
<td>Calculus with Analytic Geometry I</td>
<td>5</td>
<td>Placement</td>
</tr>
<tr>
<td>MTH 240</td>
<td>Statistics</td>
<td>3</td>
<td>Placement</td>
</tr>
</tbody>
</table>
## Transfer Education

### Sciences - 4 credits; (select ONE course)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 101</td>
<td>General Biology I</td>
<td>4</td>
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</tr>
<tr>
<td>BIO 141</td>
<td>Human Anatomy and Physiology I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHM 111</td>
<td>College Chemistry I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GOL 105</td>
<td>Physical Geology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GOL 106</td>
<td>Historical Geology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GOL 111</td>
<td>Oceanography I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>NAS 125</td>
<td>Meteorology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>NAS 131</td>
<td>Astronomy I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PHY 201</td>
<td>General College Physics I</td>
<td>4</td>
<td>MTH 163 or equivalent</td>
</tr>
</tbody>
</table>

### Social/Behavioral Sciences - 9 credits; (select THREE courses)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>ECO 201</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECO 202</td>
<td>Principles of Microeconomics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GEO 200</td>
<td>Introduction to Physical Geography</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GEO 210</td>
<td>Introduction to Cultural Geography</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GEO 220</td>
<td>World Regional Geography</td>
<td>3</td>
<td></td>
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<tr>
<td>HIS 101</td>
<td>History of Western Civilization I</td>
<td>3</td>
<td>Placement into ENG 111</td>
</tr>
<tr>
<td>HIS 102</td>
<td>History of Western Civilization II</td>
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<td>HIS 111</td>
<td>History of World Civilization I</td>
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<td>Placement into ENG 111</td>
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<td>HIS 112</td>
<td>History of World Civilization II</td>
<td>3</td>
<td>Placement into ENG 111</td>
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<tr>
<td>HIS 121</td>
<td>United States History I</td>
<td>3</td>
<td>Placement into ENG 111</td>
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<td>HIS 122</td>
<td>United States History II</td>
<td>3</td>
<td>Placement into ENG 111</td>
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<td>HIS 141</td>
<td>African American History I</td>
<td>3</td>
<td>Placement into ENG 111</td>
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<td>HIS 142</td>
<td>African American History II</td>
<td>3</td>
<td>Placement into ENG 111</td>
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<td>PLS 212</td>
<td>U.S. Government II</td>
<td>3</td>
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<td>PLS 241</td>
<td>International Relations</td>
<td>3</td>
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<tr>
<td>PSY 200</td>
<td>Principles of Psychology</td>
<td>3</td>
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<tr>
<td>PSY 201</td>
<td>Introduction to Psychology I</td>
<td>3</td>
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</tr>
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<td>PSY 202</td>
<td>Introduction to Psychology II</td>
<td>3</td>
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<tr>
<td>SOC 200</td>
<td>Principles of Sociology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SOC 201</td>
<td>Introduction to Sociology I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SOC 202</td>
<td>Introduction to Sociology II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SOC 211</td>
<td>Principles of Anthropology I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SOC 212</td>
<td>Principles of Anthropology II</td>
<td>3</td>
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### Fine Arts/Humanities - 6 credits; (select TWO courses)

<table>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ART 201</td>
<td>History of Art I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ART 202</td>
<td>History of Art II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CST 130</td>
<td>Introduction to the Theatre</td>
<td>3</td>
<td></td>
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<tr>
<td>CST 141</td>
<td>Theatre Appreciation I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG 125</td>
<td>Introduction to Literature</td>
<td>3</td>
<td>ENG 111</td>
</tr>
<tr>
<td>ENG 241</td>
<td>Survey of American Literature I</td>
<td>3</td>
<td>ENG 112</td>
</tr>
<tr>
<td>ENG 242</td>
<td>Survey of American Literature II</td>
<td>3</td>
<td>ENG 112</td>
</tr>
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<td>ENG 243</td>
<td>Survey of English Literature I</td>
<td>3</td>
<td>ENG 112</td>
</tr>
<tr>
<td>ENG 244</td>
<td>Survey of English Literature II</td>
<td>3</td>
<td>ENG 112</td>
</tr>
<tr>
<td>HUM 201</td>
<td>Survey of Western Culture I</td>
<td>3</td>
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</tr>
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<td>HUM 202</td>
<td>Survey of Western Culture II</td>
<td>3</td>
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<td>HUM 260</td>
<td>Survey of 20th Century Culture</td>
<td>3</td>
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<td>MUS 121</td>
<td>Music Appreciation I</td>
<td>3</td>
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</tr>
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<td>MUS 122</td>
<td>Music Appreciation II</td>
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<tr>
<td>PHI 101</td>
<td>Introduction to Philosophy I</td>
<td>3</td>
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</tr>
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<td>PHI 102</td>
<td>Introduction to Philosophy II</td>
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<td>PHI 111</td>
<td>Logic I</td>
<td>3</td>
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<td>PHI 220</td>
<td>Ethics</td>
<td>3</td>
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<tr>
<td>REL 230</td>
<td>Religions of the World</td>
<td>3</td>
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</tbody>
</table>

### Electives - 9 credits; (select THREE courses)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective¹</td>
<td></td>
<td>3</td>
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<tr>
<td>Elective¹</td>
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<tr>
<td>Elective¹</td>
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<td>3</td>
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</tr>
</tbody>
</table>

**Total: 37**

Note: Students should consult a faculty advisor or counselor to choose courses appropriate to their educational goals or intended major and transfer institution.

¹ Eligible courses are listed on page 33 in the 2010-2011 catalog.
## Programs Alphabetically

<table>
<thead>
<tr>
<th>Program</th>
<th>Associate Degree</th>
<th>Specialization or Technical Plans</th>
<th>Certificate</th>
<th>Career Studies Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>page 46</td>
<td>page 46</td>
<td>page 47</td>
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<tr>
<td>Acquisition and Procurement (Management)</td>
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## Programs Alphabetically (Cont.)

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<td>page 116</td>
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<td>page 117</td>
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</table>

## Programs by Academic Cluster

### Agricultural Business Technology
- Horticulture: Greenhouse Production and Garden Center Management page 78 page 78 page 79
- Horticulture: Landscape Design and Management page 79 page 79 page 80
- Turfgrass Management page 80

### Arts and Design Technology
- Advertising Design (Graphic Design) page 75 page 75
- Associate Designer (Interior Design) page 96
- Crafts (Studio Arts) page 112 page 112
- Fine Arts (Studio Arts) page 113 page 113
- Graphic Design page 76 page 76
- Green Design for Interiors (Interior Design) page 96
- Interior Design page 95
- Kitchen and Bath Design (Interior Design) page 97
- Multimedia (Graphic Design) page 76 page 76
- Music page 101
- Photography (Studio Arts) page 114 page 114
- Theatre Arts: Performance Theatre page 115
- Theatre Arts: Technical Theatre page 115
- Theatre Arts: Theatre Arts page 115

### Business Technology
- Accounting page 46 page 46 page 47
- Acquisition and Procurement (Management) page 98
- Administrative Assistant (Administrative Support Technology) page 48 page 48
- Catering (Culinary Arts) page 60
- Classical Cooking (Culinary Arts) page 60
- Culinary Arts page 59
- Customer Service page 61
- Financial Services page 72
- Food Service Management (Hospitality Management) page 81 page 81 page 81
## Programs by Academic Cluster (Cont.)

<table>
<thead>
<tr>
<th>Academic Cluster</th>
<th>Associate Degree</th>
<th>Specialization or Technical Plans</th>
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<td>Phlebotomy</td>
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<td>Automotive Engine Diagnosis (Automotive Technology)</td>
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<td>Electrical Wiring for Technicians (Electromechanical Controls Technology)</td>
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## Programs by Academic Cluster (Cont.)

### Engineering and Industrial Technology (Cont.)

<table>
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<th>Specialization or Technical Plans</th>
<th>Certificate</th>
<th>Career Studies Certificate</th>
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<td>Inspections/Lab Technology (Civil Engineering Technology)</td>
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<td>Land Surveying (Civil Engineering Technology)</td>
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<td>Marine Diesel Technician (Diesel)</td>
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<tr>
<td>Marine Electrical (Electromechanical Controls Technology)</td>
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<td>Marine Gasoline Engine Technology</td>
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<td>Maritime Welding (Welding)</td>
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<td>Mechatronics (Electromechanical Controls Technology)</td>
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<td>Occupational Safety (Industrial Technology)</td>
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<td>Quality Assurance (Industrial Technology)</td>
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<td>Renewable Energy Technologies (Electromechanical Controls Technology)</td>
<td>page 67</td>
<td></td>
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<tr>
<td>Truck Driving</td>
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<td>Truck Driving: Class B Truck Driving</td>
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<td>Welding</td>
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### Information Systems Technology

<table>
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<tbody>
<tr>
<td>Database Specialist</td>
<td>91</td>
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<tr>
<td>Geographic Information Systems - GIS</td>
<td>92</td>
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<tr>
<td>Information Systems Technology</td>
<td>90</td>
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<tr>
<td>Modeling and Simulation (Technical Studies)</td>
<td>90</td>
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<tr>
<td>Network Administration</td>
<td>92</td>
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<td>Network Enterprise Administrator - Windows 2008</td>
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<tr>
<td>Network Infrastructure Specialist</td>
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<td>Network Security</td>
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<td>Programmer Trainee</td>
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<td>Virtualization</td>
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<td>Web Development Specialist</td>
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### Public Service Technology

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<tr>
<td>Administering Programs for Young Children (Early Childhood Development)</td>
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<tr>
<td>Administration of Justice</td>
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<tr>
<td>American Sign Language (ASL)</td>
<td>52</td>
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<td>ASL - English Interpretation</td>
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<td>Child Development (Early Childhood Development)</td>
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<td>Developmental Disabilities</td>
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<td>Early Childhood Instruction (Early Childhood Development)</td>
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<td>Fire Science</td>
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<td>Fire Science Supervision (Fire Science)</td>
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<td>Funeral Services</td>
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<td>Human Services</td>
<td>82</td>
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<td>Personal Training and Fitness</td>
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<td>School Age Care (Early Childhood Development)</td>
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## Accounting

**Associate of Applied Science Degree:**
- Accounting
  - Certificate:
    - Accounting Specialist
  - Career Studies Certificate:
    - Accounting Technician

The Accounting program offers three levels of programs, all built on the solid foundation of courses in the Career Studies Certificate program. The programs prepare students for entry-level positions or help students update their skills and knowledge if they are already working in the accounting field.

The Career Studies Certificate program prepares students for employment as a bookkeeper or as an accounting or auditing clerk. The same hours meet some of the accounting educational requirements for students who have already earned a baccalaureate degree and wish to sit for the Certified Public Accountant (CPA) exam. These classes also serve as a unique review mechanism for CPA candidates. Additionally, they meet federal government guidelines for accounting coursework to qualify for positions or promotion in the government workforce.

Twenty-six credit hours of accounting coursework give a student the necessary accounting skills to sit for the Accountancy and Taxation Exam (ACAT), which is administered twice a year. Successful completion of the exam enables students to use the description: “Accredited in Accountancy.”

A cooperative education course enables students to earn academic credit while gaining work experience at local sites.

### Associate of Applied Science Degree: Accounting

#### Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<td>ACC 211</td>
<td>Principles of Accounting I</td>
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<tr>
<td>BUS 100</td>
<td>Introduction to Business</td>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td>ITE 115</td>
<td>Introduction to Computer Applications and Concepts¹</td>
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<td>MTH 121</td>
<td>Fundamentals of Mathematics</td>
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<td>College Success Skills</td>
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**Semester Total**: 17

#### Semester 2

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<th>Course Title</th>
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<tr>
<td>ACC 212</td>
<td>Principles of Accounting II</td>
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<td>ACC 211</td>
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<tr>
<td>ACC 215</td>
<td>Computerized Accounting</td>
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<tr>
<td>BUS 125</td>
<td>Applied Business Mathematics</td>
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<td>MTH 121 or higher</td>
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<td>BUS 200</td>
<td>Principles of Management</td>
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<td>BUS 100</td>
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<td>ECO 120</td>
<td>Survey of Economics (or ECO 201 or ECO 202)</td>
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**Semester Total**: 18

#### Semester 3

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<tr>
<td>ACC 221</td>
<td>Intermediate Accounting I</td>
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<td>ACC 212</td>
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<td>ACC 231</td>
<td>Cost Accounting I</td>
<td>3</td>
<td>ACC 212</td>
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<tr>
<td>ACC 261</td>
<td>Principles of Federal Taxation I</td>
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**Semester Total**: 16

#### Semester 4

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<td>ACC 222</td>
<td>Intermediate Accounting II</td>
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<td>ACC 212</td>
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<tr>
<td>ACC 241</td>
<td>Auditing I</td>
<td>3</td>
<td>ACC 212</td>
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<tr>
<td>ACC 297</td>
<td>Cooperative Education in Accounting (or Business Elective³)</td>
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<td>BUS 220</td>
<td>Introduction to Business Statistics</td>
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<td>Health/Physical Education Elective²</td>
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**Semester Total**: 15

**Total Minimum Credits**: 66

### Certificate: Accounting Specialist

(Program Code: 202)

#### Semester 1

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<tr>
<td>ACC 211</td>
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<td>ACC 261</td>
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<tr>
<td>BUS 241</td>
<td>Business Law I (or ACC 215)⁴</td>
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<tr>
<td>ITE 115</td>
<td>Introduction to Computer Applications and Concepts¹</td>
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**Semester Total**: 13

#### Semester 2

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<td>ACC 211</td>
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<td>ENG 111</td>
<td>College Composition I</td>
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<td>Placement</td>
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<td>MTH 121</td>
<td>Fundamentals of Mathematics</td>
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<td>Placement</td>
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**Semester Total**: 10

#### Semester 3

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<th>Course Title</th>
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<td>ACC 212</td>
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<tr>
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<td>Intermediate Accounting II</td>
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<td>ACC 231</td>
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<td>ACC 212</td>
</tr>
<tr>
<td>ACC 241</td>
<td>Auditing I</td>
<td>3</td>
<td>ACC 212</td>
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**Semester Total**: 14

**Total Minimum Credits**: 37
CARER AND TECHNICAL EDUCATION

CAREER STUDIES: ACCOUNTING TECHNICIAN
(Program Code: 221.203.03)

Semester 1
Course No. Course Title Credits Prerequisite
ACC 211 Principles of Accounting I 3
ACC 261 Principles of Federal Taxation I 3
Semester Total 6

Semester 2
Course No. Course Title Credits Prerequisite
ACC 212 Principles of Accounting II 3 ACC 211
BUS 241 Business Law I (or ACC 215) 3
Semester Total 6

Semester 3
Course No. Course Title Credits Prerequisite
ACC 221 Intermediate Accounting I 4 ACC 212
ACC 222 Intermediate Accounting II 4 ACC 212
ACC 231 Cost Accounting I 3 ACC 212
ACC 241 Auditing I 3 ACC 212
Semester Total 14

Total Minimum Credits 26

1 ITE 115 satisfies the college’s computer competency requirement for graduation.
2 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
3 Business electives include courses that have the following prefix: ACC, ACQ, AST, BUS, ECO, FIN, GIS, HRI, ITD, ITE, ITN, ITP, LGL, MKT, and REA.
4 Students with a baccalaureate degree who wish to complete requirements to sit for the Certified Public Accountant (CPA) examination must take BUS 241. Those who are employed in government positions who require college credit in accounting for promotion or those seeking government employment and other students should take ACC 215.

ADMINISTRATION OF JUSTICE

Associate of Applied Science Degree:
• Administration of Justice

The Associate of Applied Science (A.A.S.) degree in Administration of Justice provides a broad educational foundation and allows for the option of concentrating in various specialties including law enforcement, corrections, or industrial security.

This A.A.S. degree provides entry into the law enforcement field and can lead to promotion to a higher rank and/or supervisory position.

For employment with most criminal justice agencies, the following qualifications are prerequisites: good physical condition, free from any physical or mental condition which might adversely affect performance, normal hearing, color vision, and eye vision correctable to 20/20; weight in proportion to height; no convictions of any crime involving moral turpitude or conviction of any felony. A background investigation will be conducted by the employing agency to confirm the foregoing.

Under a formal articulation agreement with Saint Leo University, and with appropriate course substitutions, students may be able to transfer coursework into a baccalaureate degree program. Students interested in transferring should see a TCC advisor early in their academic program and should consult Saint Leo’s catalog, transfer guide, and website.

ASSOCIATE OF APPLIED SCIENCE DEGREE: ADMINISTRATION OF JUSTICE (Program Code: 400)

Semester 1 (Based on a Fall Semester start)
Course No. Course Title Credits Prerequisite
ADJ 110 Introduction to Law Enforcement 3
ADJ 111 Law Enforcement Organization and Administration I 3
ENG 111 College Composition I 3 Placement
PSY 255 Psychological Aspects of Criminal Behavior (or ADJ 247) 3
SDV 100 College Success Skills 1 Social Science Elective1 3
Semester Total 16

Semester 2
Course No. Course Title Credits Prerequisite
ADJ 140 Introduction to Corrections 3
ADJ 201 Criminology 3
ENG 112 College Composition II 3 ENG 111
Social Science Elective1 3 Humanities Elective1 3
Semester Total 15

Semester 3
Course No. Course Title Credits Prerequisite
ADJ 211 Criminal Law, Evidence and Procedures I 3
ADJ 105 The Juvenile Justice System 3
Mathematics Elective1 3 Placement
Science with Lab Elective1 4 Health/Physical Education Elective1 2
Elective1 3
Semester Total 18

Semester 4
Course No. Course Title Credits Prerequisite
ADJ 212 Criminal Law, Evidence and Procedures II 3 ADJ 211
ADJ 236 Principles of Criminal Investigation 3
ADJ 299 Supervised Study in ADJ 4
CST 100 Principles of Public Speaking2 3 Science with Lab Elective1 4
Semester Total 17

Total Minimum Credits 66

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2 Students may substitute CST 110 for CST 100.
CAREER AND TECHNICAL EDUCATION

ADMINISTRATIVE SUPPORT TECHNOLOGY

Associate of Applied Science Degree:
- Administrative Support Technology

Specialization: Administrative Assistant

Career Studies Certificate:
- General Secretary

Specialization: Medical Secretary

Career Studies Certificate:
- Medical Secretary

Administrative Assistant

This program will train students to take on the role of administrative assistant. It also acts as an ideal refresher program for those returning to the field, or as a means of upgrading skills for professional advancement.

Students can choose from two programs, depending on the level of professional development they seek. Career Studies Certificate graduates may become general office assistants, file clerks, or administrative support assistants. With the Associate of Applied Science degree, students may become an administrative assistant, executive secretary, or office manager.

Cooperative education allows students to earn academic credit while they gain work experience at local sites.

ASSOCIATE OF APPLIED SCIENCE DEGREE: ADMINISTRATIVE SUPPORT TECHNOLOGY

Specialization: Administrative Assistant (Program Code: 298.05)

Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>AST 101</td>
<td>Keyboarding I</td>
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<tr>
<td>AST 234</td>
<td>Records and Database Management</td>
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<tr>
<td>BUS 100</td>
<td>Introduction to Business</td>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td>MTH 121</td>
<td>Fundamentals of Mathematics I</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td>or higher</td>
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<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
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Semester 2

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<tbody>
<tr>
<td>AST 102</td>
<td>Keyboarding II</td>
<td>3</td>
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<tr>
<td>AST 141</td>
<td>Word Processing (Microsoft Office Word)</td>
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<td>AST 101 or equivalent</td>
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<td>AST 150</td>
<td>Desktop Publishing I (Microsoft Office Word)</td>
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<td>AST 205</td>
<td>Business Communications</td>
<td>3</td>
<td>ENG 111</td>
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<tr>
<td>AST 236</td>
<td>Specialized Software Applications¹</td>
<td>4</td>
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<tr>
<td>BUS 125</td>
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<td>3</td>
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Semester 3

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<td>ACC 220</td>
<td>Accounting for Small Business (or ACC 211)</td>
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<tr>
<td>AST 201</td>
<td>Keyboarding III</td>
<td>3</td>
<td>AST 102 or equivalent</td>
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<tr>
<td>AST 243</td>
<td>Office Administration I</td>
<td>3</td>
<td>AST 101 or equivalent</td>
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<tr>
<td>ITE 215</td>
<td>Advanced Computer Applications and Integration Psychology Elective¹</td>
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<td>ITE 115 or AST 236</td>
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<td>AST 297</td>
<td>Cooperative Education (or Approved Elective¹)</td>
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<tr>
<td>ECO 120</td>
<td>Survey of Economics (or ECO 201)</td>
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<td>ITE 130</td>
<td>Introduction to Internet Services</td>
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<tr>
<td>Health/Physical Education Elective¹</td>
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<td>Humanities Elective¹</td>
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Total Minimum Credits: 68

CAREER STUDIES: GENERAL SECRETARY

(Program Code: 221.298.07)

Semester 1

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<td>Records and Database Management</td>
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<td>ENG 111</td>
<td>College Composition I</td>
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<td>MTH 121</td>
<td>Fundamentals of Mathematics I</td>
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<tr>
<td>or higher</td>
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<td>College Success Skills</td>
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Semester 2

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<td>AST 101 or equivalent</td>
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<td>AST 141</td>
<td>Word Processing (Microsoft Office Word)</td>
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<td>AST 101 or equivalent</td>
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<td>AST 205</td>
<td>Business Communications</td>
<td>3</td>
<td>ENG 111</td>
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<tr>
<td>AST 243</td>
<td>Office Administration I</td>
<td>3</td>
<td>AST 101 or equivalent</td>
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<td>13</td>
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</table>

CAREER & TECHNICAL EDUCATION – A

TIDewater community college • catalog 2010-11
Medical Secretary

Students in this program acquire skills in medical transcription, medical terminology, medical office procedures, records management, and word processing. The Career Studies Certificate program provides training as a receptionist or clerical office assistant in a medical office. An Associate of Applied Science degree in this field will prepare students for work as a medical office specialist.

A cooperative education program allows students to earn academic credit while they gain work experience at local sites.

ASSOCIATE OF APPLIED SCIENCE DEGREE: ADMINISTRATIVE SUPPORT TECHNOLOGY
Specialization: Medical Secretary

Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
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<th>Prerequisite</th>
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<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td>HLT 143</td>
<td>Medical Terminology I</td>
<td>3</td>
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<tr>
<td>MTH 121</td>
<td>Fundamentals of Mathematics</td>
<td>3</td>
<td>Placement, or higher</td>
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<td>SDV 100</td>
<td>College Success Skills</td>
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Semester Total 16

Semester 2

<table>
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<tr>
<td>AST 102</td>
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<td>AST 205</td>
<td>Business Communications</td>
<td>3</td>
<td>ENG 111</td>
</tr>
<tr>
<td>AST 236</td>
<td>Specialized Software Applications 4</td>
<td>4</td>
<td>AST 101 or equivalent</td>
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<tr>
<td>BUS 125</td>
<td>Applied Business Mathematics</td>
<td>3</td>
<td>MTH 121 or higher</td>
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<td>HLT 144</td>
<td>Medical Terminology II</td>
<td>3</td>
<td>HLT 143</td>
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</table>

Semester Total 16

Total Minimum Credits 29

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2 AST 236 satisfies the college’s computer competency requirement for graduation.
3 Approved Electives:
   - ASL 101 – American Sign Language I
   - BUS 117 – Leadership Development
   - BUS 200 – Principles of Management
   - BUS 201 – Organizational Behavior
   - BUS 205 – Human Resource Management
   - BUS 241 – Business Law I
   - BUS 265 – Ethical Issues in Management
   - BUS 280 – Introduction to International Business
   - MKT 260 – Customer Service Management

CAREER STUDIES: MEDICAL SECRETARY

(Program Code: 221.285.06)

Semester 1

<table>
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<tr>
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<th>Course Title</th>
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<tr>
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</tr>
<tr>
<td>AST 234</td>
<td>Records and Database Management</td>
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<td>HLT 143</td>
<td>Medical Terminology I</td>
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Semester Total 9

Semester 2

<table>
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<th>Prerequisite</th>
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<tr>
<td>AST 102</td>
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<td>AST 236</td>
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<td>AST 101 or equivalent</td>
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<tr>
<td>HLT 144</td>
<td>Medical Terminology II</td>
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<td>HLT 143</td>
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Semester Total 10

Total Minimum Credits 68
Semester 3

Course No. | Course Title | Credits | Prerequisite
---|---|---|---
AST 242 | Medical Insurance and Coding | 3 | AST 102 or equivalent and HLT 143
AST 245 | Medical Machine Transcription | 3 | AST 102 or equivalent and HLT 143
AST 271 | Medical Office Procedures I | 3 | AST 102

Semester Total | 9

Total Minimum Credits | 28

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2. AST 236 satisfies the college's computer competency requirement for graduation.
3. Approved Electives:
   - ASL 101 – American Sign Language I
   - BUS 117 – Leadership Development
   - BUS 200 – Principles of Management
   - BUS 201 – Organizational Behavior
   - BUS 205 – Human Resource Management
   - BUS 241 – Business Law I
   - BUS 265 – Ethical Issues in Management
   - BUS 280 – Introduction to International Business
   - MKT 260 – Customer Service Management

AIR CONDITIONING AND REFRIGERATION

Associate of Applied Science Degree:
- Construction Trades/Air Conditioning (Technical Studies)
  - Certificate:
    - Air Conditioning and Refrigeration

The Associate of Applied Science (A.A.S.) degree in Technical Studies: Construction Trades/Air Conditioning was developed in conjunction with the Tidewater Builders’ Association and local contractors to meet the needs of the Hampton Roads construction industry.

Many of the courses from the Certificate in Air Conditioning and Refrigeration may be applied toward this degree program.

ASSOCIATE OF APPLIED SCIENCE:
CONSTRUCTION TRADES/AIR CONDITIONING (TECHNICAL STUDIES) (Program Code: 718.04)

Semester 1

Course No. | Course Title | Credits | Prerequisite
---|---|---|---
AIR 111 | Air Conditioning and Refrigeration Controls I | 3 | Co-req: AIR 121
AIR 121 | Air Conditioning and Refrigeration I | 3 | Co-req: AIR 111
AIR 154 | Heating Systems I | 3 |
AIR 161 | Heating, Air, and Refrigeration Calculations I | 3 |
ENG 111 | College Composition I | 3 | Placement
SDV 100 | College Success Skills | 1 |

Semester Total | 16

Semester 2

Course No. | Course Title | Credits | Prerequisite
---|---|---|---
AIR 112 | Air Conditioning and Refrigeration Controls II | 3 | AIR 111
AIR 122 | Air Conditioning and Refrigeration II | 3 | AIR 121
AIR 165 | Air Conditioning Systems I | 3 | AIR 161
AIR 206 | Psychrometrics | 3 |
IND 165 | Principles of Industrial Technology I | 4 | Health/Physical Education Elective^1 2

Semester Total | 18

Total Minimum Credits | 68

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

CERTIFICATE: AIR CONDITIONING AND REFRIGERATION (Program Code: 903)

This program prepares students to begin work in the field of heating, ventilation, air conditioning, and refrigeration and also provides current workers the opportunity to upgrade skills and knowledge.

The Certificate program prepares students for technician jobs working on residential or commercial air conditioning systems, or for positions as a sales representative or a control services technician.

Many of the courses in the certificate program may be applied to an air conditioning degree plan available under the A.A.S. in Technical Studies. See the Technical Studies program plan shown above for details.
### Semester 1

<table>
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<tr>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<td>AIR 111</td>
<td>Air Conditioning and Refrigeration Controls I</td>
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<td>Co-req: AIR 121</td>
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<tr>
<td>AIR 121</td>
<td>Air Conditioning and Refrigeration I</td>
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<td>Co-req: AIR 111</td>
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<td>AIR 154</td>
<td>Heating Systems I</td>
<td>3</td>
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<td>AIR 161</td>
<td>Heating, Air, and Refrigeration Calculations I</td>
<td>3</td>
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Semester Total 16

### Semester 2

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<td>Air Conditioning and Refrigeration Controls II</td>
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<td>AIR 111</td>
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<tr>
<td>AIR 122</td>
<td>Air Conditioning and Refrigeration II</td>
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<td>AIR 165</td>
<td>Air Conditioning Systems I</td>
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<td>AIR 161</td>
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<td>MTH 103</td>
<td>Applied Technical Mathematics I</td>
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Semester Total 15

### Semester 3

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<td>Duct Construction and Maintenance</td>
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<td>AIR 200</td>
<td>Hydronics</td>
<td>2</td>
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<td>AIR 235</td>
<td>Heat Pumps</td>
<td>3</td>
<td>AIR 112 and AIR 122</td>
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<td>AIR 238</td>
<td>Advanced Troubleshooting and Service</td>
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Semester Total 10

Total Minimum Credits 41

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### American Sign Language

**Associate of Applied Science Degree:**
- ASL-English Interpretation

**Career Studies Certificate:**
- American Sign Language

American Sign Language (ASL) is the natural language of deaf people in the United States. Two programs in ASL and Interpretation are designed to prepare hearing students to communicate with deaf people, and provide interpretation between deaf and hearing people.

The Career Studies Certificate in American Sign Language is a one-year, part-time program. Prospective students include parents of deaf children and people who plan to work in deaf-related fields, such as social work, vocational rehabilitation, deaf education, etc. Office personnel who want to make their businesses more “deaf-friendly” will benefit from this program of study. The program does not prepare a student to perform interpreting services between spoken English users and ASL users. Proficient ASL users require further training to become interpreters.

The Associate of Applied Science (A.A.S.) degree in ASL-English Interpretation is an intensive two-year, full-time course of study designed to benefit those who are interested in providing communication access between deaf and hearing people. The requirements for admission to the program are proficiency in American Sign Language and proficiency in English as demonstrated by placement into ASL 261 and placement into ENG 111. Students must earn at least a C or better in each applicable prerequisite course in order to register for its subsequent course. Successful completion of this program prepares the student to pursue either a Virginia Quality Assurance Screening (VQAS) Level III or national certification. These credentials qualify the student to interpret in entry-level settings, either in education or the community.

These two programs of study are not intended to prepare students for transfer into a baccalaureate degree program. The limited number of general education courses required in the program may be transferable to four-year colleges and universities.

For further information go to: www.tcc.edu search keyword ASL. For academic counseling, career advisement, and admission to the ASL Studies or the Interpreter Education program, please contact the program head at (757) 214-6157 or sgrieser@tcc.edu.

**ASSOCIATE OF APPLIED SCIENCE DEGREE:**
**ASL-ENGLISH INTERPRETATION** (Program Code: 640)

<table>
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<th>Semester 1 (Based on a Fall Semester start)</th>
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**American Sign Language**
## AUTOMOTIVE TECHNOLOGY

**Associate of Applied Science Degree:**

- **Automotive Technology**

**Career Studies Certificates:**
- Auto Parts Management Trainee
- Automotive Brakes, Suspension, and State Inspection
- Automotive Electrical, Electronic, and Air Conditioning
- Automotive Engine Diagnosis
- Automotive Heavy-Duty Engine and Transmission
- Automotive Service and Parts Specialist

This National Automotive Technician Education Foundation (NATEF) Certified Automotive Technician Training Program prepares students to begin employment as automotive technicians or to upgrade their skills if they are already employed in the field. The program also prepares students for the National Institute for Automotive Service Excellence (ASE) Certified Automotive Technician examinations and Virginia state inspection certification.

The Career Studies Certificate programs in Automotive Technology will give students the background they need for entry-level positions as an engine performance, air conditioning, or electrical technician. Completion of any of these programs can lead to employment as an automotive tune-up specialist, troubleshooter, or diagnostic specialist. With the Associate of Applied Science (A.A.S.) degree in Automotive Technology, students may become a diagnostician, line technician, service advisor, manager, or manufacturing representative.

The college offers the Toyota T-TEN Automotive Technology program. This is a program in automotive technology that is a partnership with Toyota Motor Sales, Toyota and Lexus dealers, and the college. Its mission is to support Toyota and Lexus dealerships’ success by providing skilled, entry-level automotive service personnel. Students are provided specific Toyota training in addition to the regular A.A.S. Automotive Technology curriculum.

The college also offers the Chrysler College Automotive Program (CAP). Along with classroom instruction, CAP offers on-site training at sponsoring Chrysler, Dodge, and Jeep dealerships under the direction of master technicians. Students rotate class time and internship while fulfilling requirements for an A.A.S. degree in Automotive Technology.

The college also offers the Honda PACT (Professional Automotive Career Training) program. This partnership with American Honda Motor Co., Honda and Acura dealers, and the college, offers students the classroom time, lab time, and dealership facets as they complete the requirements for an A.A.S. degree in Automotive Technology.
### CAREER AND TECHNICAL EDUCATION

**ASSOCIATE OF APPLIED SCIENCE DEGREE: AUTOMOTIVE TECHNOLOGY** (Program Code: 909)

#### Semester 1 (Based on a Fall semester start)

<table>
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<th>Course Title</th>
<th>Credits</th>
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<td>Introduction to Automotive Systems</td>
<td>3</td>
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<td>AUT 166</td>
<td>Automotive Diagnostics I</td>
<td>5</td>
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<td>AUT 167</td>
<td>Automotive Diagnostics II</td>
<td>5</td>
<td>AUT 166</td>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
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<td>Placement</td>
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<tr>
<td>SDV 106</td>
<td>Preparation for Employment (or SDV 100)</td>
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**Semester Total**: 17

#### Semester 2

<table>
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<td>AUT 166</td>
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<td>AUT 221</td>
<td>Automotive Diagnostics VI</td>
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<td>AUT 166</td>
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<td>MTH 103</td>
<td>Applied Technical Mathematics (or MTH 121)</td>
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<td>Humanities Elective¹</td>
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**Semester Total**: 16

#### Semester 3

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<th>Course Title</th>
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<td>AUT 178</td>
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<td>AUT 297</td>
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**Semester Total**: 7

#### Semester 4

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<th>Course Title</th>
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<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUT 168</td>
<td>Automotive Diagnostics III</td>
<td>5</td>
<td>AUT 166</td>
</tr>
<tr>
<td>AUT 169</td>
<td>Automotive Diagnostics IV</td>
<td>5</td>
<td>AUT 166</td>
</tr>
<tr>
<td>AUT 297</td>
<td>Cooperative Education in Automotive</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Science Elective¹</td>
<td>3</td>
<td></td>
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</table>

**Semester Total**: 15

#### Semester 5

<table>
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<tr>
<th>Course No.</th>
<th>Course Title</th>
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<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>AUT 247</td>
<td>Automotive Diagnostics VII</td>
<td>5</td>
<td>AUT 166</td>
</tr>
<tr>
<td>AUT 248</td>
<td>Automotive Diagnostics VIII</td>
<td>5</td>
<td>AUT 166</td>
</tr>
<tr>
<td>AUT 297</td>
<td>Cooperative Education in Automotive</td>
<td>2</td>
<td>Health/Physical Education Elective¹</td>
</tr>
</tbody>
</table>

**Semester Total**: 14

**Total Minimum Credits**: 69

¹ Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

---

**CAREER STUDIES, AUTO PARTS MANAGEMENT TRAINEE** (Program Code: 221.909.62)

This Career Studies Certificate is offered in partnership with Advance Auto Parts.

#### Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 100</td>
<td>Introduction to Business</td>
<td>3</td>
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</tr>
<tr>
<td>BUS 205</td>
<td>Human Resource Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td>MKT 100</td>
<td>Principles of Marketing</td>
<td>3</td>
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**Semester Total**: 12

#### Semester 2

<table>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>AST 205</td>
<td>Business Communications</td>
<td>3</td>
<td>ENG 111</td>
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<tr>
<td>BUS 200</td>
<td>Principles of Management</td>
<td>3</td>
<td>BUS 100</td>
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<tr>
<td>Approved Electives*</td>
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<td>Approved Electives*</td>
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**Semester Total**: 12

#### Semester 3

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BUS 202</td>
<td>Applied Management Principles</td>
<td>3</td>
<td>BUS 200</td>
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**Semester Total**: 3

**Total Minimum Credits**: 27

* Students may select electives from the following list without approval:
  - ACC 220 – Accounting for Small Business 3
  - AUT 101 – Introduction to Automotive Systems 3
  - AUT 297 – Cooperative Education 1-5
  - BUS 111 – Principles of Supervision I 3
  - ITE 115 – Introduction to Computer Applications and Concepts 4
  - MKT 110 – Principles of Selling 3
  - MKT 260 – Customer Service Management 3
  - MKT 271 – Consumer Behavior 3
  - SDV 106 – Preparation for Employment 1
CAREER AND TECHNICAL EDUCATION

CAREER STUDIES: AUTOMOTIVE BRAKES, SUSPENSION, AND STATE INSPECTION
(Program Code: 221.909.02)

The Career Studies Certificate in Automotive Brakes, Suspension, and State Inspection prepares students to specialize in brakes, steering, and suspension diagnosis, service, and repair. The training includes preparation for the ASE certification exams in steering and suspension (A4) and brakes (A5). Additionally, the training includes preparation for the VA Safety Inspection exam.

**Semester 1**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUT 101</td>
<td>Introduction to Automotive Systems</td>
<td>3</td>
<td></td>
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<tr>
<td>AUT 166</td>
<td>Automotive Diagnostics I</td>
<td>5</td>
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**Semester 2**

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<tbody>
<tr>
<td>AUT 220</td>
<td>Automotive Diagnostics V</td>
<td>5</td>
<td>AUT 166</td>
</tr>
<tr>
<td>AUT 221</td>
<td>Automotive Diagnostics VI</td>
<td>5</td>
<td>AUT 166</td>
</tr>
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<td>AUT 297</td>
<td>Cooperative Education in Automotive</td>
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<td><strong>Semester Total</strong></td>
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**Total Minimum Credits 23**

CAREER STUDIES: AUTOMOTIVE HEAVY-DUTY ENGINE AND TRANSMISSION
(Program Code: 221.909.06)

The Career Studies Certificate in Automotive Heavy-Duty Engine and Transmission prepares students to specialize in the service, diagnosis, and repair of automatic and manual transmissions, transaxles, and engines. The training includes preparation for the ASE certification exams in engine repair (A1), automatic transmissions (A2), and manual drive transmissions (A3).

**Semester 1**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUT 101</td>
<td>Introduction to Automotive Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AUT 166</td>
<td>Automotive Diagnostics I</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>AUT 167</td>
<td>Automotive Diagnostics II</td>
<td>5</td>
<td>AUT 166</td>
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**Semester 2**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>AUT 220</td>
<td>Automotive Diagnostics V</td>
<td>5</td>
<td>AUT 166</td>
</tr>
<tr>
<td>AUT 221</td>
<td>Automotive Diagnostics VI</td>
<td>5</td>
<td>AUT 166</td>
</tr>
<tr>
<td>AUT 297</td>
<td>Cooperative Education in Automotive</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Semester Total</strong></td>
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</table>

**Total Minimum Credits 23**

CAREER STUDIES: AUTOMOTIVE ELECTRICAL, ELECTRONIC, AND AIR CONDITIONING
(Program Code: 221.909.45)

The Career Studies Certificate in Automotive Electrical, Electronic, and Air Conditioning prepares students to specialize in the service, diagnosis, and repair of basic and advanced electrical systems as well as heating and air conditioning systems. Basic engine performance concepts are also covered. The training includes preparation for the ASE certification exams in electrical/electronic systems (A6) and heating and air conditioning (A7). Additionally, the training provides preparation for the Refrigerant Recovery License exam.

**Semester 1**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUT 101</td>
<td>Introduction to Automotive Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AUT 166</td>
<td>Automotive Diagnostics I</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>AUT 167</td>
<td>Automotive Diagnostics II</td>
<td>5</td>
<td>AUT 166</td>
</tr>
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<td><strong>Semester Total</strong></td>
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**Semester 2**

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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>AUT 220</td>
<td>Automotive Diagnostics IV</td>
<td>5</td>
<td>AUT 166</td>
</tr>
<tr>
<td>AUT 297</td>
<td>Cooperative Education in Automotive</td>
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<td><strong>Semester Total</strong></td>
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</table>

**Total Minimum Credits 23**

CAREER STUDIES: AUTOMOTIVE ENGINE DIAGNOSIS
(Program Code: 221.909.01)

The Career Studies Certificate in Automotive Engine Diagnosis prepares students to specialize in the service, diagnosis, and repair of engine management and control systems. These systems include ignition, fuel, emissions, and computer controls. The training includes preparation for the ASE certification exam in engine performance (A8).

**Semester 1**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUT 101</td>
<td>Introduction to Automotive Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AUT 166</td>
<td>Automotive Diagnostics I</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>AUT 167</td>
<td>Automotive Diagnostics II</td>
<td>5</td>
<td>AUT 166</td>
</tr>
<tr>
<td><strong>Semester Total</strong></td>
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**Semester 2**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
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<td>Automotive Diagnostics III</td>
<td>5</td>
<td>AUT 166</td>
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<td>AUT 297</td>
<td>Cooperative Education in Automotive</td>
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<tr>
<td><strong>Semester Total</strong></td>
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</table>

**Total Minimum Credits 23**
CAREER STUDIES: AUTOMOTIVE SERVICE AND PARTS SPECIALIST  (Program Code: 221.909.03)

The Career Studies Certificate in Automotive Service and Parts Specialist prepares students to become a service advisor and/or a parts department specialist in an automotive repair facility. The courses covered in this program include various automotive systems, automotive business skills, and computer competencies.

**Semester 1**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>aST 117</td>
<td>Keyboarding for Computer Usage</td>
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</tr>
<tr>
<td>AUT 101</td>
<td>Introduction to Automotive Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AUT 170</td>
<td>Automotive Systems Operation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG 111</td>
<td>College Composition I (or ENG 131)</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>CST 110</td>
<td>Introduction to Communication (or CST 100)</td>
<td>3</td>
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</table>

**Semester Total**  13

**Semester 2**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>ACC 220</td>
<td>Accounting for Small Business (or ACC 211)</td>
<td>3</td>
<td>ACC 211</td>
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<tr>
<td>ITE 115</td>
<td>Introduction to Computer Applications and Concepts (or SAF 125)</td>
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<td>MTH 103</td>
<td>Applied Technical Mathematics (or MTH 121)</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>AUT 110</td>
<td>Automotive Business Practices</td>
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**Semester Total**  13

**Semester 3**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>AUT 297</td>
<td>Cooperative Education in Automotive</td>
<td>3</td>
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</table>

**Semester Total**  3

**Total Minimum Credits**  29

CIVIL ENGINEERING TECHNOLOGY

Associate of Applied Science Degree:
- Civil Engineering Technology
  - Career Studies Certificates:
    - Construction Project Management
    - Inspections/Lab Technology
    - Land Surveying
    - Geographic Information Systems (GIS) (see GIS program listing under the Information Systems Technology Career Studies Certificate options)

The Civil Engineering Technology (CET) program has several options available to students. They may earn an Associate of Applied Science (A.A.S.) degree in Civil Engineering Technology or obtain targeted training leading to a specific career pathway in areas such as Land Surveying or GIS. CET students learn the technical skills needed to help civil engineers design and build large projects, such as roadways, bridges, and buildings. Students learn how to analyze construction sites, use and maintain equipment, draft plans, and write reports.

Students completing the A.A.S. degree in CET are prepared to enter the workforce directly upon graduation or continue toward a bachelor’s degree at a university in an engineering technology program. Students interested in pursuing a bachelor’s degree should meet with the program head early in their academic plan and consult the receiving institution’s catalog and transfer guide. The CET program emphasizes basic mathematics, science, and communication skills. Students concentrate on fundamentals of engineering technology, surveying, construction materials and testing, computer-aided drafting (CAD), as well as environmental technology, soils, and fluid mechanics.

TCC also offers Career Studies Certificates in Construction Project Management, Inspections/Lab Technology, Land Surveying, and Geographic Information Systems. For information on the GIS Career Studies Certificate, see the GIS program listing under Information Systems Technology. The Career Studies Certificate in Land Surveying prepares students to take the State Land Surveyors-in-Training Examination.

The Career Studies Certificate in Construction Project Management enables students to learn all aspects of managing construction job sites including, but not limited to: job-site administration, estimating and bidding, construction systems, construction safety, and construction surveying applications.

The Career Studies Certificate in GIS prepares students for GIS technician positions in fields such as city and regional planning, surveying and mapping, transportation, and local government. Students may apply their Career Studies Certificate courses toward the A.A.S. degree program.

ASSOCIATE OF APPLIED SCIENCE DEGREE: CIVIL ENGINEERING TECHNOLOGY  (Program Code: 913)

**Semester 1** (Based on a Fall semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>CIV 110</td>
<td>Introduction to Civil Engineering Technology</td>
<td>2</td>
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<tr>
<td>CIV 115</td>
<td>Civil Engineering Drafting</td>
<td>3</td>
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</tr>
<tr>
<td>CIV 171</td>
<td>Surveying I</td>
<td>3</td>
<td>Placement into MTH 163</td>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
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<td>Placement</td>
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<tr>
<td>MTH 163</td>
<td>Precalculus I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>SDV 101</td>
<td>Orientation to Engineering and Technologies</td>
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<td>Social Science Elective(^1)</td>
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**Semester Total**  18

**Semester 2**

<table>
<thead>
<tr>
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<th>Credits</th>
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<tbody>
<tr>
<td>CIV 172</td>
<td>Surveying II</td>
<td>3</td>
<td>CIV 171</td>
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<tr>
<td>MTH 164</td>
<td>Precalculus II</td>
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<td>MTH 163</td>
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<td>Health/Physical Education Elective(^1)</td>
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<td>Humanities Elective(^1)</td>
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**Semester Total**  17
### CAREER STUDIES: INSPECTIONS/LAB TECHNOLOGY (Program Code: 221.915.03)

<table>
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<th>Course No.</th>
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<tbody>
<tr>
<td></td>
<td>CIV 110</td>
<td>Introduction to Civil Engineering Technology</td>
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<td></td>
<td>CIV 120</td>
<td>Masonry Technology</td>
<td>3</td>
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<td></td>
<td>CIV 230</td>
<td>Civil Construction Materials</td>
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<tr>
<td></td>
<td>CIV 225</td>
<td>Soil Mechanics</td>
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<td>CIV 226</td>
<td>Soil Mechanics Laboratory</td>
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<td>CIV 228</td>
<td>Concrete Technology</td>
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<tr>
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<td>CIV 229</td>
<td>Concrete Laboratory</td>
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<td></td>
<td>CIV 280</td>
<td>Intro to Environmental Engineering</td>
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### CAREER STUDIES: CONSTRUCTION PROJECT MANAGEMENT (Program Code: 221.917.01)

#### Semester 1

<table>
<thead>
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<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CIV 111</td>
<td>Blue Print Reading and the Building Code</td>
<td>3</td>
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<tr>
<td>CIV 171</td>
<td>Surveying I</td>
<td>3</td>
<td>MTH 163</td>
</tr>
<tr>
<td>CIV 200</td>
<td>Fundamentals of Building Construction</td>
<td>3</td>
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<tr>
<td>CIV 230</td>
<td>Civil Construction Materials</td>
<td>3</td>
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<tr>
<td></td>
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#### Semester 2

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BLD 117</td>
<td>Contract Documents and Construction Law</td>
<td>3</td>
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<tr>
<td>BLD 215</td>
<td>OSHA 30 Construction Safety</td>
<td>2</td>
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<tr>
<td>BLD 247</td>
<td>Construction Planning and Scheduling</td>
<td>3</td>
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<tr>
<td>CIV 135</td>
<td>Construction Management and Estimating</td>
<td>3</td>
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<td><strong>Semester Total</strong></td>
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</tr>
<tr>
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<td><strong>Total Minimum Credits</strong></td>
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</tbody>
</table>
Computer-Aided Drafting and Design Technology

**Associate of Applied Science Degree:**
- Computer-Aided Drafting and Design Technology
  - **Specialization:** Architectural Drafting and Design Technology
  - **Specialization:** Mechanical Drafting and Design Technology

**Certificate:**
- Computer-Aided Drafting and Design Technology

The Computer-Aided Drafting and Design Technology program has three different options for students seeking to obtain a degree or choosing to develop or update their technical skills. Those working toward the degree program have a choice between two specializations. The Architectural Drafting and Design Technology specialization prepares students for work in architectural, engineering, and design firms. The Mechanical Drafting and Design Technology specialization prepares students for employment in the fields of mechanical and machine design, structural, manufacturing, civil engineering, marine design, and construction. The third option, for those seeking only to acquire or hone their technical skills, is the 33-credit Certificate in Computer-Aided Drafting and Design Technology which primarily consists of technical courses. Students who already have a degree frequently see this Certificate as an excellent choice.

Architectural Drafting and Design Technology

The Architectural Drafting and Design Technology specialization is offered at the Virginia Beach Campus and prepares students for employment as an advanced CADD drafter or designer in an architectural firm. Graduates have the knowledge and skills to pursue a wide variety of employment opportunities in the design and construction industry. Under formal articulation agreements, students may transfer coursework toward a baccalaureate degree program in an engineering technology field or to some schools of architecture. Students planning on pursuing a baccalaureate degree should meet with the program head early in their academic plan and consult the receiving institution’s catalog and transfer guide.

The faculty is composed of experienced educators and professionals who include practicing architects and engineers. They bring in current practices and knowledge of the latest building materials, construction methods and computer technology. The program is highly regarded in the Virginia architectural community for its ability to challenge its students and teach essential technical skills for which employers are looking. Students in the program have the opportunity to sample a variety of interest areas within the discipline, including building and site planning, architectural graphic techniques, computer-aided drafting, rendering and animation, materials and construction technology, architectural history, international study, building codes, office practices, structures and more. Students may begin fall, spring, or summer semester.

The specialization in Architectural Drafting and Design Technology prepares students for employment in these businesses and industries:
- Architect offices
- Engineering consulting firms (civil, mechanical, and electrical)
- Landscape architect offices
- Construction management firms
- Building contracting firms
- Building developers
- Computer drafting and mapping service companies
- Construction material suppliers and producers (sales, shop drawings)
- Facilities planning offices

**ASSOCIATE OF APPLIED SCIENCE DEGREE:**
**COMPUTER-AIDED DRAFTING AND DESIGN TECHNOLOGY**

**Specialization: Architectural Drafting and Design Technology**

(Program Code: 729.01)

**Semester 1 (Based on a Fall semester start)**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 100</td>
<td>Introduction to Architecture</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CAD 151</td>
<td>Engineering Drawing Fundamentals I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CAD 201</td>
<td>Computer-Aided Drafting and Design I</td>
<td>4</td>
<td></td>
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<tr>
<td>ENG 111</td>
<td>College-Aided Drafting and Design I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>MTH 163</td>
<td>Precalculus I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
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<tr>
<td><strong>Semester Total</strong></td>
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**Semester 2**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 121</td>
<td>Architectural Drafting I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ARC 133</td>
<td>Construction Methodology and Procedures I</td>
<td>3</td>
<td></td>
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<tr>
<td>CAD 202</td>
<td>Computer-Aided Drafting and Design II</td>
<td>4</td>
<td>CAD 201</td>
</tr>
<tr>
<td>MTH 164</td>
<td>Precalculus II</td>
<td>3</td>
<td>MTH 163</td>
</tr>
<tr>
<td>Approved Technical Elective2</td>
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<td><strong>Semester Total</strong></td>
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**Semester 3**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 122</td>
<td>Architectural Drafting II</td>
<td>3</td>
<td>ARC 121</td>
</tr>
<tr>
<td>ARC 221</td>
<td>Architectural CAD Applications Software I</td>
<td>3</td>
<td>ARC 121 and CAD 201</td>
</tr>
<tr>
<td>MEC 131</td>
<td>Mechanics I – Statics for Engineering Technology</td>
<td>3</td>
<td>MTH 116 or MTH 164</td>
</tr>
<tr>
<td>PHY 201</td>
<td>General College Physics I (or Approved Technical Elective2)</td>
<td>4</td>
<td>MTH 115 or MTH 163</td>
</tr>
<tr>
<td>Health/Physical Education Elective1</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Social Science Elective1</td>
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<tr>
<td><strong>Semester Total</strong></td>
<td></td>
<td><strong>18</strong></td>
<td></td>
</tr>
</tbody>
</table>
Students are expected to finish their A.A.S. degree within the time frame set by NGNN. Upon completion of the A.A.S. degree and the Co-Op program, students may be offered a full-time design-related job by Northrop Grumman Newport News.

For more details, contact Lorenz Drake (822-2426 or email ldrake@tcc.edu) or Ralph Denton (822-7178 or email rdenton@tcc.edu) for specific information about the Co-Op program.

ASSOCIATE OF APPLIED SCIENCE DEGREE:
COMPUTER-AIDED DRAFTING AND DESIGN TECHNOLOGY
Specialization: Mechanical Drafting and Design Technology
(Program Code: 729)

Semester 1 (Based on a Fall semester start)
Course No. Course Title Credits Prerequisite
CAD 151 Engineering Drawing Fundamentals I 3 CAD 122 and
ARC 221 or
(CAD 201 and
CAD 211)
CAD 201 Computer-Aided Drafting and Design I 4
ENG 111 College Composition I 3 Placement
MEC 111 Materials for Industry 3
MTH 163 Precalculus I 3 Placement
SDV 100 College Success Skills 1

Semester Total 17

Semester 2
Course No. Course Title Credits Prerequisite
CAD 152 Engineering Drawing Fundamentals II 3 CAD 151
CAD 202 Computer-Aided Drafting and Design II 4 CAD 201
MTH 164 Precalculus II 3 MTH 163
Humanities Elective 1 3
Social Science Elective 1 3

Semester Total 16

Semester 3
Course No. Course Title Credits Prerequisite
CAD 211 Advanced Technical Drafting I 3 CAD 152 and
CAD 201
CAD 241 Parametric Solid Modeling I 3
MEC 131 Mechanics I – Statics for Engineering Technology 3 MTH 116 or
MTH 164
MTH 164 Precalculus II 3
PHY 201 General College Physics II 4 MTH 115 or
(or Approved Technical Elective) MTH 163
Approved Technical Elective 2 3

Semester Total 16

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your faculty advisor or counselor to choose the appropriate course(s).
2 Consult with your faculty advisor or counselor. Eligible courses for Approved Technical Elective include any ARC, CAD or MEC courses not required in the program.
3 Students planning on transferring to a four-year program should take PHY 201-202 and not technical electives.

Mechanical Drafting and Design Technology
The Mechanical Drafting and Design Technology specialization is offered at the Portsmouth and Virginia Beach campuses and focuses on preparing students to work successfully in computer-aided design and related computer-aided manufacturing operations (CAD/CAM). Graduates typically find employment in the fields of mechanical and machine design, structural design, manufacturing, civil engineering, marine design, construction, and related areas. Using Autodesk software, students learn to prepare working drawings reflecting national and international standards, practices, and procedures. Additionally, students learn to prepare engineering drawings supporting mechanical engineering and design utilizing welding details, industrial piping, geometric dimensioning and tolerancing, electrical schematics, sheet metal developments, and solid modeling.

The Associate of Applied Science (A.A.S.) degree program provides a thorough background with performance skills and experiences necessary for higher-level positions and a better potential for success in the CADD profession.

Under formal articulation agreements, students may transfer coursework to a baccalaureate degree program in an engineering technology area. Students planning on pursuing a baccalaureate degree should meet with the program head in his/her academic plan and consult the receiving institution’s catalog and transfer guide.

In addition to preparing students to move directly into business and industry and providing for college transfer opportunities upon graduation, the CADD program is designed to work in partnership with local business and industry to meet their educational and training needs.

The Northrop Grumman Newport News (NGNN) Cooperative (Co-Op) is an example of this partnership, training students to become the next generation of marine designers. The educational opportunity is selective and based on a coordinated program of full-time coursework at TCC and on-the-job work experience in one of the design divisions at NGNN. Students in the Co-Op receive a salary while at NGNN. While enrolled at TCC, students will be eligible for tuition reimbursement from NGNN for successfully completed courses.
CAREER AND TECHNICAL EDUCATION

CERTIFICATE: COMPUTER-AIDED DRAFTING AND DESIGN TECHNOLOGY (Program Code: 727)

The CADD Certificate program provides the student with basic skills and knowledge necessary for an entry-level position as a CAD operator or drafter. Business and industry professionals can update their skills and knowledge relating to: AutoCAD and Autodesk Software, current ANSI and ISO Standards and procedures, and improve their knowledge of material selection and processing for efficient design.

Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD 151</td>
<td>Engineering Drawing Fundamentals I</td>
<td>3</td>
<td>Co-req (1st 8-week session) or Prereq: HRI 158</td>
</tr>
<tr>
<td>CAD 201</td>
<td>Computer-Aided Drafting and Design I</td>
<td>4</td>
<td>Placement</td>
</tr>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>MEC 111</td>
<td>Materials for Industry</td>
<td>3</td>
<td></td>
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<tr>
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<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
<td>1</td>
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</tbody>
</table>

Semester Total 17

Total Minimum Credits 33

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your faculty advisor or counselor to choose the appropriate course(s).

2 Consult with your faculty advisor or counselor. Eligible courses include any ARC, MEC, or CAD courses not required in the program.

3 Students planning on transferring to a four-year program should take PHY 201-202 and not technical electives.

CULINARY ARTS

Associate of Applied Science Degree:
- Culinary Arts

Career Studies Certificates:
- Catering
- Classical Cooking
- Kitchen Management

Culinary Arts

The Culinary Arts program is designed to provide the knowledge and skills essential to a successful career in the rapidly expanding hospitality industry. The curriculum is a blend of professional, technical, and general education courses that will enable students to enter, advance, and compete successfully in a growing industry. Computer applications are integrated into many of the courses. Faculty combine practical experience and academic perspective.

The Culinary Arts program focuses on the technical knowledge and hands-on skills necessary for a career path in food preparation in the hospitality industry.

With the Associate of Applied Science (A.A.S.) degree, students can become an assistant kitchen manager, chef de partie, caterer, banquet chef, chef tournant, sous chef, and eventually, executive chef.

The A.A.S. degree in Culinary Arts is accredited by the American Culinary Federation’s Accrediting Commission.

The Culinary Arts program is hosted by the Norfolk Campus. A few classes that are also included in the Hospitality Management program are offered at the Virginia Beach Campus as well.

ASSOCIATE OF APPLIED SCIENCE DEGREE: CULINARY ARTS (Program Code: 242)

Semester 1 (Based on Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>HRI 106</td>
<td>Principles of Culinary Arts I</td>
<td>3</td>
<td>(1st 8-week session) Co-req or Prereq: HRI 158</td>
</tr>
<tr>
<td>HRI 107</td>
<td>Principles of Culinary Arts II</td>
<td>3</td>
<td>(2nd 8-week session) HRI 106</td>
</tr>
<tr>
<td>HRI 119</td>
<td>Applied Nutrition for Food Service</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HRI 158</td>
<td>Sanitation and Safety</td>
<td>3</td>
<td>(online 1st 8-week session) HRI 158</td>
</tr>
<tr>
<td>MTH 121</td>
<td>Fundamentals of Mathematics I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
<td>1</td>
<td>Approved Health or PE Elective1</td>
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</tbody>
</table>

Semester Total 18

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your faculty advisor or counselor to choose the appropriate course(s).

2 Consult with your faculty advisor or counselor. Eligible courses include any ARC, MEC, or CAD courses not required in the program.

3 Students planning on transferring to a four-year program should take PHY 201-202 and not technical electives.
<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>HRI 106</td>
<td>Principles of Culinary Arts I</td>
<td>3</td>
<td>Prereq or Co-req:</td>
</tr>
<tr>
<td></td>
<td>(1st 8-week session)</td>
<td></td>
<td>HRI 158</td>
</tr>
<tr>
<td>HRI 158</td>
<td>Sanitation and Safety</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HRI 107</td>
<td>Principles of Culinary Arts II</td>
<td>3</td>
<td>HRI 106</td>
</tr>
<tr>
<td>MTH 121</td>
<td>Fundamentals of Mathematics I</td>
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<td>Placement</td>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>HRI 106</td>
<td>Principles of Culinary Arts I</td>
<td>3</td>
<td>Prereq or Co-req:</td>
</tr>
<tr>
<td></td>
<td>(1st 8-week session)</td>
<td></td>
<td>HRI 158</td>
</tr>
<tr>
<td>HRI 158</td>
<td>Sanitation and Safety</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HRI 107</td>
<td>Principles of Culinary Arts II</td>
<td>3</td>
<td>HRI 106</td>
</tr>
<tr>
<td>MTH 121</td>
<td>Fundamentals of Mathematics I</td>
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<td>Placement</td>
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<table>
<thead>
<tr>
<th>Course No.</th>
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<tbody>
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<td></td>
<td>(1st 8-week session)</td>
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<td>HRI 158</td>
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<td>HRI 158</td>
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<td>HRI 107</td>
<td>Principles of Culinary Arts II</td>
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<tr>
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</table>

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2 Approved HRI Electives:
   HRI 150 — Introduction to Hospitality Ownership
   HRI 205 — Fundamentals of Wine
   HRI 235 — Marketing of Hospitality Services
   HRI 256 — Principles and Applications of Catering
   HRI 275 — Hospitality Law
   HRI 280 — Principles of Advanced Baking and Pastry
CAREER AND TECHNICAL EDUCATION

CAREER STUDIES: KITCHEN MANAGEMENT
(Program Code: 221.775.04)

Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
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<th>Prerequisite</th>
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<tbody>
<tr>
<td>HRI 106</td>
<td>Principles of Culinary Arts I</td>
<td>3</td>
<td>Prereq or Co-req: HRI 158</td>
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<tr>
<td>HRI 119</td>
<td>Applied Nutrition for Food Service</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HRI 158</td>
<td>Sanitation and Safety (online 1st 8-week session)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MTH 121 or higher</td>
<td>Fundamentals of Mathematics I</td>
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Semester Total: 12

Semester 2

<table>
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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HRI 107</td>
<td>Principles of Culinary Arts II</td>
<td>3</td>
<td>HRI 106</td>
</tr>
<tr>
<td>HRI 224</td>
<td>Recipe and Menu Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HRI 251</td>
<td>Food and Beverage Cost Control I</td>
<td>3</td>
<td>MTH 121 or higher</td>
</tr>
</tbody>
</table>

Semester Total: 9

Total Minimum Credits: 21

CUSTOMER SERVICE

Career Studies Certificate:
• Customer Service

The Career Studies Certificate in Customer Service is a partnership with local businesses to offer coursework to prepare students for careers in customer service. Students will complete 12 core credits and up to 12 elective credits. When students complete the core courses, they will be offered an interview with at least one of the participating companies. Consideration for employment will be based on past work experience, grade point average, and technical aptitude.

CAREER STUDIES: CUSTOMER SERVICE
(Program Code: 221.251.19)

Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
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<td>AST 117</td>
<td>Keyboarding for Computer Usage</td>
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<td>ITE 115</td>
<td>Introduction to Computer Applications and Concepts</td>
<td>4</td>
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<tr>
<td>MKT 260</td>
<td>Customer Service Management</td>
<td>3</td>
<td></td>
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<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
<td>1</td>
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<tr>
<td>CST 110</td>
<td>Introduction to Communication</td>
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Semester Total: 12

Semester 2-3

<table>
<thead>
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<tbody>
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<td>Approved Electives1</td>
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</tbody>
</table>

Total Minimum Credits: 24

1 Students should consult the Business, Public Services, and Technologies Division at the Chesapeake Campus for elective options.

DEVELOPMENTAL DISABILITIES

Career Studies Certificate:
• Developmental Disabilities Specialist

The Career Studies Certificate in Developmental Disabilities Specialist prepares students for paraprofessional positions in schools and agencies working with children and adults with disabilities. Internships are available in a variety of work settings that give students hands-on experience in the field.

Through an agreement with Old Dominion University, a limited number of courses from the certificate program may be accepted for transfer towards a baccalaureate degree in special education.

CAREER STUDIES: DEVELOPMENTAL DISABILITIES SPECIALIST  (Program Code: 221.480.12)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EDU 245</td>
<td>Teaching and Training of Language Skills for the Disabled</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EDU 247</td>
<td>Adult Independent Living and Vocational Skills for the Disabled</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>EDU 250</td>
<td>Introduction to Developmental Disabilities</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>EDU 254</td>
<td>Teaching Basic Academic Skills to Exceptional Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EDU 255</td>
<td>Behavior Technology for Use with Developmental Disabilities</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>EDU 290</td>
<td>Coordinated Internship in Education</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Total Minimum Credits: 22

DIAGNOSTIC MEDICAL SONOGRAPHY (ULTRASOUND)

Associate of Applied Science Degree:
• Diagnostic Medical Sonography (Ultrasound)

As a sonographer, the graduate will work closely with radiologists or other physicians to ensure correct diagnosis. Graduates can become staff sonographers in a radiology department, hospital setting, private office, outpatient clinic, within the ultrasound industry, or the military.

Program applications and the general admission application to the college must be submitted to the Virginia Beach Admissions Office no later than May 15.

Applicants will be ranked according to the health professions admissions ranking scale. Admissions decisions will be made based on the applicant’s ranking which considers academic record and area of residence. All in-state residents are given first priority in the application process. All applicants are given points in the application process based on any non-sonography classes taken and the grades earned in those classes. Students with health professions backgrounds, including radiography, are given additional application points.

An official copy of your Allied Health Program transcripts and transcripts from other colleges attended must be sent to Tidewater Community College,
Central Records Office/Office of the College Registrar, P.O. Box 9000, Norfolk, Virginia, 23509, prior to the application deadline date. These transcripts must be evaluated before any transfer credit is granted. Applicants are also required to have a personal interview with the program representative.

Applicants must complete placement tests in English and math and place into ENG 111 and be eligible to take MTH 126 or higher prior to being considered for admission into the DMS program. Students must submit an unofficial transcript along with their health professions application.

Once accepted, students must have current CPR-Healthcare Provider certification, a documented medical examination, and must maintain a C average or better to remain in good standing. The program faculty reserves the right to recommend, through appropriate channels, the withdrawal of any student who does not exhibit suitable demeanor/attendance, and a rigid attendance policy is in place for the clinical experience. A copy of all standards is available in the Diagnostic Medical Sonography Student Handbook. Students will be re-admitted to the program at the discretion of the director and according to availability. Students are financially responsible for their uniforms and travel.

Clinical practice allows for hands-on experience while earning academic credit. After admission to the program, clinical practice can be completed in four semesters of full-time study.

This program is accredited by the Committee on Accreditation of Allied Health Education Programs through the Joint Review Committee on Education in Diagnostic Medical Sonography.

ASSOCIATE OF APPLIED SCIENCE DEGREE: DIAGNOSTIC MEDICAL SONOGRAPHY (Program Code: 109)

<table>
<thead>
<tr>
<th>Semester 1 (Based on a Fall Semester start)</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>BIO 141</td>
<td>Human Anatomy and Physiology I</td>
<td>4</td>
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<tr>
<td>HLT 105</td>
<td>Cardiopulmonary Resuscitation</td>
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<td>HLT 143</td>
<td>Medical Terminology I</td>
<td>3</td>
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<td>MTH 126</td>
<td>Mathematics for Allied Health</td>
<td>3</td>
<td>Placement</td>
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<td>PHY 100</td>
<td>Elements of Physics</td>
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<td>SDV 101</td>
<td>Orientation to Health Care</td>
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<table>
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<tr>
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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DMS 206</td>
<td>Introduction to Sonography</td>
<td>2</td>
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<tr>
<td>DMS 207</td>
<td>Sectional Anatomy</td>
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<td>DMS 208</td>
<td>Ultrasound Physics and Instrumentation I</td>
<td>3</td>
<td>Instructor Permission</td>
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</tr>
<tr>
<td>DMS 211</td>
<td>Abdominal Sonography</td>
<td>4</td>
<td>Instructor Permission</td>
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<tr>
<td>DMS 231</td>
<td>Clinical Education I</td>
<td>2</td>
<td>Instructor Permission</td>
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</tr>
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<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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<table>
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<tr>
<th>Semester 3</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>DMS 209</td>
<td>Ultrasound Physics and Instrumentation II</td>
<td>3</td>
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<tr>
<td>DMS 221</td>
<td>Ultrasound Seminar I</td>
<td>3</td>
<td>Instructor Permission</td>
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<tr>
<td>DMS 232</td>
<td>Clinical Education II</td>
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<tbody>
<tr>
<td>DMS 212</td>
<td>Obstetrical and Gynecological Sonography</td>
<td>4</td>
<td>DMS 211 or Instructor Permission</td>
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<tr>
<td>DMS 223</td>
<td>Introduction to Vascular Ultrasound</td>
<td>3</td>
<td>DMS 211 or Instructor Permission</td>
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<tr>
<td>DMS 233</td>
<td>Clinical Education III</td>
<td>5</td>
<td>DMS 232 or Instructor Permission</td>
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<tr>
<td>Humanities Elective</td>
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<th>Semester 5</th>
<th>Course No.</th>
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<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>DMS 222</td>
<td>Sonography Registry Review</td>
<td>3</td>
<td>Instructor Permission</td>
<td></td>
</tr>
<tr>
<td>DMS 234</td>
<td>Clinical Education IV</td>
<td>6</td>
<td>DMS 233 or Instructor Permission</td>
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<tr>
<td>Social Science Elective</td>
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</table>

| Total Minimum Credits | 72 |

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
### CAREER AND TECHNICAL EDUCATION

#### DIESEL

**Career Studies Certificates:**
- Diesel and Industrial Machine Repair
- Marine Diesel Technician

**CAREER STUDIES: DIESEL AND INDUSTRIAL MACHINE REPAIR** (Program Code: 221.920.62)

The Diesel and Industrial Machine Repair program is a hands-on practical experience program. The student will receive extensive training on diesel engines, hydraulics, electrical systems, brake systems and advanced engine rebuilding. Along with classroom instruction, the students will spend the majority of their time in the shop, working on real-life projects.

In the Diesel program, the students learn the theory of diesel engine operation along with the latest repair and diagnostic procedures available in the diesel industry. Designed to prepare the student for entry into diesel repair, this program’s emphasis is on diagnosis, repair, and maintenance of semi-tractors, construction equipment, and agricultural equipment.

**Semester 1**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DSL 121</td>
<td>Diesel Engines I</td>
<td>6</td>
</tr>
<tr>
<td>DSL 143</td>
<td>Diesel Truck Electrical Systems</td>
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**Semester Total**  
10

**Semester 2**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DSL 122</td>
<td>Diesel Engines II</td>
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<tr>
<td>DSL 152</td>
<td>Diesel Power Trains, Chassis, and Suspension</td>
<td>4</td>
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<tr>
<td>DSL 161</td>
<td>Air Brake Systems I</td>
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**Semester Total**  
11

**Semester 3**

<table>
<thead>
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<tbody>
<tr>
<td>DSL 133</td>
<td>Diesel Fuel and Injection Systems</td>
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</table>

**Semester Total**  
6

**Total Minimum Credits**  
27

#### EARLY CHILDHOOD DEVELOPMENT

**Associate of Applied Science Degree:**
- Early Childhood Development
  - Certificate:
    - Early Childhood Instruction

**CAREER STUDIES: MARINE DIESEL TECHNICIAN** (Program Code: 221.920.20)

The Marine Diesel Technician program provides students with training on modern marine diesel engines and related systems. This program includes the diagnosis, and rebuilding of diesel engines. Also included in the program is the study of fuel injection systems, marine electrical, hydraulics, and marine maintenance mechanics.

The Marine Diesel Technician program is a hands-on practical experience program. The student will study the unique requirements of marine mechanics, which includes basic nomenclature, construction and function of hulls, drive power principles, propellers, steering systems, controls, electrical equipment, instruments, and accessories.

**Semester 1 (Based on a Fall Semester start)**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD 119</td>
<td>Introduction to Reading Methods</td>
<td>3</td>
</tr>
<tr>
<td>CHD 120</td>
<td>Introduction to Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>CHD 145</td>
<td>Teaching Art, Music, and Movement to Children</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>PSY 235</td>
<td>Child Psychology (or PSY 231)</td>
<td>3</td>
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<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
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**Semester Total**  
16

**ASSOCIATE OF APPLIED SCIENCE DEGREE: EARLY CHILDHOOD DEVELOPMENT** (Program Code: 636)

**Semester 1**

<table>
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<tr>
<th>Course No.</th>
<th>Course Title</th>
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<tr>
<td>CHD 119</td>
<td>Introduction to Reading Methods</td>
<td>3</td>
</tr>
<tr>
<td>CHD 120</td>
<td>Introduction to Early Childhood Education</td>
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<tr>
<td>CHD 145</td>
<td>Teaching Art, Music, and Movement to Children</td>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>PSY 235</td>
<td>Child Psychology (or PSY 231)</td>
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</tr>
<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
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</table>

**Semester Total**  
16
### CAREER AND TECHNICAL EDUCATION

#### CERTIFICATE: EARLY CHILDHOOD INSTRUCTION

(Program Code: 632)

The Early Childhood Instruction Certificate trains students in the care, supervision, and education of children from birth through 12 years of age. Graduates earning this certification begin work in public and private child care centers, preschool programs, family child care homes, before and after school programs, and religious-sponsored programs, or as private family nannies.

<table>
<thead>
<tr>
<th>Semester 1 Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>CHD 119</td>
<td>Introduction to Reading Methods</td>
<td>3</td>
<td>ENG 111</td>
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<tr>
<td>CHD 120</td>
<td>Introduction to Early Childhood Education</td>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td>CHD 145</td>
<td>Teaching Art, Music and Movement to Children</td>
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<td></td>
</tr>
<tr>
<td>PSY 235</td>
<td>Child Psychology (or PSY 231)</td>
<td>3</td>
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<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
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<table>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>CHD 118</td>
<td>Language Arts for Young Children</td>
<td>3</td>
<td></td>
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<tr>
<td>CHD 146</td>
<td>Math, Science, and Social Studies for Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHD 205</td>
<td>Guiding the Behavior of Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHD 210</td>
<td>Introduction to Exceptional Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG 112</td>
<td>College Composition II</td>
<td>3</td>
<td>EN 111</td>
</tr>
<tr>
<td>CST 100</td>
<td>Principles of Public Speaking</td>
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<tbody>
<tr>
<td>CHD 165</td>
<td>Observation and Participation in Early Childhood/Primary Settings</td>
<td>3</td>
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<tr>
<td>CHD 166</td>
<td>Infant and Toddler Programs</td>
<td>3</td>
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<tr>
<td>CHD 215</td>
<td>Models of Early Childhood Education Programs</td>
<td>3</td>
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<tr>
<td>CHD 216</td>
<td>Early Childhood Programs, School and Social Change</td>
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<td></td>
<td>Mathematics or Science with Lab Elective</td>
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<td>Placement</td>
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<td>CHD 265</td>
<td>Advanced Observation and Participation in Early Childhood/Primary Settings</td>
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<td>CHD 270</td>
<td>Administration of Childcare Programs</td>
<td>3</td>
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<td>CHD 298</td>
<td>Portfolio Development</td>
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<td>HLT 135</td>
<td>Child Health and Nutrition</td>
<td>3</td>
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<td>SOC 215</td>
<td>Sociology of the Family</td>
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<td>Humanities Elective</td>
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</table>

| Total Minimum Credits | **65-66** |

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

#### CAREER STUDIES: ADMINISTERING PROGRAMS FOR YOUNG CHILDREN

(Program Code: 221.636.61)

The Administering Programs for Young Children Career Studies Certificate provides students with legal and clerical information required to manage, direct, and/or own any type of facility designated to care and educate young children.

<table>
<thead>
<tr>
<th>Semester 2 Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
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<tbody>
<tr>
<td>CHD 118</td>
<td>Language Arts for Young Children</td>
<td>3</td>
<td></td>
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<tr>
<td>CHD 146</td>
<td>Math, Science, and Social Studies for Children</td>
<td>3</td>
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</tr>
<tr>
<td>CHD 165</td>
<td>Observation and Participation in Early Childhood/Primary Settings</td>
<td>3</td>
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<tr>
<td>CHD 205</td>
<td>Guiding the Behavior of Children</td>
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<td>CHD 210</td>
<td>Introduction to Exceptional Children</td>
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<tr>
<td>CST 100</td>
<td>Principles of Public Speaking</td>
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| Total Minimum Credits | **34** |

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
CAREER STUDIES: CHILD DEVELOPMENT
(Program Code: 221.636.04)

The Child Development Career Studies Certificate provides students with entry-level knowledge required to work with children. These core courses also meet the requirements for students to begin their CDA credentialing processes.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tr>
<td>CHD 120</td>
<td>Introduction to Early Childhood Education</td>
<td>3</td>
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<tr>
<td>CHD 145</td>
<td>Teaching Art, Music, and Movement to Children</td>
<td>3</td>
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</tr>
<tr>
<td>CHD 205</td>
<td>Guiding the Behavior of Children</td>
<td>3</td>
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<tr>
<td>HLT 135</td>
<td>Child Health and Nutrition</td>
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</table>

Total Minimum Credits: 12

CAREER STUDIES: EDUCATIONAL SUPPORT SPECIALIST
(Program Code: 221.629.03)

The Educational Support Specialist Career Studies Certificate leads to positions as a teacher assistant in public and private schools.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
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<tbody>
<tr>
<td>CHD 118</td>
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<tr>
<td>CHD 120</td>
<td>Introduction to Early Childhood Education</td>
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<td>CHD 146</td>
<td>Math, Science, and Social Studies for Children</td>
<td>3</td>
<td></td>
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<tr>
<td>CHD 205</td>
<td>Guiding the Behavior of Children</td>
<td>3</td>
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</tr>
<tr>
<td>PSY 235</td>
<td>Child Psychology (or PSY 231)</td>
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<td>Approved Program Elective¹</td>
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</table>

Total Minimum Credits: 18

¹ Approved program electives may be chosen from CHD 145, CHD 210, or HLT 135.

CAREER STUDIES: SCHOOL AGE CARE
(Program Code: 221.636.09)

The School Age Care Career Studies Certificate trains students to efficiently and effectively plan, implement, and manage a high quality before-and-after school program using state and national guidelines and field-tested program planning.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD 220</td>
<td>Introduction to School-Age Child Care</td>
<td>3</td>
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<tr>
<td>CHD 225</td>
<td>Curriculum Development for School-Age Child Care</td>
<td>3</td>
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</tr>
<tr>
<td>CHD 230</td>
<td>Behavior Management for School-Age Child Care</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHD 235</td>
<td>Health and Recreation for School-Age Child Care</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HLT 105</td>
<td>Cardiopulmonary Resuscitation</td>
<td>1</td>
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<tr>
<td>HLT 106</td>
<td>First Aid and Safety</td>
<td>2</td>
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</tr>
<tr>
<td>PSY 235</td>
<td>Child Psychology (or PSY 231)</td>
<td>3</td>
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</tbody>
</table>

Total Minimum Credits: 18

ELECTROMECHANICAL CONTROLS TECHNOLOGY

Associate of Applied Science Degree:
- Electromechanical Controls Technology

Career Studies Certificates:
- Electrical Wiring
- Electrical Wiring for Technicians
- Fiber and Data Cabling Installation
- Marine Electrical
- Mechatronics
- Renewable Energy Technologies

Electromechanical Controls Technology

The Electromechanical Controls Technology programs prepare students for employment in a variety of positions, to include the following: industrial machine installer/repairer, electrical/electronic equipment repairer, mechanical control and valve repairer, programmable controller installer, programmer and repairer, electrical and electronic equipment assembler, electromechanical systems repairer, marine electrician, renewable energy installer, automated machinery maintenance mechanic, and industrial automation and process controls technician. These programs also provide students with a comprehensive set of skills that employers seek when hiring new employees.

Successful completion of one or more certificate programs provides a concentration in a particular field of electromechanical maintenance and repair. The program also prepares students for industrial certification in automation, process control, fluid power, fiber optics, and renewable energy technology.

Students with limited background in the field should plan to complete the Associate of Applied Science in Electromechanical Controls Technology.

ASSOCIATE OF APPLIED SCIENCE DEGREE:
ELECTROMECHANICAL CONTROLS TECHNOLOGY
(Program Code: 706)

Semester 1 (Based on a Fall semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE 127</td>
<td>Residential Wiring Methods (or ELE 149)</td>
<td>3</td>
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<tr>
<td>ELE 131</td>
<td>National Electrical Code I</td>
<td>4</td>
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<tr>
<td>ELE 150</td>
<td>A.C. and D.C. Circuit Fundamentals</td>
<td>3</td>
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</tr>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
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Total: 17

¹ Approved program electives may be chosen from CHD 145, CHD 210, or HLT 135.
### CAREER STUDIES: ELECTRICAL WIRING (Program Code: 221.706.01)

The Career Studies Certificate plan in Electrical Wiring includes additional training in electrical theory and electrical power and motor controls.

#### Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ELE 127</td>
<td>Residential Wiring Methods</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td>ELE 131</td>
<td>National Electrical Code I</td>
<td>4</td>
<td>Placement</td>
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<td>A.C. and D.C. Circuit Fundamentals</td>
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<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
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**Semester Total** 10

**Total Minimum Credits** 23

### CERTIFICATE: ELECTRICAL WIRING (Program Code: 942)

The Certificate in Electrical Wiring prepares students for employment as electricians and assists those already employed to upgrade their skills and knowledge for advancement.

#### Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tr>
<td>ELE 127</td>
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<td>Placement</td>
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<tr>
<td>ELE 131</td>
<td>National Electrical Code I</td>
<td>4</td>
<td>Placement</td>
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<tr>
<td>ELE 150</td>
<td>A.C. and D.C. Circuit Fundamentals</td>
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**Semester Total** 16

**Total Minimum Credits** 65-66
CAREER STUDIES: ELECTRICAL WIRING FOR TECHNICIANS  
(Program Code: 221.706.03)

The Career Studies Certificate in Electrical Wiring for Technicians provides the classroom training required by the state to sit for the electrician licensing exam.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
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1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2. Consult with your academic advisor or counselor. Courses must be approved by the appropriate academic dean.
3. The ELE electives may be ELE 127, ELE 149, ELE 150, ELE 174, ELE 179, ELE 189, ELE 234, ELE 250, INS 230, INS 233, or another course approved by the appropriate academic dean.

CAREER STUDIES: FIBER AND DATA CABLING INSTALLATION  
(Program Code: 221.706.30)

The Career Studies Certificate in Fiber and Data Cabling Installation prepares students for a career emphasis in the assembly, construction and installation of computer data and video network systems. Students who complete this program will be prepared to take the industry and manufacturer-specific certification exams for Fiber and Data Cabling Installation.

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
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<td>National Electrical Code I</td>
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<td></td>
<td>ELE 174</td>
<td>Fiber Optic Connections</td>
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<td>ELE 189</td>
<td>Data Cabling Communication</td>
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<tr>
<td></td>
<td>ELE 146</td>
<td>Electric Motor Control</td>
<td>4</td>
<td>ELE 150 or equivalent</td>
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<tr>
<td></td>
<td>MAR 210</td>
<td>Marine Electronics for Maritime Vessels</td>
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CAREER STUDIES: MARINE ELECTRICAL  
(Program Code: 221.706.10)

The Career Studies Certificate in Marine Electrical prepares students for a career emphasis in the maintenance and repair of shipboard electrical and electronic systems.

<table>
<thead>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td></td>
<td>ELE 145</td>
<td>Transformer Connections and Circuits</td>
<td>2</td>
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<td>ELE 146</td>
<td>Electric Motor Control</td>
<td>4</td>
<td>ELE 150 or equivalent</td>
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<td></td>
<td>MAR 210</td>
<td>Marine Electronics for Maritime Vessels</td>
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CAREER STUDIES: MECHATRONICS  
(Program Code: 221.706.90)

The Career Studies Certificate in Mechatronics prepares students for a career emphasis in the maintenance and repair of automation and process control systems. Students who complete this program will be prepared to take industry- and manufacturer-specific certification exams for Mechatronics.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
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<td>ELE 150</td>
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<td>ELE 233</td>
<td>Programmable Logic Controller Systems I</td>
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<td>Co-requisite: ELE 146</td>
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<td>INS 230</td>
<td>Instrumentation I</td>
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<td>MEC 269</td>
<td>Fluid Power - Pneumatic Systems</td>
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<tr>
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<td>ELE 234</td>
<td>Programmable Logic Controller Systems II</td>
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<td>ETR 281</td>
<td>Digital Systems</td>
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<td>INS 233</td>
<td>Process Control Integration</td>
<td>4</td>
<td>INS 230 and ELE 233</td>
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<tr>
<td></td>
<td>MEC 268</td>
<td>Fluid Power - Hydraulic Systems</td>
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</table>

1. Approved ELE Electives:
   - ELE 179 - Satellite Dish Installation
   - ELE 250 - Fiber Optics Technology
CAREER AND TECHNICAL EDUCATION

CAREER STUDIES: RENEWABLE ENERGY TECHNOLOGIES (Program Code: 221.706.40)

The Career Studies Certificate in Renewable Energy Technologies prepares students for a career in the design, installation and maintenance of alternative energy systems. Students who complete this program will be prepared to take industry- and manufacturer-specific certification exams for Renewable Energies Integrator Installer through the Electronics Technician Association (ETA).

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td></td>
<td>ELE 131</td>
<td>National Electrical Code I</td>
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<tr>
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<td>ELE 150</td>
<td>A.C. and D.C. Circuit Fundamentals</td>
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<table>
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<tr>
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<td>Solar Power Installations</td>
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<td>ENE 120</td>
<td>Solar Power - Photovoltaic and Thermal</td>
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<td>ELE 150</td>
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<td></td>
<td>SAF 127</td>
<td>Industrial Safety</td>
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<table>
<thead>
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<th>Course Title</th>
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<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>ELE 188</td>
<td>Geothermal Technology for Electricians</td>
<td>4</td>
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</tr>
<tr>
<td></td>
<td>ELE 178</td>
<td>Wind Turbine Technology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENE 105</td>
<td>Solar Thermal Active and Passive Technology</td>
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<td><strong>Total Minimum Credits</strong></td>
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ELECTRONICS TECHNOLOGY

Associate of Applied Science Degree:
- Electronics Technology

Certificate:
- Electronics Engineering Technology

The Associate of Applied Science degree in Electronics Technology may qualify students to seek such positions as biomedical equipment technician, communication electronics technician, computer electronics technician, electrical/electronics technician, and electrical/electronics engineering technician. The Certificate in Electronics Engineering Technology prepares students for entry-level electronics technician positions or assists students with advancement within the field.

Under a formal articulation agreement with Old Dominion University (ODU), and with appropriate course substitutions, students may transfer coursework into a related baccalaureate degree program. Students interested in transferring should see their faculty advisor early in their academic plan and consult ODU's catalog, transfer guide, and website for additional information.

Entry into this plan requires the following high school units or their equivalent as a minimum: four units of English, three units of mathematics (two units of algebra, one unit of geometry), one unit of laboratory science, and one unit of social studies.

ASSOCIATE OF APPLIED SCIENCE DEGREE: ELECTRONICS TECHNOLOGY (Program Code: 981)

Semester 1 (Based on a Fall semester start)

<table>
<thead>
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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>ETR 104</td>
<td>Electronic Fundamentals with Computer Applications</td>
<td>4</td>
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</tr>
<tr>
<td>MTH 166</td>
<td>Pre-Calculus with Trigonometry</td>
<td>5</td>
<td>Placement</td>
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<td>SDV 101</td>
<td>Orientation to Engineering and Technologies</td>
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</tr>
<tr>
<td></td>
<td>Health/Physical Education Elective¹</td>
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Semester 2

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<td>ENG 111</td>
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<tr>
<td>ETR 113</td>
<td>D.C. and A.C. Fundamentals I</td>
<td>4</td>
<td>ETR 104 &amp; (MTH 164 or MTH 166)</td>
</tr>
<tr>
<td>ETR 279</td>
<td>Digital Principles, Terminology and Applications</td>
<td>4</td>
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<td>MTH 173</td>
<td>Calculus with Analytic Geometry I</td>
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Semester 3

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<td>D.C. and A.C. Fundamentals II</td>
<td>4</td>
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<td>ETR 148</td>
<td>Amplifiers and Integrated Circuits</td>
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Semester 4

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<td>Solid State Circuits</td>
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<td>ETR 261</td>
<td>Microprocessor Application I¹</td>
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<td>PHY 201</td>
<td>General College Physics I</td>
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Semester 5

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<td>ETR 297</td>
<td>Cooperative Education (or Approved Elective¹)</td>
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<td>PHY 202</td>
<td>General College Physics II</td>
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## CERTIFICATE: ELECTRONICS ENGINEERING TECHNOLOGY (Program Code: 943)

<table>
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<td>College Composition I</td>
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<td>Placement</td>
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<td>ETR 104</td>
<td>Electronic Fundamentals with Computer Applications</td>
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<td>MTH 166</td>
<td>Precalculus with Trigonometry</td>
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<td>Placement</td>
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<td>SDV 101</td>
<td>Orientation to Engineering and Technologies</td>
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<td>ETR 113</td>
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<td>4</td>
<td>ETR 104 &amp; (MTH 164 or MTH 166)</td>
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<td>ETR 279</td>
<td>Digital Principles, Terminology and Applications</td>
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<td>Amplifiers and Integrated Circuits</td>
<td>4</td>
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<td></td>
<td>ETR 250</td>
<td>Solid State Circuits</td>
<td>4</td>
<td>ETR 148</td>
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<td>ETR 261</td>
<td>Microprocessor Application P</td>
<td>4</td>
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<td><strong>Semester Total</strong></td>
<td></td>
<td><strong>8</strong></td>
<td></td>
</tr>
</tbody>
</table>

| **Total Minimum Credits** | **40** |

**NOTE:** Successful completion of this program satisfies the college computer competency requirement.

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your faculty advisor or counselor to choose the appropriate course(s).  
2 Approved elective must be one of the following: ETR 193-Introduction to LabVIEW, EGR 125, or CHM 111.  
3 ETR 193 Introduction to LabVIEW can be substituted for ETR 261.

## EMERGENCY MEDICAL SERVICES

### Associate of Applied Science Degree:
- **Emergency Medical Services**

### Career Studies Certificates:
- Critical Care
- Emergency Medical Technician – Intermediate
- Emergency Medical Technician – Paramedic

The skilled pre-hospital provider is key in providing a vital link between the patient and the emergency room. These personnel become the “eyes and ears” for the physician, rapidly assessing and administering appropriate care and maintaining communications with the emergency facility. The pre-hospital personnel must be skilled in Emergency Medical Services.

Emergency Medical Services are used by ambulance providers, fire-rescue, hospitals, industry, military, voluntary services, nursing homes, sport organizations, cruise ship lines, and other recreational entities, among other possibilities.

The Emergency Medical Services field offers a vast range of opportunities in the medical profession, all starting with the Emergency Medical Technician (EMT)-Basic. The EMT-Basic course provides a basic medical background in pre-hospital emergency medicine. The course is offered each semester in both day and night schedules and prepares students to test at the State level for certification. The National Registry EMT exam is also available throughout the year.

For admission into the Associate of Applied Science degree program, students must complete a second application (in addition to the general college application). Prospective students must be proficient in reading, writing, and speaking the English language. All candidates must be at least 18 years of age at the start of the training program, have a high school degree or GED, have no felony convictions for any sexual crime (and a record free of felony convictions for five years), have no prohibitive physical disability, and must consent to a criminal background investigation.

The programs of study offered by the college are all based on the standards and curriculum established by the United States Department of Transportation and the National Highway Traffic Administration. The Virginia Office of Emergency Medical Services, the National Registry of Emergency Medical Technicians, and the Committee on Accreditation of Educational Programs for EMS Professions (CoAEMSP) that accredits the college’s program have incorporated the National Standard Curriculum into their standards.

## ASSOCIATE OF APPLIED SCIENCE DEGREE: EMERGENCY MEDICAL SERVICES (Program Code: 146)

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td></td>
<td>EMS 111</td>
<td>Emergency Medical Technician – Basic</td>
<td>6</td>
<td>Co-req: EMS 120</td>
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<td>EMS 120</td>
<td>Emergency Medical Technician – Basic Clinical</td>
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<td>Co-req: EMS 111</td>
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<tr>
<td></td>
<td>SDV 101</td>
<td>Orientation to Health Care</td>
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<td>Science with Lab Elective¹</td>
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<td><strong>Semester Total</strong></td>
<td></td>
<td><strong>15</strong></td>
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</tr>
</tbody>
</table>
CAREER STUDIES: CRITICAL CARE
(Program Code: 221.146.10)

The Career Studies Certificate in Critical Care provides the knowledge and skills that qualify students who complete the program successfully to function in critical care environments, from flight programs to critical care ground transports and critical care units within hospitals. The courses are open to registered nurses and paramedics and foster the interaction and cooperation of both professions in the care of the critically ill or injured patient. After completing this program of study, nurses are eligible, from an education standpoint, to sit for the Critical Care Nurses Exam (CCRN), while paramedics are eligible to sit for the Flight Paramedic exam.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EMS 205</td>
<td>Advanced Pathophysiology</td>
<td>3</td>
<td>EMS 155 or equivalent &amp; Instructor Permission</td>
</tr>
<tr>
<td></td>
<td>EMS 207</td>
<td>Advanced Patient Assessment</td>
<td>3</td>
<td>EMS 155 or equivalent &amp; Instructor Permission</td>
</tr>
<tr>
<td></td>
<td>EMS 256</td>
<td>12 Lead ECG Interpretation</td>
<td>2</td>
<td>EMS 153 or Instructor Permission</td>
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<tr>
<th>Semester 2</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>EMS 209</td>
<td>Advanced Pharmacology</td>
<td>4</td>
<td>EMS 155 or equivalent &amp; Instructor Permission</td>
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<tr>
<td></td>
<td>EMS 244</td>
<td>ALS Clinical Internship IV</td>
<td>1</td>
<td>EMS 172 or equivalent &amp; Instructor Permission</td>
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<td>EMS 255</td>
<td>Concepts in Critical Care</td>
<td>5</td>
<td>Current EMT-P Certification or RN</td>
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<tr>
<td>Semester Total</td>
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<td></td>
<td>10</td>
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<tr>
<td>Total Minimum Credits</td>
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</tbody>
</table>
CAREER STUDIES: EMERGENCY MEDICAL
TECHNICIAN-INTERMEDIATE (Program Code: 221.146.03)

The Career Studies Certificate in Emergency Medical Technician-
Intermediate provides the knowledge and skills that allow successful
students who complete the program to sit for the National Registry
EMT-Intermediate certification exam. This is the initial advanced level
of certification that may be required for employment in the fields of ambulance
providers, hospital emergency medicine, military corpsmen, and fire-
rescuers. In the process of completing this program, students may also be
eligible to sit for the Virginia EMT-Enhanced test.

Admission to this program requires current EMT/B certification.

Semester 1
Course No. Course Title Credits Prerequisite
EMS 151 Introduction to Advanced Life Support 4 EMS 111; Co-requisite: EMS 170
EMS 153 Basic ECG Recognition 2 EMS 111
EMS 155 ALS – Medical Care 4 EMS 151
EMS 170 ALS Internship I 1 Co-requisite: EMS 151

Semester Total 11

Semester 2
Course No. Course Title Credits Prerequisite
EMS 157 ALS – Trauma Care 3 EMS 151
EMS 159 ALS – Special Populations 2 EMS 151, EMS 153, & EMS 155
EMS 172 ALS Clinical Internship II 1 EMS 170
EMS 173 ALS Field Internship II 1 EMS 170

Semester Total 7
Total Minimum Credits 18

CAREER STUDIES: EMERGENCY MEDICAL
TECHNICIAN-PARAMEDIC (Program Code: 221.146.05)

The Career Studies Certificate in Emergency Medical Technician-Paramedic
provides the knowledge and skills that people need to function as advanced
life support providers and advance to the highest level within their field.
After completing this program of study, students are eligible to sit for the National Registry EMT-Paramedic exam.

Students must have completed the Career Studies Certificate: Emergency Medical Technician-Intermediate or have equivalent background.

Semester 1
Course No. Course Title Credits Prerequisite
EMS 157 ALS – Trauma Care 3 Current EMT-B Certification and EMS 151
EMS 159 ALS – Special Populations 2 EMS 151, EMS 153, & EMS 155
EMS 172 ALS Clinical Internship II 1 EMS 170
EMS 173 ALS Field Internship II 1 EMS 170

Semester Total 7

Semester 2
Course No. Course Title Credits Prerequisite
EMS 201 EMT Professional Development 2 Current EMT-B Certification
EMS 205 Advanced Pathophysiology 3 EMS 155 or equivalent and Instructor Permission
EMS 207 Advanced Patient Assessment 3 EMS 155 or equivalent and Instructor Permission
EMS 242 ALS Clinical Internship III 1 EMS 172
EMS 243 ALS Field Internship III 1 EMS 173

Semester Total 10

Semester 3
Course No. Course Title Credits Prerequisite
EMS 209 Advanced Pharmacology 4 EMS 155
EMS 211 Operations 2 Current EMT-B Certification
EMS 244 ALS Clinical Internship IV 1 EMS 172
EMS 245 ALS Field Internship IV 1 EMS 173

Semester Total 8
Total Minimum Credits 25

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2 Eligible courses include any EMS, FST, or HLT courses not required in the program.

NOTES:
• BIO 141/142 Human Anatomy and Physiology I and II are recommended if the student is planning to transfer to a medically-related program.
• Program has special admission requirements. Call 822-7335 for information.
FINANCIAL SERVICES

Career Studies Certificate:
  • Financial Services

The Career Studies Certificate in Financial Services is designed to prepare the student for employment and/or positioning for promotions and increased earnings in credit unions, banks, insurance carriers, and securities dealers. Students expand their range of knowledge and skills to include products, services, interpersonal and problem-solving skills.

CAREER STUDIES: FINANCIAL SERVICES
(Program Code: 221.212.11)

Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BUS 100</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>BUS 111</td>
<td>Principles of Supervision I</td>
<td>3</td>
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<td>FIN 115</td>
<td>Personal Investments</td>
<td>2</td>
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<td>MKT 260</td>
<td>Customer Service Management</td>
<td>3</td>
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<td>SDV 100</td>
<td>College Success Skills</td>
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Semester 2

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ACC 211</td>
<td>Principles of Accounting I</td>
<td>3</td>
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<tr>
<td>BUS 117</td>
<td>Leadership Development</td>
<td>3</td>
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<td>BUS 236</td>
<td>Communication in Management</td>
<td>3</td>
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<tr>
<td>FIN 110</td>
<td>Principles of Banking</td>
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Total Minimum Credits: 24

FIRE SCIENCE

Associate of Applied Science Degree:
  • Fire Science

Career Studies Certificate:
  • Fire Science Supervision

An Associate of Applied Science degree in Fire Science will qualify students to become a fire administrator, a municipal department administrator, a safety director, a fire arson investigator, a state training coordinator, a fire insurance appraiser, or a fire apparatus and equipment salesperson.

Entry into the Fire Science program requires a personal interview with a representative of the program.

ASSOCIATE OF APPLIED SCIENCE DEGREE:
FIRE SCIENCE (Program Code: 427)

Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
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<th>Prerequisite</th>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
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<td>Placement</td>
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<tr>
<td>FST 100</td>
<td>Principles of Emergency Services</td>
<td>3</td>
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<tr>
<td>FST 110</td>
<td>Fire Behavior and Combustion</td>
<td>3</td>
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<tr>
<td>SDV 100</td>
<td>College Success Skills (or SDV 101 or SDV 108)</td>
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<td>Mathematics Elective2</td>
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<td>Science with Lab Elective1</td>
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Semester 2

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<th>Course Title</th>
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<tr>
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<td>Technical Report Writing I</td>
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<td>ENG 111</td>
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<tr>
<td>FST 112</td>
<td>Hazardous Materials Chemistry</td>
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<td>FST 115</td>
<td>Fire Prevention</td>
<td>3</td>
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<td>FST 120</td>
<td>Occupational Safety and Health for the Fire Service</td>
<td>3</td>
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<tr>
<td>ITE 115</td>
<td>Introduction to Computer Applications and Concepts</td>
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Semester 3

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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>FST 205</td>
<td>Fire Protection Hydraulics and Water Supply</td>
<td>3</td>
<td>MTH Elective2</td>
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<tr>
<td>FST 210</td>
<td>Legal Aspects of Fire Service</td>
<td>3</td>
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<td>FST 220</td>
<td>Building Construction for Fire Protection</td>
<td>3</td>
<td></td>
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<tr>
<td>FST 230</td>
<td>Fire Investigation</td>
<td>3</td>
<td></td>
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<tr>
<td>FST 240</td>
<td>Fire Administration</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td>Social Science Elective1</td>
<td>3</td>
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Semester 4

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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FST 215</td>
<td>Fire Protection Systems</td>
<td>3</td>
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<tr>
<td>FST 235</td>
<td>Strategy and Tactics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>FST 245</td>
<td>Fire and Risk Analysis</td>
<td>3</td>
<td>FST 240</td>
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<tr>
<td></td>
<td>Health/Physical Education Elective1</td>
<td>2</td>
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<td></td>
<td>Humanities Elective1</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td>Social Science Elective1</td>
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<td></td>
<td>Semester Total</td>
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<td></td>
</tr>
</tbody>
</table>

Total Minimum Credits: 68

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2 Any 100 level math or higher.

NOTES:
• It is recommended that at the time of graduation all students have a current Emergency Medical Technician’s Certificate.
• For additional information regarding the Fire Science program, see www.tcc.edu/faculty/webpages/rdienst.
CAREER AND TECHNICAL EDUCATION

CAREER STUDIES: FIRE SCIENCE SUPERVISION
(Program Code: 221.427.05)

The Career Studies Certificate in Fire Science Supervision prepares students for a career emphasis in the management and administration of the fire protection career field and for promotion.

Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>FST 120</td>
<td>Occupational Safety &amp; Health for the Fire Service</td>
<td>3</td>
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<tr>
<td>FST 135</td>
<td>Fire Instructor I</td>
<td>3</td>
<td>Firefighter I &amp; II</td>
</tr>
<tr>
<td>FST 210</td>
<td>Legal Aspects of Fire Service</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>FST 220</td>
<td>Building Construction for Fire Protection</td>
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Semester Total 12

Semester 2

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<th>Course Title</th>
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<td>FST 140</td>
<td>Fire Officer I</td>
<td>4</td>
<td>FST 135</td>
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<tr>
<td>FST 235</td>
<td>Strategy and Tactics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>FST 237</td>
<td>Emergency Service Supervision</td>
<td>3</td>
<td>Firefighter I &amp; II</td>
</tr>
<tr>
<td>FST 240</td>
<td>Fire Administration</td>
<td>3</td>
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<tr>
<td>FST 297</td>
<td>Cooperative Education in Fire Science</td>
<td>4</td>
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</table>

Semester Total 17

Total Minimum Credits 29

1. Must be a state certified Firefighter I and II.
2. Must complete FST 135 prior to taking.
3. Objectives will be predetermined by the fire department.

NOTES:
- FST 135, FST 140, FST 237, and FST 297 can be used to substitute for existing requirements in the A.A.S. degree in Fire Science.
- FST 135 will fulfill the academic portion of your state certification requirements for Fire Instructor I through the Virginia Department of Fire Programs (VDFP).
- FST 140 will award state certification as a Fire Officer I through VDFP.
- FST 237 will award state certification as a Crew Leader through VDFP.

Aims and Objectives
- To maintain a high level of post-secondary education designed to prepare students for successful careers as funeral service professionals.
- To provide an extensive curriculum designed to address all aspects of funeral service, thereby helping students develop a level of skill and proficiency necessary to compete in this ever-changing field.
- To instill in students the desire and knowledge to serve the public with the highest ethical standards.
- To encourage and provide a forum where students and industry professionals may conduct research related to funeral service.
- To promote a positive image of the profession and its practitioners.
- To serve the funeral service community by providing continuing education and life-long learning.
- To make students ever mindful of their responsibilities to the profession and the clients they serve.
- To encourage students to contribute to the community in which they serve by providing outstanding service, while cognizant of all regulatory issues pertinent to the health, public safety, and “care of the deceased.”

The Funeral Services program is accredited by the American Board of Funeral Service Education (ABFSE), 3432 Ashland Avenue, Suite U, St. Joseph, Missouri 64506, (816) 233-3747. Web: www.abfse.org. In order to receive a Funeral Service license in the Commonwealth of Virginia, an individual must: (1) complete an approved program of mortuary science; (2) pass the National Board Examination; (3) complete a 3,000 hour apprenticeship; and (4) pass the State examination. Completion of the National Board Examination (NBE) is a requirement for graduation from TCC Funeral Services program. The cost of the exam ranges from $350 to $400 depending on the option chosen. The annual passage rate for first-time takers on the National Board Examination and all American Board of Funeral Service Education accredited schools is posted on the ABFSE website www.abfse.org.

Admission Requirements and Special Conditions
- A high school diploma (or equivalent) and satisfactory scores on college placement tests in English and mathematics are required.
- All Funeral Service students must have started the Hepatitis-B series of shots upon entering FNS 111 and 112.
- Students must apply to the program and meet with the program head to be placed in the Funeral Service curriculum.
- Prior to placement into the curriculum, students must have completed ACC 211, CHM 110, and FNS 121 with grades of C or better.
- A grade of C or better must be earned in all FNS courses and in SOC 246 and PSY 116. Students will be required to have completed twenty-four credit hours in order to enroll in FNS 111, FNS 112, FNS 113, FNS 114, FNS 211, FNS 212, FNS 231, and FNS 232. In order to take the second part of a sequence course, a grade of C or better must be earned in the first part.

Transcripts from other colleges attended must be sent to Tidewater Community College, Central Records Office/Office of the College Registrar, P.O. Box 9000, Norfolk, Virginia, 23509. These transcripts must be evaluated before any transfer credit is granted prior to the application deadline. Credit will not be granted for courses taken five years or more prior to the date of enrollment.

This program is offered at the Virginia Beach Campus.

FUNERAL SERVICES

Associate of Applied Science Degree:
- Funeral Services

The Associate of Applied Science degree in Funeral Services provides an extensive program designed to prepare students for careers in the complex field of mortuary science. A diversified curriculum addresses the changing needs and demands of contemporary funeral directing, embalming, and business management.

Upon completion of the program, graduates will be able to: (1) demonstrate proper embalming and restoration techniques with minimum supervision; (2) demonstrate an understanding of the effects of disease and the importance of sanitation in the handling of human remains; (3) apply ethical and management principles to all aspects of making funeral arrangements with minimum supervision; (4) demonstrate an understanding of how to write pre-need and at-need contracts; (5) direct a funeral with minimum supervision; (6) and set up and maintain an OSHA approved preparation room.
CAREER AND TECHNICAL EDUCATION

ASSOCIATE OF APPLIED SCIENCE DEGREE:
FUNERAL SERVICES (Program Code: 155)

Semester 1 (Based on a Fall Semester start)
Course No. | Course Title | Credits | Prerequisite
---|---|---|---
ACC 211 | Principles of Accounting I | 3 | 
CHM 110 | Survey of Chemistry | 3 | 
ENG 111 | College Composition I | 3 | Placement
FN 121 | Anatomy for Funeral Service I | 3 | 
PSY 116 | Psychology of Death and Dying | 3 | 
SDV 100 | College Success Skills | 1 | 
**Semester Total** | **15**

Semester 2
Course No. | Course Title | Credits | Prerequisite
---|---|---|---
FN 110 | Introduction to Funeral Service | 2 | Instructor Permission
FN 111 | Theory of Embalming I | 3 | Co-req: FN 113
FN 113 | Theory of Embalming Laboratory I | 1 | Co-req: FN 111
FN 126 | Pathology for Funeral Service | 3 | Instructor Permission
FN 211 | Restorative Art I | 3 | Instructor Permission
FN 231 | Principles of Funeral Management I | 4 | Instructor Permission
**Semester Total** | **16**

Semester 3
Course No. | Course Title | Credits | Prerequisite
---|---|---|---
FN 110 | Introduction to Funeral Service | 2 | Instructor Permission
FN 111 | Theory of Embalming I | 3 | Co-req: FN 113
FN 113 | Theory of Embalming Laboratory I | 1 | Co-req: FN 111
FN 126 | Pathology for Funeral Service | 3 | Instructor Permission
FN 211 | Restorative Art I | 3 | Instructor Permission
FN 231 | Principles of Funeral Management I | 4 | Instructor Permission
**Semester Total** | **16**

Semester 4
Course No. | Course Title | Credits | Prerequisite
---|---|---|---
FN 112 | Theory of Embalming II | 3 | FN 111, FN 113
FN 114 | Theory of Embalming Laboratory II | 1 | FN 111, FN 113
FN 212 | Restorative Art II | 3 | FN 211
FN 232 | Principles of Funeral Management II | 4 | FN 231
FN 236 | Funeral Service Law | 3 | Instructor Permission
FN 270 | Funeral Service Review | 3 | Instructor Permission
**Semester Total** | **17**

Total Minimum Credits | **67**

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2. Additional fees associated with this course: $350-$400 - National Board Exam; $90 - Practice National Board Exam (NBE); and $180 - Computerized Testing Program.

GERONTOLOGY

Career Studies Certificate:
• Gerontology

Through the Career Studies Certificate in the Gerontology program, students will gain a multi-disciplinary perspective of the aging process. The program will enhance the student’s understanding of related social and public policy issues as well. Further, whether students plan to work in health care, human services, the ministry, business, or marketing, their effectiveness as professionals will be enhanced by the study of gerontology.

The increasing number of older adults both in the United States and worldwide is creating an increased demand for professionals experienced and trained in gerontology. Most importantly, students of gerontology learn to apply their knowledge of the older adult in their current careers, thereby improving programs and services for the older adult.

CAREER STUDIES: GERONTOLOGY
(Program Code: 221.480.08)

Semester 1
Course No. | Course Title | Credits | Prerequisite
---|---|---|---
ENG 111 | College Composition I | 3 | Placement
HLT 270 | Health and Well-Being of the Older Adult | 3 | 
HLT 271 | Physical Care Management of the Older Adult | 3 | 
HMS 231 | Gerontology I | 3 | 
HMS 238 | Selected Topics in Aging | 3 | 
**Semester Total** | **15**
Semester 2
Course No. | Course Title                          | Credits | Prerequisite
----------|---------------------------------------|---------|-------------
HLT 130   | Nutrition and Diet Therapy            | 1       |             
HLT 272   | Medical Management of the Older Adult | 3       |             
HMS 225   | Functional Family Intervention        | 3       |             
HMS 232   | Gerontology II                        | 3       | HMS 231     
HMS 233   | Psycho and Socio Aspects of Older Adult Care | 3     |             

Semester Total | 13
Total Minimum Credits | 28

GRAPHIC DESIGN

Associate of Applied Science Degree:
- Graphic Design
  - Specialization: Advertising Design
  - Specialization: Graphic Design
  - Specialization: Multimedia

Graphic designers create the visual world around us, the world we experience – from logos to books, magazines to billboards, TV to the Internet. Every package and product, every ad, every sign, every web page, every DVD and every game was designed by someone schooled in the tools and techniques of Graphic Design.

TCC’s Graphic Design program is housed at the Visual Arts Center (VAC) in Olde Towne, Portsmouth. In this state-of-the-art facility, Graphic Design classes are supported by three Macintosh computer labs, a video studio and two sound editing suites. Students in this program will prepare for careers in graphic design, advertising design, and multimedia, or transfer toward a baccalaureate degree program. Many students take courses in this discipline to enhance their career skills or enrich their lives.

Advertising Design
The Advertising Design specialization teaches students the computer skills, design sense and marketing acumen needed to work in the field of advertising – as a layout artist, a copywriter, a freelance graphic designer, or in marketing and sales. While not designed as a transfer program, courses from the Advertising Design specialization may transfer toward corresponding baccalaureate degree programs.

ASSOCIATE OF APPLIED SCIENCE DEGREE: GRAPHIC DESIGN

Specialization: Advertising Design (Program Code: 514.01)

Semester 1 (Based on a Fall semester start)
Course No. | Course Title                          | Credits | Prerequisite
----------|---------------------------------------|---------|-------------
ART 131   | Fundamentals of Design I              | 3       |             
ART 201   | History of Art I                      | 3       |             
ART 283   | Computer Graphics I                   | 4       | Co-req: ART 131 
ENG 111   | College Composition I                 | 3       | Placement  
MKT 100   | Principles of Marketing               | 3       |             
SDV 100   | College Success Skills                | 1       |             

Semester Total | 17

Semester 2
Course No. | Course Title                          | Credits | Prerequisite
----------|---------------------------------------|---------|-------------
ART 121   | Drawing I                             | 3       |             
ART 141   | Typography I                          | 4       | ART 131 and ART 283 
ART 202   | History of Art II                     | 3       |             
ART 284   | Computer Graphics II                  | 4       | ART 283 
ENG 112   | College Composition II                | 3       | ENG 111 

Semester Total | 17

Semester 3
Course No. | Course Title                          | Credits | Prerequisite
----------|---------------------------------------|---------|-------------
ART 209   | Creative Concepts and Copywriting     | 3       | ENG 111 
ART 251   | Communication Design I                | 3       | ART 141 
HIS 111   | History of World Civilization I       | 3       | Placement into ENG 111 
MKT 220   | Principles of Advertising             | 3       |             
PHI 101   | Photography I                         | 3       |             
PHI 136    | Health/Physical Education Elective   | 1       |             

Semester Total | 16

Semester 4
Course No. | Course Title                          | Credits | Prerequisite
----------|---------------------------------------|---------|-------------
ART 252   | Communication Design II               | 3       | ART 251 
ART 286   | Communication Arts Workshop           | 3       | Instructor Permission 
HIS 112   | History of World Civilization II      | 3       | Placement into ENG 111 
Approved Graphic Design Elective\(^\d\) | 3-4 | 
Natural Science Elective\(^\d\) or Mathematics Elective\(^\d\) | 3 | Placement for MTH Elective 

Semester Total | 15-16
Total Minimum Credits | 65-66

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2 ART 286 should be taken in the final semester before graduation and is offered in the Fall and Spring semesters only.
3 Students may choose from any of the listed courses for which they have the prerequisite and that is not already a requirement in their specialization: ART 122, ART 203, ART 208, ART 250, ART 251, ART 252, ART 263, ART 264, ART 270, ART 289*, ART 297*, and PHT 135. * Requires permission of Visual Arts Center Director.
Graphic Design
The Graphic Design specialization teaches students how to design for print and the web. They learn the specialized computer skills and develop the professional sense of design needed to create logos, magazine layouts, brochures, web pages, or any of the limitless design tasks graphic artists are called upon to invent. Every word, every photo, every illustration ever made was designed by a graphic artist.

Students will be prepared for employment as a production artist, layout artist, entry-level graphic designer or in-house corporate graphic artist. While not designed as a transfer program, courses from the Graphic Design specialization may transfer toward corresponding baccalaureate programs.

ASSOCIATE OF APPLIED SCIENCE DEGREE: GRAPHIC DESIGN
Specialization: Graphic Design (Program Code: 514.03)

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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<td>ART 201</td>
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<td>ART 283</td>
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<td>Creative Concepts and Copywriting</td>
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<td>ART 251</td>
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<td>HIS 111</td>
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<td>PHT 101</td>
<td>Photography I</td>
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<td>Natural Science Elective¹ or Mathematics Elective¹</td>
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Multimedia
The future of communication is digital — through the web, CD, DVD, video, and whatever comes next. Industry needs designers capable of shaping that information and delivering it to the world. This is what the Multimedia specialization prepares students to do. They develop a highly trained understanding of design and apply that understanding to produce technologically sophisticated video and multimedia work.

Students will be prepared for employment as web page designers, motion graphic artists or interactive media designers. While not designed as a transfer program, courses from the Multimedia specialization may transfer toward corresponding baccalaureate programs.

ASSOCIATE OF APPLIED SCIENCE DEGREE: GRAPHIC DESIGN
Specialization: Multimedia (Program Code: 514.04)

<table>
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<tr>
<th>Semester 1 (Based on a Fall Semester start)</th>
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<th>Credits</th>
<th>Prerequisite</th>
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<td>ART 131</td>
<td>Fundamentals of Design I</td>
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<td>ART 201</td>
<td>History of Art I</td>
<td>3</td>
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<td>ART 283</td>
<td>Computer Graphics I</td>
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<td>Co-req: ART 131</td>
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<td>Placement</td>
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<td>PHT 101</td>
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<td>SDV 100</td>
<td>College Success Skills</td>
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</table>
### Career and Technical Education

#### Health Information Management

**Associate of Applied Science Degree:**

- Health Information Management

Health information specialists work with health care professionals and administration to organize, analyze and preserve medical information used to evaluate patient care, diagnose and treat illnesses, and substantiate reimbursement. The profession requires extensive knowledge of medical terminology, pathology, coding for reimbursement, medical laws and standards, and manual and computerized maintenance and retrieval systems for health information.

A degree in Health Information Management (HIM) can lead to careers in hospitals, nursing homes, insurance companies, consulting firms, and many other health-related facilities. Career opportunities include coders, supervisors, managers, tumor registrars, analysts, performance improvement specialists, and health information specialists. A Registered Health Information Technician (RHIT) may obtain positions in technical, supervisory, and management positions. Some HIM courses may be offered online.

This program has a selective admission process. Application deadline for the program is June 15 of each year for the fall semester. Transcripts from other colleges attended must be sent to Tidewater Community College, Central Records Office/Office of the College Registrar, P.O. Box 9000, Norfolk, Virginia, 23509, prior to the application deadline date. These transcripts must be evaluated before any transfer credit is granted. Prerequisites for the program include: high school graduation or GED, BIO 141, ENG 111, and successful completion of MTH 3.

Graduates of the Health Information Management program are eligible to sit for the American Health Information Management Association’s National Accreditation examination. Successful completion of this examination will award the graduate Registered Health Information Technician (RHIT) credentials. The program is fully accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM) in collaboration with the American Health Information Management Association (AHIMA).

**ASSOCIATE OF APPLIED SCIENCE DEGREE: HEALTH INFORMATION MANAGEMENT**

(Program Code: 152)

#### Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIO 141</td>
<td>Human Anatomy and Physiology</td>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
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<td>Placement</td>
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<tr>
<td>HIM 101</td>
<td>Health Information Technology</td>
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<td>Program Admission</td>
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<tr>
<td>HLT 143</td>
<td>Medical Terminology I</td>
<td>3</td>
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<tr>
<td>ITE 115</td>
<td>Introduction to Computer</td>
<td>4</td>
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<tr>
<td>Applications and Concepts</td>
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**Semester Total** 18

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1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

2. ART 286 should be taken in the final semester before graduation and is offered in the Fall and Spring semester only.

3. Students may choose from any of the listed courses for which they have the prerequisite and that is not already a requirement in their specialization: ART 122, ART 203, ART 208, ART 250, ART 251, ART 252, ART 263, ART 264, ART 270, ART 290*, ART 297*, and PHT 135. * Requires permission of Visual Arts Center Director.
Semester 2
Course No.  | Course Title                                      | Credits | Prerequisite
----------|--------------------------------------------------|---------|---------------
HIM 110   | Introduction to Human Pathology                   | 3       | BIO 141 and HLT 143
HIM 151   | Reimbursement Issues in Medical Practice Management| 2       | Program Admission
HIM 215   | Health Data Classification Systems                | 5       | HLT 143
HLT 144   | Medical Terminology II                            | 3       | HLT 143
SDV 101   | Orientation to Health Care                        | 1       |               
Semester Total |                                                | 17     |               

Semester 3
Course No.  | Course Title                                      | Credits | Prerequisite
----------|--------------------------------------------------|---------|---------------
HIM 249   | Supervision and Management Practices              | 3       | HIM 101
HIM 253   | Health Records Coding                             | 4       | BIO 141 and HLT 215
Semester Total |                                                | 7       |               

Semester 4
Course No.  | Course Title                                      | Credits | Prerequisite
----------|--------------------------------------------------|---------|---------------
HIM 103   | Health Information Technology II                  | 2       | HIM 101
HIM 143   | Managing Electronic Billing in a Medical Practice | 2       | Program Admission
HIM 190   | Coordinated Internship                            | 2       | HIM 101
HIM 226   | Legal Aspects of Health Record Documentation      | 2       | Program Admission
HIM 254   | Advanced Coding and Reimbursement                 | 4       | HIM 253
Health/Physical Education Elective¹               | 2       |               
Semester Total |                                                | 14     |               

Semester 5
Course No.  | Course Title                                      | Credits | Prerequisite
----------|--------------------------------------------------|---------|---------------
HIM 220   | Health Statistics                                 | 2       | Program Admission
HIM 229   | Performance Improvement in Health Care Settings   | 2       | HIM 101
HIM 230   | Information Systems and Technology in Health Care | 3       | HIM 101
HIM 260   | Pharmacology for Health Information Technology    | 2       | BIO 141 and HLT 143
HIM 290   | Coordinated Internship                            | 2       | HIM 101
HIM 298   | Seminar and Project                               | 2       | HIM 101
Humanities Elective¹                              | 3       |               
Semester Total |                                                | 16     |               
Total Minimum Credits |                                | 72     |               

¹ Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
Semester 3

<table>
<thead>
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<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>HRT 115</td>
<td>Plant Propagation</td>
<td>3</td>
<td>HRT 110</td>
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<tr>
<td>HRT 121</td>
<td>Greenhouse Crop Production I</td>
<td>3</td>
<td>HRT 110</td>
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<tr>
<td>HRT 207</td>
<td>Plant Pest Management</td>
<td>3</td>
<td>HRT 110</td>
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<tr>
<td>HRT 226</td>
<td>Greenhouse Management</td>
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<td>HRT 110</td>
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<td></td>
<td>Social Science Elective¹</td>
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Semester Total 16

Semester 4

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<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>HRT 122</td>
<td>Greenhouse Crop Production II</td>
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<td>HRT 110</td>
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<tr>
<td>HRT 225</td>
<td>Nursery and Garden Center Management</td>
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<td>HRT 110</td>
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<td>HRT 298</td>
<td>Seminar and Project</td>
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<td>SPA 160</td>
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<td>Social Science Elective¹</td>
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Semester Total 17

Total Minimum Credits 66

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2 Approved Elective may be chosen from BUS, HRT, ITE, or MKT and must be approved by your horticulture program advisor.
3 Consult your academic advisor.

CAREER STUDIES: GREENHOUSE PRODUCTION

(Program Code: 221.335.03)

<table>
<thead>
<tr>
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<th>Credits</th>
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<tr>
<td>HRT 110</td>
<td>Principles of Horticulture</td>
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<td>HRT 115</td>
<td>Plant Propagation</td>
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<td>HRT 121</td>
<td>Greenhouse Crop Production I</td>
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<td>HRT 207</td>
<td>Plant Pest Management</td>
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<td>HRT 110</td>
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<td>HRT 226</td>
<td>Greenhouse Management</td>
<td>3</td>
<td>HRT 110</td>
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Total Minimum Credits 18

Landscape Design and Management

The Landscape Design and Management program prepares students for careers in the public and private sectors as landscape designers, landscape gardeners, installers, maintenance technicians, and as employees in the retail landscape business. Students who are already in the field use the program to upgrade their skills, knowledge, and certifications. All courses taken for the Career Studies Certificate option in Landscape Design and Management may be applied to the Associate of Applied Science in Horticulture with a specialization in Landscape Design and Management.

ASSOCIATE OF APPLIED SCIENCE DEGREE:
HORTICULTURE

Specialization: Landscape Design and Management
(Program Code: 335.03)

Semester 1 (Based on a Fall semester start)

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Semester Total 17

Semester 2

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<td>HRT 235</td>
<td>Landscape Drawing</td>
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<td>MTH 121</td>
<td>Fundamentals of Mathematics I</td>
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Semester Total 16

Semester 3

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<td>HRT 207</td>
<td>Plant Pest Management</td>
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<td>Professional Landscape Management</td>
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<td>Turfgrass Management I</td>
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Semester Total 16

Semester 4

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<td>SPA 160</td>
<td>Spanish for the Green Industry</td>
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<tr>
<td></td>
<td>Approved HRT Elective³</td>
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Semester Total 17

Total Minimum Credits 66
CAREER STUDIES: LANDSCAPE DESIGN AND MANAGEMENT  (Program Code: 221.335.18)

Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
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<tbody>
<tr>
<td>HRT 110</td>
<td>Principles of Horticulture</td>
<td>3</td>
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<td>HRT 201</td>
<td>Landscape Plants I</td>
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<td>Approved HRT Elective</td>
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Semester 2

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<tbody>
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<td>Landscape Plants II</td>
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<td>HRT 235</td>
<td>Landscape Drawing</td>
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<td>HRT 110</td>
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<td>HRT</td>
<td>Approved HRT Elective</td>
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<td>Semester Total</td>
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</table>

Total Minimum Credits 18

Turfgrass Management

The Career Studies Certificate in Turfgrass Management is designed for individuals currently working as turfgrass professionals who desire to enhance their knowledge and skills. It also provides the opportunity for individuals who desire to explore turfgrass management as a career option. The curriculum consists of courses designed to maximize student exposure to the turfgrass profession and to stress practical knowledge as students learn the principles of turfgrass management.

CAREER STUDIES: TURFGRASS MANAGEMENT  (Program Code: 221.308.01)

Semester 1

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<thead>
<tr>
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<tbody>
<tr>
<td>HRT 110</td>
<td>Principles of Horticulture</td>
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<td>HRT 125</td>
<td>Chemicals in Horticulture</td>
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Semester 2

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<td>HRT 110 and HRT 125</td>
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Semester 3

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<td>HRT 207</td>
<td>Plant Pest Management</td>
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<td>HRT 110</td>
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<td>HRT 228</td>
<td>Turfgrass Management I</td>
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<td>HRT 110</td>
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HOSPITALITY MANAGEMENT

Associate of Applied Science Degree:
• Hospitality Management

Specialization: Food Service Management

Career Studies Certificate:
• Food Service Management Trainee

Specialization: Lodging Management

Career Studies Certificate:
• Lodging Management Trainee

Food Service Management

In the Food Service Management program, students will develop a practical working knowledge of the principles of hotel, motel, restaurant, and institutional management. They will learn about current trends and the latest practices, such as the dynamics of guest relations.

The Career Studies Certificate program prepares students to become a manager trainee in areas such as restaurants, clubs, hotels, and catering businesses.

With the Associate of Applied Science degree in Food Service Management, students may become employed as an assistant kitchen manager, banquet manager, restaurant general manager, cost control manager, hotel assistant food and beverage manager, catering sales manager, kitchen manager, sales manager, or purchasing manager. Courses in supervisory management, accounting, communications, marketing, cost control, and purchasing provide a comprehensive management background.
ASSOCIATE OF APPLIED SCIENCE DEGREE: 
HOSPITALITY MANAGEMENT

Specialization: Food Service Management (Program Code: 775.02)

Semester 1 (Based on a Fall Semester start)

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<tbody>
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<td>Applied Nutrition for Food Service</td>
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<tr>
<td>HRI 154</td>
<td>Principles of Hospitality Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HRI 158</td>
<td>Sanitation and Safety</td>
<td>3</td>
<td></td>
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<tr>
<td>ITE 115</td>
<td>Introduction to Computer Applications and Concepts</td>
<td>4</td>
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<tr>
<td>MTH 121</td>
<td>Fundamentals of Mathematics I or higher</td>
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<td>Placement</td>
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<td>SDV 100</td>
<td>College Success Skills</td>
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<td>ENG 111</td>
<td>College Composition I</td>
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<td>Placement</td>
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<td>HRI 159</td>
<td>Introduction to Hospitality Industry Systems</td>
<td>4</td>
<td>ITE 115</td>
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<tr>
<td>HRI 224</td>
<td>Recipe and Menu Management</td>
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<td>HRI 241</td>
<td>Supervision in the Hospitality Industry</td>
<td>3</td>
<td>HRI 154</td>
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Semester 3

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<th>Credits</th>
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<tbody>
<tr>
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<td>Business Communications</td>
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<td>ENG 111</td>
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<td>HRI 235</td>
<td>Marketing of Hospitality Services</td>
<td>3</td>
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<td>HRI 257</td>
<td>Catering Management</td>
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<td>Social Science Elective¹</td>
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Semester 4

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<tr>
<td>ACC 220</td>
<td>Accounting for Small Business</td>
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<tr>
<td>HRI 251</td>
<td>Food and Beverage Cost Control I</td>
<td>3</td>
<td>MTH 121 or higher</td>
</tr>
<tr>
<td>HRI 255</td>
<td>Human Resource Management and Training for Hospitality and Tourism</td>
<td>3</td>
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<td>HRI 275</td>
<td>Hospitality Law</td>
<td>3</td>
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<tr>
<td>HRI 297</td>
<td>Cooperative Education (or Business Elective²)</td>
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<td>Health/Physical Education Elective¹</td>
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</table>

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2 Business electives include courses with the following prefixes:
   ACC, ACQ, AST, BUS, ECO, ENO, GIS, HRI, ITD, ITE, ITN, ITP, LGL, MKT, and REA.

CAREER STUDIES: FOOD SERVICE MANAGEMENT 
TRAINEE (Program Code: 221.241.64)

Semester 1

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<tbody>
<tr>
<td>HRI 119</td>
<td>Applied Nutrition for Food Service</td>
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<td></td>
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<tr>
<td>HRI 158</td>
<td>Sanitation and Safety</td>
<td>3</td>
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<tr>
<td>HRI 154</td>
<td>Principles of Hospitality Management</td>
<td>3</td>
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</tr>
<tr>
<td>HRI 215</td>
<td>Food Purchasing</td>
<td>3</td>
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<tr>
<td>MTH 121</td>
<td>Fundamentals of Mathematics I</td>
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<td>Placement</td>
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Semester 2

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<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>HRI 224</td>
<td>Recipe and Menu Management</td>
<td>3</td>
<td>HRI 154</td>
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<tr>
<td>HRI 241</td>
<td>Supervision in the Hospitality Industry</td>
<td>3</td>
<td>MTH 121 or higher</td>
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<tr>
<td>HRI 251</td>
<td>Food and Beverage Cost Control I</td>
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<tr>
<td>HRI Approved Elective²</td>
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<td><strong>Total Minimum Credits</strong></td>
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</table>

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2 HRI Approved Electives: 
   HRI 235 – Marketing of Hospitality Services 
   HRI 255 – Human Resource Management and Training for Hospitality and Tourism 
   HRI 257 – Catering Management 
   HRI 275 – Hospitality Law 
   HRI 290/297 – Coordinated Internship in HRI or Cooperative Education in HRI

Lodging Management

In the Lodging Management program, students will develop a practical working knowledge of the principles of hotel, motel, restaurant, and institutional management. They will learn about current trends and the latest practices, such as the dynamics of guest relations.

The Career Studies Certificate program qualifies students as trainees in the field, ready for positions such as front desk clerk, hotel receptionist, housekeeper, or reservationist.

With the Associate of Applied Science degree in Lodging Management, students may be employed as a front office manager, guest services manager, cost control manager, purchasing director, sales manager, assistant hotel general manager, or executive housekeeper. Courses in supervisory management, accounting, communications, marketing, cost control, and purchasing provide a comprehensive management background.
## CAREER AND TECHNICAL EDUCATION

**ASSOCIATE OF APPLIED SCIENCE DEGREE:**  
**HOSPITALITY MANAGEMENT**  
*Specialization: Lodging Management* (Program Code: 775.04)

### Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition</td>
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<td>HRI 154</td>
<td>Principles of Hospitality Management</td>
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<tr>
<td>ITE 115</td>
<td>Introduction to Computer Applications and Concepts</td>
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<td>MTH 121</td>
<td>Fundamentals of Mathematics I</td>
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<td>Placement</td>
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<tr>
<td>Health/Physical Education Elective¹</td>
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**Semester Total:** 16

### Semester 2

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<th>Course Title</th>
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<tbody>
<tr>
<td>AST 205</td>
<td>Business Communications</td>
<td>3</td>
<td>ENG 111</td>
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<tr>
<td>HRI 159</td>
<td>Introduction to Hospitality Industry Computer Systems</td>
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<td>ITE 115</td>
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<td>HRI 224</td>
<td>Recipe and Menu Management</td>
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<td>HRI 241</td>
<td>Supervision in the Hospitality Industry</td>
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**Semester Total:** 16

### Semester 3

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<td>HRI 180</td>
<td>Convention Management and Service</td>
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<td>HRI 235</td>
<td>Marketing of Hospitality Services</td>
<td>3</td>
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<tr>
<td>HRI 265</td>
<td>Hotel Front Office Operations</td>
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**Semester Total:** 15

### Semester 4

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<td>HRI 255</td>
<td>Human Resource Management and Training for Hospitality and Tourism</td>
<td>3</td>
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<td>HRI 270</td>
<td>Strategic Lodging Management</td>
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<td>HRI 275</td>
<td>Hospitality Law</td>
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<td>HRI 297</td>
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**Semester Total:** 18

**Total Minimum Credits:** 65

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¹ Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

² Business electives include courses with the following prefixes: ACC, ACQ, AST, BUS, ECO, FIN, GIS, HRI, ITD, ITE, ITN, ITP, LGL, MKT, and REA.

## CAREER STUDIES: LODGING MANAGEMENT TRAINEE  
(Program Code: 221.775.02)

### Semester 1

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<th>Course Title</th>
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<tr>
<td>HRI 160</td>
<td>Executive Housekeeping</td>
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<td>HRI 180</td>
<td>Convention Management and Service</td>
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<td>HRI 265</td>
<td>Hotel Front Office Operations</td>
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**Semester Total:** 12

### Semester 2

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<td>Marketing of Hospitality Services</td>
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<td>HRI 270</td>
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<td>Hospitality Law</td>
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**Semester Total:** 15

**Total Minimum Credits:** 27

## HUMAN SERVICES

**Associate of Applied Science Degree:**  
• Human Services

The Associate of Applied Science degree in Human Services provides a basic foundation and skill set useful in the field of social and human services. It prepares students for employment in a wide array of job titles, including human services worker, case management aide, social work assistant, community support worker, mental health aide, community outreach worker, life skills counselor, or gerontology aide. These social and human services assistants assess clients’ needs, establish their eligibility for benefits and services, and assist clients in obtaining these benefits and services. Graduates usually work under the direction of workers from a variety of fields, such as nursing, psychiatry, psychology, rehabilitative or physical therapy, or social work.

**ASSOCIATE OF APPLIED SCIENCE DEGREE:**  
**HUMAN SERVICES**  
(Program Code: 480)

### Semester 1 (Based on a Fall Semester start)

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<tbody>
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<td>College Composition I</td>
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<td>HMS 100</td>
<td>Introduction to Human Services</td>
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<td>ITE 115</td>
<td>Introduction to Computer Applications and Concepts</td>
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<td>PSY 201</td>
<td>Introduction to Psychology I</td>
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<tr>
<td>SOC 201</td>
<td>Introduction to Sociology I</td>
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<table>
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<td>HMS 141</td>
<td>Group Dynamics I</td>
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<td>Principles of Case Management</td>
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<td>PBS 265</td>
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<td>PSY 216</td>
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<td>SOC 268</td>
<td>Social Problems</td>
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Total Minimum Credits: 65

<sup>1</sup> Approved Human Services Electives:
ADJ 232 – Domestic Violence
CHD 210 – Introduction to Exceptional Children
HMS 226 – Helping Across Cultures
HMS 227 – The Helper as a Change Agent
HMS 236 – Gerontology
MEN 135 – Human Services and the Law
PSY 215 – Abnormal Psychology
PSY 255 – Psychological Aspects of Criminal Behavior
SOC 215 – Sociology of the Family

### INDUSTRIAL TECHNOLOGY

**Associate of Applied Science Degree:**
- **Specialization:** Industrial Technology
- **Career Studies Certificate:**
  - Specialization: Industrial Maintenance
- **Career Studies Certificate:**
  - Specialization: Industrial Management
- **Career Studies Certificate:**
  - Specialization: Industrial Manufacturing Engineering Technology
- **Career Studies Certificate:**
  - Specialization: Industrial Supervision

**Specialization: Industrial Maintenance Technology**
This program is designed to provide training for students working in industrial maintenance, providing them with skills in managerial techniques of supervision, process management control, quality assurance, and project management.

Graduates will be prepared for the following job opportunities: plant maintenance coordinator, equipment maintenance coordinator, production-planning maintenance technician, or maintenance supervisor in a shipyard, manufacturing or assembly operation, or warehousing environment.

**ASSOCIATE OF APPLIED SCIENCE DEGREE: INDUSTRIAL TECHNOLOGY**

**Specialization: Industrial Maintenance Technology**
(Program Code: 963.10)

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<sup>1</sup> Approved IND Elective:
ADJ 232 – Domestic Violence
CHD 210 – Introduction to Exceptional Children
HMS 226 – Helping Across Cultures
HMS 227 – The Helper as a Change Agent
HMS 236 – Gerontology
MEN 135 – Human Services and the Law
PSY 215 – Abnormal Psychology
PSY 255 – Psychological Aspects of Criminal Behavior
SOC 215 – Sociology of the Family

<sup>2</sup> Approved IND Elective:
ADJ 232 – Domestic Violence
CHD 210 – Introduction to Exceptional Children
HMS 226 – Helping Across Cultures
HMS 227 – The Helper as a Change Agent
HMS 236 – Gerontology
MEN 135 – Human Services and the Law
PSY 215 – Abnormal Psychology
PSY 255 – Psychological Aspects of Criminal Behavior
SOC 215 – Sociology of the Family
### Career and Technical Education

**Semester 2**

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<td>Introduction to Metrology</td>
<td>3</td>
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<td>Statistical Quality Control</td>
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**Semester Total** 17

**Semester 2 (cont.)**

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**Semester Total** 10

**Total Minimum Credits** 23

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your faculty advisor or counselor to choose the appropriate course(s).
2. Consult with your faculty advisor or counselor. Courses must be approved by the appropriate academic dean.

#### Industrial Management

The Industrial Management program is designed to prepare “management-oriented technical professionals” with the practical knowledge, skills, and training to compete effectively for entry-level positions in industrial manufacturing and engineering services companies.

Graduates will be prepared for the following job opportunities: industrial or manufacturing supervisory technician, production planning technician, methods engineering technician, materials-handling technician, wage and job evaluation technician, or plant layout technician.

#### Associate of Applied Science Degree:

**Industrial Technology**

**Specialization: Industrial Management** (Program Code: 963.01)

**Semester 1 (Based on a Fall semester start)**

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<td>Quality Assurance Technology I</td>
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<td>IND 106</td>
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**Semester Total** 17

**Semester 2**

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<td>IND 237</td>
<td>Fundamentals of ISO 9000</td>
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**Semester Total** 16

**Career Studies: Industrial Maintenance**

(Program Code: 221.990.00)

**Semester 1**

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<td>Safety and Health Standards: Regulations</td>
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<td>SAF 297</td>
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**Semester Total** 13

**Semester 2**

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**Semester Total** 16
### Semester 3

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### Semester 4

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<td>IND 293</td>
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### CAREER STUDIES: INDUSTRIAL MANAGEMENT

(Program Code: 221.991.16)

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<td>IND 160</td>
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1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your faculty advisor or counselor to choose the appropriate course(s).
2. Consult with your faculty advisor or counselor. Courses must be approved by the appropriate academic dean.

### Associate of Applied Science Degree: Industrial Technology

**Specialization: Industrial Manufacturing Engineering Technology**  
(Program Code: 963.06)

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<td>MTH 164</td>
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1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your faculty advisor or counselor to choose the appropriate course(s).
2. Consult with your faculty advisor or counselor. Courses must be approved by the appropriate academic dean.

### Industrial Manufacturing Engineering Technology

Graduates will be prepared for the following job opportunities: manufacturing technologist, manufacturing process engineering technologist, line supervisor, industrial/technical representative, industrial/technical sales, production technologist, production foreman, production-planning technician, or line manager in a shipyard.
Industrial Supervision

The Industrial Supervision program is designed to provide the practical knowledge, skills, and training to compete effectively for entry-level supervisory positions in industrial manufacturing and engineering services companies.

Graduates will be capable of delivering operational supervision and leading workers or integrated product teams. Graduates will fill such positions as: industrial supervisory technician, production planning supervisor, materials-handling supervisor, production line supervisor, or plant operations technical supervisor.

ASSOCIATE OF APPLIED SCIENCE DEGREE: INDUSTRIAL TECHNOLOGY
Specialization: Industrial Supervision (Program Code: 963.04)

Semester 1 (Based on a Fall semester start)

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<td>IND 115</td>
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<td>Safety and Health Standards: Regulations and Codes</td>
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Semester 3

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Semester 4

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<td>Plant Layout and Materials Handling</td>
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<td>Time and Motion Study</td>
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<td>Humanities Elective¹</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Science Elective¹</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>Semester Total</strong></td>
<td><strong>17</strong></td>
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</tr>
<tr>
<td></td>
<td><strong>Total Minimum Credits</strong></td>
<td><strong>65</strong></td>
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</table>

CAREER STUDIES: INDUSTRIAL SUPERVISION
(Program Code: 221.991.07)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>IND 101</td>
<td>Quality Assurance Technology I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IND 121</td>
<td>Industrial Supervision I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IND 216</td>
<td>Plant Layout and Materials Handling</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IND 245</td>
<td>Time and Motion Study</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td><strong>Total Minimum Credits</strong></td>
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</table>

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your faculty advisor or counselor to choose the appropriate course(s).

2. Consult with your faculty advisor or counselor. Courses must be approved by the appropriate academic dean.

Occupational Safety

The Occupational Safety program is designed to provide occupational safety instruction, information, and knowledge of safety compliance in accordance with current OSHA regulations and inspection procedures.

The Career Studies Certificate plan prepares students to become a safety technician, a safety examiner for an insurance company, a consumer safety inspector, an industrial hygienist, an OSHA compliance/enforcement officer, a production specialist, or a fire marshal. The Associate of Applied Science degree is designed for any of a number of managerial/supervisory positions in safety including OSHA compliance, safety investigation and inspection, or environmental protection.

ASSOCIATE OF APPLIED SCIENCE DEGREE: INDUSTRIAL TECHNOLOGY
Specialization: Occupational Safety (Program Code: 963.12)

Semester 1 (Based on a Fall semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>SAF 120</td>
<td>Safety and Health Standards: Regulations and Codes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SAF 125</td>
<td>Computer Applications for Technicians</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>SDV 101</td>
<td>Orientation to Engineering and Technologies</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approved IND/SAF Elective²</td>
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Semester 2

<table>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>IND 106</td>
<td>Industrial Engineering Technology</td>
<td>3</td>
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<tr>
<td>MTH 163</td>
<td>Precalculus II</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>SAF 120</td>
<td>Safety and Health Standards: Regulations and Codes</td>
<td>3</td>
<td></td>
</tr>
<tr>
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<td>Approved IND/SAF Elective²</td>
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Semester 3

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>IND 122</td>
<td>Industrial Supervision II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SAF 125</td>
<td>Computer Applications for Technicians</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>SAF 126</td>
<td>Principles of Industrial Safety</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SDV 101</td>
<td>Orientation to Engineering and Technologies</td>
<td>1</td>
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</tr>
<tr>
<td></td>
<td>Approved IND/SAF Elective²</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>Semester Total</strong></td>
<td><strong>17</strong></td>
<td></td>
</tr>
</tbody>
</table>
### Quality Assurance

The Quality Assurance program provides certification through the American Society for Quality (ASQ) and is designed to produce graduates who can manage, plan, design, and maintain effective quality control programs for a variety of industries.

The Quality Assurance program prepares technicians to handle quality assurance issues and monitoring for industry and/or manufacturing company production operations.

Graduates are prepared for promotion to supervisory technical positions and find jobs in: quality engineering, quality assurance, production, operations, material management, and other industrial marine engineering functions.

### ASSOCIATE OF APPLIED SCIENCE DEGREE:

#### INDUSTRIAL TECHNOLOGY

**Specialization: Quality Assurance**

(Program Code: 963.05)

#### Semester 1 (Based on a Fall semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>IND 101</td>
<td>Quality Assurance Technology I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IND 106</td>
<td>Industrial Engineering Technology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IND 237</td>
<td>Fundamentals of ISO 9000</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SAF 125</td>
<td>Computer Applications for Technicians</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>SDV 101</td>
<td>Orientation to Engineering and Technologies</td>
<td>1</td>
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</table>

**Semester Total** 17

#### Semester 2

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>IND 115</td>
<td>Materials and Processes of Industry</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>IND 145</td>
<td>Introduction to Metrology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IND 146</td>
<td>Statistical Quality Control</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MTH 163</td>
<td>Precalculus I</td>
<td>3</td>
<td>MTH 163</td>
</tr>
<tr>
<td>SAF 120</td>
<td>Safety and Health Standards: Regulations and Codes</td>
<td>3</td>
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</tbody>
</table>

**Semester Total** 16

#### Semester 3

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>IND 102</td>
<td>Quality Assurance Technology II</td>
<td>3</td>
<td></td>
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<tr>
<td>IND 105</td>
<td>Nondestructive Inspection (NDI) and Testing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IND 236</td>
<td>Total Quality Concepts</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MTH 164</td>
<td>Precalculus II</td>
<td>3</td>
<td>MTH 163</td>
</tr>
<tr>
<td>SAF 125</td>
<td>Computer Applications for Technicians</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**Semester Total** 15

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1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your faculty advisor or counselor to choose the appropriate course(s).

2 Consult with your faculty advisor or counselor. Courses must be approved by the appropriate academic dean.
The iST programs at TCC are offered as Career Studies Certificates, Certificate, and Associate degrees.

- Each of the ten (10) Career Studies Certificates consists of technology courses that focus on a specific career area in the IST field:
  - Database Specialist
  - Geographic Information Systems
  - Modeling and Simulation
  - Network Administration
  - Network Enterprise Administrator – Windows 2008
  - Network Infrastructure Specialist
  - Network Security
  - Programmer Trainee
  - Virtualization
  - Web Development Specialist

(Most of the above focus areas prepare students to sit for either vendor-specific or vendor-neutral certifications.)

- The Certificate program builds on coursework completed in a Career Studies Certificate program by including general education and business courses.

- The associate degree programs build on coursework completed in a Certificate program and include additional general education, computer, and business courses.

**ADMISSION**

For entry into any of the college’s IST programs, students should have a strong foundation in microcomputer applications, including word processing, spreadsheets, database, the Windows desktop, Internet, and e-mail. Students may demonstrate these competencies by challenging or completing ITE 115. Additionally, students are encouraged to complete the IT core requirements of ITN 101, ITN 106, ITN 107, and ITP 100 (or CSC 110) prior to specializing in any of the Career Studies Certificate programs. Some Career Studies Certificate programs alter these requirements slightly. Be sure to check the specific program requirements prior to enrolling in the core classes.

**ADDITIONAL INFORMATION**

The field of information technology is constantly evolving, and TCC frequently changes its courses and programs to keep them current. Please visit the following website for the most up-to-date information: www.tcc.edu/IST.

Students enrolled in many of the IST courses are eligible for free software from Microsoft Corporation as a result of TCC’s membership in the Microsoft Developers’ Network Academic Alliance (MSDNAA). See www.tcc.edu/IST for details about MSDNAA.
ASSOCIATE OF APPLIED SCIENCE DEGREE: MODELING AND SIMULATION (TECHNICAL STUDIES) (Program Code: 718.03)

The Associate of Applied Science (A.A.S.) degree in Technical Studies: Modeling and Simulation is a hands-on, skill-based curriculum which prepares the student for employment as a technician/analyst in the field.

Modeling and simulation is one of the region’s fastest growing industries. Applications run the spectrum from military simulations, homeland security and medical to serious gaming and transportation. Jobs require problem-solving and technical skills as well as the ability to work independently and with other experts.

Cooperative education experiences help students explore the job market before graduation and gain further skill and understanding of the field.

Semester 1
Course No. | Course Title | Credits | Prerequisite
--- | --- | --- | ---
ENG 111 | College Composition I | 3 | Placement
ITE 115 | Introduction to Computer Applications and Concepts | 4 |
ITN 171 | Unix I | 4 |
ITP 100 | Software Design | 4 |
MTH 163 | Precalculus I | 3 | Placement
Semester Total | | 18 |

Semester 2
Course No. | Course Title | Credits | Prerequisite
--- | --- | --- | ---
BUS 216 | Probability and Statistics for Business and Economics (or MTH 240) | 3 | ITE 115 and MTH 163
ENG 131 | Technical Report Writing I | 3 | ENG 111
ITN 101 | Introduction to Network Concepts | 4 | ITN 106 or ITN 171
ITP 120 | Java Programming I | 4 | ITP 100 or CSC 110
ITP 165 | Gaming and Simulation | 4 | ITP 100 and ITP 120
Semester Total | | 18 |

Semester 3
Course No. | Course Title | Credits | Prerequisite
--- | --- | --- | ---
ITP 251 | Systems Analysis and Design | 3 | ITP 100 or CSC 110 plus appropriate programming language
ITP 260 | Concepts of Simulation | 4 | ITP 165 and ITP 120
ITP 297 | Cooperative Education in ITP | 3 | IT Approved Elective1
Social Science Elective1 | 3 |
Semester Total | | 17 |

Semester 4
Course No. | Course Title | Credits | Prerequisite
--- | --- | --- | ---
ITP 265 | Applications of Modeling and Simulation | 4 | ITP 260
ITP 297 | Cooperative Education in ITP | 3 |
SDV 106 | Preparation for Employment | 1 | Health/Physical Education Elective1
Health/Physical Education Elective1 | 2 |
Humanities Elective1 | 3 |
Social Science Elective1 | 3 |
Semester Total | | 16 |
Total Minimum Credits | | 69 |

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2. IT Approved electives:
- GIS 200 – Geographical Information Systems I
- ITE 150 – Desktop Database Software
- ITP 112 – Visual Basic.NET I
- ITP 132 – C++ Programming
- ITP 193 – Introduction to Game Programming
- ITP 220 – Java Programming II
- PHY 201 – General College Physics I
CAREER STUDIES: MODELING AND SIMULATION
(Program Code: 221.299.72)

The Modeling and Simulation Career Studies Certificate program is designed to provide students with the skills to create computer-generated representations of data that analysts can use in the planning and decision-making processes of a business organization. Graduates may be employed as modeling and simulation technicians, junior software engineers, software engineers, distributed simulation specialists, or simulation analysis assistants.

This advanced Career Studies Certificate program requires a strong background in programming, computer operating systems, and mathematics.

This Career Studies Certificate program can be used to define an area of concentration for the A.A.S. in Information Systems Technology or the Certificate in Information Systems Technology.

Semester 1
Course No. Course Title Credits Prerequisite
ITP 120 Java Programming I 4 ITP 100 or Programming Experience

Semester Total 4

Semester 2
Course No. Course Title Credits Prerequisite
ITP 132 C++ Programming I (or ITP 220) 4 ITP 100 or Programming Experience
ITP 165 Gaming and Simulation 4 ITP 100 and ITP 120

Semester Total 8

Semester 3
Course No. Course Title Credits Prerequisite
ITP 250 Concepts of Simulation 4 ITP 165

Semester Total 4

Semester 4
Course No. Course Title Credits Prerequisite
ITP 265 Applications of Modeling and Simulation 4 ITP 260

Semester Total 4

Total Minimum Credits 20

ASSOCIATE OF APPLIED SCIENCE DEGREE:
INFORMATION SYSTEMS TECHNOLOGY
(Program Code: 299)

The Associate of Applied Science degree program enables students to concentrate in one of the following areas: Database Specialist, Geographic Information Systems, Modeling and Simulation, Network Administration, Network Enterprise Administrator - Windows 2008, Network Infrastructure Specialist, Network Security, Programmer Trainee, Virtualization, or Web Development Specialist. Students select from ONE of the IST Career Studies Certificate programs to define an area of concentration.

Semester 1 (Based on a Fall Semester start)
Course No. Course Title Credits Prerequisite
BUS 100 Introduction to Business 3
ENG 111 College Composition I 3 Placement
ITN 106 Microcomputer Operating Systems 4
ITN 107 Personal Computer Hardware and Troubleshooting 4
MTH 158 College Algebra 3 Placement
or higher
SDV 100 College Success Skills 1

Semester Total 18

Semester 2
Course No. Course Title Credits Prerequisite
AST 205 Business Communications 3 ENG 111
BUS 125 Applied Business Mathematics 3 MTH 121 or higher
BUS 200 Principles of Management (or BUS 165) 3 BUS 100
ITN 101 Introduction to Network Concepts 4 ITN 106 or ITN 171
ITP 100 Software Design 4

Semester Total 17

Semester 3
Course No. Course Title Credits Prerequisite
ACC 211 Principles of Accounting I 3
ECO 120 Survey of Economics (or ECO 201 or ECO 202) 3
Humanities Elective 3
IT Approved Elective 3-4
IT Approved Elective 3-4

Semester Total 15-17
Semester 4

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 212</td>
<td>Principles of Accounting II (or IT Approved Elective)</td>
<td>3-4</td>
<td>ACC 211</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
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<tr>
<td></td>
<td>Health/Physical Education Elective</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT Approved Elective</td>
<td>3-4</td>
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<tr>
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<td>IT Approved Elective</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Semester Total: 15-17

Total Minimum Credits: 65-69

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2 IT approved electives must be selected from one of the IST Career Studies Certificate programs.
3 These courses prepare students to sit for certification exams. ITN 106 and ITN 107 prepare students for the A+ certification and ITN 101 prepares students for the Network+ certification.
4 Students in the Web Development Specialist curriculum should take ITn 106 Introduction to Internet Services in place of ITn 101.
5 Students in the Database Specialist curriculum should take ITN 171 UNIX I in place of ITN 106.
6 IT course is recommended for IST majors. Students planning to transfer to a four-year university should take a transfer course (see page 33 in the 2010-2011 catalog).

CERTIFICATE: INFORMATION SYSTEMS TECHNOLOGY (Program Code: 200)

The Certificate program enables students to concentrate in one of the following areas: Database Specialist, Geographic Information Systems, Modeling and Simulation, Network Administration, Network Enterprise Administrator - Windows 2008, Network Infrastructure Specialist, Network Security, Programmer Trainee, Virtualization, or Web Development Specialist. Students select from ONE of the IST Career Studies Certificate programs to define an area of concentration.

Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>MTH 158</td>
<td>College Algebra</td>
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<td>Placement</td>
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<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
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<td></td>
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Semester Total: 13-15

Semester 2

<table>
<thead>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>BUS 100</td>
<td>Introduction to Business</td>
<td>3</td>
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<td>IT Approved Elective</td>
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</table>

Semester Total: 11-15

Semester 3

<table>
<thead>
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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 211</td>
<td>Principles of Accounting I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT Approved Elective</td>
<td>6-8</td>
<td></td>
</tr>
</tbody>
</table>

Semester Total: 9-11

Total Minimum Credits: 33-41

1 IT approved electives must be selected from one of the IST Career Studies Programs.

CAREER STUDIES: DATABASE SPECIALIST (Program Code: 221.299.11)

The Database Specialist Career Studies Certificate program is designed to provide students with skills in designing, implementing, maintaining, and troubleshooting relational databases. Graduates may be employed as database administrators, database analysts, or database specialists.

TCC is an Oracle Academic Initiative (OAI) Partner and an authorized Oracle training site. The courses in this program prepare students for the examinations leading to Oracle Certified Associate (OCA) and Oracle Certified Professional (OCP) industry certifications.

Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITD 132</td>
<td>Structured Query Language</td>
<td>4</td>
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</tr>
<tr>
<td>ITD 260</td>
<td>Data Modeling and Design</td>
<td>4</td>
<td>Co-req: ITD 132</td>
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Semester Total: 8

Semester 2

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
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<tbody>
<tr>
<td>ITD 250</td>
<td>Database Architecture and Administration</td>
<td>4</td>
<td>ITD 132 and ITN 171</td>
</tr>
<tr>
<td>ITD 134</td>
<td>PL/SQL Programming</td>
<td>4</td>
<td>ITD 132 or SQL knowledge</td>
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Semester Total: 8

Semester 3

<table>
<thead>
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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
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<td>Approved Electives 1</td>
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<td>Approved Electives 1</td>
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Semester Total: 8

Semester 4

<table>
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<th>Course Title</th>
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<tbody>
<tr>
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<td>3-4</td>
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<td>Semester Total: 3-4</td>
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</tbody>
</table>

Total Minimum Credits: 27-28

1 Electives may be chosen from any of the courses listed below:
- ITD 136 – Database Management Software
- ITD 152 – Oracle Forms Developer
- ITD 251 – Database System Development
- ITD 252 – Database Backup and Recovery
- ITD 258 – Database Performance and Tuning
## CAREER STUDIES: GEOGRAPHIC INFORMATION SYSTEMS (GIS) (Program Code: 221.719.71)

The Geographic Information Systems (GIS) Career Studies Certificate program is designed to provide students with skills to visualize, analyze, and model systems to help in the planning and decision-making processes of a business organization, thereby making geographical information accessible to scientists, planners, decision makers, and the public. Graduates may be employed as GIS specialists within a private, public, or governmental agency.

This advanced Career Studies Certificate program requires a strong background in microcomputer applications, including word processing, spreadsheets, databases, operating systems, Internet maneuverability, and e-mail. Students can obtain proficiency in these areas by completing ITE 115. When selecting GIS Approved Electives from a specific concentration, students should ensure that all prerequisite coursework has been completed.

### Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
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<tbody>
<tr>
<td>GIS 200</td>
<td>Geographical Information Systems I</td>
<td>4</td>
<td>ITe 115 (or instructor approval)</td>
</tr>
<tr>
<td>GIS Approved Elective¹</td>
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<td>3-4</td>
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**Semester Total** 7-8

### Semester 2

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>GIS 201</td>
<td>Geographical Information Systems II</td>
<td>4</td>
<td>GIS 200</td>
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<tr>
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**Semester Total** 7-8

### Semester 3

<table>
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<tr>
<td>GIS 205</td>
<td>GIS 3-Dimensional Analysis</td>
<td>4</td>
<td>GIS 201</td>
</tr>
<tr>
<td>GIS 210</td>
<td>Understanding Geographic Data</td>
<td>4</td>
<td>GIS 201</td>
</tr>
<tr>
<td>GIS Approved Elective¹</td>
<td></td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**Semester Total** 12

**Total Minimum Credits** 26-28

1. Select GIS Approved Electives from one of the following areas (Business, Civil Engineering, Environmental Sciences, GIS Generalist, or Information Technology):

- **Business:**
  - BUS 100, BUS 130, BUS 131, BUS 165, BUS 200
- **Civil Engineering:**
  - CIV 115, CIV 116, CIV 171, CIV 256, CIV 259
- **Environmental Sciences:**
  - GIS 230, GOL 105, GOL 225
- **GIS Generalist:**
  - GIS 220, GIS 290 or GIS 297, GOL 105, ITe 150
- **Information Technology:**
  - ITD 132, ITe 150, ITP 112, ITP 165, ITP 170, ITP 212

## CAREER STUDIES: NETWORK ADMINISTRATION (Program Code: 221.732.01)

The Network Administration Career Studies Certificate program is designed to provide students with a broad background in network administration utilizing a number of network operating systems, such as Windows, Unix, and Linux. In addition, students configure and maintain routers to support the network infrastructure. Graduates may be employed as network administrators or help desk technicians.

Depending upon the selection of courses, students are prepared for Cisco, Microsoft, and CompTIA industry certification examinations.

### Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 110</td>
<td>Client Operating System (Windows 7)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ITN 171</td>
<td>UNIX I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ITN 195</td>
<td>Network Fundamentals, Router Basics, and Configuration (ICND1) - Cisco</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ITN 260</td>
<td>Network Security Basics</td>
<td>4</td>
<td>ITN 101 or substantial networking experience</td>
</tr>
</tbody>
</table>

**Semester Total** 16

### Semester 2

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 111</td>
<td>Server Administration (Windows 2008)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ITN 170</td>
<td>Linux System Administration</td>
<td>4</td>
<td>ITN 171</td>
</tr>
<tr>
<td>Approved IT Elective¹</td>
<td></td>
<td>3-4</td>
<td></td>
</tr>
</tbody>
</table>

**Semester Total** 11-12

**Total Minimum Credits** 27-28

1. Approved IT Electives:
   - ITN 112 – Network Infrastructure (Windows 2008)
   - ITN 113 – Active Directory (Windows 2008)
   - ITN 195 – Switching, Wireless, and VoIP Technologies (ICND2) - Cisco
   - ITN 270 – Advanced Linux Network Administration
   - ITN 290 or ITN 297 – Coordinated Internship in ITN or Cooperative Education in ITN
CAREER STUDIES: NETWORK ENTERPRISE ADMINISTRATOR - WINDOWS 2008
(Program Code: 221.732.30)

The Network Enterprise Administrator – Windows 2008 Career Studies Certificate program is designed to provide students with the skills to plan, design, configure, administer, maintain, analyze, and troubleshoot a local area network and an enterprise-level network using the Windows 2008 Server operating system. Graduates may be employed as server administrators, server systems administrators, monitoring operators, local area network administrators, enterprise systems administrators, IT system administrators, enterprise security administrators, or systems architects.

The courses in this program prepare students in their pursuit of the following Microsoft certification exams:
- The Microsoft Certified Professional (MCP) exam, by successfully completing ITN 110.
- A number of Microsoft Certified Technology Specialist (MCTS) exams, each focusing on a specific technology. Each course in this program has its own MCTS exam.
- The Microsoft Certified IT Professional (MCITP) Server Administrator exam, which focuses on the day-to-day operations and management of a Windows 2008 network. Applicable courses are ITN 111, ITN 112, and ITN 113.
- The Microsoft Certified IT Professional (MCITP) Enterprise Administrator exam, which focuses on network design. Applicable courses are ITN 110, ITN 112, ITN 113, ITN 212, and ITN 215.

Semester 1
Course No. | Course Title | Credits | Prerequisite
--- | --- | --- | ---
ITN 110 | Client Operating System (Windows 7) | 4 | 
ITN 111 | Server Administration (Windows 2008) | 4 | 

Semester Total | 8 |

Semester 2
Course No. | Course Title | Credits | Prerequisite
--- | --- | --- | ---
ITN 112 | Network Infrastructure (Windows 2008) | 4 | ITN 111
ITN 113 | Active Directory (Windows 2008) | 4 | ITN 111

Semester Total | 8 |

Semester 3
Course No. | Course Title | Credits | Prerequisite
--- | --- | --- | ---
ITN 212 | Applications Infrastructure (Windows 2008) | 4 | ITN 111
ITN 215 | Enterprise Administration (Windows 2008) | 4 | ITN 111
ITN Approved Elective | 4 | 

Semester Total | 12 |
Total Minimum Credits | 28 |

1 ITN Approved Electives:
- ITN 195 – Network Fundamentals, Router Basics, and Configuration (ICND1) – Cisco
- ITN 214 – Messaging Server Administration (Exchange Server 2007)
- ITN 216 – Database Server Administration (SQL Server 2008)
- ITN 250 – Network Security Basics
- ITN 295 – SharePoint Server Administration (2007)

CAREER STUDIES: NETWORK INFRASTRUCTURE SPECIALIST (Program Code: 221.732.07)

The Network Infrastructure Specialist Career Studies Certificate program is designed to provide students with the skills to install and configure a network, optimize Wide Area Networks (WANs) through Internet access solutions that reduce bandwidth and lower costs, configure routers and switches, design and implement wireless solutions, and secure the networks. Graduates may be employed as network infrastructure administrators, specialists, analysts, or engineers.

TCC is a Cisco Regional Academy that provides training and support for local academies in our service area. The courses in this program prepare students for the examinations leading to industry certifications as a Cisco Certified Networking Associate (CCNA) and as a Cisco Certified Networking Professional (CCNP).

Semester 1
Course No. | Course Title | Credits | Prerequisite
--- | --- | --- | ---
ITN 195 | Network Fundamentals, Router Basics, and Configuration (ICND1) – Cisco | 4 | 
ITN 171 | Unix | 4 | 

Semester Total | 8 |

Semester 2
Course No. | Course Title | Credits | Prerequisite
--- | --- | --- | ---
ITN 195 | Switching, Wireless, and WAN Technologies (ICND2) – Cisco | 4 | Prereq or Co-req:
ITN 295 | Scalable Internetworks (BSCI) – Cisco | 4 | ITN 195 (ICND1)

Semester Total | 8 |

Semester 3
Course No. | Course Title | Credits | Prerequisite
--- | --- | --- | ---
ITN 295 | MultiLayer Switched Networks (BCMSN) – Cisco | 4 | ITN 195 (ICND2)
ITN 295 | Secure Converged Wide Area Networks (ISCW) – Cisco | 4 | ITN 195 (ICND2)

Semester Total | 8 |

Semester 4
Course No. | Course Title | Credits | Prerequisite
--- | --- | --- | ---
ITN 295 | Converged Networks Optimization (ONT) – Cisco | 4 | ITN 195 (ICND2)

Semester Total | 4 |
Total Minimum Credits | 28 |

1 These courses prepare students to sit for the Cisco Certified Networking Associate (CCNA) certification exam.
2 These courses prepare students to sit for the Cisco Certified Networking Professional (CCNP) certification exam.
CAREER STUDIES: NETWORK SECURITY  
(Program Code: 221.732.09)

The Network Security Career Studies Certificate program is designed to provide students with the skills to recognize and prevent threats to information and information systems and to master techniques for defense against such threats. Security models, intrusion detection, incident handling, firewalls, perimeter protection, and network security law issues are covered in the coursework. Graduates may be employed as information security officers and network security specialists in local businesses, educational institutions, and governmental agencies.

This advanced Career Studies Certificate program is designed for working professionals with significant networking experience. ITN 260 prepares the students for the CompTIA Security+ certification examination. Depending upon the selection of courses, students are prepared for Cisco, Microsoft, and other CompTIA industry certification examinations.

**Semester 1**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 260</td>
<td>Network Security Basics</td>
<td>4</td>
<td>ITN 101 or substantial networking experience</td>
</tr>
<tr>
<td>ITN 267</td>
<td>Legal Topics in Network Security</td>
<td>3</td>
<td>Prereq or Co-req: ITN 260</td>
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**Semester Total** 7

**Semester 2**

<table>
<thead>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ITN 261</td>
<td>Network Attacks, Computer Crime and Hacking</td>
<td>4</td>
<td>ITN 260</td>
</tr>
<tr>
<td>ITN 262</td>
<td>Network Communication, Security and Authentication</td>
<td>4</td>
<td>ITN 260</td>
</tr>
<tr>
<td>ITN 263</td>
<td>Internet/Intranet Firewalls and E-Commerce Security</td>
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<td>ITN 260</td>
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**Semester Total** 12

**Semester 3**

<table>
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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ITN 266</td>
<td>Network Security Layers</td>
<td>4</td>
<td>ITN 260</td>
</tr>
<tr>
<td>ITN</td>
<td>Approved ITN Elective</td>
<td>3-4</td>
<td>ITN 260</td>
</tr>
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</table>

**Semester Total** 7-8

**Total Minimum Credits** 26-27

1. Choose from ITN 112, ITN 120, ITN 132, or ITN 136.
2. Choose from ITN 212, ITN 220, ITN 232, or ITN 236.

CAREER STUDIES: PROGRAMMER TRAINEE  
(Program Code: 221.299.06)

The Programmer Trainee Career Studies Certificate program is designed to provide students with the skills to apply critical-thinking and problem-solving techniques utilizing structured and object-oriented programming languages. Students design, code, debug, and document their programs in addition to developing web-based application programs. Graduates may be employed as entry-level programmers or applications support personnel.

Languages currently supported include: Java, Visual Basic.NET, C++, C#.NET, PL/SQL, and ASP.NET.

**Semester 1**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITD 132</td>
<td>Structured Query Language</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ITP</td>
<td>Introductory Programming Language¹</td>
<td>4</td>
<td>ITT 100 or CSC 110</td>
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</table>

**Semester Total** 8

**Semester 2**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITE 215</td>
<td>Advanced Computer Applications and Integration</td>
<td>4</td>
<td>ITE 115</td>
</tr>
<tr>
<td>ITP</td>
<td>Introductory Programming Language¹</td>
<td>4</td>
<td>ITP 100 or CSC 110</td>
</tr>
<tr>
<td>ITP</td>
<td>Advanced Programming Language²</td>
<td>4</td>
<td>Related Intro Programming Language</td>
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**Semester Total** 12

**Semester 3**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 251</td>
<td>System Analysis and Design</td>
<td>3</td>
<td>ITP 100 or CSC 110 plus Related Intro Programming Language</td>
</tr>
<tr>
<td>ITP</td>
<td>Advanced Programming Language²</td>
<td>4</td>
<td>Related Intro Programming Language</td>
</tr>
</tbody>
</table>

**Semester Total** 7

**Total Minimum Credits** 27

1. Choose from ITP 112, ITP 120, ITP 132, or ITP 136.
2. Choose from ITP 212, ITP 220, ITP 232, or ITP 236.

CAREER STUDIES: VIRTUALIZATION  
(Program Code: 221.299.71)

The Career Studies Certificate in Virtualization prepares students to install, deploy, configure, manage, secure, and analyze a VMware virtual infrastructure in a networked environment. Graduates may be employed as server administrators, monitoring operators, local area network administrators, enterprise systems administrators, IT system administrators, enterprise security administrators, or systems architects, along with a growing field of VMware specialists.
### CAREER AND TECHNICAL EDUCATION

#### CAREER STUDIES, WEB DEVELOPMENT SPECIALIST *(Program Code: 221.352.01)*

The Web Development Specialist Career Studies Certificate program is designed to provide students with the skills to design, administer, and troubleshoot Web pages and Web sites. Depending upon the selection of electives within the program, students can concentrate on Web design or Web programming. Graduates may be employed as Web page designers and managers, Web site managers, Web graphics designers, Web application developers, Web programmers, or Web database programmers.

The courses in this program prepare students for the examinations leading to industry certifications as a Certified Internet Webmaster (CIW) Associate and as a Certified Internet Webmaster (CIW) Professional.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 171</td>
<td>Unix I</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITN 260</td>
<td>Network Security Basics</td>
<td>4</td>
<td>ITN 101 or substantial networking experience</td>
<td></td>
</tr>
</tbody>
</table>

| Semester Total | 8 |

<table>
<thead>
<tr>
<th>Semester 2</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 213</td>
<td>Information Storage and Management</td>
<td>4</td>
<td>ITN 101</td>
<td></td>
</tr>
<tr>
<td>ITN 293</td>
<td>VMware Virtual Infrastructure: Installation and Configuration</td>
<td>4</td>
<td>ITN 171 and ITN 260</td>
<td></td>
</tr>
</tbody>
</table>

| Semester Total | 8 |

<table>
<thead>
<tr>
<th>Semester 3</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 293</td>
<td>VMware Virtual Infrastructure: Deployment, Security, and Analysis</td>
<td>4</td>
<td>ITN 293 - Install and Configure</td>
<td></td>
</tr>
</tbody>
</table>

| Semester Total | 4 |

| Total Minimum Credits | 20 |

1. Choose from courses for career specialties in either Web Design Graphics or Web Programming:
   - **Web Design Graphics:**
     - ITD 112 – Designing Web Page Graphics
     - ITD 212 – Interactive Web Design
   - **Web Programming:**
     - ITD 132 – Structured Query Language
     - ITD 120 – Java Programming I
     - ITD 240 – Server Side Programming
     - ITD 242 – ASP Server Side Scripting

2. Courses lead to Certified Internet Webmaster (CIW) Associate and Professional certifications.

### INTERIOR DESIGN

#### Associate of Applied Science Degree:
- **Interior Design**

#### Career Studies Certificates:
- Associate Designer
- Green Design for Interiors
- Kitchen and Bath Design

The Associate of Applied Science (A.A.S.) degree in Interior Design is a blend of general education and interior design courses that provide a foundation in visual presentation skills, spatial design, color coordination, the evolution of furniture and interior styles, and estimation. Students can customize the program with their choice of interior design electives.

Graduates with the A.A.S. degree find positions in visual merchandising, floor coverings, decorative accessories, and home furnishings. They work for architectural firms, commercial designers, retailers, or open their own design firms.

This program is offered at the Chesapeake Campus.

#### ASSOCIATE OF APPLIED SCIENCE DEGREE: INTERIOR DESIGN *(Program Code: 520)*

<table>
<thead>
<tr>
<th>Semester 1 (Based on a Fall Semester start)</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDS 100</td>
<td>Theory and Techniques of Interior Design</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDS 105</td>
<td>Architectural Drafting for Interior Design</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDS 205</td>
<td>Materials and Sources</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTH 158</td>
<td>College Algebra (or MTH 121)</td>
<td>3</td>
<td>Placement</td>
<td></td>
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<tr>
<td>SDV 101</td>
<td>Orientation to Interior Design</td>
<td>1</td>
<td></td>
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<tr>
<td>CST 100</td>
<td>Principles of Public Speaking</td>
<td>3</td>
<td></td>
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</tr>
</tbody>
</table>

| Semester Total | 16 |
### CAREER AND TECHNICAL EDUCATION

#### Semester 1
**Course No.** | **Course Title** | **Credits** | **Prerequisite**
--- | --- | --- | ---
IDS 100 | Theory and Techniques of Interior Design | 3 | 
IDS 105 | Architectural Drafting for Interior Design | 3 | 
IDS 109 | Styles of Furniture and Interiors | 3 | 
IDS 205 | Materials and Sources | 3 | 

**Semester Total** | **12**

#### Semester 2
**Course No.** | **Course Title** | **Credits** | **Prerequisite**
--- | --- | --- | ---
IDS 106 | Three-Dimensional Drawing and Rendering | 3 | 
IDS 120 | Estimation of Interior Coverings | 3 | 
IDS 245 | Computer-Aided Drafting for Interior Designers | 3 | IDS 105

**Semester Total** | **12**

**Total Minimum Credits** | **24**

---

#### CAREER STUDIES: GREEN DESIGN FOR INTERIORS
(Program Code: 221.520.10)

The Career Studies Certificate in Green Design for Interiors prepares students for a career emphasis in “Green Design.” This Career Studies Certificate is based upon the requirements for LEED Certification (Leadership In Energy and Environmental Design), and is designed to prepare individuals to take the LEED Certification exam for Homes (LEED-H). Program graduates will be able to assist their clients through the inclusion of more eco-friendly interior materials and techniques for ‘green design’ interiors.

#### Semester 1
**Course No.** | **Course Title** | **Credits** | **Prerequisite**
--- | --- | --- | ---
IDS 100 | Theory and Techniques of Interior Design | 3 | 
IDS 105 | Architectural Drafting for Interior Design | 3 | 
IDS 109 | Styles of Furniture and Interiors | 3 | 
IDS 205 | Materials and Sources | 3 | 

**Semester Total** | **12**

#### Semester 2
**Course No.** | **Course Title** | **Credits** | **Prerequisite**
--- | --- | --- | ---
IDS 106 | Three-Dimensional Drawing and Rendering | 3 | 
IDS 120 | Estimation of Interior Coverings | 3 | 
IDS 206 | Lighting and Furnishings | 3 | IDS 105

**Semester Total** | **12**

**Total Minimum Credits** | **24**

---

#### CAREER STUDIES: ASSOCIATE DESIGNER
(Program Code: 221.520.17)

The Associate Designer Career Studies Certificate provides a basic foundation in visual presentation skills, spatial design, color coordination, the evolution of furniture and interior styles, and estimation. All courses count toward the associate degree.

This Career Studies Certificate program prepares the student for employment as a color consultant or sales associate of retail interior design.

#### Semester 1
**Course No.** | **Course Title** | **Credits** | **Prerequisite**
--- | --- | --- | ---
IDS 100 | Theory and Techniques of Interior Design | 3 | 
IDS 105 | Architectural Drafting for Interior Design | 3 | 
IDS 250 | Green Design for Interior Designers | 3 | IDS 100

**Semester Total** | **9**

#### Semester 2
**Course No.** | **Course Title** | **Credits** | **Prerequisite**
--- | --- | --- | ---
IDS 116 | Period Residential Design | 4 | IDS 105 and IDS 217
IDS 215 | Theory and Research in Commercial Design | 3 | IDS 105 and IDS 217
IDS 245 | Computer-Aided Drafting for Interior Designers | 3 | IDS 105
IDS 250 | Green Design for Interior Designers | 3 | IDS 100 and IDS 105
IDS Elective1 | 3 | 

**Semester Total** | **13**

**Total Minimum Credits** | **68**

---

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2. Consult with your academic advisor or counselor. Courses must be approved by the appropriate division dean.
CAREER AND TECHNICAL EDUCATION

CAREER STUDIES: KITCHEN AND BATH DESIGN
(Program Code: 221.520.25)

The Career Studies Certificate in Kitchen and Bath Design prepares students for a career emphasis in the design of kitchens, baths, and related cabinetry. This Career Studies Certificate is based on the requirements of the National Kitchen and Bath Association (NKBA), and it prepares individuals to take the NKBA examination for an Associate Kitchen and Bath Designer (AKBD) certification. Program completers will be able to apply through the NKBA to take the certification exam for the Associate Kitchen and Bath Designer certification (AKBD).

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IDS 105</td>
<td>Architectural Drafting for Interior Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDS 205</td>
<td>Materials and Sources</td>
<td>3</td>
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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ARC 133</td>
<td>Construction Methodology &amp; Procedures I</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDS 106</td>
<td>Three-Dimensional Drawing and Rendering</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDS 206</td>
<td>Lighting and Furnishings</td>
<td>3</td>
<td>IDS 105</td>
<td></td>
</tr>
<tr>
<td>IDS 225</td>
<td>Business Procedures</td>
<td>3</td>
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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>IDS 217</td>
<td>Advanced Rendering and Presentation</td>
<td>3</td>
<td>IDS 105</td>
<td></td>
</tr>
<tr>
<td>IDS 298</td>
<td>Seminar and Project in Interior Design</td>
<td>2</td>
<td>Divisional Approval</td>
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<th>Course No.</th>
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<tbody>
<tr>
<td>IDS 245</td>
<td>Computer-Aided Drafting for Interior Design</td>
<td>3</td>
<td>IDS 105</td>
<td></td>
</tr>
<tr>
<td>IDS 290</td>
<td>Internship</td>
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<td>Divisional Approval</td>
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</tbody>
</table>

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2. Consult with your academic advisor or counselor. Courses must be approved by the appropriate division dean.

MANAGEMENT

Associate of Applied Science Degree:
• Management

Specialization: Maritime Logistics

Career Studies Certificates:
• Acquisition and Procurement
• Retail Operations
• Small Business Management
• Supervisory Management

Tomorrow’s administrative assistants, department heads, management and supervisor trainees, office managers, or supervisors will get the training and education they need to get a good start in the management program. It also helps current managers update their skills for advancement and promotion.

The Associate of Applied Science (A.A.S.) degree program takes both a theoretical and a practical approach to accounting, marketing, business law, statistics, economics, and human resource management. Graduates become supervisors, department heads, office managers, small business managers, and administrative assistants.

A cooperative education program allows students to earn academic credit and supplement their income while they gain work experience at local sites.

The courses for the A.A.S. degree in Management are available at all four campuses. The Career Studies Certificate in Acquisition and Procurement is only available at the Virginia Beach Campus. Most courses in the remaining Career Studies Certificates are available on most campuses.

ASSOCIATE OF APPLIED SCIENCE DEGREE: MANAGEMENT
(Program Code: 212)

Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 211</td>
<td>Principles of Accounting I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BUS 100</td>
<td>Introduction to Business</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>ITE 115</td>
<td>Introduction to Computer Applications and Concepts</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MTH 121</td>
<td>Fundamentals of Mathematics I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
<td>1</td>
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<td>Semester Total</td>
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<td>17</td>
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</table>

Semester 2

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACC 212</td>
<td>Principles of Accounting II</td>
<td>3</td>
<td>ACC 211</td>
</tr>
<tr>
<td>AST 205</td>
<td>Business Communications</td>
<td>3</td>
<td>ENG 111</td>
</tr>
<tr>
<td>BUS 125</td>
<td>Applied Business Mathematics</td>
<td>3</td>
<td>MTH 121 or higher</td>
</tr>
<tr>
<td>BUS 200</td>
<td>Principles of Management</td>
<td>3</td>
<td>BUS 100</td>
</tr>
<tr>
<td>ECO 201</td>
<td>Principles of Macroeconomics (or ECO 120)</td>
<td>3</td>
<td>Health/Physical Education Elective</td>
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<td>Semester Total</td>
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### CAREER STUDIES: SMALL BUSINESS MANAGEMENT

(Program Code: 221.212.24)

**Semester 1**

<table>
<thead>
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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
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<td>Accounting for Small Business</td>
<td>3</td>
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<tr>
<td>BUS 111</td>
<td>Principles of Supervision I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>ITE 115</td>
<td>Introduction to Computer Applications and Concepts</td>
<td>4</td>
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**Semester Total** 13

**Total Minimum Credits** 29

**Semester 2**

<table>
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<tr>
<th>Course No.</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>AST 205</td>
<td>Business Communications</td>
<td>3</td>
<td>ENG 111</td>
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<tr>
<td>BUS 160</td>
<td>Legal Aspects of Small Business Operations</td>
<td>1</td>
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<tr>
<td>BUS 260</td>
<td>Planning for Small Business</td>
<td>2</td>
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<tr>
<td>FIN 260</td>
<td>Financial Management for Small Business</td>
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<tr>
<td>MKT 160</td>
<td>Marketing for Small Business</td>
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**Semester Total** 11

**Total Minimum Credits** 27

### CAREER STUDIES: ACQUISITION AND PROCUREMENT

(Program Code: 221.248.05)

**Semester 1**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACQ 121</td>
<td>Introduction to Acquisition and Procurement Fundamentals I</td>
<td>3</td>
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<tr>
<td>ACQ 215</td>
<td>Contract Law</td>
<td>3</td>
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<tr>
<td>ACQ 231</td>
<td>Principles of Contract Pricing and Negotiations I</td>
<td>3</td>
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</table>

**Semester Total** 9

**Total Minimum Credits** 18

**Semester 2**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ACQ 122</td>
<td>Introduction to Acquisition and Procurement Fundamentals II</td>
<td>3</td>
<td>ACQ 121</td>
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<tr>
<td>ACQ 221</td>
<td>Advanced Acquisition and Procurement Management I</td>
<td>3</td>
<td>ACQ 121</td>
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<tr>
<td>ACQ 232</td>
<td>Principles of Contract Pricing and Negotiations II</td>
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<td>ACQ 231</td>
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</table>

**Semester Total** 9

**Total Minimum Credits** 18

### CAREER STUDIES: RETAIL OPERATIONS

(Program Code: 221.212.23)

**Semester 1**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BUS 111</td>
<td>Principles of Supervision I</td>
<td>3</td>
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<tr>
<td>CST 110</td>
<td>Introduction to Communication</td>
<td>3</td>
<td></td>
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<tr>
<td>MKT 100</td>
<td>Principles of Marketing</td>
<td>3</td>
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<tr>
<td>MKT 110</td>
<td>Principles of Selling</td>
<td>3</td>
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<tr>
<td>Approved Electives*</td>
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**Semester Total** 15

**Total Minimum Credits** 29

**Semester 2**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>MKT 193</td>
<td>Portfolio Development</td>
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<td>MKT 216</td>
<td>Retail Organization and Management</td>
<td>3</td>
<td></td>
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<tr>
<td>MKT 260</td>
<td>Customer Service Management</td>
<td>3</td>
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</tr>
<tr>
<td>SDV 106</td>
<td>Preparation for Employment</td>
<td>1</td>
<td>Approved Electives*</td>
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<td></td>
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<td>Approved Electives*</td>
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**Semester Total** 14

**Total Minimum Credits** 29
## Career and Technical Education

### Career Studies: Supervisory Management

**Program Code:** 221.212.25

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>ACC 211</td>
<td>Principles of Accounting I</td>
<td>3</td>
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<tr>
<td>BUS 100</td>
<td>Introduction to Business</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td>BUS 201</td>
<td>Organizational Behavior</td>
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<table>
<thead>
<tr>
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<th>Course No.</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BUS 200</td>
<td>Principles of Management</td>
<td>3</td>
<td>BUS 100</td>
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<tr>
<td>BUS 205</td>
<td>Human Resource Management</td>
<td>3</td>
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<tr>
<td>ENG 131</td>
<td>Technical Report Writing I</td>
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<td>ENG 111</td>
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<tr>
<td>SAF 126</td>
<td>Principles of Industrial Safety</td>
<td>3</td>
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<td><strong>Semester Total</strong></td>
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<td><strong>Total Minimum Credits</strong></td>
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<td>24</td>
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</tbody>
</table>

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

### Maritime Logistics

Maritime Logistics Management is the part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption in order to meet customers’ requirements in the maritime and business environments. Supply management has evolved from a clerical function requiring limited education to strategic supply management with a professional staff, a proactive approach, and a global view.

The Associate of Applied Science degree program takes a theoretical and a practical approach to the supply chain processes of distribution and transportation, supply chain management, purchasing, inventory and warehouse management, accounting, integrated logistics, and financial management. Graduates are prepared for employment and growth in the field of logistics management in the maritime and business environments.

### Associate of Applied Science Degree: Management

**Specialization: Maritime Logistics** (Program Code: 212.02)

<table>
<thead>
<tr>
<th>Semester 1 (Based on a Fall Semester start)</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 211</td>
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<td>Introduction to Business</td>
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<td>College Composition I</td>
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<td>Placement</td>
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<tr>
<td>MTH 121 or higher</td>
<td>Fundamentals of Mathematics I</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
<td>1</td>
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<tr>
<td><strong>Semester Total</strong></td>
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<td></td>
<td>17</td>
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</tbody>
</table>

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

2. Electives:
   - BUS 130 – Maritime Logistics Afloat
   - BUS 131 – Maritime Logistics Ashore

### Semester 2

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
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<tbody>
<tr>
<td>ACC 212</td>
<td>Principles of Accounting II</td>
<td>3</td>
<td>ACC 211</td>
</tr>
<tr>
<td>AST 205</td>
<td>Business Communications</td>
<td>3</td>
<td>ENG 111</td>
</tr>
<tr>
<td>BUS 125</td>
<td>Applied Business Mathematics</td>
<td>3</td>
<td>MTH 121 or higher</td>
</tr>
<tr>
<td>BUS 200</td>
<td>Principles of Management</td>
<td>3</td>
<td>BUS 100</td>
</tr>
<tr>
<td>ECO 120</td>
<td>Survey of Economics (or ECO 201)</td>
<td>3</td>
<td>Health/Physical Education Elective¹</td>
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| Semester Total |  | 17 |

### Semester 3

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>BUS 215</td>
<td>Purchasing and Materials Management (or BUS approved elective²)</td>
<td>3</td>
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<tr>
<td>BUS 223</td>
<td>Distribution and Transportation</td>
<td>3</td>
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<tr>
<td>BUS 265</td>
<td>Ethical Issues in Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BUS 297</td>
<td>Cooperative Education (or BUS prefix courses only)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKT 100</td>
<td>Principles of Marketing</td>
<td>3</td>
<td>Humanities Elective²</td>
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| Semester Total |  | 18 |

### Semester 4

<table>
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<th>Course No.</th>
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<tbody>
<tr>
<td>BUS 234</td>
<td>Supply Chain Management</td>
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<tr>
<td>BUS 255</td>
<td>Inventory and Warehouse Management (or BUS approved elective²)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BUS 297</td>
<td>Cooperative Education (or BUS prefix courses only)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>FIN 215</td>
<td>Financial Management</td>
<td>3</td>
<td>ACC 212 or Instructor Permission</td>
</tr>
</tbody>
</table>

| Semester Elective² | 3 |

| Semester Total |  | 15 |

| Total Minimum Credits | 67 |

1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

2. Electives:
   - BUS 130 – Maritime Logistics Afloat
   - BUS 131 – Maritime Logistics Ashore

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**NOTE:** This information is subject to change. Please refer to the official Tidewater Community College catalog for the most current and accurate information.
CAREER AND TECHNICAL EDUCATION

MARINE GASOLINE ENGINE TECHNOLOGY

Career Studies Certificate:
• Marine Gasoline Engine Technology

The Career Studies Certificate in Marine Gasoline Engine Technology prepares students for a career in marine engine service and repair. Upon completion of the program, students will be able to maintain, diagnose, and repair marine engines and stern drive systems found in the pleasure boating industry.

CAREER STUDIES: MARINE GASOLINE ENGINE TECHNOLOGY (Program Code: 221.953.10)

Semester 1
Course No. Course Title Credits Prerequisite
MAR 130 Marine Maintenance Mechanics 3 Placement
MAR 137 Basic Marine Electrical Circuits 4
MAR 157 Small Outboard Engine Service 4
MAR 165 Stern Drive Transmission Service 4
Semester Total 15

Semester 2
Course No. Course Title Credits Prerequisite
MAR 140 Intro to Hydraulics and Hydraulic Systems 4
MAR 158 Inboard Engine Service 4
MAR 159 Large Outboard Engine Service 4
Semester Total 12
Total Minimum Credits 27

MEDICAL ASSISTING

Certificate:
• Medical Assisting

Career Studies Certificate:
• Medical Office Administration

Students are trained to work in various health care settings, including physicians’ offices, urgent care facilities, and hospitals. Upon completion of the program, students are eligible for nurse aide certification and meet all national standards to successfully complete the national certification examination.

In addition to the general college admission requirements, students must have completed three years of high school English, two years of high school math, including Algebra I, and one year of high school biology. Placement into ENG 111 and MTH 126 are required. Completion of ITE 115 (or equivalent computer competencies) must be met prior to acceptance into the program. Students must also be able to type 35 words per minute and have CPR for healthcare providers (before beginning the clinical portion of the program) and meet technical standards for the medical assistant. A physical examination is required. Transcripts from other colleges attended must be sent to Tidewater Community College, Central Records Office/Office of the College Registrar, P.O. Box 9000, Norfolk, Virginia, 23509, prior to the application deadline date. These transcripts must be evaluated before any transfer credit is granted. The application deadline is June 15.

Students must maintain a C average or better to remain in good standing. Students will be readmitted to the program at the discretion of the program director and according to space availability. A 320-hour internship in a doctor’s office, nursing home, hospital and/or urgent care center is required for graduation.

Program requirements may change in accordance with federal, state, or industry standards. Call 822-7255 for the most current information.

The Tidewater Community College Virginia Beach Campus’ Medical Assisting Program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org), upon the recommendation of the Medical Assisting Education Review Board (MAERB), 20 N. Wacker Drive, Suite 1575, Chicago, IL 60606.

CERTIFICATE: MEDICAL ASSISTING (Program Code: 166)

Semester 1
Course No. Course Title Credits Prerequisite
ENG 111 College Composition I 3 Placement
HLT 105 Cardiopulmonary Resuscitation 1
HLT 130 Nutrition and Diet Therapy 1
MDA 100 Introduction to Medical Assisting 1 Instructor permission
MDA 101 Medical Assistant Science I 4 Instructor permission
MDA 203 Medical Office Procedures 3 Instructor permission
MDA 207 Medical Law and Ethics 2 Instructor permission
SDV 101 Orientation to Health Care 1
Semester Total 16

Semester 2
Course No. Course Title Credits Prerequisite
MDA 102 Medical Assistant Science II 2 Instructor permission
MDA 104 Medical Assistant Science IV 3 Instructor permission
MDA 190 Coordinated Internship in Medical Assisting 1 Instructor permission
MDA 190 Coordinated Internship in Medical Assisting 2 Instructor permission
MDA 208 Medical Office Coding 2 Instructor permission
MDA 209 Medical Office Insurance 2 Instructor permission
MDA 221 Diagnostic Laboratory Procedures 4 Instructor permission
Semester Total 16

MARINE GASOLINE ENGINE TECHNOLOGY

Career Studies Certificate:
• Marine Gasoline Engine Technology

CAREER STUDIES: MARINE GASOLINE ENGINE TECHNOLOGY (Program Code: 221.953.10)

Semester 1
Course No. Course Title Credits Prerequisite
MAR 130 Marine Maintenance Mechanics 3 Placement
MAR 137 Basic Marine Electrical Circuits 4
MAR 157 Small Outboard Engine Service 4
MAR 165 Stern Drive Transmission Service 4
Semester Total 15

Semester 2
Course No. Course Title Credits Prerequisite
MAR 140 Intro to Hydraulics and Hydraulic Systems 4
MAR 158 Inboard Engine Service 4
MAR 159 Large Outboard Engine Service 4
Semester Total 12
Total Minimum Credits 27

MEDICAL ASSISTING

Certificate:
• Medical Assisting

Career Studies Certificate:
• Medical Office Administration

Students are trained to work in various health care settings, including physicians’ offices, urgent care facilities, and hospitals. Upon completion of the program, students are eligible for nurse aide certification and meet all national standards to successfully complete the national certification examination.

In addition to the general college admission requirements, students must have completed three years of high school English, two years of high school math, including Algebra I, and one year of high school biology. Placement into ENG 111 and MTH 126 are required. Completion of ITE 115 (or equivalent computer competencies) must be met prior to acceptance into the program. Students must also be able to type 35 words per minute and have CPR for healthcare providers (before beginning the clinical portion of the program) and meet technical standards for the medical assistant. A physical examination is required. Transcripts from other colleges attended must be sent to Tidewater Community College, Central Records Office/Office of the College Registrar, P.O. Box 9000, Norfolk, Virginia, 23509, prior to the application deadline date. These transcripts must be evaluated before any transfer credit is granted. The application deadline is June 15.

Students must maintain a C average or better to remain in good standing. Students will be readmitted to the program at the discretion of the program director and according to space availability. A 320-hour internship in a doctor’s office, nursing home, hospital and/or urgent care center is required for graduation.

Program requirements may change in accordance with federal, state, or industry standards. Call 822-7255 for the most current information.

The Tidewater Community College Virginia Beach Campus’ Medical Assisting Program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org), upon the recommendation of the Medical Assisting Education Review Board (MAERB), 20 N. Wacker Drive, Suite 1575, Chicago, IL 60606.

CERTIFICATE: MEDICAL ASSISTING (Program Code: 166)

Semester 1
Course No. Course Title Credits Prerequisite
ENG 111 College Composition I 3 Placement
HLT 105 Cardiopulmonary Resuscitation 1
HLT 130 Nutrition and Diet Therapy 1
MDA 100 Introduction to Medical Assisting 1 Instructor permission
MDA 101 Medical Assistant Science I 4 Instructor permission
MDA 203 Medical Office Procedures 3 Instructor permission
MDA 207 Medical Law and Ethics 2 Instructor permission
SDV 101 Orientation to Health Care 1
Semester Total 16

Semester 2
Course No. Course Title Credits Prerequisite
MDA 102 Medical Assistant Science II 2 Instructor permission
MDA 104 Medical Assistant Science IV 3 Instructor permission
MDA 190 Coordinated Internship in Medical Assisting 1 Instructor permission
MDA 190 Coordinated Internship in Medical Assisting 2 Instructor permission
MDA 208 Medical Office Coding 2 Instructor permission
MDA 209 Medical Office Insurance 2 Instructor permission
MDA 221 Diagnostic Laboratory Procedures 4 Instructor permission
Semester Total 16

TIDewater community collEgE • cataloG 2010-11
Medical Office Administration
This Career Studies Certificate represents the administrative (front office) portion of the classes included in the Medical Assisting Certificate program at Tidewater Community College. This program provides valuable information for use in a doctor's office, an urgent care center, hospital, or medical coding and billing facility. The program provides courses in anatomy, physiology, medical terminology, legal and ethical issues, coding and insurance, and medical office procedures. Graduates of this program have excellent opportunities in the health care industry.

Through placement testing, students must place into ENG 111. Students must complete ITE 115 or exhibit equivalent computer competency skills prior to acceptance into the program. Students must be able to type 35 words per minute and possess a current CPR certification for Health Care Providers before entering the clinical portion of the program. A physical exam is required. The application deadline is June 15.

Music
Career Studies Certificate:
• Music

The Career Studies Certificate in Music is designed to provide students with a solid introduction to music for those interested in pursuing a degree in music or enhancing their understanding of music theory, appreciation, and history. Additionally, it provides the opportunity to improve performance skills in either choral or selected instruments.

Music (Program Code: 221.529.01)

<table>
<thead>
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<th>Course Title</th>
<th>Credits</th>
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<td>MUS 101</td>
<td>Basic Musicianship I</td>
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</tr>
<tr>
<td>MUS 102</td>
<td>Basic Musicianship II</td>
<td>3</td>
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</tr>
<tr>
<td>MUS 111</td>
<td>Music Theory I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MUS 112</td>
<td>Music Theory II</td>
<td>4</td>
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<td>MUS 121</td>
<td>Music Appreciation I</td>
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<tr>
<td>MUS 122</td>
<td>Music Appreciation II</td>
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<td>Applied Music Elective¹</td>
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<tr>
<td>Approved Music Elective²</td>
<td>3-5</td>
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</table>

Total Minimum Credits: 25-29

1. Applied Music course must be taken from the following:
   - MUS 136 – Applied Music – Voice
   - MUS 145 – Applied Music – Keyboard
   - MUS 155 – Applied Music – Woodwinds
   - MUS 165 – Applied Music – Strings
   - MUS 175 – Applied Music – Brass
   - MUS 185 – Applied Music – Percussion
   - MUS 236 – Advanced Applied Music – Voice
   - MUS 245 – Advanced Applied Music – Keyboard
   - MUS 265 – Advanced Applied Music – Strings

   Applied Music courses will require additional fees/studio charges for off-campus instruction to meet proficiency requirements. Contact the Music Department for details.

2. Approved Music Electives:
   - MUS 137 – Chorus Ensemble
   - MUS 197 – Cooperation Education
   - MUS 211 – Advanced Music Theory I
   - MUS 212 – Advanced Music Theory II
   - MUS 221 – History of Music I
   - MUS 222 – History of Music II
   - MUS 237 – Chorus Ensemble
NURSING PROGRAM

Associate of Applied Science Degree:
- Nursing

The Associate of Applied Science (A.A.S.) degree in Nursing is designed to prepare students who want to pursue a career as a Registered Nurse. The program provides a background for maximum transfer opportunities to baccalaureate nursing programs. Registered nurses are eligible for employment in a variety of facilities including acute care, doctors’ offices, health departments, home health services, hospices, long-term care, and mental health and rehabilitation centers. Students experience planned theory and clinical practice in a variety of nursing/community settings. The program integrates clinical laboratory practice using state-of-the-art patient care simulators and state-of-the-art laboratory equipment. The use of state-of-the-art technology better prepares students for their role in the workforce.

The A.A.S. in Nursing requires five semesters of full-time study and is fully accredited by the National League for Nursing Accrediting Commission (NLNAC). The National League for Nursing Accrediting Commission (3343 Peachtree Road NE, Atlanta, GA (866-747-9965)) may be used as a resource for program information. TCC’s program is also approved by the Virginia Board of Nursing. The Board of Nursing can deny licensure to any applicant who has filed false credentials, who has falsely represented facts on the application for licensure, and/or has committed a felony/misdemeanor. Some health facilities may not employ individuals who have committed certain criminal acts and may conduct criminal background checks before hiring. Background checks for criminal history and sex offender crimes against minors are required for entrance into some clinical agencies. Students who have convictions may be prohibited from clinical practice and may not complete the degree program.

Prospective nursing applicants must be accepted into TCC and attend a nursing information session. Students are admitted in cohort groups—two groups are admitted in the fall and two groups are admitted in the spring. Applications are accepted between September 1, and May 15. All admission documents must be submitted and admission requirements must be met by May 15. The criteria for admission to the nursing program are outlined in the Registered Nursing Program Admissions Procedures and Information Booklet for Students. Additional information related to diagnostic testing requirements is included in this booklet. Students are selected based on a weighted point system as outlined in the Information Booklet noted above.

Students are responsible for costs related to required testing fees, liability insurance, uniforms, books, criminal history and sex offender crimes against minors’ checks, parking at clinical sites, and nursing skills packs.

Progression

Students must pass each nursing course to proceed to the next course. For clinically based nursing courses, students must pass theory as well as clinical to pass the course and meet the designated clinical hours. Students must maintain a minimum GPA of 2.0 to continue in the program.

LPN to RN Options

Licensed Practical Nurses (LPNs) who desire to pursue their RN education have two options: articulation or advanced placement. Articulation awards credits based on previous learning experiences at LPN programs after students successfully complete Nursing 115 (Transition from LPN to RN Education). For more information on these options, please see the specific admission requirements as outlined in the Registered Nursing Program Admissions Procedures and Information Booklet for Students.

Withdrawal/Re-enrollment

Students who withdraw should have an exit interview with the nursing faculty or program head. Those who withdraw because of academic failure may not re-enroll more than once and must have a GPA cumulative of 2.4 for readmission consideration. Students seeking re-enrollment must write a letter of intent to the nursing program head. Re-enrollment must occur within two years to maintain credits. Pending space availability, students may demonstrate certain competencies and meet health/clinical requirements to be considered for re-enrollment. Students who have failed two nursing courses will not be re-enrolled.

Transfer

Students transferring from other nursing programs must meet the admission requirements of this program. Letters of reference and submission of nursing course syllabi must be submitted to the nursing program head. Students who desire consideration of transferring nursing credits must have completed nursing courses within two years of beginning the nursing program. Specific details regarding transfer are found in the Registered Nursing Program Admissions Procedures and Information Booklet for Students.

See the TCC website (www.tcc.edu/academics/programs) for the most current program information.

ASSOCIATE OF APPLIED SCIENCE DEGREE:
NURSING (Program Code: 156)

Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 141</td>
<td>Human Anatomy and Physiology I</td>
<td>4</td>
<td></td>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
</tr>
<tr>
<td>NUR 108</td>
<td>Nursing Principles and Concepts I</td>
<td>6</td>
<td>Admission to Program</td>
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<tr>
<td>NUR 130</td>
<td>Physical Assessment and Basic Pharmacology</td>
<td>3</td>
<td>NUR 108</td>
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<tr>
<td>SDV 101</td>
<td>Orientation to Health Care</td>
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Semester Total 17

Semester 2

<table>
<thead>
<tr>
<th>Course No.</th>
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<tbody>
<tr>
<td>BIO 142</td>
<td>Human Anatomy and Physiology II</td>
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<td>BIO 141</td>
</tr>
<tr>
<td>NUR 170</td>
<td>Essentials of Medical/Surgical Nursing</td>
<td>4</td>
<td>NUR 108 and NUR 130</td>
</tr>
<tr>
<td>NUR 180</td>
<td>Essentials of Maternal/Newborn Nursing</td>
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<td>NUR 170</td>
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<tr>
<td>PSY 201</td>
<td>Introduction to Psychology I (or PSY 200)</td>
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Semester Total 15
OCCUPATIONAL THERAPY ASSISTANT

Associate of Applied Science Degree:
• Occupational Therapy Assistant

Occupational Therapy Assistants are trained to provide occupational therapy treatments to assist individuals in meeting a level of independence to perform the roles necessary for productive living (occupation) within their environment. These roles include: self care tasks, work tasks, and play or leisure tasks for patients disabled by illness, accidents, developmental or psychiatric impairment.

The Occupational Therapy Assistant program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1220. AOTA’s phone number is (301) 652-AOTA. Graduates 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). Most states, including Virginia, require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination.

Requirements for admission to the program include: high school graduation or GED, placement into ENG 111, MTH 3, 2.5 GPA or better, 30 hours of observation time with an occupational therapist (OTR) or an occupational therapy assistant (COTA), and a personal interview with the program director. A writing sample may also be required. Transcripts from all other colleges attended must be sent to Tidewater Community College, Central Records/Office of the College Registrar, P.O. Box 9000, Norfolk, Virginia, 23509, prior to the application deadline date. These transfer credits must be evaluated before any transfer credit is granted. Applications are accepted through May 1.

Once accepted, students must have current CPR Certification, a documented medical examination, criminal record check, and must maintain a C grade point average or better to remain in good standing. Students whose academic performance is below a C grade point average will be readmitted to the program at the discretion of the director and according to space availability.

Neither Tidewater Community College nor the Occupational Therapy Assistant program at Tidewater Community College discriminates against anyone with a criminal record. However, it should be noted that some facilities may refuse to accept any student with a positive criminal background and it may affect their ability to become nationally certified and licensed to practice in many states even after successfully completing the program. Prospective applicants should be aware that some clinical facilities may require an additional sex offender background check and/or drug screening prior to attending clinical, a required component of the program. The cost of any background check is the responsibility of the student.

Students are wholly responsible for all transportation to and from clinical facilities and are financially responsible for clinical uniforms, laboratory clothes, and parking fees.

The Associate of Applied Science degree in Occupational Therapy Assistant requires five full-time semesters of study. All OTA students must complete Level II Fieldwork within 18 months following completion of academic preparation. All academic and fieldwork requirements must be completed before the student will be eligible to sit for the National Certification Examination.

ASSOCIATE OF APPLIED SCIENCE DEGREE: OCCUPATIONAL THERAPY ASSISTANT (Program Code: 126)

Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>BIO 141</td>
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<td>HLT 143</td>
<td>Medical Terminology I</td>
<td>3</td>
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<tr>
<td>OCT 100</td>
<td>Introduction to Occupational Therapy</td>
<td>3</td>
<td>Admission to Program</td>
</tr>
<tr>
<td>OCT 201</td>
<td>Occupational Therapy with Psychosocial Dysfunction</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSY 201</td>
<td>Introduction to Psychology I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SDV 101</td>
<td>Orientation to Health Care</td>
<td>1</td>
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<tr>
<td>Semester Total</td>
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<td>17</td>
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</tbody>
</table>
# Paralegal Studies

**Associate of Applied Science Degree:**
- Paralegal Studies
  - **Specialization:** General Practice
    - **Certificate:**
      - Legal Assistant
    - **Career Studies Certificate:**
      - Paralegal General Practice
  - **Specialization:** Litigation
    - **Certificate:**
      - Legal Assistant
    - **Career Studies Certificate:**
      - Paralegal Litigation

**General Practice**

This program prepares students to work as a paralegal in diverse settings with an emphasis in general practice.

The Career Studies Certificate program enables students to upgrade their skills if they are currently employed as a legal assistant in general practice law. It gives those who already have a degree the training they need to make a career change. The Certificate program may lead to entry-level positions in a general practice law firm, and the Associate of Applied Science degree in Paralegal Studies enables students to work as a legal assistant with a general practice firm.

A cooperative education program enables students to earn academic credit and supplement their income while they gain work experience at local sites. Placement test scores should indicate a readiness for ENG 111 prior to registering for any LGL course offering.

**Associate of Applied Science Degree:**

**Paralegal Studies**

*Specialization: General Practice*

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td>NAS 177</td>
<td>Upper Extremity Anatomy and Kinesiology</td>
<td>2</td>
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</tr>
<tr>
<td>OCT 206</td>
<td>Dyadic and Group Dynamics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OCT 225</td>
<td>Neurological Concepts for Occupational Therapy Assistants</td>
<td>4</td>
<td>BIO 141</td>
</tr>
<tr>
<td>PSY 215</td>
<td>Abnormal Psychology</td>
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**Semester Total:** 15

**Semester 3**

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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>OCT 190</td>
<td>Coordinated Internship in OT (Psychosocial Dysfunction)²</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>OCT 202</td>
<td>Occupational Therapy with Physical Disabilities</td>
<td>4</td>
<td></td>
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<tr>
<td>OCT 205</td>
<td>Therapeutic Media</td>
<td>2</td>
<td>Humanities Elective¹</td>
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**Semester Total:** 10

**Semester 4**

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<tr>
<td>OCT 190</td>
<td>Coordinated Internship in OT (Physical Dysfunction)²</td>
<td>1</td>
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<tr>
<td>OCT 203</td>
<td>Occupational Therapy with Developmental Disabilities</td>
<td>4</td>
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<tr>
<td>OCT 207</td>
<td>Therapeutic Skills</td>
<td>4</td>
<td></td>
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<tr>
<td>OCT 208</td>
<td>Occupational Therapy Service Management</td>
<td>3</td>
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<tr>
<td>OCT 210</td>
<td>Assistive Technology in Occupational Therapy</td>
<td>2</td>
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<tr>
<td>OCT 220</td>
<td>Occupational Therapy for the Adult</td>
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**Semester Total:** 16

**Total Minimum Credits:** 70

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1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2. Due to the limited number of available clinical sites in the region, students may have to travel to a distant site or stay temporarily near a facility.
<table>
<thead>
<tr>
<th>Semester 2</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ENG 112</td>
<td>College Composition II</td>
<td>3</td>
<td>ENG 111</td>
<td></td>
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<tr>
<td>LGL 125</td>
<td>Legal Research</td>
<td>3</td>
<td>LGL 110</td>
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<tr>
<td>LGL 235</td>
<td>Legal Aspects of Business Organizations</td>
<td>3</td>
<td>LGL 110</td>
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<tr>
<td>MTH 121</td>
<td>Fundamentals of Mathematics I</td>
<td>3</td>
<td>Placement</td>
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<td></td>
<td>LGL Elective</td>
<td>3</td>
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<th>Course No.</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>CST 100</td>
<td>Principles of Public Speaking</td>
<td>3</td>
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<tr>
<td>LGL 126</td>
<td>Legal Writing</td>
<td>3</td>
<td>ENG 111 and LGL 125</td>
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<tr>
<td>LGL 225</td>
<td>Estate Planning and Probate</td>
<td>3</td>
<td>LGL 110</td>
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<tr>
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<td>Elective</td>
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<th>Course No.</th>
<th>Course Title</th>
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<th>Prerequisite</th>
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<tr>
<td>LGL 238</td>
<td>Bankruptcy</td>
<td>3</td>
<td>Prereq or Co-req: LGL 110</td>
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<tr>
<td>LGL 297</td>
<td>Cooperative Education (or Business Elective)</td>
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<td>LGL Elective</td>
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<tr>
<td>LGL Elective</td>
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<tr>
<td>Social Science Elective</td>
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|          |                         |          |                       |
|          | Total Minimum Credits   | 67       |                       |

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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ENG 112</td>
<td>College Composition II</td>
<td>3</td>
<td>ENG 111</td>
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</tr>
<tr>
<td>LGL 125</td>
<td>Legal Research</td>
<td>3</td>
<td>LGL 110</td>
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<tr>
<td>LGL 200</td>
<td>Ethics for the Legal Assistant</td>
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<td>Prereq or Co-req: LGL 110</td>
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<tr>
<td>MTH 121</td>
<td>Fundamentals of Mathematics I</td>
<td>3</td>
<td>Placement</td>
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<td></td>
<td>LGL Elective</td>
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<th>Course Title</th>
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<tbody>
<tr>
<td>LGL 126</td>
<td>Legal Writing</td>
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<td>Bankruptcy</td>
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<td>LGL Elective</td>
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<tr>
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<td>12</td>
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</table>

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2 Business electives include courses which have the following prefix: ACC, ACQ, AST, BUS, ECO, FIN, GIS, HRI, LGL, ITD, ITE, ITN, ITP, MKT, and REA.

**CERTIFICATE: LEGAL ASSISTANT** (Program Code: 261)

<table>
<thead>
<tr>
<th>Semester 1</th>
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<th>Course Title</th>
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<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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</tr>
<tr>
<td>ITE 109</td>
<td>Information Systems for Legal Assistants</td>
<td>3</td>
<td></td>
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<tr>
<td>LGL 110</td>
<td>Introduction to Law and the Legal Assistant</td>
<td>3</td>
<td>Placement into ENG 111</td>
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<tr>
<td>LGL 117</td>
<td>Family Law</td>
<td>3</td>
<td>Prereq or Co-req: LGL 110</td>
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<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
<td>1</td>
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<tr>
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**CAREER STUDIES: PARALEGAL GENERAL PRACTICE** (Program Code: 221.260.02)

<table>
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<tr>
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<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>Information Systems for Legal Assistants</td>
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<td>LGL 110</td>
<td>Introduction to Law and the Legal Assistant</td>
<td>3</td>
<td>Placement into ENG 111</td>
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<td>LGL 115</td>
<td>Real Estate Law for Legal Assistants</td>
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<td>Prereq or Co-req: LGL 110</td>
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<tr>
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<td>Ethics for the Legal Assistant</td>
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ASSOCIATE OF APPLIED SCIENCE DEGREE:
PARALEGAL STUDIES

Specialization: Litigation  (Program Code: 260.03)

Semester 1 (Based on a Fall Semester start)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
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<td>Information Systems for Legal Assistants</td>
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<td>LGL 110</td>
<td>Introduction to Law and the Legal Assistant</td>
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<td>Ethics for the Legal Assistant</td>
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Semester 2

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<td>Legal Research</td>
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<td>LGL 235</td>
<td>Legal Aspects of Business Organizations</td>
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Semester Total | 9

Total Minimum Credits | 28

Semester 3

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<td>Estate Planning and Probate</td>
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Semester Total | 9

Semester 1

Semester Total | 17

Litigation

This program prepares students to work in diverse settings as a paralegal with an emphasis in litigation.

The Career Studies Certificate program enables students to upgrade their skills if they are currently employed as a litigation legal assistant. It gives those who already have a degree the training they need to make a career change and become a paralegal in a litigation-focused law office, prosecutor’s office, or criminal defense firm. The Certificate program may lead to an entry-level position as a legal assistant with a trial work concentration, and the Associate of Applied Science degree in Paralegal Studies qualifies students as a paralegal with a trial work concentration.

A cooperative education program enables students to earn academic credit and supplement their income while they gain work experience at local sites.

Placement test scores should indicate a readiness for ENG 111 prior to registering for any LGL course offerings.
### CAREER AND TECHNICAL EDUCATION

#### CERTIFICATE: LEGAL ASSISTANT  
(Program Code: 261)

<table>
<thead>
<tr>
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<td>Information Systems for Legal Assistants</td>
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<td>LGL 238</td>
<td>Bankruptcy</td>
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1. Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
2. Students wishing to concentrate in general practice should select electives from the following:
   - LGL 115 – Real Estate Law for Legal Assistants
   - LGL 225 – Estate Planning and Probate
   - LGL 235 – Legal Aspects of Business Organizations
   - LGL 250 – Immigration Law

Students wishing to concentrate in litigation should select electives from the following:
- LGL 215 – Torts
- LGL 216 – Trial Preparation and Discovery Practice
- LGL 218 – Criminal Law
- LGL 230 – Legal Transactions
- LGL 250 – Immigration Law

#### CAREER STUDIES: PARALEGAL LITIGATION  
(Program Code: 221.260.03)

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<th>Course No.</th>
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<td>LGL 110</td>
<td>Introduction to Law and the Legal Assistant</td>
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<td>Placement into ENG 111</td>
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<td>LGL 117</td>
<td>Family Law</td>
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<td>LGL 215</td>
<td>Torts</td>
<td>3</td>
<td>LGL 110</td>
</tr>
<tr>
<td></td>
<td>LGL 218</td>
<td>Criminal Law</td>
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<td>LGL 126</td>
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<td>LGL 216</td>
<td>Trial Preparation and Discovery Practice</td>
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Total Minimum Credits 28
PERSONAL TRAINING AND FITNESS

Career Studies Certificate:
• Personal Training and Fitness

The Career Studies Certificate in Personal Training and Fitness prepares students for a career in the fitness industry as a Personal Trainer working with clients from school-age children to senior citizens. Graduates will assist their clients by designing exercises, nutrition plans and goal setting to improve overall health and fitness. Graduates of the program will be able to demonstrate exercises and correct form and alignment in exercise, teach, and demonstrate the use of portable fitness equipment and design corrective, therapeutic, recreational and/or athletic workout programs for each client.

While this program is hosted by the Norfolk Campus, many of the courses may be offered by other campuses.

PHLEBOTOMY

Career Studies Certificate:
• Phlebotomy

The Career Studies Certificate in Phlebotomy prepares students for entry-level employment in hospitals, medical offices, and clinics with training in blood draw and preparation and processing of blood tests.

PHYSICAL THERAPIST ASSISTANT

Associate of Applied Science Degree:
• Physical Therapist Assistant

Physical Therapist Assistants are trained to give physical therapy treatments to improve function, relieve pain, and promote healing for patients disabled by illnesses, accidents, and disabilities. Graduates choose from a wide range of employment settings including outpatient clinics, hospitals, rehabilitation centers, nursing homes, home health-care agencies, sports-medicine clinics, private industry, and schools.

Licensure is required in most states. To become licensed in Virginia, program graduates must pass a national licensure examination. A physical therapist assistant must work under the supervision of a physical therapist.

This program admits 25-30 students each fall semester. Applications must be received by April 1 for students entering the technical aspect of the program (semester 2) in the following fall semester. Transcripts from other colleges attended must be sent to Tidewater Community College, Central Records Office/Office of the College Registrar, Box 9000, Norfolk, Virginia, 23509, and be evaluated prior to the application deadline date.

Preadmission requirements include: high school graduation or GED, completion of semester 1 courses (BIO 141, ENG 111, HLT 105, PHY 100, PSY 230, and SDV 101), minimum of 40 hours (20 hours in each of two different practice settings) of volunteer or paid work at a physical therapy facility, and two recommendation forms from instructors, employers or clinicians.

Once accepted, students must maintain current CPR certification updated annually at the professional rescuer level, a documented medical examination, including an annual TB test, and maintain a C average or better to remain in good standing. Students are readmitted to the program upon successful completion of a readmission examination with a grade of 80% or higher.
This program is offered on a full-time basis during daytime hours. There is no online option. Once accepted, students are enrolled for four consecutive semesters. Students will attend three full-time clinical rotations, one four-week and two six-week rotations. Students are wholly responsible for all transportation to and from clinical facilities and are financially responsible for their clinical uniforms and laboratory clothes.

This program is accredited by the Commission on Accreditation in Physical Therapy Education, American Physical Therapy Association, 1111 North Fairfax Street, Alexandria, VA 22314, (703) 706-3245.

ASSOCIATE OF APPLIED SCIENCE DEGREE: PHYSICAL THERAPIST ASSISTANT (Program Code: 180)

Semester 1 Pre-admission Requirements

<table>
<thead>
<tr>
<th>Course No.</th>
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<tr>
<td>BIO 141</td>
<td>Human Anatomy and Physiology I</td>
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<tr>
<td>ENG 111</td>
<td>College Composition I</td>
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<td>Placement</td>
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<tr>
<td>HLT 105</td>
<td>Cardiopulmonary Resuscitation (or HLT 130)</td>
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<tr>
<td>PHY 100</td>
<td>Elements of Physics (or PHY 201)</td>
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<td>PSY 230</td>
<td>Developmental Psychology</td>
<td>3</td>
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<td>SDV 101</td>
<td>Orientation to Health Care</td>
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Semester Total 16

Semester 2 (Based on a Fall Semester start)

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<td>BIO 141</td>
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<td>PTH 105</td>
<td>Introduction to Physical Therapist Assisting</td>
<td>3</td>
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<tr>
<td>PTH 121</td>
<td>Therapeutic Procedures I</td>
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<td>Instructor Permission</td>
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<tr>
<td>PTH 151</td>
<td>Musculoskeletal Structure and Function</td>
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Semester Total 17

Semester 3

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<tr>
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<td>Kinesiology for the Physical Therapist Assistant</td>
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<td>PTH 131</td>
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Semester Total 12

Semester 4

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<td>Psychological Aspects of Therapy</td>
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<td>PTH 226</td>
<td>Therapeutic Exercise</td>
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<td>PTH 251</td>
<td>Clinical Practicum I</td>
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Semester Total 12

Semester 5

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Semester Total 14

Total Minimum Credits 71

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

POLYSOMNOGRAPHY

Career Studies Certificate:
- Polysomnography

Employment opportunities for polysomnographers include freestanding sleep labs, physician offices, and polysomnography labs within hospitals. The demand for polysomnographers continues to rise. Salaries for registered polysomnographers are competitive with other health care professions such as nursing and respiratory therapy. More information on polysomnography may be found at http://aastweb.org/.

Applicants for this growing healthcare field may be individuals who are currently credentialed as health care professionals such as respiratory therapists, licensed practical nurses, registered nurses, registered EEG technologists, EMT-paramedics, or physicians. Other applicants include those individuals who do not have current experience or credentials in health care.

CAREER STUDIES: POLYSOMNOGRAPHY (Program Code: 221.181.01)

Semester 1

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<td>HLT 105</td>
<td>Cardiopulmonary Resuscitation</td>
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Semester Total 10

1 PolySomnography
Program graduates are qualified to apply to the American Registry of Radiologic Technologists (ARRT) to take the national certification exam. Students with a history of certain crimes may not be eligible to become certified by the ARRT. Pre-applications are available from www.arrt.org or (651) 687-0048.

Prospective students are hereby notified that certain medical facilities require both criminal/sex offender background checks as well as drug screens prior to being authorized to attend clinical. The cost of the background check is the student’s responsibility.

Program students are charged a one-time program fee of $50.00 to cover clinical and laboratory supplies.

ASSOCIATE OF APPLIED SCIENCE DEGREE: RADIOGRAPHY (Program Code: 172)

Pre-Admission Semester

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<td>Polysomnography Record Evaluation</td>
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<td>PSg 190</td>
<td>Coordinated Internship</td>
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Semester 1 (Based on a Summer Semester start)

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<td>HLT 141</td>
<td>Introduction to Medical Terminology</td>
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<td>RAD 120</td>
<td>Medical Care Procedures and Safety in Radiology</td>
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<td>Admission to Program</td>
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<td>RAD 141</td>
<td>Principles of Radiographic Quality I</td>
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<td>Admission to Program</td>
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<td>RAD 205</td>
<td>Radiation Protection and Radiobiology</td>
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<td>RAD 221</td>
<td>Radiographic Procedures II</td>
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</table>

RADIOGRAPHY

Associate of Applied Science Degree:

- Radiography

Radiographers or Radiologic Technologists are highly skilled professionals who produce radiographs or “x-rays” to help physicians diagnose injuries and disease. As an integral member of the health-care team, the radiographer works in a fast-paced environment and must have the ability to multitask, problem solve, and make critical decisions while caring for sick and injured patients. The Radiographer must possess the technical skills necessary to perform competently and care for patients in a compassionate and professional manner. Education in radiobiology and radiation protection enables radiographers to minimize radiation exposure to themselves and the patient.

Prerequisites include Human Anatomy and Physiology I (BIO 141), or an equivalent transfer course, and Math 3/English 3 if placement testing indicates these are needed. Prerequisites must be completed by the end of the fall semester. The program application deadline is December 15 for the class beginning the following May. Submit the Health Professions Program application to the Admissions Office of the Virginia Beach Campus.

Admission to the program is non-subjective but very competitive. Priority is granted to Virginia residents who reside in the political subdivisions supporting the college. Call the Information Center at (757) 822-1122 to request a program information packet that will outline all aspects of the program in detail. The packet is also available online at www.tcc.edu, search keywords: radiography packet. In addition, prospective students are encouraged to attend an Open House session for Radiography held at 4:00 p.m. on the third Thursday of every month (except December).

Students are enrolled for six consecutive semesters of full-time study, primarily during the hours of 7:30 a.m. - 4:00 p.m. The program does not offer a part-time or evening option. The clinical component of the program requires 1,440 hours of practice in affiliate hospitals, where students must adhere to high standards of professionalism and competence. The program is fully accredited by the Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Dr., Suite 2850, Chicago, IL 60606-3182 or visit www.jrcert.org.
### RESPIRATORY THERAPY

**Associate of Applied Science Degree:**
- Respiratory Therapy

Respiratory Care Practitioners (RCPs) literally help patients “breathe easier.” They work under the direction of a physician and assist in the diagnosis, treatment, and management of patients with cardiopulmonary disorders to help patients recover their lung function. RCPs deliver medications and oxygen, operate life support machines, and assure that patients have open breathing passages, among other duties.

Respiratory patients range from newborn babies to the elderly. RCPs care for patients in the hospital emergency room, in the intensive care unit, in outpatient clinics, and at home. The increasing emphasis on preventive care and home care is creating new opportunities for respiratory therapists in sub-acute skilled nursing facilities, skilled nursing facilities, out-patient clinics, rehabilitation centers, and in the patients’ homes.

Applications to the Associate of Applied Science degree program in Respiratory Therapy must be submitted to the Virginia Beach Admissions Office no later than April 15. Early application submission is appreciated. Transcripts from other colleges attended must be sent to Tidewater Community College, Central Records/Office of the College Registrar, P.O. Box 9000, Norfolk, Virginia, 23509, prior to the application deadline date. These transcripts must be evaluated before any transfer credit is granted. For detailed information regarding the program call the Information Center at (757) 822-1122 to request an information packet or the packet can be accessed on the TCC website at www.tcc.edu, search keywords: respiratory therapy program.

### Pre-Admission Semester

<table>
<thead>
<tr>
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### Semester 1 (Based on a Summer Semester start)

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<td>Integrated Sciences for Respiratory Care II</td>
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<td>RTH 120</td>
<td>Fundamental Theory for Respiratory Care</td>
<td>2</td>
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<td>RTH 131</td>
<td>Respiratory Care Theory and Procedures I</td>
<td>4</td>
<td>Instructor Permission</td>
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<td>SDV 101</td>
<td>Orientation to Health Care</td>
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<td><strong>Semester Total</strong></td>
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STUDIO ARTS

Associate of Applied Science Degree:

• Studio Arts
• Specialization: Crafts
• Specialization: Fine Arts
• Specialization: Photography

Explore the rich and satisfying world of visual art in the exciting environment of TCC’s Visual Arts Center located in Olde Towne, Portsmouth. In state-of-the-art studios for two- and three-dimensional design, photography, painting, drawing, ceramics, and glass blowing, students will gain extensive studio experience in a wide range of media, both traditional and contemporary, learning from masters of their art.

While many students in the Studio Arts program are developing skills and knowledge for a career in the field, others take courses in this program for personal satisfaction and life enrichment.

Crafts

Learn how to blow glass and make pots. The history of clay and glass is as old as our culture. In this specialization, students will learn traditional methods of glass blowing and ceramics, as well as techniques shaped by the advances of modern technology.

Students will be prepared for entry into the crafts industry as an independent crafts person, commercial framer or art supply service representative, gallery representative, instructor or assistant instructor at art centers or galleries. While not designed as a transfer program, courses from the Crafts specialization may be transferable to corresponding programs at four-year colleges and universities.

ASSOCIATE OF APPLIED ARTS DEGREE:

STUDIO ARTS

Specialization: Crafts (Program Code: 532.01)

Semester 1 (Based on a Fall Semester start)

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<td>ART 131</td>
<td>Fundamentals of Design I</td>
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<td>ART 201</td>
<td>History of Art I</td>
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<td>CRF 130</td>
<td>Glass Blowing I</td>
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<td>SDV 100</td>
<td>College Success Skills</td>
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Semester 2

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<td>RTH 121</td>
<td>Cardiopulmonary Science I</td>
<td>3</td>
<td>Instructor Permission</td>
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<td>RTH 132</td>
<td>Respiratory Care Theory and Procedures II</td>
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<td>RTH 145</td>
<td>Pharmacology for Respiratory Care I</td>
<td>1</td>
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<td>RTH 190</td>
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Semester 3

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<td>Pulmonary Rehabilitation, Home Care and Health Promotion</td>
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<td>RTH 235</td>
<td>Diagnostic and Therapeutic Procedures II</td>
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<td>Critical Care Monitoring</td>
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Semester 4

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Semester 5

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<td>RTH 225</td>
<td>Neonatal and Pediatric Respiratory Procedures</td>
<td>3</td>
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<td>Coordinated Internship</td>
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Semester 6

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<td>Current Issues in Health Care</td>
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<td>RTH 298</td>
<td>Seminar and Project in Respiratory Therapy</td>
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1 Eligible courses are listed on 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).
### Semester 2

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ART 134</td>
<td>Three Dimensional Design</td>
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<td>ART 131</td>
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<td>ART 202</td>
<td>History of Art II</td>
<td>3</td>
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<tr>
<td>CRF 105</td>
<td>Introduction to Pottery</td>
<td>3</td>
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<td>CRF 131</td>
<td>Glass Blowing II</td>
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<td>CRF 130</td>
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<tr>
<td>ENG 112</td>
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**Semester Total** 15

### Semester 3

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<td>Wheel Thrown Pottery</td>
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<td>History of World Civilization I</td>
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<td>Placement into ENG 111</td>
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<tr>
<td>PHT 101</td>
<td>Photography I</td>
<td>3</td>
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<td>Health/Physical Education Elective</td>
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<td></td>
<td>Approved Studio Elective</td>
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**Semester Total** 17

### Semester 4

<table>
<thead>
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<th>Course No.</th>
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<td>Portfolio and Resume</td>
<td>3</td>
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<td>HIS 112</td>
<td>History of World Civilization II</td>
<td>3</td>
<td>Placement into ENG 111</td>
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<td>CST 100</td>
<td>Principles of Public Speaking</td>
<td>3</td>
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<td>Mathematics Elective</td>
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<td>3</td>
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</tr>
</tbody>
</table>

**Semester Total** 18

**Total Minimum Credits 66**

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### Fine Arts

The fine arts are the heart of the world’s culture. Students learn the discipline and pleasure of drawing, photography, and design. They learn the history of world art and develop their own ways of expressing thoughts and feelings through making art.

Students will be prepared for entry into the field of fine arts. Positions include practicing fine artist, freelance artist, illustrator, commercial framer or art supply service representative, gallery representative, instructor or assistant instructor at art centers or galleries or entry-level museum professional. While not designed as a transfer program, courses from the Fine Arts specialization may be transferable to corresponding programs at four-year colleges and universities.

**ASSOCIATE OF APPLIED ARTS DEGREE: STUDIO ARTS**

**Specialization: Fine Arts** (Program Code: 532.02)

**Semester 1 (Based on a Fall Semester start)**

<table>
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<td>Drawing I</td>
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<td>Fundamentals of Design I</td>
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<td>ART 201</td>
<td>History of Art I</td>
<td>3</td>
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<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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<td>College Success Skills</td>
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<td></td>
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**Semester Total** 16

**Semester 2**

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<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<td>ART 134</td>
<td>Three Dimensional Design</td>
<td>3</td>
<td>ART 131</td>
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<td>ART 202</td>
<td>History of Art I</td>
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<td>ENG 112</td>
<td>College Composition II</td>
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<td>ENG 111</td>
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<tr>
<td>PHT 101</td>
<td>Photography I</td>
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**Semester Total** 15

**Semester 3**

<table>
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<td>ART 122</td>
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<td>ART 241</td>
<td>Painting I</td>
<td>3</td>
<td>ART 122 and ART 131</td>
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<tr>
<td>HIS 111</td>
<td>History of World Civilization I</td>
<td>3</td>
<td>Placement into ENG 111</td>
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<td>CST 100</td>
<td>Principles of Public Speaking</td>
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<td></td>
<td>Approved Studio Elective</td>
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</table>

**Semester Total** 17

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1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

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

3 ART 287 should be taken in the final semester before graduation and is offered in the fall and spring semester only.

4 Approved Studio Electives: Students may take any of the listed electives for which they have the prerequisites and that are not a requirement in their specialization: ART 122, ART 134, ART 202, ART 241, ART 324, ART 243, ART 244, ART 245, ART 260, ART 290*, ART 297*, ART 299*, CRF 105, CRF 106, CRF 130, CRF 131, CRF 199*, CRF 230, CRF 231, PHT 101, PHT 126, PHT 135, PHT 221, PHT 222, PHT 231, PHT 232, PHT 256, PHT 278, PHT 290*, PHT 297*.

* Requires permission of Visual Arts Director.
CAREER AND TECHNICAL EDUCATION

Semester 4

<table>
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<th>Course Title</th>
<th>Credits</th>
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<td>Drawing IV</td>
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<td>ART 287</td>
<td>Portfolio and Resume Preparation</td>
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<td>Instructor Permission</td>
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<td>HIS 112</td>
<td>History of World Civilization II</td>
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<td>Placement into ENG 111</td>
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<td>Approved Studio Elective 1</td>
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</table>

Semester Total 18

Total Minimum Credits 66

Photography

The digital age has transformed the field of photography. Using cutting edge technologies, students learn the classic skills of composition, lighting, camera technique, and video editing. They learn to tell stories, capture moments, and to communicate through visual images.

Students will be prepared for entry into the photography industry. Positions include commercial photographer’s assistant, photo lab technician, photography sales and service representative, freelance photographer, fine arts photographer or introductory photography instructor at an arts center or museum. While not designed as a transfer program, courses from the Photography specialization may be transferable to corresponding programs at four-year colleges and universities.

ASSOCIATE OF APPLIED ARTS DEGREE: STUDIO ARTS

Specialization: Photography (Program Code: 532.03)

Semester 1 (Based on a Fall Semester start)

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<th>Credits</th>
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<td>PHT 101</td>
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<td>College Success Skills</td>
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Semester Total 16

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

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

3 ART 287 should be taken in the final semester before graduation and is offered in the Fall and Spring semester only.

4 Approved Studio Electives: Students may take any of the listed electives for which they have the prerequisites and that are not a requirement in their specialization: ART 122, ART 134, ART 208, ART 221, ART 222, ART 224, ART 243, ART 244, ART 245, ART 260, ART 290*, ART 297*, ART 299*, CRF 102, CRF 105, CRF 130, CRF 131, CRF 199*, CRF 230, CRF 231, PHT 101, PHT 126, PHT 135, PHT 221, PHT 222, PHT 231, PHT 232, PHT 256, PHT 270, PHT 290*, PHT 297*.

* Requires permission of Visual Arts Director.

Semester 2

<table>
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<td>PHT 110</td>
<td>History of Photography</td>
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<td>PHT 126</td>
<td>Introduction to Video Techniques</td>
<td>3</td>
<td>PHT 101</td>
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<tr>
<td>PHT 135</td>
<td>Electronic Darkroom</td>
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Semester Total 15

Semester 3

<table>
<thead>
<tr>
<th>Course No.</th>
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<tbody>
<tr>
<td>ART 121</td>
<td>Drawing I</td>
<td>3</td>
<td></td>
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<tr>
<td>HIS 111</td>
<td>History of World Civilization I</td>
<td>3</td>
<td>Placement into ENG 111</td>
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<td>PHT 201</td>
<td>Advanced Photography I</td>
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<td>CST 100</td>
<td>Principles of Public Speaking 2</td>
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<tr>
<td>Mathematics Elective 2</td>
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<tr>
<td>Approved Studio Elective 2</td>
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</table>

Semester Total 18

Total Minimum Credits 66

1 Eligible courses are listed on page 33 in the 2010-2011 catalog. See your academic advisor or counselor to choose the appropriate course(s).

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

3 ART 287 should be taken in the final semester before graduation and is offered in the Fall and Spring semester only.

4 Approved Studio Electives: Students may take any of the listed electives for which they have the prerequisites and that are not a requirement in their specialization: ART 122, ART 134, ART 208, ART 221, ART 222, ART 224, ART 243, ART 244, ART 245, ART 260, ART 290*, ART 297*, ART 299*, CRF 102, CRF 105, CRF 130, CRF 131, CRF 199*, CRF 230, CRF 231, PHT 101, PHT 126, PHT 135, PHT 221, PHT 222, PHT 231, PHT 232, PHT 256, PHT 270, PHT 290*, PHT 297*.

Photography

The digital age has transformed the field of photography. Using cutting edge technologies, students learn the classic skills of composition, lighting, camera technique, and video editing. They learn to tell stories, capture moments, and to communicate through visual images.

Students will be prepared for entry into the photography industry. Positions include commercial photographer’s assistant, photo lab technician, photography sales and service representative, freelance photographer, fine arts photographer or introductory photography instructor at an arts center or museum. While not designed as a transfer program, courses from the Photography specialization may be transferable to corresponding programs at four-year colleges and universities.

ASSOCIATE OF APPLIED ARTS DEGREE: STUDIO ARTS

Specialization: Photography (Program Code: 532.03)
THEATRE ARTS

Career Studies Certificates:
- Performance Theatre
- Technical Theatre
- Theatre Arts

The Career Studies Certificate options in Technical Theatre, Theatre Performance, and Theatre Arts provide students with an introduction to the theatre arts and hands-on production experience in a variety of theatre spaces including the Chesapeake Studio Theatre, the outdoor Shakespeare in the Grove theatre, and the TCC Roper Performing Arts Center in Norfolk.

The Theatre Performance option provides training for those students primarily interested in acting and directing. The Technical Theatre option provides training in the technical aspects of theatre production. The Theatre Arts option provides a broad introduction to both acting and technical aspects of theatre production.

Note: Students planning to transfer into a baccalaureate degree program in theatre should enroll in the Associate of Arts degree in Liberal Arts and consult with a TCC counselor or program advisor to select courses appropriate for transfer.

CAREER STUDIES: PERFORMANCE THEATRE
(Program Code: 221.529.03)

Semester 1
Course No. Course Title Credits Prerequisite
CST 111 Voice and Diction I 3
CST 131 Acting I 3
CST 141 Theatre Appreciation I 3
Semester Total 9

Semester 2
Course No. Course Title Credits Prerequisite
CST 132 Acting II 3 CST 131 or Instructor Permission
CST 233 Rehearsal and Performance I 3 Instructor Permission
Approved Theatre Elective 3
Semester Total 9

Semester 3
Course No. Course Title Credits Prerequisite
CST 234 Rehearsal and Performance II 3 CST 233
CST 241 Introduction to Directing I 3 CST 131, CST 132, and CST 141
Approved Theatre Elective 3
Semester Total 9

Total Minimum Credits 27

CAREER STUDIES: TECHNICAL THEATRE
(Program Code: 221.529.04)

Semester 1
Course No. Course Title Credits Prerequisite
CST 141 Theatre Appreciation I 3
CST 251 Stage Lighting and Sound 3
Semester Total 6

Semester 2
Course No. Course Title Credits Prerequisite
CST 233 Rehearsal and Performance I 3 Instructor Permission
CST 145 Stagecraft (or CST 136) 3 Approved Theatre Elective 3
Semester Total 9

Semester 3
Course No. Course Title Credits Prerequisite
CST 234 Rehearsal and Performance II 3 CST 233
Approved Theatre Elective 3
Semester Total 6

Total Minimum Credits 21

CAREER STUDIES: THEATRE ARTS
(Program Code: 221.529.02)

Semester 1
Course No. Course Title Credits Prerequisite
CST 111 Voice and Diction 3
CST 130 Introduction to the Theatre (or CST 141) 3
CST 131 Acting I 3 Approved Theatre Elective 3
Semester Total 12

Semester 2
Course No. Course Title Credits Prerequisite
CST 132 Acting II 3 CST 131 or Instructor Permission
Approved Theatre Elective 3
Approved Theatre Elective 3
Approved Theatre Elective 3
Semester Total 12

Total Minimum Credits 24

1 Electives must be chosen from the following courses:
- CST 136 – Theatre Workshop
- CST 141-142 – Theatre Appreciation I-II
- CST 145 – Stagecraft
- CST 233-234 – Rehearsal and Performance I-II
- CST 241 – Introduction to Directing I
- CST 290 – Coordinated Internship in Theatre Arts
CAREER AND TECHNICAL EDUCATION

TRUCK DRIVING

Career Studies Certificates:
• Truck Driving
• Class B Truck Driving

The Career Studies Certificate programs in Truck Driving qualify students to become professional operators of tractor trailer vehicles or buses, dump trucks, straight trucks, and cement mixers.

The programs offer day and evening sessions. The Truck Driving program operates on an eight-week, five-days-a-week schedule while the Class B program operates on a five-week, five-days-a-week schedule. Each simulates the working environment.

Contact the Trucking Driving program office at 822-2428 for the admissions package. Students must have a valid Virginia driver’s license and a record free of serious violations. Students must also pass a Department of Transportation physical and drug/alcohol screening.

CAREER STUDIES: TRUCK DRIVING
(Program Code: 221.279.02)

Semester 1

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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<td>SDV 106</td>
<td>Preparation for Employment</td>
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<tr>
<td>TRK 101</td>
<td>DOT Safety Rules and Regulations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRK 102</td>
<td>Preventive Maintenance for Truck Drivers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRK 103</td>
<td>Tractor Trailer Driving</td>
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<tr>
<td>TRK 110</td>
<td>Survey of the Trucking Industry</td>
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CAREER STUDIES: CLASS B TRUCK DRIVING
(Program Code: 221.279.03)

Semester 1

<table>
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<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tr>
<td>SDV 106</td>
<td>Preparation for Employment</td>
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<tr>
<td>TRK 101</td>
<td>DOT Safety Rules and Regulations</td>
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<tr>
<td>TRK 102</td>
<td>Preventive Maintenance for Truck Drivers</td>
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<tr>
<td>TRK 105</td>
<td>Class B Truck Driving</td>
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<tr>
<td>TRK 110</td>
<td>Survey of the Trucking Industry</td>
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<tr>
<td></td>
<td><strong>Total Minimum Credits</strong></td>
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</table>

WELDING

Certificate:
• Welding
  Career Studies Certificates:
  • Welding
  • Maritime Welding

The Welding program provides two concentrations for preparing to work in the welding industry. These include basic welding and maritime welding. Additionally, a certificate is available for those who choose the basic welding program.

A moderate level of manual dexterity and an average mechanical aptitude are helpful. Prospective welding students should contact the Welding Department at 822-2004 for prior approval before enrolling.

CERTIFICATE: WELDING (Program Code: 955)

The Certificate in Welding builds on the skills presented in the Career Studies Certificate in Welding. In addition to learning about college success skills, students gain competencies in English and math.

Semester 1

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tbody>
<tr>
<td>ENG 111</td>
<td>College Composition I</td>
<td>3</td>
<td>Placement</td>
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<tr>
<td>WEL 117</td>
<td>Oxyfuel Welding and Cutting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>WEL 123</td>
<td>Shielded Metal Arc Welding (Basic)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>WEL 141</td>
<td>Welder Qualification Test I</td>
<td>3</td>
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Semester 2

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<tr>
<td>MTH 103</td>
<td>Applied Technical Mathematics</td>
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<td>Placement</td>
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<td>WEL 124</td>
<td>Shielded Metal Arc Welding (Advanced)</td>
<td>3</td>
<td>WEL 123</td>
</tr>
<tr>
<td>WEL 136</td>
<td>Welding III (Inert Gas)</td>
<td>2</td>
<td>WEL 117</td>
</tr>
<tr>
<td>WEL 142</td>
<td>Welder Qualification Test II</td>
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<td>WEL 141</td>
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<td>SDV 100</td>
<td>College Success Skills</td>
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Semester 3

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<tr>
<td>WEL 126</td>
<td>Pipe Welding I (ARC)</td>
<td>3</td>
<td>WEL 124</td>
</tr>
<tr>
<td>WEL 135</td>
<td>Inert Gas Welding</td>
<td>2</td>
<td>WEL 136</td>
</tr>
<tr>
<td>WEL 138</td>
<td>Pipe and Tube Welding (TIG)</td>
<td>2</td>
<td>WEL 136</td>
</tr>
<tr>
<td>WEL 150</td>
<td>Welding Drawing and Interpretation</td>
<td>2</td>
<td></td>
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<tr>
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<td><strong>Semester Total</strong></td>
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<td><strong>Total Minimum Credits</strong></td>
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CAREER STUDIES: WELDING  (Program Code: 221.995.01)

The Career Studies Certificate in Welding prepares students for immediate employment in a number of industrial environments, including shipyards, utilities, manufacturing firms, and oil refineries. Students are introduced to various types of equipment and materials used in welding. Successful completers may qualify as tuck welders or as journeyman welders. Students qualifying as a journeyman may successfully pass the AWS Journeyman Certification tests.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
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<td>WEL 117</td>
<td>Oxyfuel Welding and Cutting</td>
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<td>WEL 123</td>
<td>Shielded Metal Arc Welding (Basic)</td>
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<td>WEL 141</td>
<td>Welder Qualification Test I</td>
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<td>WEL 136</td>
<td>Welding III (Inert Gas)</td>
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<td>WEL 142</td>
<td>Welder Qualification Test II</td>
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<tr>
<td></td>
<td>WEL 126</td>
<td>Pipe Welding I (ARC)</td>
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<td>WEL 135</td>
<td>Inert Gas Welding</td>
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<td>WEL 124</td>
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<td></td>
<td>WEL 138</td>
<td>Pipe and Tube Welding (TIG)</td>
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<td>WEL 150</td>
<td>Welding Drawing and Interpretation</td>
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CAREER STUDIES: MARITIME WELDING  (Program Code: 221.953.30)

The Career Studies Certificate in Maritime Welding prepares students for entry-level positions as maritime welders. While some welding skills are universal, this program will focus specifically on developing the knowledge, skills, and abilities needed to obtain employment as a maritime welder.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
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<tr>
<td></td>
<td>MAR 120</td>
<td>Introduction to Ship Systems</td>
<td>3</td>
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<td>WEL 165</td>
<td>Introduction to Maritime Welding</td>
<td>2</td>
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<td></td>
<td>WEL 170</td>
<td>Maritime Shielded Metal Arc Fillet Welding (SMAW I)</td>
<td>3</td>
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<tr>
<td></td>
<td>WEL 171</td>
<td>Maritime Shielded Metal Arc Groove Welding (SMAW II)</td>
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<td>WEL 210</td>
<td>Maritime Flux Core Arc Fillet Welding (FCAW)</td>
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<th>Credits</th>
<th>Prerequisite</th>
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<tr>
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<td>WEL 220</td>
<td>Maritime Gas Metal Arc Fillet Welding (GMAW)</td>
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<td>WEL 230</td>
<td>Maritime Gas Tungsten Arc Fillet Welding (GTAW)</td>
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<td><strong>Total Minimum Credits</strong></td>
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</table>
Courses – A

General Usage Courses

These courses are used in all disciplines by using the appropriate course prefix with a specific discipline or course content title.

90-190-290 1-5 credits

Coordinated Internship In

Includes supervised practice in selected business, industrial, and service firms coordinated by the college. Credit/practice ratio maximum 1:5 hours. Variable hours per week.

93-193-293 1-5 credits

Studies In

Covers new content not covered in existing courses in the discipline. Allows instructor to explore content and instructional methods to assess the course's viability as a permanent offering. Variable hours per week.

95-195-295 1-5 credits

Topics In

Provides an opportunity to explore topic areas of an evolving nature or of short-term importance in the discipline. Variable hours per week.

96-196-296 1-5 credits

On-Site Training In

Offers opportunities for career orientation and training without pay in selected businesses and industry. Supervised and coordinated by the college. Credit/work ratio not to exceed 1:5 hours. Variable hours per week.

97-197-297 1-5 credits

Cooperative Education In

Provides on-the-job training for pay in approved business, industrial, and service firms. Applies to all occupational-technical curricula at the discretion of the college. Credit/work ratio not to exceed 1:5 hours. Variable hours per week.

98-198-298 1-5 credits

Seminar and Project In

Requires completion of a project or research report related to the student’s occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field. Variable hours per week.

99-199-299 1-5 credits

Supervised Study In

Assigns problems for independent study outside the normal classroom setting under the guidance and direction of an instructor. Incorporates prior experience and instruction in the discipline. Variable hours per week.

Accounting

ACC 100 5 credits

Introduction to Bookkeeping

Presents the accounting cycle, focusing on the routine recording of data in journals and ledgers. Includes payroll preparation and practical procedures. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

ACC 124 3 credits

Payroll Accounting

Presents accounting systems and methods used in computing and recording payroll to include payroll taxes and compliance with federal and state legislation. Lecture 3 hours per week.

ACC 210 3 credits

Advanced Bookkeeping

Emphasizes the complexities of bookkeeping. Stresses methods to avoid typical pitfalls in preparation for the Certified Bookkeeper Exam. Prerequisite: ACC 212. Lecture 3 hours per week.

ACC 211 3 credits

Principles of Accounting I

Presents accounting principles/application to various businesses. Covers the accounting cycle, income determination, and financial reporting. Includes a comprehensive study of the basic elements of accounting and emphasizes the nature and importance of accounting procedures. Lecture 3 hours per week.

ACC 212 3 credits

Principles of Accounting II


ACC 215 3 credits

Computerized Accounting

Introduces the computer in solving accounting problems. Focuses on operation of computers. Presents the accounting cycle and financial statement preparation in a computerized system and other applications for financial and managerial accounting. Prerequisite or co-requisite: ACC 211. Lecture 3 hours per week.

ACC 217 3 credits

Analyzing Financial Statements

Explains the generation and limitations of data, techniques for analyzing the flow of a business's funds, and the methods of selecting and interpreting financial ratios. Offers analytical techniques through the use of comprehensive case studies. Prerequisite: ACC 202. Lecture 3 hours per week.

ACC 219 3 credits

Government and Non-Profit Accounting

Introduces fund accounting as used by governmental and non-profit entities. Stresses differences between accounting principles of for-profit and not-for-profit organizations. Prerequisite: ACC 202 or equivalent. Lecture 3 hours per week.

ACC 220 3 credits

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 payroll, and checking account management. Includes regulations applicable to payroll, self-employment, social security and other taxes. Lecture 3 hours per week.

ACC 221 4 credits

Intermediate Accounting I

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. Expands theory and practice of accounting principles in prerequisite courses. Prerequisite: ACC 212 or equivalent. Lecture 4 hours per week.
COURSE DESCRIPTIONS

ACC 222  4 credits
Intermediate Accounting II
Continues accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long-term liabilities, and investments. Prerequisite: ACC 212. Lecture 4 hours per week.

ACC 231  3 credits
Cost Accounting I
Studies cost accounting methods and reporting as applied to job order, process, and standard cost accounting systems. Includes cost control and other topics. Explores the development of cost accounting tools and techniques necessary for effective decision making. Prerequisite: ACC 212 or equivalent. Lecture 3 hours per week.

ACC 241  3 credits
Auditing I
Presents techniques of investigating, interpreting, and appraising accounting records and assertions. Studies internal control design and evaluation, evidence-gathering techniques and other topics. Prerequisite: ACC 212. Lecture 3 hours per week.

ACC 261  3 credits
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. Prerequisite: ACC 212 or equivalent. Lecture 3 hours per week.

ACC 262  3 credits
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. Prerequisite: ACC 261. Lecture 3 hours per week.

ACQ 121  3 credits
Introduction to Acquisition and Procurement Fundamentals I
Introduces technical and fundamental procedures of government acquisition and procurement. Focuses on appropriations and funding, competition requirements, types of specifications, small business and labor surplus areas, pre-solicitation considerations, solicitations, and contractor qualifications. Lecture 3 hours per week.

ACQ 122  3 credits
Introduction to Acquisition and Procurement Fundamentals II
Presents technical and fundamental procedures basic to government acquisition and procurement. Focuses on sealed bidding, types of contracts, pricing policies and techniques, contracting by negotiation, contract administration, contractor performance, government contract quality assurance, termination of government contracts, protest, disputes, appeals, and contract close-out. Prerequisite: ACQ 121. Lecture 3 hours per week.

ACQ 215  3 credits
Contract Law
Studies government contract law. Applies basic legal aspects and principles of law associated with contracting and the administration of contracts. Emphasizes the dispute process, including administrative and judicial methods of resolution of contract disputes. Focuses on modifications, award law, government property, defective pricing data, patent and data law, and labor law. Lecture 3 hours per week.

ACQ 221  3 credits
Advanced Acquisition and Procurement Management I
Studies advanced areas of acquisition planning, government provided property, sealed bidding, funding, and acquisition of information resources. Emphasizes interactions with service contracts, value engineering, commercial activities, technical requirements, construction requirements, and socio-economic programs. Prerequisite: ACQ 121. Lecture 3 hours per week.

ACQ 231  3 credits
Principles of Contract Pricing and Negotiations I
Covers the environment in which cost and price analysis takes place, sources of data for cost and price analysis, methods for analyzing direct and indirect costs, methods for performing profit analysis, and a selection of current pricing topics. Lecture 3 hours per week.

ACQ 232  3 credits
Principles of Contract Pricing and Negotiations II
Continues the environment in which cost and price analysis takes place. Includes individual and group negotiation activities, which address the fundamentals of the negotiation process, essential techniques, strategies, and tactics. Prerequisite: ACQ 231. Lecture 3 hours per week.

Administration of Justice

ADJ 105  3 credits
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 110  3 credits
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 and organizations of local, state, and federal law enforcement agencies. Examines the qualification requirements and career opportunities in the law enforcement profession. Lecture 3 hours per week.

ADJ 111  3 credits
Law Enforcement Organization and Administration I
Teaches the principles of organization and administration of law enforcement agencies. Studies the management of line operations, staff and auxiliary services, investigative and juvenile units. Introduces the concept of data processing; examines policies, procedures, rules, and regulations pertaining to crime prevention. Surveys concepts of protection of life and property, detection of offenses, and apprehension of offenders. Lecture 3 hours per week.

TIDewater Community College • Catalog 2010-11
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJ 120</td>
<td>3 credits</td>
<td>Introduction to Courts&lt;br&gt;Presents an overview of the American judiciary—the federal and 50 state judicial systems—with emphasis on criminal court structures, functions, and personnel; surveys the judicial system in Commonwealth of Virginia. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>ADJ 127</td>
<td>3 credits</td>
<td>Firearms and Marksmanship&lt;br&gt;Surveys lethal weapons in current use and current views on weapon types and ammunition design. Examines the legal guidelines as to the use of deadly force, safety in handling of weaponry, and weapon care and cleaning; marksmanship instruction under standard range conditions. Prerequisite: Instructor permission. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>ADJ 140</td>
<td>3 credits</td>
<td>Introduction to Corrections&lt;br&gt;Focusses 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.</td>
</tr>
<tr>
<td>ADJ 150</td>
<td>3 credits</td>
<td>Introduction to Security Administration&lt;br&gt;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.</td>
</tr>
<tr>
<td>ADJ 201</td>
<td>3 credits</td>
<td>Criminology&lt;br&gt;Studies current and historical data pertaining to criminal and other deviant behavior. Examines theories that explain crime and criminal behavior in human society. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>ADJ 211-212</td>
<td>3 credits each</td>
<td>Criminal Law, Evidence and Procedures I-II&lt;br&gt;Teaches the elements of proof for major and common crimes and the legal classification of offenses. Studies the kinds, degrees and admissibility of evidence and its presentation in criminal proceedings with emphasis on legal guidelines for methods and techniques of evidence acquisition. Surveys the procedural requirements from arrest to final disposition in the various American court systems with focus on the Virginia jurisdiction. Prerequisite for ADJ 212: ADJ 211. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>ADJ 231</td>
<td>3 credits</td>
<td>Community Policing&lt;br&gt;Examines the history of police-community relations and the role of both the community and the police in establishing a crime fighting partnership for success. Emphasizes building relationships between police officers and the community they serve. Includes case studies from various cities that have undertaken the philosophy of community policing. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>ADJ 232</td>
<td>3 credits</td>
<td>Domestic Violence&lt;br&gt;Surveys historical issues that have affected family violence. Examines current trends in the context of the criminal justice system. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>ADJ 234</td>
<td>3 credits</td>
<td>Terrorism and Counter-Terrorism&lt;br&gt;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.</td>
</tr>
<tr>
<td>AIR 121-122</td>
<td>3 credits each</td>
<td>Air Conditioning and Refrigeration I-II&lt;br&gt;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. Co-requisite for AIR 121: AIR 111. Prerequisite for AIR 122: AIR 121. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>AIR 116</td>
<td>2 credits</td>
<td>Duct Construction and Maintenance&lt;br&gt;Presents duct materials including sheet metal, aluminum, and fiber glass. Explains development of duct systems, layout methods, safety hand tools, cutting and shaping machines, fasteners and fabrication practices. Includes duct fittings, dampers and regulators, diffusers, heater and air washers, fans, insulation, and ventilating hoods. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.</td>
</tr>
<tr>
<td>AIR 111-112</td>
<td>3 credits each</td>
<td>Heating Systems I&lt;br&gt;Introduces types of fuels and their characteristics of combustion; types, components and characteristics of burners, and burner efficiency analyzers. Studies forced air heating systems including troubleshooting, preventive maintenance and servicing. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</td>
</tr>
</tbody>
</table>
COURSE DESCRIPTIONS

AIR 161  3 credits
Heating, Air, and Refrigeration Calculations I
Introduces fractions, decimals, sign of operations, equations, Ohm's Law, subtraction, multiplication and division of signed numbers. Teaches fundamentals of algebra, expression of stated problems in mathematical form, and solutions of equations. Lecture 3 hours per week.

AIR 165  3 credits
Air Conditioning Systems I
Introduces comfort survey, house construction, heat calculations, types of distribution systems, and equipment selection. Introduces designing, layout, installing and adjusting of duct systems, job costs, and bidding of job. Prerequisite: AIR 161. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 181  2 credits
Planning and Estimating I
Presents fundamentals of blueprint reading as applied to the building trades. Emphasizes air conditioning distribution, designing and drawing residential and commercial systems, take-off of materials and estimating the cost of the systems. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

AIR 200  2 credits
Hydronics
Presents design and installation of hydronic systems for heating and cooling. Includes steam heated and chilled water systems. Primarily concerns systems using water under forced circulation. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

AIR 206  3 credits
Psychrometrics
Studies air and its properties, characteristics and measurements as they apply to human comfort. Considers control of temperature, humidity and distribution of air and air mixtures. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 235  3 credits
Heat Pumps
Studies theory and operation of reverse cycle refrigeration, including supplementary heat as applied to heat pump systems, including service, installation and maintenance. Prerequisites: AIR 112 and AIR 122. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

AIR 238  3 credits
Advanced Troubleshooting and Service
Presents advanced service techniques on a wide variety of equipment used in refrigeration, air conditioning, and phases of heating and ventilation and controls. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Architecture

ARC 100  3 credits
Introduction to Architecture
Outlines history and impact of architecture. Emphasizes dynamics and social aspects of architecture and society; focuses on 19th and 20th century architectural forms. Lecture 3 hours per week.

ARC 121-122  3 credits each
Architectural Drafting I-II
Introduces techniques of architectural drafting, including lettering, dimensioning, and symbols. Requires production of plans, sections, and elevations of a simple building. Studies use of common reference material and the organization of architectural working drawings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ARC 133  3 credits
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. Includes specification of materials and installation procedures, types of specifications and writing procedures, bidding procedures, and contract documents. Lecture 3 hours per week.

ARC 220  3 credits
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, and facilities. Lecture 3 hours per week.

ARC 221  3 credits
Architectural CAD Applications Software I
Teaches the principles and techniques of architectural drawing practices through the use of architecture specific CAD software. Utilizes the commands and features of the software to generate drawings that emphasize architectural design and structural systems. Prerequisite: ARC 121 and CAD 201. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ARC 222  3 credits
Architectural CAD Applications Software II
Uses advanced features of architectural CAD software to teach students to develop working drawings and details that adhere to the practices and techniques of architectural drafting principles. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

ARC 231  4 credits
Advanced Architectural Design, and Graphics I
Provides fundamental knowledge of principles and techniques of architectural drawing procedures. Familiarizes student with design process. Provides a better understanding of the relation between architectural design and structural systems. Prerequisite: ARC 122 or equivalent. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

ARC 258  3 credits
Building Codes, Contract Documents, and Professional Office Practices
Covers professional role of the architectural technician with regard to the construction industry. Includes building codes and their effect on specifications and drawings. Teaches purpose and writing of specifications with their legal and practical application to working drawings. Analyzes contract documents for client-architect-contractor responsibilities and duties. Lecture 3 hours per week.
# Course Descriptions

## Aviation

**ARO 121** 3 credits

### Private Pilot Ground School

Presents the fundamental principles of flight including theory of flight, aircraft standards and specifications, basic aircraft construction, weight and balance, navigation, meteorology, principles of radio communication and application of aerophysics. Prepares students for the FAA examination for private pilot rating. Lecture 3 hours per week.

**ARO 122** 3 credits

### Instrument Pilot Ground School

Covers principles applicable to instrument aviation requirements. Includes study of aerodynamics pertaining to instrument flight, flight instruments, and airways. Prepares students for the FAA examination for instrument pilot rating. Lecture 3 hours per week.

## Art

### General Art

**ART 114** 3 credits

Introduces art to the student without previous training. Provides studio exercises in drawing, painting, and two- and three-dimensional design. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.

**ART 121-122** 3 credits each

### 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 media. Includes field trips and gallery assignments as appropriate. Prerequisite for ART 122: ART 121. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 131** 3 credits

### Fundamentals of Design I

Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 134** 3 credits

### Three Dimensional Design

Explores the concepts of three dimensional design applicable to all fields of Visual Art. Covers tools and techniques. Uses computers as appropriate for research. Prerequisite: ART 131. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 141** 4 credits

### Typography I

Studies the history of letter forms and typefaces and examines their uses in contemporary communications media. Emphasizes applications to specific design problems. Includes identification and specification of type, copy fitting and hands-on typesetting problems. Prerequisites: ART 131 and ART 283. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

**ART 201-202** 3 credits each

### History of Art I-II

Studies the historical context of art of the ancient, medieval, Renaissance and modern worlds. Includes research project. Lecture 3 hours per week.

**ART 203** 4 credits

### Animation I

Introduces the student to the basic techniques of animation, both traditional and computer generated. Teaches theoretical elements of the aesthetics of sequential imagery. Provides practical experience in animation. Exposes students to a variety of animation techniques through lectures, presentations, classroom work, and outside assignments. Prerequisites: ART 131 and ART 283. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

**ART 208** 4 credits

### Video Techniques

Addresses the fundamentals of video technology as applied to the creation of multimedia projects. Focuses on the aesthetics of editing. Extends the capabilities of graphic designers and artists and allows them to transfer art work and animation from the computer to video, and to capture video frames for use in multimedia design on the computer. Instructs students in the development of sophisticated typographic design. Prerequisite: ART 283. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

**ART 209** 3 credits

### Creative Concepts and Copywriting

Focuses on the generation of creative verbal/visual concepts and the techniques of effective written communication necessary for success in the graphic design industry. Prerequisite: ENG 111. Lecture 3 hours per week.

**ART 221-222** 3 credits each

### Drawing III-IV

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. Must be taken in sequence. Prerequisite for ART 221. ART 122. Prerequisite for ART 222. ART 221. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 241-242** 3 credits each

### Painting I-II

Introduces abstract and representational painting in acrylic and/or oil with emphasis on color composition and value. Must be taken in sequence. Prerequisite for ART 241: ART 122 and ART 131 or divisional approval. Prerequisite for ART 242: ART 241. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 243-244** 3 credits each

### Watercolor I-II

Presents abstract and representational painting in watercolor with emphasis on design, color, composition, technique and value. Must be taken in sequence. Prerequisite for ART 243: ART 122 and ART 131 or divisional approval. Prerequisite for ART 244: ART 243. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

**ART 245** 3 credits

### Portrait Painting

Explores portrait painting as representational and abstract art. Emphasizes analytical study of the head using a variety of mediums. Prerequisite: ART 241. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.
ART 250  3 credits
History of Design
Surveys the development of graphic design and illustration with emphasis on the 19th and 20th centuries. Analyzes the work of outstanding designers and illustrators. Lecture 3 hours per week.

ART 251-252  3 credits each
Communication Design I-II
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. Must be taken in sequence. Prerequisite for ART 251: ART 141. Lecture 2 hours. Studio instruction 3 hours. Total 5 hours per week.

ART 260  3 credits
Pastel Landscape
Introduces students to the urban and rural landscape using the medium of soft pastels. Emphasizes the concepts of proportion, space, perspective, tone and composition as applied to the landscape. Provides experience in plein air at various locations when weather permits. Prerequisite: ART 121. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 263-264  4 credits each
Interactive Design I-II
Focuses on creative concepts of design problem solving for interactive design: techniques specific to web, multimedia for the web, and other interactive design products. Advanced interactive design functions such as animation, rollovers, and audio are covered in ART 264. Prerequisites for ART 263: ART 141 and ART 283. Prerequisites for ART 264: ART 263. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 270  3 credits
Motion Graphics I
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. Prerequisites: ART 131 and ART 283. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 283-284  4 credits each
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. Must be taken in sequence. Co-requisite for ART 283: ART 131. Prerequisite for ART 284: ART 283. Lecture 2 hours. Studio instruction 4 hours. Total 6 hours per week.

ART 286  3 credits
Communication Arts Workshop
Requires special project and/or research focusing on career opportunities. Teaches resume and portfolio preparation and interview techniques. May include internship with a professional design firm. Recommended for final semester Graphic Design program students. Prerequisite: Instructor approval. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

ART 287  3 credits
Portfolio and Resume Preparation
Focuses on portfolio preparation, resume writing, and job interviewing for students. Recommended for final semester Studio Arts program students. Prerequisite: Instructor approval. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.

American Sign Language

ASL 101-102  3 credits each
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 non-manual signals. Focuses on communicative competence. Develops gestural skills as a foundation for ASL enhancement. Introduces cultural knowledge and increases understanding of the Deaf Community. Lecture 3 hours per week.

ASL 115  2 credits
Fingerspelling and Number Use in ASL
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. Prerequisite: ASL 101 or permission of instructor. Lecture 2 hours per week.

ASL 125  3 credits
History & Culture of the Deaf Community I
Presents an overview of various aspects of Deaf Culture, including educational and legal issues. Prerequisite: ASL 101. Lecture 3 hours per week.

ASL 150  2 credits
Working with Deaf and Hard-of-Hearing People
Explores career options for serving Deaf/hard-of-hearing people and/or for using American Sign Language skills in a career. Examines interests, skills, and educational assessments. Investigates job market viability via the internet and professional periodicals. Develops opportunities for students to network with professionals in the field of deafness. Lecture 2 hours per week.

ASL 201-202  3 credits each
American Sign Language III-IV
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. Prerequisite for ASL 201: ASL 102. Prerequisite for ASL 202: ASL 201. Lecture 3 hours per week.

ASL 220  3 credits
Comparative Linguistics: ASL & English
Describes spoken English and ASL (American Sign Language) on five levels: phonological, morphological, lexical, syntactic, and discourse. Compares and contrasts the two languages on all five levels using real-world examples. Documents similarities between signed languages and spoken languages in general. Describes the major linguistic components and processes of English and ASL. Introduces basic theories regarding ASL structure. Emphasizes ASL’s status as a natural language by comparing and contrasting similarities and unique differences between the two languages. Prerequisite: ASL 201. Lecture 3 hours per week.
COURSE DESCRIPTIONS

ASL 261-262 3 credits each
American Sign Language V-VI
Develops advanced American Sign Language comprehension and production skills. Emphasizes advanced linguistic aspects of ASL. Presents ASL literary forms. Encourages contact with the Deaf Community. Prerequisite: ASL 202 or instructor permission. Lecture 3 hours per week.

AST 55 1 credit
Certification Preparation
Serves as a review of objectives for a specific certification. Uses certification test preparation software, when available, in conjunction with a faculty resource person. May be repeated for credit. Lecture 1 hour per week.

AST 101 3 credits
Keyboarding I
Teaches the alpha/numeric keyboard with emphasis on correct techniques, speed, and accuracy. Teaches formatting of basic personal and business correspondence, reports, and tabulation. Lecture 3 hours per week.

AST 102 3 credits
Keyboarding II
Develops keyboarding and document production skills with emphasis on preparation of specialized business documents. Continues skill building for speed and accuracy. Prerequisite: AST 101 or equivalent. Lecture 3 hours per week.

AST 107 3 credits
Editing/Proofreading Skills
Develops skills essential to creating and editing business documents. Covers grammar, spelling, diction, punctuation, capitalization, and other usage problems. Lecture 3 hours per week.

AST 114 2 credits
Keyboarding for Information Processing
Teaches the alphabetic and numeric keys: develops correct techniques and competency in the use of computer keyboards. May include basic correspondence and report formats. Lecture 2 hours per week.

AST 117 1 credit
Keyboarding for Computer Usage
Teaches the alphabetic keyboard and 10-key pad. Develops correct keying techniques. Lecture 1 hour per week.

AST 132 1 credit
Word Processing I (Microsoft Office Word)
Introduces students to a word processing program to create, edit, save and print documents. Lecture 1 hour per week.

AST 141 4 credits
Word Processing (Microsoft Office Word)
Teaches creating and editing documents, including line and page layouts, columns, fonts, search/replace, cut/paste, spell/thesaurus, and advanced editing and formatting features of word processing software. Prerequisite: AST 101 or equivalent. Lecture 4 hours per week.

AST 147 1 credit
Introduction to Presentation Software (Microsoft Office PowerPoint)
Introduces presentation options including slides, transparencies, and other forms of presentations. Lecture 1 hour per week.

AST 150 1 credit
Desktop Publishing I (Microsoft Office Word)
Presents desktop publishing features including page layout and design, font selection, and use of graphic images. Lecture 1 hour per week.

AST 154 1 credit
Voice Recognition Applications
Teaches the computer user to use the voice as an input device to compose documents and to give commands directly to the computer. Lecture 1 hour per week.

AST 201 3 credits
Keyboarding III
Develops decision-making skills, speed, and accuracy in production keying. Applies word processing skills in creating specialized business documents. Prerequisite: AST 102 or equivalent. Lecture 3 hours per week.

AST 205 3 credits
Business Communications
Teaches techniques of oral and written communications. Emphasizes writing and presenting business-related material. Prerequisite: ENG 111. Lecture 3 hours per week.

AST 234 3 credits
Records and Database Management
Teaches filing and records management procedures using microcomputer database software. Incorporates both manual and electronic methods for managing information. Lecture 3 hours per week.

AST 236 4 credits
Specialized Software Applications
Teaches specialized integrated software applications on the microcomputer. Emphasizes document production to meet business and industry standards. Prerequisite: AST 101 or equivalent. Lecture 4 hours per week.

AST 242 3 credits
Medical Insurance and Coding
Teaches coding for medical services rendered within a medical office setting utilizing current coding books. Prerequisite: HLT 143. Lecture 3 hours per week.

AST 243 3 credits
Office Administration I
Develops an understanding of the administrative support role and the skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes the development of critical thinking, problem-solving, and job performance skills in a business office environment. Prerequisite: AST 101 or equivalent. Lecture 3 hours per week.

AST 244 3 credits
Office Administration II
Enhances skills necessary to provide organizational and technical support in a contemporary office setting. Emphasizes administrative and supervisory role of the office professional. Includes travel and meeting planning, office budgeting and financial procedures, international issues, and career development. Prerequisite: AST 243 or equivalent. Lecture 3 hours per week.
### Automotive Business Practices

**AUT 110** 3 credits

- **Introduction to Automotive Systems**
- Introduces fundamental systems of the automobile: the engine, fuel, exhaust, electric, ignition, lubrication, cooling, transmission, steering, brake and suspension systems.
- Teaches theory and function of each system. Demonstrates operation. **Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.**

**AUT 166-167** 5 credits each

- **Automotive Diagnostics I-II**
- Presents the application and operating theory and diagnostic procedures on general engine mechanical and electrical systems. Emphasizes diagnostic procedures using the latest diagnostic equipment. Prerequisite for AUT 167: AUT 166. **Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.**

**AUT 168-169** 5 credits each

- **Automotive Diagnostics III-IV**
- Presents the application and operation theory and diagnostic procedures on engine performance systems, emissions analysis, computer controlled systems, body electronics, and climate control systems. Emphasizes diagnostic procedures using the latest diagnostic equipment. Includes preparation for Refrigerant Certification Test and ASE Tests A6, A7, A8. Prerequisite: AUT 166. **Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.**

### Automotive Systems Operation

**AUT 170** 3 credits

- **Automotive Systems Operation**
- Introduces general automotive systems and their operations. Includes body and suspension, engine, electrical system, powertrain, emission controls and accessory systems. Emphasizes basic automotive system component parts and their function. **Lecture 3 hours per week.**

**AUT 178** 4 credits

- **Automotive Final Drive and Manual Transmission Systems**
- Presents the operation, design, construction and repair of manual transmissions and final drive systems, for both front and rear drive vehicles, including clutches, synchronizers, torque multiplication/gear reduction, along with differentials, transmission/transaxles, drive axles, U-joints, CV joints, 4-wheel drive and all-wheel drive systems. **Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.**

**AUT 220-221** 5 credits each

- **Automotive Diagnostics V-VI**
- Presents the application and operation of diagnostic test equipment to test and inspect steering, suspension, and braking systems. Includes preparation for Virginia State Inspection exam and ASE tests A4 and A5. Prerequisite: AUT 166. **Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.**

**AUT 247-248** 5 credits each

- **Automotive Diagnostics VII-VIII**
- Presents the application and operation of diagnostic test equipment to test and inspect powertrain systems. Includes preparation for ASE Tests A1, A2, and A3. Prerequisite: AUT 166. **Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.**

### Medical Machine Transcription

**AST 245** 3 credits

- **Medical Machine Transcription**
- Develops machine transcription skills, integrating operation of transcribing equipment with understanding of medical terminology. Emphasizes dictation techniques and accurate transcription of medical documents in prescribed formats. Prerequisite: AST 102 or equivalent and HLT 143. **Lecture 3 hours per week.**

### Medical Office Procedures I

**AST 271** 3 credits

- **Medical Office Procedures I**
- Covers medical office procedures, records management, preparation of medical reports, and other medical documents. Prerequisite or co-requisite: AST 102. **Lecture 3 hours per week.**

### Automotive Engines I

**AUT 111** 3 credits

- **Automotive Engines I**
- Presents analysis of power, cylinder condition, valves and bearings in the automotive engine to establish the present condition, repairs or adjustments. Part I of II. **Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.**

### Small Gasoline Engines

**AUT 156** 2 credits

- **Small Gasoline Engines**
- Studies small gasoline engine operating principles, construction, design, variety, and their many purposes. Gives instruction on two-cycle and four-cycle small gas engines, their construction, design, fuel system, ignition system, and lubricating systems. Demonstrates disassembly, reconditioning, overhaul and reassembly in the lab. **Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.**

### Automotive Diagnosis and Tune-Up

**AUT 165** 2 credits

- **Automotive Diagnosis and Tune-Up**
- Presents the techniques for diagnosis of malfunctions in systems of the automobile. Uses dynamometers, oscilloscopes and other specialized diagnostic and testing equipment. Demonstrates tune-up of conventional and rotary engines. **Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.**

### Automotive Diagnostics

**AUT 220-221** 5 credits each

- **Automotive Diagnostics V-VI**
- Presents the application and operation of diagnostic test equipment to test and inspect steering, suspension, and braking systems. Includes preparation for Virginia State Inspection exam and ASE tests A4 and A5. Prerequisite: AUT 166. **Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.**

### Automotive Final Drive and Manual Transmission Systems

**AUT 247-248** 5 credits each

- **Automotive Diagnostics VII-VIII**
- Presents the application and operation of diagnostic test equipment to test and inspect powertrain systems. Includes preparation for ASE Tests A1, A2, and A3. Prerequisite: AUT 166. **Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.**

### Automotive Alignment

**AUT 268** 2 credits

- **Automotive Alignment**
- Studies use of alignment equipment in diagnosing, adjusting, and repairing suspension problems. **Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.**
### Biology

<table>
<thead>
<tr>
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| BIO 1 | 3 credits | Foundations of Biology  
Develops a basic understanding of plant and animal form, function and relationships. Prepares students who have a deficiency in high school biology. May be repeated for credit. Lecture 3 hours per week. |
| BIO 100 | 3 credits | Basic Human Biology  
Presents basic principles of human anatomy and physiology. Discusses cells, tissues, and selected human systems. Lecture 3 hours per week. |
| BIO 101-102 | 4 credits each | General Biology I-II  
Explores fundamental characteristics of living matter from the molecular level to the ecological community with emphasis on general biological principles. Introduces the diversity of living organisms, their structure, function and evolution. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week. |
| BIO 141-142 | 4 credits each | Human Anatomy and Physiology I-II  
Integrates anatomy and physiology of cells, tissues, organs, and systems of the human body. Integrates concepts of chemistry, physics, and pathology. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. |
| BIO 150 | 4 credits | Introductory Microbiology  
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 275 | 4 credits | Marine Ecology  
Applies ecosystem concepts to marine habitats. Includes laboratory and field work. Prerequisite: BIO 101-102 or divisional approval. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week. |
| BIO 278 | 3 credits | Coastal Ecology  
Investigates beach, salt marsh, and estuarine ecosystems, including the effects of chemical, geological, and physical factors upon the distribution of organisms. Discusses the effects of pollution and human manipulation of the coastline. Includes observation and identification of coastal plants and animals, and analysis of the dynamics of coastal community structure and function in a field-based setting. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. |

### Building

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
</table>
| BLD 101 | 3 credits | 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, business methods, including basic computer usage, safety and general project management procedures. Lecture 3 hours per week. |
| BLD 111 | 3 credits | Blueprint Reading and the Building Code  
Introduces reading and interpreting various kinds of blueprints and working drawings with reference to local, state, and national building codes. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. |
| BLD 117 | 3 credits | Contract Documents and Construction Law  
Covers contractual relationships, contract forms and documents, managing general conditions, good documentation processes, differing site conditions, time impacts, and negotiation of resolutions. Lecture 3 hours per week. |

### Business Management and Administration

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
</table>
| BUS 100 | 3 credits | Introduction to Business  
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 credits | 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. |
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 116</td>
<td>3 credits</td>
<td>Entrepreneurship</td>
<td>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.</td>
</tr>
<tr>
<td>BUS 117</td>
<td>3 credits</td>
<td>Leadership Development</td>
<td>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.</td>
</tr>
<tr>
<td>BUS 125</td>
<td>3 credits</td>
<td>Applied Business Mathematics</td>
<td>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. Prerequisite: MTH 121 or higher. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 130</td>
<td>3 credits</td>
<td>Maritime Logistics Afloat</td>
<td>Examines the technician and mid-level management responsibilities required to perform all tasks relative to maritime logistics operations afloat using current occupational standards for Logisticians. Discusses the three major topic areas in the Naval Supply System of Inventory, logistics, and financial management. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 131</td>
<td>3 credits</td>
<td>Maritime Logistics Ashore</td>
<td>Examines the technician and mid-level management responsibilities required to perform all tasks relative to ashore maritime logistics. Focuses on current occupational standards for Logisticians. Discusses the three major topic areas in the Naval Supply System of Inventory, logistics, and financial management. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 160</td>
<td>1 credit</td>
<td>Legal Aspects of Small Business Operations</td>
<td>Covers the functional areas of business law, specifically as it applies to small business. Provides the students with a working knowledge of business contracts, agency relationships, and product liability. Provides a knowledge base for small business owners to overcome problems that are individually within their abilities. Covers selection of professional assistance for problems of a more serious nature. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>BUS 165</td>
<td>3 credits</td>
<td>Small Business Management</td>
<td>Identifies management concerns unique to small businesses. Introduces the requirements necessary to initiate a small business, and identifies the elements comprising a business plan. Presents information establishing financial and administrative controls, developing a marketing strategy, managing business operations, and the legal and government relationships specific to small businesses. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 200</td>
<td>3 credits</td>
<td>Principles of Management</td>
<td>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. Prerequisite: BUS 100. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 201</td>
<td>3 credits</td>
<td>Organizational Behavior</td>
<td>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.</td>
</tr>
<tr>
<td>BUS 202</td>
<td>3 credits</td>
<td>Applied Management Principles</td>
<td>Focuses on management practices and issues. May use case studies and/or management decision models to analyze problems in developing and implementing a business strategy while creating and maintaining competitive advantage. Prerequisite: BUS 200. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 205</td>
<td>3 credits</td>
<td>Human Resource Management</td>
<td>Introduces employment, 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.</td>
</tr>
<tr>
<td>BUS 215</td>
<td>3 credits</td>
<td>Purchasing and Materials Management</td>
<td>Teaches the principles of effective purchasing and management of materials and equipment. Includes determination of requirements, source selection, pricing, value analysis, contracting, inventory management, and equipment requisition decisions. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 216</td>
<td>3 credits</td>
<td>Probability and Statistics for Business and Economics</td>
<td>Introduces methods of probability assessment and statistical inference. Includes data collection and presentation; descriptive statistics; basic probability concepts; discrete and continuous probability distributions; decision theory; sampling and estimation; and hypothesis testing. Emphasizes business and economic applications. Utilizes computer software as a tool for problem solving. Prerequisites: ITE 115 and MTH 163. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 220</td>
<td>3 credits</td>
<td>Introduction to Business Statistics</td>
<td>Introduces statistics as a tool in decision-making. Emphasizes ability to collect, present, and analyze data. Employs measures of central tendency and dispersion, statistical inference, index numbers, probability theory, and time series analysis. Prerequisite: MTH 121. Lecture 3 hours per week.</td>
</tr>
</tbody>
</table>
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>BUS 223</td>
<td>3 credits</td>
<td>Distribution and Transportation</td>
<td>Examines the background and history of transportation, emphasizing the fundamental role and importance the industry plays in companies, society, and the environment in which transportation service is provided. Provides an overview of carrier operations, management, technology, and strategies including transportation regulations and public policy. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 234</td>
<td>3 credits</td>
<td>Supply Chain Management</td>
<td>Examines the process of planning, organizing, and controlling the flow of materials and services from supplier to end users/customers. Focuses on coordinating supply management, operations and integrated logistics into a seamless pipeline to maintain a continual flow of products and services. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 236</td>
<td>3 credits</td>
<td>Communication in Management</td>
<td>Introduces the functions of communication in management with emphasis on gathering, organizing, and transmitting facts and ideas. Teaches the basic techniques of effective oral and written communication. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 241</td>
<td>3 credits</td>
<td>Business Law I</td>
<td>Develops a basic understanding of the US business legal environment. Introduces property and contract law, agency and partnership liability, and government regulatory law. Students will be able to apply these legal principles to landlord/tenant disputes, consumer rights issues, employment relationships, and other business transactions. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 242</td>
<td>3 credits</td>
<td>Business Law II</td>
<td>Focuses on business organization and dissolution, bankruptcy and Uniform Commercial Code. Introduces international law and the emerging fields of E-Commerce and Internet Law. Prerequisite: BUS 241. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 255</td>
<td>3 credits</td>
<td>Inventory and Warehouse Management</td>
<td>Emphasizes the relationships of inventory and warehouse management to customer service and profitability of the wholesale distributor. Focuses on the role of computerized systems and resulting information for effective management of inventory and the warehouse under various conditions. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>BUS 260</td>
<td>2 credits</td>
<td>Planning for Small Business</td>
<td>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. Prerequisites: BUS 160, BUS 165, and ACC 220. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>BUS 265</td>
<td>3 credits</td>
<td>Ethical Issues in Management</td>
<td>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.</td>
</tr>
<tr>
<td>BUS 266</td>
<td>3 credits</td>
<td>Introduction to International Business</td>
<td>Studies the problems, challenges, and opportunities, which 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.</td>
</tr>
<tr>
<td>BUS 280</td>
<td>3 credits</td>
<td>Technical Drafting I-II</td>
<td>Introduces technical drafting from the fundamentals through advanced drafting practices. Teaches lettering, metric construction, technical sketching, orthographic projection, sections, intersections, development, fasteners, theory and applications of dimensioning and tolerances. Includes pictorial drawing, and preparation of working and detailed drawings. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>CAD 151-152</td>
<td>3 credits each</td>
<td>Engineering Drawing Fundamentals I-II</td>
<td>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.</td>
</tr>
<tr>
<td>CAD 160</td>
<td>3 credits</td>
<td>Machine Blueprint Reading</td>
<td>Introduces interpretation of various blueprints and working drawings. Applies basic principles and techniques such as visualization of an object, orthographic projection, technical sketching and drafting terminology. Requires outside preparation. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CAD 161</td>
<td>2 credits</td>
<td>Blueprint Reading I</td>
<td>Teaches the application of basic principles, visualization, orthographic projection, details of drafting shop processes and terminology, assembly drawings and exploded views. Considers dimensioning, changes and corrections, classes of fits, tolerances and allowances, sections and convention in blueprint reading. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>CAD 162</td>
<td>2 credits</td>
<td>Blueprint Reading II</td>
<td>Emphasizes industrial prints, auxiliary views, pictorial drawings, simplified drafting procedures, production drawing, operation sheets, tool drawing, assembly drawings, and detailed prints. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>CAD 165</td>
<td>3 credits</td>
<td>Architectural Blueprint Reading</td>
<td>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.</td>
</tr>
</tbody>
</table>
**Course Descriptions**

**CAD 201** 4 credits

**Computer-Aided Drafting and Design I**  
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 credits

**Computer-Aided Drafting and Design II**  
Teaches production drawings and advanced operations in computer-aided drafting. Prerequisite: CAD 201. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**CAD 211** 3 credits

**Advanced Technical Drafting I**  
Teaches use of drafting equipment and applications, emphasizing knowledge and skill required for industrial drawing. Includes piping, gearing, geometric and positional tolerances and 2D/3D drawing layout. Prerequisite: CAD 152 and CAD 201. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**CAD 212** 3 credits

**Advanced Technical Drafting II**  
Teaches concepts of sheet metal fabrication including radii, fillets and tolerances, electrical and electronics symbols and drawing, and advanced design drafting techniques. Prerequisites: CAD 201 and CAD 202. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**CAD 238-239** 3 credits each

**Computer-Aided Modeling and Rendering I-II**  
Focuses on training students in the contemporary techniques of 3D modeling, rendering, and animation on the personal computer. Introduces the principles of visualization, sometimes known as photo-realism, which enables the student to create presentation drawings for both architectural and industrial product design. Uses computer animation to produce walk-throughs that will bring the third dimension to architectural designs. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**CAD 241-242** 3 credits each

**Parametric Solid Modeling I-II**  
Focuses on teaching students the design of parts by parametric solid modeling. Topics covered will include, but not limited to, sketch profiles; geometric and dimensional constraints; 3-D features; model generation by extrusion, revolution and sweep; and the creation of 2-D drawing views that include sections, details and auxiliary. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**CAD 247** 3 credits

**Ship Design Drafting**  
Introduces the shipbuilding industry, ship structure design components, and ship drafting to develop skills required in drawing the “lines” of a ship. Prerequisite: CAD 201. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**CAD 280** 3 credits

**Design Capstone Project**  
Focuses on design projects developed independently and in consultation with the instructor. Topics covered, but not limited to: parametric modeling, civil, mechanical piping, architectural applications, structural, electro-mechanical, 3-D solids, exploration of application software, and the integration of CAD/CAM. Prerequisites: (ARC 122 and ARC 221) or (CAD 201 and CAD 211). Lecture 3 hours per week.

**Childhood Development**

**CHD 109** 3 credits

**Music and Movement for Children**  
Emphasizes theory and practice in movement and music education and the integration of these skills in a curriculum. Designed for teachers and aids in child care, preschool, nursery, or primary schools. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**CHD 118** 3 credits

**Language Arts for Young Children**  
Prepares teachers and others to teach language arts to primary grade children. Topics covered will include the selection of appropriate content and materials, approaches to education for young children, professionalism, and curricular procedures. Lecture 3 hours per week.

**CHD 119** 3 credits

**Introduction to Reading Methods**  
Focuses on promoting language and literacy skills as the foundation for emergent readers. 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. NOTE: This course replaces CHD 117. Prerequisite: ENG 111. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**CHD 120** 3 credits

**Introduction to Early Childhood Education**  
Introduces early childhood development through activities and experiences in nursery, pre-kindergarten, kindergarten, and primary programs. Investigates classroom organization and procedures, and use of classroom time and materials, approaches to education for young children, professionalism, and curricular procedures. Lecture 3 hours per week.

**CHD 125** 3 credits

**Creative Activities for Children**  
Prepares individuals to work with young children in the arts and other creative age-appropriate activities. Investigates affective classroom experiences and open-ended activities. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**CHD 126** 3 credits

**Science and Math Concepts for Children**  
Covers the selection of appropriate developmental learning materials for developing activities to stimulate the logical thinking skills in children. Lecture 3 hours per week.

**CHD 145** 3 credits

**Teaching Art, Music, and Movement to Children**  
Provides experiences in developing the content, methods, and materials for directing children in art, music, and movement activities. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
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<tr>
<td>CHD 146</td>
<td>3</td>
<td>Math, Science, and Social Studies for Children</td>
<td>Provides experiences in developing the content, methods, and materials for directing children in math, science, and social studies activities. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>CHD 165</td>
<td>3</td>
<td>Observation and Participation in Early Childhood/Primary Settings</td>
<td>Observes and participates in early childhood settings such as child care centers, preschools, Montessori schools or public schools in Kindergarten through 3rd grade levels. Students spend one hour each week in a seminar session in addition to 60 clock hours in the field. May be repeated for credit. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.</td>
</tr>
<tr>
<td>CHD 166</td>
<td>3</td>
<td>Infant and Toddler Programs</td>
<td>Examines the fundamentals of infant and toddler development, including planning and implementing programs in group care. Emphasizes meeting physical, social, emotional, and cognitive needs: scheduling, preparing age-appropriate activities, health and safety policies, record keeping, and reporting to parents. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CHD 205</td>
<td>3</td>
<td>Guiding the Behavior of Children</td>
<td>Explores positive ways to build self-esteem in children and help them develop self-control. Presents practical ideas for encouraging prosocial behavior in children and emphasizes basic skills and techniques in classroom management. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CHD 210</td>
<td>3</td>
<td>Introduction to Exceptional Children</td>
<td>Reviews the history of education for exceptional children. Studies the characteristics associated with exceptional children. Explores positive techniques for managing behavior and adapting materials for classroom use. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CHD 215</td>
<td>3</td>
<td>Models of Early Childhood Education Programs</td>
<td>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.</td>
</tr>
<tr>
<td>CHD 216</td>
<td>3</td>
<td>Early Childhood Programs, School, and Social Change</td>
<td>Explores methods of developing positive, effective relations between staff and parents to enhance the developmental goals of home and school. Reviews current trends and issues in education, describes symptoms of homes in need of support, investigates non-traditional family and cultural patterns, and lists community resources. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CHD 220</td>
<td>3</td>
<td>Introduction to School-Age Child Care</td>
<td>Examines the purposes of school-age child care in today’s society, the role of adults within school-age child care, and the state of the profession of school-age child care. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CHD 225</td>
<td>3</td>
<td>Curriculum Development for School-Age Child Care</td>
<td>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.</td>
</tr>
<tr>
<td>CHD 230</td>
<td>3</td>
<td>Behavior Management for School-Age Child Care</td>
<td>Discusses the development of social skills that school-age children need for self-management, including self-discipline, self-esteem, and coping with stress and anger. Explores ways to effectively guide and discipline school-age children, focusing on how adults can facilitate positive pro-social and self-management skills. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CHD 235</td>
<td>3</td>
<td>Health and Recreation for School-Age Child Care</td>
<td>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.</td>
</tr>
<tr>
<td>CHD 265</td>
<td>3</td>
<td>Advanced Observation and Participation in Early Childhood/Primary Settings</td>
<td>Observes and participates in early childhood settings such as child care centers, pre-school, Montessori schools, or public school settings (kindergarten through third grade). Emphasizes planning and implementation of appropriate activities and materials for children. Students will spend one hour each week in a seminar session in addition to 60 clock hours in the field. May be taken again for credit. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.</td>
</tr>
<tr>
<td>CHD 270</td>
<td>3</td>
<td>Administration of Childcare Programs</td>
<td>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.</td>
</tr>
<tr>
<td>CHD 298</td>
<td>1</td>
<td>Portfolio Development</td>
<td>Serves, in conjunction with CHD 265, as the capstone for Early Childhood Development Associate of Applied Science degree. Focuses on the development of a portfolio to demonstrate professional competence in the field of early care and education. The resulting portfolio will be reviewed by early childhood faculty and other designated early childhood professionals. Lecture 1 hour per week.</td>
</tr>
</tbody>
</table>
Chinese

CHI 75-76  2 credits each
Conversational Chinese I-II
Teaches basic oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture 2 hours per week.

CHI 101-102  5 credits each
Conversational Chinese I-II
Introduces understanding, speaking, reading, and writing skills; emphasizes basic Chinese sentence structure. Prerequisite for CHI 102: CHI 101. Lecture 5 hours per week.

Chemistry

CHM 1  4 credits
Chemistry
Presents basic inorganic and organic principles to students with little or no chemistry background. Can be taken in subsequent semesters as necessary until course objectives are completed. Lecture 4 hours per week.

CHM 110  3 credits
Survey of Chemistry
Introduces the basic concepts of general, organic, and biochemistry with emphasis on their applications to other disciplines. No previous chemistry background required. Lecture 3 hours per week.

CHM 111-112  4 credits each
College Chemistry I-II
Explores the fundamental laws, theories, and mathematical concepts of chemistry. Designed primarily for science and engineering majors. Requires a strong background in mathematics. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

CHM 121-122  4 credits each
Health Science Chemistry I-II
Introduces the health science student to concepts of inorganic, organic, and biological chemistry as applicable to the allied health profession. Prerequisite: CHM 1. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

CHM 241-242  3 credits each
Organic Chemistry I-II
Designed for chemistry and chemical engineering majors. Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanism. Co-requisites: CHM 245-246. Lecture 3 hours per week.

CHM 245-246  2 credits each
Organic Chemistry Laboratory I-II
Includes qualitative organic analysis. Shall be taken concurrently with CHM 241 and CHM 242. Laboratory 6 hours per week.

Civil Engineering Technology

CIV 110  2 credits
Introduction to Civil Engineering Technology
Introduces basic skills required for a career in civil engineering technology, focusing on the roles and responsibilities of the engineering team, professional ethics, problem solving with hand calculator and computer applications. Introduces civil engineering materials and analysis, standard laboratory procedures and reporting, and engineering graphics, including instruction in Computer-Aided Drafting. Instructs students in oral presentation preparations and delivery. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

CIV 115  3 credits
Civil Engineering Drafting
Introduces terminology and drafting procedures related to civil engineering. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CIV 116  3 credits
Topographic Drafting
Focuses on the development of techniques for topographic data computation, topographic map preparation and interpretation. Includes preparation of maps from survey field data, satellite and aerial photography, and techniques for the use of color in topographic presentations. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CIV 120  3 credits
Masonry Technology
Introduces the ASTM standards and the methodology of concrete masonry technology emphasizing mortar mix designs, field and laboratory testing, and typical field applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

CIV 135  3 credits
Construction Management and Estimating
Teaches the equipment and methods used in construction. Includes principles and economics of construction, planning and management, and principles of estimating primarily using highway and building project examples. Lecture 3 hours per week.

CIV 171  3 credits
Surveying I
Introduces surveying equipment, procedures and computations including adjustment of instruments, distance measurement, leveling, angle measurement, traversing, traverse adjustments, area computations and introduction to topography. Prerequisite: Placement into MTH 163. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CIV 172  3 credits
Surveying II
Introduces surveys for transportation systems including the preparation and analysis of topographic maps, horizontal and vertical curves, earthwork and other topics related to transportation construction. Prerequisite: CIV 171. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

CIV 200  3 credits
Fundamentals of Building Construction
Introduces the various materials available for design and construction. Covers application and combination of traditional materials and recent innovations in construction systems. Lecture 3 hours per week.
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<tr>
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<tbody>
<tr>
<td>CIV 225</td>
<td>3</td>
<td>Soil Mechanics</td>
</tr>
<tr>
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<td>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. Co-requisite: CIV 226. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CIV 226</td>
<td>1</td>
<td>Soil Mechanics Laboratory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduces practical soil sampling; classification of unified, ASTM and ASSHTO specifications; laboratory testing of soils to predict engineering performance. Co-requisite: CIV 225. Laboratory 2 hours per week.</td>
</tr>
<tr>
<td>CIV 228</td>
<td>2</td>
<td>Concrete Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduces properties of Portland cement concrete, methods of mix design and adjustment, transportation, placement and curing in accordance with ACI and PCA recommended procedures. Co-requisite: CIV 229. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>CIV 229</td>
<td>1</td>
<td>Concrete Laboratory</td>
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<tr>
<td></td>
<td></td>
<td>Focuses on mixing, curing, testing and quality control of concrete. Co-requisite: CIV 228. Laboratory 2 hours per week.</td>
</tr>
<tr>
<td>CIV 230</td>
<td>3</td>
<td>Civil Construction Materials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduces the basic properties of Portland Cement concrete, soils and bituminous materials. Includes design and composition, placement, sampling and testing of concrete, soils, and asphalt cements used in civil engineering construction. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>CIV 235</td>
<td>2</td>
<td>Asphalt Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduces properties of bituminous materials with emphasis on asphalt cements used in construction; methods of asphalt cement concrete mix design; transportation; placement and curing. Co-requisite: CIV 236. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>CIV 236</td>
<td>1</td>
<td>Asphalt Laboratory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Focuses on testing and quality control of bituminous materials, mixing, testing and quality control of asphalt cements. Co-requisite: CIV 235. Laboratory 2 hours per week.</td>
</tr>
<tr>
<td>CIV 240</td>
<td>3</td>
<td>Fluid Mechanics and Hydraulics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduces the principles of fluid flow and development of practical hydraulics resulting from study of fluid statics, flow of real fluid in pipes, multiple pipe lines, liquid flow in open channels, and fluid measurement techniques. Prerequisite: MEC 131. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CIV 256</td>
<td>3</td>
<td>Global Positioning Systems for Land Surveying</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>CIV 257</td>
<td>3</td>
<td>Mapping Standards, VA Rules and Statutes, and Surveying Law</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Presents both theory and practical mapping experience in the preparation of subdivision maps, records of surveys, topographic maps, route and rights-of-way maps. Covers the requirements of the Subdivision Map Act and the Land Surveyors Act. Presents techniques for the reduction of field survey notes and the preparation of improvement plans. Prepares students for areas of the Land Surveyors-in-Training and the State Land Surveyors examinations. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CIV 258</td>
<td>1</td>
<td>Photogrammetry and Remote Sensing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduces principles of photogrammetry, geometry of photographs, flight planning, ground control, single and double image photogrammetry, stereoscopic plot, orthophoto, photogrammetric mapping, applications, and economic factors. Provides the student with the required background preparation for areas of the State Land Surveyors Examination and the Land Surveyors-in-Training Examination devoted to this topic. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>CIV 259</td>
<td>1</td>
<td>Virginia Coordinate Systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provides an introduction to the theory of the Virginia Coordinate System and its application to modern surveying practices; conversion of geographical coordinates, zone conversion, and transversing of the grid. Provides the student with the required background and preparation for areas of the State Land Surveyors Examination and the Land Surveyors-in-Training Examination devoted to this topic. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>CIV 280</td>
<td>3</td>
<td>Introduction to Environmental Engineering</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
</tbody>
</table>

Crafts

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRF 101</td>
<td>3</td>
<td>Hand-Built Pottery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduces fundamental concepts and skills related to hand crafted hand-built pottery. Prerequisite: CRF 105. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>CRF 102</td>
<td>3</td>
<td>Wheel-Thrown Pottery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduces fundamental concepts and skills related to hand crafted wheel-thrown pottery. Prerequisite: CRF 105. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>CRF 105</td>
<td>3</td>
<td>Introduction to Pottery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduces art and design related to pottery. Teaches techniques of hand-building, throwing on the potter’s wheel, glaze techniques and experimental firing. Lecture 1 hour. Studio instruction 4 hours. Total 5 hours per week.</td>
</tr>
</tbody>
</table>
CRF 130  3 credits
Glass Blowing I
Introduces a variety of techniques for manipulating molten “hot glass” into vessel or sculptural forms. Teaches studio safety, equipment operation, techniques of forming molten glass, annealing and cold working techniques. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

CRF 131  3 credits
Glass Blowing II
Introduces intermediate glass blowing techniques using progressively more complex forms. Emphasis on design and working from prepared drawings. Prerequisite: CRF 130. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

CRF 230  3 credits
Glass Blowing III
Introduces advanced techniques of producing blown glass pieces with multiple blown forms. Explores advanced design problems and the development of individual styles. Continues practice in color application, facility, and equipment maintenance and studio operation. Prerequisite: CRF 230. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

CRF 231  3 credits
Glass Blowing IV
Explores advanced glass blowing techniques and color application with the development of a unified body of glass vessels and objects. Examines marketing, sales, studio operation, the process of show application, image and resume preparation. Prerequisite: CRF 231. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

Computer Science

CSC 201  4 credits
Computer Science I
Introduces algorithm and problem solving methods. Emphasizes structured programming concepts, elementary data structures and the study and use of a high level programming language. Prerequisite: CSC 110 or equivalent and MTH 173 or equivalent or divisional approval. Lecture 4 hours per week.

CSC 205  3 credits
Computer Organization
Examines the hierarchical structure of computer architecture. Focuses on multi-level machine organization. Uses a simple assembler language to complete programming projects. Includes processors, instruction, execution, addressing techniques, data representation and digital logic. Prerequisite: CSC 110. Lecture 3 hours per week.

CSC 210  4 credits
Programming with C++
Includes language syntax, problem-solving techniques, top-down refinement, procedure definition, loop invariance, theory of numerical errors and debugging. Covers the syntax of the C++ language. Prerequisite: CSC 201, or EGR 125 or instructor permission. Lecture 4 hours per week.

CSC 215  3 credits
Advanced Computer Organization
Examines advanced topics in Computer Science such as I/O methods, virtual memory, disk management and operating systems. Prerequisite: CSC 205. Lecture 3 hours per week.

Communication Studies and Theatre

CST 100  3 credits
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 credits
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 credits
Voice and Diction I
Enables students to improve pronunciation, articulation, and voice quality. Includes applied phonetics. Lecture 3 hours per week.

CST 126  3 credits
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 130  3 credits
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 credits each
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 credits
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 141-142  3 credits each
Theatre Appreciation I-II
Aims to increase knowledge and enjoyment of theatre. Considers process, style, organization, written drama, and performed drama. Lecture 3 hours per week.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST 145</td>
<td>3</td>
<td>Stagecraft</td>
<td>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.</td>
</tr>
<tr>
<td>CST 151-152</td>
<td>3 credits each</td>
<td>Film Appreciation I-II</td>
<td>Aims to increase the student's knowledge and enjoyment of film and film criticism through discussion and viewing of movies. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CST 229</td>
<td>3</td>
<td>Intercultural Communication</td>
<td>Emphasizes the influence of culture on the communication process including differences in values, message systems, and communication rules. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CST 233-234</td>
<td>3 credits each</td>
<td>Rehearsal and Performance I-II</td>
<td>Explores various aspects of the theatre through involvement in college theatre production. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CST 240</td>
<td>3</td>
<td>Basic Set Design</td>
<td>Studies basic techniques and methods of scenic design for the stage. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>CST 241-242</td>
<td>3 credits each</td>
<td>Introduction to Directing I-II</td>
<td>Introduces theory and practice of stage direction through the study of directing methods as well as the execution and discussion of directing exercises. Prerequisites: CST 131-132 or SPD 131-132 or divisional approval. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>CST 251</td>
<td>3</td>
<td>Stage Lighting and Sound</td>
<td>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. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>CST 266</td>
<td>3</td>
<td>Outdoor Drama</td>
<td>Enables students to study production techniques through participation as actors or technicians in outdoor drama. Prerequisite: divisional approval. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>DAN 160</td>
<td>2</td>
<td>Modern Dance</td>
<td>Teaches the basic techniques of creative dance. Skills include self-expression, contemporary routines, dance forms, and basic choreography. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.</td>
</tr>
<tr>
<td>DAN 161-162</td>
<td>2 credits each</td>
<td>Dance Production I-II</td>
<td>Focuses on creating a dance performance. Teaches the basic skills in creating and producing a dance. Includes lighting, costumes, music, and choreography. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.</td>
</tr>
<tr>
<td>DAN 163-164</td>
<td>2 credits each</td>
<td>Jazz I-II</td>
<td>Introduces dance through contemporary jazz movements. Includes floor stretches, isolations, dance patterns and lomotor movements. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.</td>
</tr>
<tr>
<td>DAN 165</td>
<td>2</td>
<td>Tap Dance</td>
<td>Teaches the basic footwork, patterns, and coinciding body movements to various rhythms. Includes development of choreographic routines. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.</td>
</tr>
<tr>
<td>DAN 166</td>
<td>2</td>
<td>Ballet</td>
<td>Teaches ballet as a discipline with correct alignment and ballet form. Expresses movement through traditional dance form with choreographic emphasis. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.</td>
</tr>
<tr>
<td>DIT 121</td>
<td>3</td>
<td>Nutrition I</td>
<td>Studies food composition, dietary guidelines, and nutrients essential to healthy human life. Analyzes nutrient function and metabolism. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>DIT 125</td>
<td>3</td>
<td>Current Concepts in Diet and Nutrition</td>
<td>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-dietetic major. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>DIT 130</td>
<td>3</td>
<td>Food Management Systems</td>
<td>Studies the principles of food service delivery systems in institutional and other health care facilities. Includes fundamentals of menu planning, recipe standardization, food preparation, equipment, sanitation and safety, role of computers in food service, and concepts of food service management. Lecture 3 hours per week.</td>
</tr>
</tbody>
</table>
Diagnostic Medical Sonography

DMS 206  2 credits
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. Prerequisite: Instructor permission. Lecture 2 hours per week.

DMS 207  2 credits
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. Prerequisite: Instructor permission. Lecture 2 hours per week.

DMS 208  3 credits
Ultrasound Physics and Instrumentation I
Discusses and solves mathematical problems associated with human tissue, basic instrumentation and scanning technology. Prerequisite: Instructor permission. Lecture 3 hours per week.

DMS 209  3 credits
Ultrasound Physics and Instrumentation II
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. Prerequisite: DMS 208 or Instructor permission. Lecture 3 hours per week.

DMS 211  4 credits
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. Prerequisite: Instructor permission. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

DMS 212  4 credits
Obstetrical and Gynecological Sonography
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. Prerequisite: DMS 211 or Instructor permission. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

DMS 221  3 credits
Ultrasound Seminar I
Introduces the fundamentals of renal failure and transplantations, small parts sonography, basic echocardiography, neonatal neurosonography, and rare and interesting ultrasonic case presentations. Prerequisite: Instructor permission. Lecture 3 hours per week.

DMS 222  3 credits
Sonography Registry Review
Reviews material covered throughout the sonography program to prepare the student for the ultrasound registry examination. Prerequisite: Instructor permission. Lecture 3 hours per week.

DMS 223  3 credits
Introduction to Vascular Ultrasound
Discusses the principles of vascular ultrasound, the related anatomy and more common pathologies detected as well as the physiology and hemodynamics detected and evaluated with ultrasound. Prerequisite: DMS 211 or Instructor permission. Lecture 3 hours per week.

DMS 231  2 credits
Clinical Education I
Develops the student’s ultrasonic skills in a diagnostic environment; may include on-campus laboratories, private office settings, as well as hospital rotations. Includes experience in abdominal, pelvic and obstetrical and small parts scanning. Prerequisite: DMS 231 or Instructor permission. Laboratory 10 hours per week.

DMS 232  4 credits
Clinical Education II
Develops the student’s ultrasonic skills in a diagnostic environment; may include on-campus laboratories, private office settings, as well as hospital rotations. Includes experience in abdominal, pelvic and obstetrical and small parts scanning as well as echocardiography and vascular sonography. Prerequisite: DMS 232 or Instructor permission. Laboratory 20 hours per week.

DMS 233  5 credits
Clinical Education III
Develops the student’s ultrasonic skills in a diagnostic environment; may include on-campus laboratories, private office settings, as well as hospital rotations. Includes experience in abdominal, pelvic and obstetrical and small parts scanning. Prerequisite: DMS 232 or Instructor permission. Laboratory 25 hours per week.

DMS 234  6 credits
Clinical Education IV
Develops the student’s ultrasonic skills in a diagnostic environment; may include on-campus laboratories, private office settings, as well as hospital rotations. Includes experience in abdominal, pelvic and obstetrical and small parts scanning. Prerequisite: DMS 233 or Instructor permission. Laboratory 30 hours per week.

Diesel

DSL 121  6 credits
Diesel Engines I
Studies the basic principles involved in the construction and operation of diesel engines. Examines fuel, air, cooling, and control systems of various designs. Emphasizes engine overhaul and repair, including gauging proper measuring instruments and tools for these tasks. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.

DSL 122  5 credits
Diesel Engines II
Studies the basic principles involved in the construction and operation of diesel engines. Examines fuel, air, cooling, and control systems of various designs. Emphasizes engine overhaul and repair, including gauging proper measuring instruments and tools for these tasks. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.
## COURSES

### DSL 133 6 credits
**Diesel Fuel and Injection Systems**
Studies the design, operation, care, and repair of fuel injection systems used on a variety of diesel engines. Includes testing and reconditioning fuel injectors, nozzles, fuel pumps, and transfer pumps. Teaches use of calibrating and reconditioning in troubleshooting the fuel system. **Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.**

### DSL 143 4 credits
**Diesel Truck Electrical Systems**
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. Laboratory 4 hours. Total 6 hours per week.**

### DSL 152 4 credits
**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 such power train components 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 161 2 credits
**Air Brake Systems I**
Studies the basic operational theory of pneumatic and air brake systems used in public transportation vehicles. Covers various air control valves, air and test system components, and advanced air system schematics. **Lecture 2 hours per week.**

### Economics

#### ECO 120 3 credits
**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 3 credits
**Principles of Macroeconomics**
Introduces macroeconomics including the study of Keynesian, classical, and 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 3 credits
**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 3 credits
**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.**

### Education

#### EDU 100 1 credit
**Introduction to Education**
Provides an overview of teaching as a career with orientation to theories, practices, responsibilities, guidelines, current trends and issues in education. **Lecture 1 hour per week.**

#### EDU 160 3 credits
**Observation and Assessment in Early Care**
Introduces formal and informal methods of gathering data on children. Emphasis on understanding developmental patterns and implications for diagnostic teaching. **Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.**

#### EDU 200 3 credits
**Introduction to Teaching as a Profession**
Provides an orientation to the teaching profession in Virginia, including historical perspectives, current issues, and future trends in education on the national and state levels. Emphasizes information about teacher licensure examinations, steps to certification, teacher preparation and induction programs, and attention to critical shortage areas in Virginia. Includes supervised field placement (recommended: 40 clock hours) in a K-12 school. Prerequisite: Successful completion of 24 credits of transfer courses. **Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.**

#### EDU 245 3 credits
**Teaching and Training of Language Skills for Disabled**
Covers the normal development of language, the identification of deficiencies in language development, and strategies for teaching language skills to individuals with a variety of developmental disabilities. **Lecture 3 hours per week.**

#### EDU 247 4 credits
**Adult Independent Living and Vocational Skills for Disabled**
Emphasizes skills required to develop competencies in teaching developmentally disabled individuals ages 16 and older in vocational training settings. Develops competencies related to teaching independent living and mobility skills, occupational behavior skills, and job task performance skills. **Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.**

#### EDU 250 4 credits
**Introduction to Developmental Disabilities**
Presents an overview, history, and current philosophy of the developmental disabilities program. Provides descriptions and examines causes of developmental disabilities, identifies intervention strategies, promotes social and legal advocacy, explores employment and career opportunities. Laboratory experiences include a minimum of ten hours of observation of work settings. **Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.**
### Engineering Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Description</th>
</tr>
</thead>
</table>
| EGR 110     | 3       | Engineering Graphics  
              Presents theories and principles of orthographic projection. Studies multi-view, pictorial drawings and sketches, geometric construction, sectioning, lettering, tolerancing, dimensioning and auxiliary projections. Studies the analysis and graphic presentation of space relationships of fundamental geometric elements; points, lines, planes and solids. Includes instruction in Computer-Aided Drafting. Prerequisite: MTH 164 or MTH 166 or placement into MTH 173. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. |
| EGR 120     | 2       | Introduction to Engineering  
              Introduces the engineering profession, professional concepts, ethics, and responsibility. Reviews hand calculators, number systems, and unit conversions. Introduces the personal computer and operating systems. Includes engineering problem-solving techniques using computer software. Prerequisite: MTH 164 or MTH 166 or placement into MTH 173. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week. |
| EGR 125     | 4       | Introduction to Engineering Methods  
              Applies problem-solving techniques to engineering problems utilizing computer programming and algorithms in a higher level computer language such as FORTRAN, PASCAL, or C++. Prerequisite: EGR 110. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week. |
| EGR 140     | 3       | Engineering Mechanics - Statics  
              Introduces mechanics of vector forces and space, scalar mass and time, including S.I. and U.S. customary units. Teaches equilibrium, free-body diagrams, moments, couples, distributed forces, centroids, moments of inertia analysis of two-force and multi-force members and friction and internal forces. Prerequisite: EGR 120. Co-requisite: MTH 174. Lecture 3 hours per week. |
| EGR 245     | 3       | Engineering Mechanics - Dynamics  
              Presents approach to kinematics of particles in linear and curvilinear motion. Includes kinematics of rigid bodies in plane motion. Teaches Newton’s second law, work-energy and power, impulse and momentum, and problem solving using computers. Prerequisite: EGR 140. Lecture 3 hours per week. |
| EGR 246     | 3       | Mechanics of Materials  
              Teaches concepts of stress, strain, deformation, internal equilibrium, and basic properties of engineering materials. Analyzes axial loads, torsion, bending, shear and combined loading. Studies stress transformation and principle stresses, column analysis and energy principles. Prerequisite: EGR 140. Lecture 3 hours per week. |
| EGR 247     | 1       | Mechanics of Materials Laboratory  
              Examines mechanical behavior of bars, rods, shafts, tubes and beams subjected to various types of loading. Introduces experimental stress analysis techniques, such as the use of strain gauges and data reduction. Co-requisite: EGR 246. Laboratory 2 hours per week. |
| EGR 248     | 3       | Thermodynamics for Engineering  
              Studies formulation of the first and second law of thermodynamics. Presents energy conversion, concepts of energy, temperature, entropy and enthalpy, and 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 260     | 3       | Circuit Analysis  
              Covers topics in linear circuit analysis, including basic electrical properties, resistive circuits, network equations, operational amplifiers, network reduction techniques, network theorems, two-port parameters and networks, inductors, capacitors, first-order circuits, second-order circuits and phasor analysis. Co-requisite: MTH 279. Lecture 3 hours per week. |
| EGR 261     | 3       | Signals and Systems  
              Covers topics including Laplace transforms and Laplace transform analysis of circuits, time and frequency domain representation of linear systems, methods of linear systems analysis including convolution and Laplace transforms, frequency domain representation of signals including frequency response, filters, Fourier series, and Fourier transforms. Prerequisite: EGR 260. Lecture 3 hours per week. |
| EGR 262     | 2       | Fundamental Circuits Laboratory  
              Covers topics including microprocessor hardware and programming, lab test equipment, lab safety, technical report writing, and using a microprocessor, such as the MicroStamp 11, to control basic electric circuits. Experiments include topics such as resistive circuits, analog-to-digital and digital-to-analog conversion, pulse width modulation, and the design of power supplies. Prerequisite: EGR 125 and EGR 260. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week. |
| EGR 267     | 3       | Engineering Analysis Tools  
              Covers topics in mathematics including calculus, differential equations, Laplace transforms, linear algebra, vector spaces, complex variables, discrete mathematics, data analysis and linear regression. Emphasizes engineering applications and the use of software tools, such as MatLab and Excel. Prerequisite: EGR 260. Lecture 3 hours per week. |
**COURSE DESCRIPTIONS**

**EGR 270 4 credits**  
**Fundamentals of Computer Engineering**  
Covers the design and organization of digital systems, including number systems, Boolean algebra, logic gates, Karnaugh maps, combinational and sequential logic circuits, timing diagrams, and synchronous and asynchronous controllers. Introduces hardware description language (HDL) and assembly language programming. Prerequisite: EGR 260 and EGR 125. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**ELE 146 4 credits**  
**Electric Motor Control**  
Studies solid state devices with application and emphasis toward control of power. Includes diodes, SCR’s, photoelectric controls, timing, circuits, voltage regulation and three phase rectifiers. Prerequisite: ELE 150 or equivalent. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ELE 149 3 credits**  
**Wiring Methods in Industry**  
Studies the fundamentals of industrial power distribution, circuits, switches, enclosures, panels, fuses, circuit breakers, transformers, and wiring methods using various charts and tables of the National Electrical Code. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ELE 150 3 credits**  
**A.C. and D.C. Circuit Fundamentals**  
Provides an intensive study of the fundamentals of direct and alternating current, resistance, magnetism, inductance and capacitance, with emphasis on practical applications. Focuses on electrical/machine applications. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**ELE 160 3 credits**  
**Power Controls**  
Introduces basic electrical and other controls used in home and industry. Includes application of panels, fuse boxes, breakers, and transformers, experiments to develop testing and troubleshooting techniques. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ELE 174 3 credits**  
**Fiber Optic Connections**  
Introduces construction of fiber optic cable connections to a quality acceptable in the industry today. Includes types of cabling, connectors and splices, installation techniques and hardware in fiber optic systems. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ELE 178 4 credits**  
**Wind Turbine Technology**  
Introduces many facets of the wind industry. Introduces the history and development of the wind systems as well as the future of the wind industry as the desire for alternative energy grows. Presents the terminology used in the application of wind systems. Identifies the various types of wind energy turbines and other topics as appropriate. Includes safety training. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ELE 179 3 credits**  
**Satellite Dish Installation**  
Introduces installation, testing, troubleshooting, and repair of satellite dish systems. Prepares students for the Electronics Technician Association Certified Satellite Installer (CSI) certification necessary to compete for entry-level positions in the satellite installation industry. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**ELE 188 4 credits**  
**Data Cabling Communication**  
Introduces construction, testing, troubleshooting, and repair of a variety of copper cables. Prepares students for the Electronics Technician Association Data Cable Installer Certification (DCIC) necessary to compete for entry-level positions in a wide range of networking, security and video companies. Lecture 2 hours. Laboratory 3 hours. Total 6 hours per week.

**ELE 189 3 credits**  
**Geothermal Technology for Electricians**  
Provides an introduction to the use of geothermal energy as it applies to electricians. Introduces geothermal system design, installation, and maintenance. Focuses on site surveys, soil types, header design, loop types, pump sizing, flushing and purging. Introduces the feasibility of heat pump applications for local use on an individual basis. Includes safety training. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**ELE 233-234 3 credits each**  
**Programmable Logic Controller Systems I-II**  
Teaches operating and programming of programmable logic controllers. Covers analog and digital interfacing and communication schemes as they apply to systems. Prerequisite or co-requisite: ELE 146 or divisional approval. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.
ELE 250
Fiber Optics Technology
Introduces testing, troubleshooting, and repair of fiber optic systems. Prepares students for the Electronics Technician Association Fiber Optics Technician (FOfT) certification necessary to compete for technician level positions in a wide range of networking, security and video companies. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

EMS 111
6 credits
Emergency Medical Technician - Basic
Prepares student for certification as a Virginia and National Registry EMT-Basic. Includes all aspects of pre-hospital basic life support as defined by the Virginia Office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Prerequisite: CPR certification at the Health Care Provider level. Co-requisite: EMS 120. Lecture 4 hours. Laboratory 4 hours. Total 8 hours per week.

EMS 120
1 credit
Emergency Medical Technician – Basic Clinical
Observes in a program approved clinical/field setting. Includes topics for both EMS 111 and EMS 113, dependent upon the program in which the student is participating and is a co-requisite to both EMS 111 and EMS 113. Lecture 1 hour per week.

EMS 151
4 credits
Introduction to Advanced Life Support
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. Prerequisite: EMS 111. Co-requisite: EMS 170. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 153
2 credits
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. Prerequisite: EMS 111. Lecture 2 hours per week.

EMS 155
4 credits
ALS - Medical Care
Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Includes ALS pharmacology, drug and fluid administration with emphasis on patient assessment, differential diagnosis and management of multiple medical complaints. Includes, but is not limited to, conditions relating to cardiac, diabetic, neurological, non-traumatic abdominal pain, environmental, behavioral, gynecological, and toxicological disease conditions. Prerequisites: Current EMT-B certification, EMS 151 and EMS 153. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 157
3 credits
ALS - Trauma Care
Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Utilizes techniques which will allow the student to utilize the assessment findings to formulate a field impression and implement the treatment plan for the trauma patient. Prerequisites: Current EMT-B certification and EMS 151. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 159
2 credits
ALS - Special Populations
Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Focuses on the assessment and management of specialty patients including obstetrical, neonates, pediatric, and geriatrics. Prerequisites: EMS 151 and EMS 153. Prerequisite or co-requisite: EMS 155. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

EMS 170
1 credit
ALS Internship I
 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. Prerequisite: EMS 151. Laboratory 3 hours per week.

EMS 172
1 credit
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. Prerequisite: EMS 170. Laboratory 3 hours per week.

EMS 173
1 credit
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. Prerequisite: EMS 170. Laboratory 3 hours per week.

EMS 201
2 credits
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. Prerequisite: Current EMT-B Certification. Lecture 2 hours per week.

EMS 205
3 credits
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 health care provider in and out of the hospital environment. Prerequisite: EMS 155. Lecture 3 hours per week.
COURSES – DESCRIPTIONS

EMS 207 3 credits
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 laboratory environment. Prerequisite: EMS 155. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

EMS 209 4 credits
Advanced Pharmacology
Focuses on the principles of pharmacokinetics, pharmacodynamics and drug administration. Includes drug legislation, techniques of medication administration, and principles of math calculations. Emphasizes drugs used to manage respiratory, cardiac, neurological, gastrointestinal, fluid and electrolyte and endocrine disorders and includes classification, mechanism of action, indications, contraindications, precautions, and patient education. Incorporates principles related to substance abuse and hazardous materials. Applies principles during the assessment and management of trauma, medical, and specialty patients in a laboratory environment. Prerequisite: EMS 155. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

EMS 211 2 credits
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.) Prerequisite: Current EMT-B Certification. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

EMS 242 1 credit
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. Prerequisite: EMS 172. Laboratory 3 hours per week.

EMS 243 1 credit
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. Prerequisite: EMS 173. Laboratory 3 hours per week.

EMS 244 1 credit
ALS Clinical Internship IV
The fourth in a series of clinical experiences providing direct patient contact in appropriate patient care facilities in-and-out of hospitals. Includes, but not limited to, patient care units such as the Emergency Department, Critical Care units, Pediatric, Labor and Delivery, Operating Room and Trauma Centers. May be repeated as necessary. Prerequisite: EMS 172. Laboratory 3 hours per week.

EMS 245 1 credit
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 necessary. Prerequisite: EMS 173. Laboratory 3 hours per week.

EMS 255 5 credits
Concepts in Critical Care
Prepares the paramedic or RN to become a critical care specialist, capable of managing the care of a critical care patient both in a hospital setting and during a high risk inter-facility transfer. Includes advanced concepts that build on the knowledge and skills of the paramedic and/or nursing curricula, as well as topics needed to troubleshoot complex monitoring devices and equipment. Includes anatomy and physiology based clinical assessment, advanced airway management to include mechanical ventilators, diagnostics data interpretation, bedside hemodynamic monitoring, 12 lead EKG interpretation and hemodialysis care. Prerequisite: Current EMT-P Certification or RN. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

EMS 256 2 credits
12 Lead ECG Interpretation
Prepares student to interpret 12 lead electrocardiograms and recognize acute myocardial injury as well as infarct imitators. Includes Lead placement, collection of the 12 lead ECG, review of cardiac anatomy and physiology, electrical conduction through the heart, common dysrhythmias, and pathophysiology of AMI and infarct imitators. Includes field treatment of the acute coronary syndrome. Prerequisite: EMS 153 or instructor permission. Lecture 2 hours per week.

Energy Technology

ENE 105 4 credits
Solar Thermal Active and Passive Technology
Provides a comprehensive study of thermal technology as it applies to collector types and ratings, open-loop versus closed-loop and system sizing. Introduces hydronics, hot water, and pool heating applications. Provides an introduction to fluid dynamics and chemistry as it applies to system installation and maintenance. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ENE 110 4 credits
Solar Power Installations
Covers wiring, control, conversion, and ties to established power systems. Studies use of inverters, batteries, and charging systems. Prerequisite: ELE 150. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ENE 120 4 credits
Solar Power - Photovoltaic and Thermal
Studies the production and conversion of electrical energy, thermal solar capture, and storage for residential and commercial applications. Covers energy conversion and storage equipment based on size and efficiency. Prerequisite: ELE 150. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
# Course Descriptions

## English

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<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Description</th>
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| ENG 1 | 4 credits | Preparing for College Writing I  
Helps students discover and develop writing processes needed to bring their proficiency to the level necessary for entrance into their respective curricula. Guides students through the process of starting, composing, revising, and editing. Prerequisite: Placement Test. Lecture 4 hours per week. |
| ENG 3 | 4 credits | Preparing for College Writing II  
Emphasizes strategies within the writing process to help students with specific writing situations. Develops techniques to improve clarity of reading and raise proficiency to the level necessary for entrance into particular curricula. Prerequisite: Placement Test or ENG 1. Lecture 4 hours per week. |
| ENG 4 | 4 credits | Reading Improvement I  
Helps students improve their reading processes to increase their understanding of reading materials. Includes word forms and meanings, comprehension techniques, and ways to control reading pace. Prerequisite: Placement Test. Lecture 4 hours per week. |
| ENG 5 | 4 credits | Reading Improvement II  
Helps students read critically and increase appreciation of reading. Guides students in making inferences, drawing conclusions, detecting relationships between generalizations and supporting details. Includes interpreting graphic aids and basic library skills. Prerequisite: Placement Test or ENG 4. Lecture 4 hours per week. |
| ENG 7 | 6 credits | Writing and Reading Improvement I  
Provides an integrated approach to developing students’ writing and reading processes. Prepares students to complete assignments successfully by providing them with reading and writing strategies. Prerequisite: Placement Test. Lecture 6 hours per week. |
| ENG 8 | 6 credits | Writing and Reading Improvement II  
Emphasizes strategies within the writing and critical reading processes to help students with specific writing and reading assignments. Encourages an appreciation for clear writing and practical reading applications. Prerequisite: Placement Test or ENG 1 and ENG 4. Lecture 6 hours per week. |
| ENG 108 | 3 credits | Critical Reading and Study Skills  
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. Prerequisite: Placement Test or ENG 1 and ENG 4. Lecture 3 hours per week. |
| ENG 111 | 3 credits | College Composition I  
Introduces students to critical thinking and the fundamentals of academic writing. Through the writing process, students refine topics; develop and support ideas; investigate, evaluate, and incorporate appropriate resources; edit for effective style and usage; and determine appropriate approaches for a variety of contexts, audiences, and purposes. Writing activities will include exposition and argumentation with at least one researched essay. Prerequisite: Placement Test. Lecture 3 hours per week. |
| ENG 112 | 3 credits | College Composition II  
Continues to develop college writing with increased emphasis on critical essays, argumentation, and research, developing these competencies through the examination of a range of texts about the human experience. Requires students to locate, evaluate, integrate, and document sources and effectively edit for style and usage. Prerequisite: ENG 111 or equivalent and ability to use word processing software. Lecture 3 hours per week. |
| ENG 115 | 3 credits | Technical Writing  
Develops ability in technical writing through extensive practice in composing technical reports and other documents. Guides students in achieving voice, tone, style, and content in formatting, editing, and graphics. Introduces students to technical discourse through selected reading. Prerequisite: Placement Test. Lecture 3 hours per week. |
| ENG 121-122 | 3 credits each | Introduction to Journalism I-II  
Introduces students to all news media, especially news gathering and preparation for print. Prerequisite: ENG 111 or 112 or divisional approval. Lecture 3 hours per week. |
| ENG 125 | 3 credits | Introduction to Literature  
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. Prerequisite: ENG 111. Lecture 3 hours per week. |
| ENG 131 | 3 credits | Technical Report Writing I  
Reviews 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. Prerequisite: ENG 111. Lecture 3 hours per week. |
| ENG 139 | 3 credits | College Grammar  
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. |
| ENG 150 | 3 credits | Children’s Literature  
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. |
COURSE DESCRIPTIONS

ENG 210  3 credits
Advanced Composition
Helps students refine skills in writing non-fiction prose. Guides development of individual voice and style. Introduces procedures for publication. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 211-212  3 credits each
Creative Writing I-II
Introduces the student to the fundamentals of writing imaginatively. Students write in forms to be selected from poetry, fiction, drama, and essays. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 236  3 credits
Introduction to the Short Story
Examines selected short stories emphasizing the history of the genre. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 241-242  3 credits each
Survey of American Literature I-II
Examines American literary works from colonial times to the present, emphasizing the ideas and characteristics of our national literature. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 243-244  3 credits each
Survey of English Literature I-II
Studies major English works from the Anglo-Saxon period to the present, emphasizing ideas and characteristics of the British literary tradition. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 246  3 credits
Major American Writers
Examines major writers of American literary history. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 251-252  3 credits each
Survey of World Literature I-II
Examines major works of world literature. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 253-254  3 credits each
Survey of African-American Literature I-II
Examines selected works by African-American writers from the colonial period to the present. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 261-262  3 credits each
Advanced Creative Writing I-II
Guides the student in imaginative writing in selected genres on an advanced level. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 276  3 credits
Southern Literature
Examines the themes and techniques of selected writers dealing with the American South as a distinctive cultural entity. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 279  3 credits
Film and Literature
Examines the translation of literature into film viewing and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

ENG 279  3 credits
Film and Literature
Examines the translation of literature into film viewing and writing. Prerequisite: ENG 112 or divisional approval. Lecture 3 hours per week.

English as a Second Language

ESL 20    12 credits
   English as a Second Language II
Provides intensive instruction and practice at the low intermediate level. Provides an introduction to the sound system, stress, intonational and rhythmic patterns of English through listening and speaking exercises. Includes individualized instruction to improve basic reading comprehension. Requires practice in writing with emphasis on building basic sentence structures, grammar and sentence-level writing. Prerequisite: ESL Placement Test. Lecture 12 hours per week.

ESL 32  4 credits
   English as a Second Language: Reading I
Helps students improve their reading comprehension and vocabulary. Improves students’ reading proficiency to a level which would allow the student to function adequately in ESL 06 or other college classes. Prerequisite: ESL Placement Test or ESL 20. Lecture 4 hours per week.

ESL 42  4 credits
   English as a Second Language: Reading II
Helps students improve their reading comprehension and vocabulary. Improves students’ reading proficiency to a level which would allow the student to function adequately in the ESL 17 reading class or other college classes. Prerequisite: ESL Placement Test or ESL 32. Lecture 4 hours per week.

ESL 33  4 credits
   English as a Second Language: Oral Communication I
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. Prerequisite: ESL Placement Test or ESL 20. Lecture 4 hours per week.

ESL 73  3 credits
   Accent Reduction
Provides contextualized practice at the high intermediate/advanced level to improve the speech intelligibility of non-native speakers of English. Focuses on problems of American English sound/spelling patterns, word endings, syllables, stress, rhythm and intonation common to speakers of different language backgrounds. May include individualized practice in consonant and vowel production. Lecture 3 hours per week.
ESL 31  4 credits  
**English as a Second Language: Composition I**  
Provides instruction and practice in the writing process, emphasizing development of fluency writing and competence in structural and grammatical patterns of written English. Prerequisite: ESL 20 or ESL Placement Test. Lecture 4 hours per week.

ESL 41  4 credits  
**English as a Second Language: Composition II**  
Provides further instruction and practice in the writing process, and introduces advanced language patterns. Includes practice in developing and improving writing strategies. Prerequisite: ESL 31 or ESL Placement Test. Lecture 4 hours per week.

ESL 51  4 credits  
**English as a Second Language: Composition III**  
Prepares students for college-level writing by practice in the writing process, emphasizing development of thought in essays of greater length and complexity, and use of appropriate syntax and diction. Prerequisite: ESL 41 or ESL Placement Test. Lecture 4 hours per week.

ESL 52  4 credits  
**English as a Second Language: Reading III**  
Helps students improve their reading comprehension and vocabulary development. Improves students’ reading proficiency to a level which would allow students to succeed in certificate and degree programs. Emphasizes applying and synthesizing ideas. Includes ways to detect organization, summarize, make inferences, draw conclusions, evaluate generalizations, recognize differences between facts and opinions, and other advanced comprehension strategies. May also include comprehensive library skills. Prerequisite: ESL 42 or ESL Placement Test. Lecture 4 hours per week.

Electronics Technology  
ETR 104  4 credits  
**Electronic Fundamentals with Computer Applications**  
Provides an introduction to the fundamentals of D.C. and A.C. circuit analysis and computer applications. Includes the study of electrical units and components, series, parallels, series-parallel D.C. and A.C. circuits, inductive and capacitive reactance, impedance and use of circuit analysis software. Lecture 4 hours.

ETR 113-114  4 credits each  
**D.C. and A.C. Fundamentals I-II**  
Studies D.C. and A.C. circuits, basic electrical components, instruments, network theorems, and techniques used to predict, analyze and measure electrical quantities. Prerequisite for ETR 113: ETR 104 and MTH 164 or MTH 166. Prerequisite for ETR 114: ETR 113. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 116  4 credits  
**D.C. and A.C. Circuit Analysis**  
Covers background information required by the Electronics Engineering Technology program but not covered in military electronic schools. Includes D.C. and A.C. circuit analysis techniques such as Thevenin, Norton, Mesh, Nodal, branch current, three phase power, two port parameters, etc. Co-requisite: MTH 166. Lecture 4 hours per week.

ETR 148  4 credits  
**Amplifiers and Integrated Circuits**  
Studies devices and amplifiers with emphasis on analysis and design. May include summing and integrating amplifiers, choppers, modulators and other circuits. Prerequisite: ETR 113. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 193  4 credits  
**Introduction to LabVIEW**  
An introductory course in virtual instrumentation, data acquisition, and instrument control, all using LabVIEW. Structures, arrays and clusters, charts and graphs, strings and file I/O, and data analysis will be introduced for student application programs. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 203  3 credits  
**Electronic Devices I**  
Studies active devices and circuits such as diodes, power supplies, transistors, amplifiers, and others. Prerequisite: ELE 150. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

ETR 250  4 credits  
**Solid State Circuits**  
Teaches theory and application of amplifiers and oscillators. Includes amplifier circuit configurations, amplifier classes, operational amplifiers, power amplifiers, bandwidth distortion, and principles of feedback. Prerequisite: ETR 148. Lecture 3 hours per week. Laboratory 3 hours. Total 6 hours per week.

ETR 261  4 credits  
**Microprocessor Application I**  
Teaches the fundamentals of microprocessors, including architecture, internal operations, memory, I/O devices, machine level programming and interfacing. Emphasizes instrumentation and microprocessor. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 279  4 credits  
**Digital Principles, Terminology and Applications**  
Studies digital principles, terminology and applications covering number systems, arithmetic, Boolean algebra, Karnaugh maps and advanced logic circuits. Includes the study of registers, encoding and decoding, and multiplexing, A/D, D/A, displays and others. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ETR 281  3 credits  
**Digital Systems**  
Includes basic numbering systems, Boolean algebra, logic circuits and systems, pulse circuits and pulse logic systems as applied to computer and microprocessor technology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Financial Services  
FIN 107  3 credits  
**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 110 3 credits
Principles of Banking
Presents nearly every aspect of banking, providing a comprehensive introduction to the diversified services and operations of the banking industry. Focuses on new trends gaining attention in banking circles. Recommended for all banking students. Lecture 3 hours per week.

FIN 115 2 credits
Personal Investments
Examines personal financial investments, money management and risk reward strategies. Covers most widely employed investment instruments, including current information on stocks, bonds, mutuals, real estate, limited partnerships and tax sheltering devices. Lecture 2 hours per week.

FIN 215 3 credits
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 vs. buy analysis, and Cost of Capital computations. Uses problems and cases to enhance skills in financial planning and decision making. Prerequisite: ACC 212 or instructor permission. Lecture 3 hours per week.

FIN 248 3 credits
International Finance
Exposes the student to the international financial environment. Focuses on the financial management of businesses operating in international markets. Examines topics such as importance of international finance, monetary systems, foreign exchange risk, short-term, long-term financial market and how to manage political risk. Lecture 3 hours per week.

FIN 260 2 credits
Financial Management for Small Business
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. Prerequisites: ACC 220 or ACC 211 and BUS 165. Lecture 2 hours per week.

Funeral Services

FNS 110 2 credits
Introduction to Funeral Service
Presents a comprehensive study of the history of funeral service, commencing with the practices of the Egyptians, early Christians, Romans, and Hebrews. Traces funeral practice from its early pagan origins to the modern practices of today. May include the study of the sociology of funeral service. Prerequisite: Instructor Permission. Lecture 2 hours per week.

FNS 111 3 credits
Theory of Embalming I
Introduces the purpose and historical background of embalming. Teaches the ethics and sanitary consideration in the handling of human remains, signs and tests of deaths, and postmortem changes in the body. Prerequisite: FNS 113. Lecture 3 hours per week.

FNS 112 3 credits
Theory of Embalming II
Presents pre-embalming diagnosis, positioning the body and posing the features, linear and anatomical guides for selected blood vessels, and factors that influence fluid distribution and blood drainage. Prerequisite: FNS 111 and FNS 113. Co-requisite: FNS 114. Lecture 3 hours per week.

FNS 113 1 credit
Theory of Embalming Laboratory I
Teaches the basic procedures of embalming. Presents instruments, equipment, and the types of preservatives and disinfectant chemicals used in embalming. Prerequisite: Instructor Permission. Co-requisite: FNS 111. Laboratory 3 hours per week.

FNS 114 1 credit
Theory of Embalming Laboratory II
Teaches through practice and demonstration of various embalming techniques. May include clinical experiences in area funeral homes. Prerequisite: FNS 111 and FNS 113. Co-requisite: FNS 112. Laboratory 3 hours per week.

FNS 115 2 credits
Theory of Embalming Laboratory III
Introduces the basic procedures of embalming. Presents instruments, equipment, and the types of preservatives and disinfectant chemicals used in embalming. Prerequisite: Instructor Permission. Co-requisite: FNS 111. Laboratory 3 hours per week.

FNS 121 3 credits
Anatomy for Funeral Service I
Introduces anatomy and physiology and basic terminology. Presents information about wills, tissues, and organs. Discusses the reproductive, urinary, and endocrine body system. Lecture 3 hours per week.

FNS 125 3 credits
Microbiology for Funeral Service
Focuses on microscopic forms of life from a morphological, cultural, and staining viewpoint. Studies in detail causative agents of disease and their importance to a scientific approach to sanitation. Stresses the need for scientific knowledge concerning disease and its cause. Prerequisite: Instructor Permission. Lecture 3 hours per week.

FNS 126 3 credits
Pathology for Funeral Service
Introduces the general processes of disease, stressing their importance to the scientific embalmer and funeral director as health guardians. Studies diseases of specific organs and organ systems with emphasis on the significant structural changes involved and the embalming problems they present. Prerequisite: Instructor Permission. Lecture 3 hours per week.

FNS 211 3 credits
Restorative Art I
Presents surface contour; the influence of the bone structure on facial form; and the effect of the facial muscles on the wrinkles, grooves, and folds of the face. Teaches the treatments and techniques for restorations. Introduces wax and non-wax treatments such as swellings, feature corrections, and hair restoration. Studies lip-waxing techniques and the modeling of various forms of the mouth and eyes. Teaches the rudiments of cosmetic knowledge and techniques through lectures, demonstrations, and student participation. Prerequisite: Instructor Permission. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
FNS 212  3 credits  
Restorative Art II  
Studies color principles and their application to funeral work and the funeral establishment. Teaches the basic principles employed in recreating the personalized form and dimensions of each facial feature when restoration is necessary. Focuses on problem cases which require illusory corrections, matching wax color skin, and the masking of small and extensive discolorations. Teaches feature construction with restorative wax through demonstrations and laboratory practice. Prerequisite: FNS 211. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

FNS 231  4 credits  
Principles of Funeral Management I  
Introduces the basic social, religious, ethical, and psychological factors that influence funeral service. Teaches telephone techniques and etiquette and acceptable funeral terminology. Studies the various types of religious, fraternal, and military funeral services. Prerequisite: Instructor Permission. Lecture 4 hours per week.

FNS 232  4 credits  
Principles of Funeral Management II  
Teaches merchandising, the principles of buying and selling and the techniques of making funeral arrangements. Studies the construction and proper selection of casket, room arrangement, and Social Security and veterans’ benefits. Focuses on modern funeral establishment management techniques and procedures. Prerequisite: FNS 231. Lecture 4 hours per week.

FNS 236  3 credits  
Funeral Service Law  
Focuses on the duties, rights, responsibilities, and liabilities of the funeral director and embalmer. Teaches building and zoning ordinances relating to the funeral establishment, tort liability, cemetery law, wills, and the administration of estates. May include the study of state laws as they pertain to funeral services. Prerequisite: Instructor Permission. Lecture 3 hours per week.

FNS 270  3 credits  
Funeral Service Review  
Prepares the student for national and state licensing examination in funeral service. Reviews all materials that will be covered by funeral service licensing examinations. Teaches modern test-taking techniques. Requires the writing of a detailed outline of one funeral service subject which determines the final grade. This is a capstone course designed to prepare students for the National Board Examination (NBE). Completion of the NBE is a requirement for successful completion of this course. FEE: $350/$400 for National Board Exam. Prerequisite: Instructor Permission. Lecture 3 hours per week.

French  

FRE 101-102  4 credits each  
Beginning French I-II  
Introduces understanding, speaking, reading, and writing skills and emphasizes basic French sentence structure. Lecture 4 hours per week. May include one additional hour of oral practice per week.

FRE 203-204  3 credits each  
Intermediate French I-II  
Continues to develop understanding, speaking, reading, and writing skills. Prerequisite: FRE 102 or equivalent. Lecture 3 hours per week.

Fire Science Technology  

FST 100  3 credits  
Principles of Emergency Services  
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; introduction to fire strategy and tactics. Lecture 3 hours per week.

FST 109  3 credits  
Introduction to Fire Behavior and Combustion  
Explores the theories and fundamentals of how and why fires start, spread, and how they are controlled. Lecture 3 hours per week.

FST 112  3 credits  
Hazardous Materials Chemistry  
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 120  3 credits  
Occupational Safety and Health for the Fire Service  
Introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Includes 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 135  3 credits  
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 student 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.
COURSE DESCRIPTIONS

FST 140  4 credits
Fire Officer I
Presents a basic course to help individuals develop the skills needed to supervise and direct personnel, and manage resources at the company level; and is based on the current requirements of the NFPA 1021, Standards for Fire Officer Professional Qualifications. Prepares student for certification as Fire Officer I. Prerequisite: FST 135. Lecture 4 hours per week.

FST 205  3 credits
Fire Protection Hydraulics and Water Supply
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 credits
Legal Aspects of Fire Service
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 credits
Fire Protection Systems
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 credits
Building Construction for Fire Protection
Provides the components of building construction that relate to fire and life safety. Focuses on firefighter safety. Covers the elements of construction and design of structures and how they are key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. Lecture 3 hours per week.

FST 230  3 credits
Fire Investigation
Provides the student with the fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the fire setter, and types of fire causes. Lecture 3 hours per week.

FST 235  3 credits
Strategy and Tactics
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 credits
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 credits
Fire Administration
Introduces the student to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasizes fire service leadership from the perspective of the company officer. Lecture 3 hours per week.

FST 245  3 credits
Fire and Risk Analysis
Presents a study of current urban fire problems with emphasis on solutions based upon current available technology. Includes master planning, as well as methods of identifying, analyzing and measuring accompanying risk and loss possibilities. Prerequisite: FST 240. Lecture 3 hours per week.

FST 250  3 credits
Fire Officer II
Presents an intermediate-level course to help individuals further develop the skills needed to supervise and direct personnel, manage resources at the company level, and is based on the current requirements of the NFPA 1021, Standards for Fire Officer Professional Qualifications. Prepares student for certification as Fire Officer II. Prerequisite: FST 140 or Certification as Fire Officer I. Lecture 3 hours per week.

Geography

GEO 200  3 credits
Introduction to Physical Geography
Studies major elements of the natural environment including earth/sun relationship, land forms, weather and climate, natural vegetation and soils. Introduces the student to types and uses of maps. Lecture 3 hours per week.

GEO 210  3 credits
People and the Land: Introduction to Cultural Geography
Focuses on the relationship between culture and geography. Presents a survey of modern demographics, landscape modification, material and non-material culture, language, race and ethnicity, religion, politics, and economic activities. Introduces the student to types and uses of maps. Lecture 3 hours per week.

GEO 220  3 credits
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 221-222  3 credits each
Regions of the World I-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. Lecture 3 hours per week.

GEO 225  3 credits
Economic Geography
Familiarizes the student with the various economic, geographic, political and demographic factors that affect international target markets and trade activity. Lecture 3 hours per week.
**German**

**GER 101-102** 4 credits each  
**Beginning German I-II**
Introduces understanding, speaking, reading, and writing skills and emphasizes basic German sentence structure. Lecture 4 hours per week. May include one additional hour oral practice per week.

**GER 201-202** 3 credits each  
**Intermediate German I-II**
Continues to develop understanding, speaking, reading, and writing skills. German is used in the classroom. Prerequisite: GER 102 or equivalent. Lecture 3 hours per week. May include one additional hour oral practice per week.

**Geographical Information Systems**

**GIS 200** 4 credits  
**Geographical Information Systems I**
Provides hands-on introduction to a dynamic desktop GIS (Geographic Information System). Introduces the components of a desktop GIS and their functionality. Emphasizes manipulation of data for the purpose of analysis, presentation, and decision-making. Prerequisite: ITE 115 or instructor approval. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**GIS 201** 4 credits  
**Geographical Information Systems II**
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. Prerequisite: GIS 200. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**GIS 205** 4 credits  
**GIS 3-Dimensional Analysis**
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 Tins, DEMs, grids, and controlling the perspective and scale of 3D data through rotating, panning, and zooming. Prerequisite: GIS 201. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**GIS 210** 4 credits  
**Understanding Geographic Data**
Provides the student 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. Prerequisite: GIS 201. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**GIS 220** 4 credits  
**Introduction to Urban and Regional Planning**
Provides an overview of how GIS is used in urban and regional planning. Emphasis will be on the use of GIS software to address real-world social, economic, and environmental planning problems. Prerequisite: GIS 201. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

**GIS 230** 3 credits  
**GIS: Applications in Environmental Science**
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). Prerequisite(s): GIS 200, ENG 03, ENG 04, MTH 02. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**Geophysical Sciences**

**GOL 105** 4 credits  
**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 crustal deformation. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**GOL 106** 4 credits  
**Historical Geology**
Traces the evolution of the earth and life through time. Presents scientific theories of the origin of the earth and life and interprets rock and fossil records. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**GOL 110** 4 credits  
**Earth Science**
FOR NON-SCIENCE MAJORS. Examines the dynamics of the earth and its relation to the solar system. Applies the principles of geology, oceanography, meteorology and astronomy in a multi-disciplinary science environment. Stresses the effects of geologic processes on the environment. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**GOL 111-112** 4 credits each  
**Oceanography I-II**
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** 2 credits  
**Field Studies in Geology**
Investigates geologic phenomena. Includes activities such as observation of regional geology and landforms, collection of samples, and measurement and interpretation of geologic structures. Field studies 6 hours per week.

**GOL 225** 4 credits  
**Environmental Geology**
Explores the interaction between man and his physical environment. Stresses geologic hazards and environmental pollution utilizing case histories. Prerequisite: GOL 105. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
Health Information Management

HIM 101  4 credits
Health Information Technology I
Introduces values, uses and content of the medical record. Defines numbering, filing and retention policies and practices. Prerequisite: Admission into the Health Information Management program. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

HIM 103  2 credits
Health Information Technology II
Introduces principles of data quality and validation types and uses of health databases. Prerequisite: HIM 101. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

HIM 110  3 credits
Introduction to Human Pathology
Introduces the basic concepts, terminology, etiology, and characteristics of pathological processes. Prerequisite: Bio 141 and HLT 143. Lecture 3 hours per week.

HIM 143  2 credits
Managing Electronic Billing in a Medical Practice
Presents practical knowledge on use of computer technology in medical practice management. Develops basic skills in preparation of universal billing claim. Explores insurance claim processing issues. Prerequisite: Admission to program. Lecture 2 hours per week.

HIM 151  2 credits
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. Prerequisite: Admission to program. Lecture 2 hours per week.

HIM 215  5 credits
Health Data Classification Systems
Focuses on disease and procedure classification systems currently utilized for collecting health data for the purposes of statistical research and financial reporting. Prerequisite: Bio 100 or HLT 143. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

HIM 220  2 credits
Health Statistics
Introduces the students to basic statistical principles and calculations as applied in the health care environment, procedures for collection and reporting vital statistics, and quality control basics. Prerequisite: Admission to program. Lecture 2 hours per week.

HIM 226  2 credits
Legal Aspects of Health Record Documentation
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. Prerequisite: Admission to program. Lecture 2 hours per week.

HIM 229  2 credits
Performance Improvement in Health Care Settings
Focuses on concepts of facility-wide performance improvement, resource management, and risk management. Applies tools for data collection and analysis. Prerequisite: HIM 101. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

HIM 230  3 credits
Information Systems and Technology in Health Care
Explores computer technology and system application in health care. Introduces the information systems life cycle. Prerequisite: HIM 101. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HIM 249  3 credits
Supervision and Management Practices
Introduces supervision and management principles with emphasis on the application of these principles in the health information setting. Prerequisite: HIM 101. Lecture 3 hours per week.

HIM 253  4 credits
Health Records Coding
Examines the development of coding classification systems. Introduces ICD-9-CM coding classification system, its format and conventions. Stresses basic coding steps and guidelines according to body systems. Provides actual coding exercises in relation to each system covered. Prerequisites: Bio 141 and HIM 215. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

HIM 254  4 credits
Advanced Coding and Reimbursement
Stresses advanced coding skills through practical exercises using actual medical records. Introduces CPT-4 coding system and guidelines for out-patient/ambulatory surgery coding. Introduces prospective payment system and its integration with ICD-9-CM coding. Prerequisite: HIM 253. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

HIS 101-102  3 credits each
History of Western Civilization I-II
Examines the development of western civilization from ancient times to the present. Prerequisite: Placement into ENG 111. Lecture 3 hours per week.

HIS 111-112  3 credits each
History of World Civilization I-II
Surveys Asian, African, Latin American, and European civilizations from the ancient period to the present. Prerequisite: Placement into ENG 111. Lecture 3 hours per week.

HIS 121-122  3 credits each
United States History I-II
Surveys United States history from its beginning to the present. Prerequisite: Placement into ENG 111. Lecture 3 hours per week.
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Course Description</th>
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</table>
| HIS 141-142| 3 credits| African-American History I-II
Surveys the history of black Americans from their African origins to the present. Prerequisite: Placement into ENG 111. Lecture 3 hours per week. |
| HIS 155    | 3 credits| Life in Colonial Virginia
Studies life in Virginia before the American Revolution, including politics, economics, customs, culture, and the slave plantation system. Prerequisite: Placement into ENG 111. Lecture 3 hours per week. |
| HIS 262    | 3 credits| United States History in Film
Examines selected topics in the United States history which shaped the American experience, presented in film. Prerequisite: Placement into ENG 111. Lecture 3 hours per week. |
| HIS 265    | 3 credits| History of the Old South
Examines the unique society that existed in the southern United States between 1815 and 1860. Emphasizes political, economic, social, and cultural characteristics that developed in the South before the Civil War. Prerequisites: HIS 121-122. Lecture 3 hours per week. |
| HIS 266    | 3 credits| 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. Prerequisite: Placement into ENG 111. Lecture 3 hours per week. |
| HIS 269    | 3 credits| 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. Prerequisite: Placement into ENG 111. Lecture 3 hours per week. |
| HIS 280    | 3 credits| American Foreign Policy Since 1890
Examines American foreign policy since 1890 with an emphasis on current events and diverse points of view. Prerequisite: Placement into ENG 111. Lecture 3 hours per week. |
| HIS 281    | 3 credits| History of Virginia I
Examines the cultural, political, and economic history of the Commonwealth from its beginning to the present. Prerequisite: Placement into ENG 111. Lecture 3 hours per week. |
| HLT 100    | 3 credits| First Aid and Cardiopulmonary Resuscitation
Focuses on the principles and techniques of safety, first aid, and cardiopulmonary resuscitation. Lecture 3 hours per week. |
| HLT 104    | 1 credit | CPR Training for Instructor Trainers
Provides training in instructional activities, record keeping, legal aspects and research activities relevant to CPR instruction. Evaluates CPR performance skills, teaching skills and knowledge base. Required for Instructor-Trainee certification by American Heart Association. Prerequisite: Current BLS Provider certification which has been in effect at least one year. Lecture 1 hour per week. |
| HLT 105    | 1 credit | Cardiopulmonary Resuscitation
Provides training in coordinated mouth-to-mouth artificial ventilation and chest compression, choking, life-threatening emergencies, and sudden illness. Lecture 1 hour per week. |
| HLT 106    | 2 credits| First Aid and Safety
Focuses on the principles and techniques of safety and first aid. Lecture 2 hours per week. |
| HLT 110    | 3 credits| 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 119    | 3 credits| First Responder
Provides knowledge and proficiency in basic life support and in actions necessary to minimize patient discomfort and prevention of further complications. Meets requirements for Virginia Certification as a first responder. Lecture 3 hours per week. |
| HLT 121    | 3 credits| Introduction to Drug Use and Abuse
Explores the use and abuse of drugs in contemporary society with emphasis upon sociological, physiological and psychological effects of drugs. Lecture 3 hours per week. |
| HLT 122    | 1 credit | Introduction to Alcohol Abuse and Control
Explores the physiological, psychological, and sociological effects of alcohol. Studies why people drink, disease concepts, alcohol tolerance curves, and alcohol’s effect on the operation of a motor vehicle. Lecture 1 hour per week. |
| HLT 130    | 1 credit | Nutrition and Diet Therapy
Studies nutrients, sources, functions, and requirements with an introduction to diet therapy. Lecture 1 hour per week. |
| HLT 135    | 3 credits| Child Health and Nutrition
Focuses on the physical needs of the preschool child and the methods by which these are met. Emphasizes health routines, hygiene, nutrition, feeding and clothing habits, childhood diseases, and safety as related to health, growth and development. Lecture 3 hours per week. |
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<tbody>
<tr>
<td>HLT 138</td>
<td>2</td>
<td>Principles of Nutrition</td>
<td>Studies nutrient components of food, including carbohydrates, fats, proteins, vitamins, minerals and water. Provides a behavioral approach to nutrient guidelines for the development and maintenance of optimum wellness. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>HLT 141</td>
<td>2</td>
<td>Introduction to Medical Terminology</td>
<td>Focuses on medical terminology for students preparing for careers in the health professions. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>HLT 143-144</td>
<td>3 credits each</td>
<td>Medical Terminology I-II</td>
<td>Provides an understanding of medical abbreviations and terms. Includes the study of prefixes, suffixes, word stems, and technical terms with emphasis on proper spelling, pronunciation, and usage. Emphasizes more complex skills and techniques in understanding medical terminology. Prerequisite for HLT 144: HLT 143. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HLT 155</td>
<td>2</td>
<td>Current Issues in Health Care</td>
<td>Focuses on current issues in the health care industry. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>HLT 156</td>
<td>3</td>
<td>Health Care for Athletic Injuries</td>
<td>Teaches prevention and care of athletic injuries, recognition and management of head and spinal injuries, fractures, strains, sprains, as well as cardiac emergencies. Discusses taping, protective equipment, and medical referral. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HLT 160</td>
<td>3</td>
<td>Personal Health and Fitness</td>
<td>Studies the relationships between health and fitness. Topics include nutrition, disease prevention, weight control, smoking and health, medical care, aerobic and anaerobic conditioning, and the relationship between physical and mental health. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>HLT 200</td>
<td>3</td>
<td>Human Sexuality</td>
<td>Provides a basic understanding of human sexuality. Includes anatomy, physiology, pregnancy, family planning, venereal diseases, and sexual variations. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HLT 204</td>
<td>3</td>
<td>Women's Health</td>
<td>Explores current issues related to women's health and wellness with an emphasis upon prevention of disease and optimum well being. Takes a multi-ethnic approach to exploring the most up-to-date findings, diagnostic tools, and treatments for breast cancer, reproductive tract illness, heart, and other common diseases faced by women from puberty through menopause. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HLT 215</td>
<td>3</td>
<td>Personal Stress and Stress Management</td>
<td>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.</td>
</tr>
<tr>
<td>HLT 226</td>
<td>2</td>
<td>AIDS Awareness</td>
<td>Provides basic understanding of Acquired Immune Deficiency Syndrome (AIDS), AIDS-Related Complex (ARC), and Human Immunodeficiency Virus (HIV) Infection. Includes information on the etiology of AIDS, historical perspectives, signs and symptoms, HIV antibody testing, safer sex guidelines, AIDS in the workplace (including health care settings), psychosocial issues, death and dying issues, homophobia, and HIV transmission and prevention. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>HLT 270</td>
<td>3</td>
<td>Health and Well-Being of the Older Adult</td>
<td>Focuses on the health of the older adult. Teaches health promotion, preventive health techniques and accident prevention. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HLT 271</td>
<td>3</td>
<td>Physical Care Management of the Older Adult</td>
<td>Introduces physiology of aging. Integrates caretaker guidelines. Demonstrates skills to care for aging at a variety of functional levels. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HLT 272</td>
<td>3</td>
<td>Medical Management of the Older Adult</td>
<td>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.</td>
</tr>
<tr>
<td>HMS 100</td>
<td>3</td>
<td>Introduction to Human Services</td>
<td>Introduces human service agencies, roles and careers. Presents an historical perspective of the field as it relates to human services today. Additional topics include values clarification and needs of target populations. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HMS 121</td>
<td>3</td>
<td>Basic Counseling Skills I</td>
<td>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.</td>
</tr>
<tr>
<td>HMS 141</td>
<td>3</td>
<td>Group Dynamics I</td>
<td>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.</td>
</tr>
<tr>
<td>HMS 225</td>
<td>3</td>
<td>Functional Family Intervention</td>
<td>Provides an understanding of functions and dysfunctions within the family. Emphasizes the development of effective skills through an interpersonal/interpersonal approach to family intervention. Lecture 3 hours per week.</td>
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<tr>
<td>HMS 226</td>
<td>3 credits</td>
<td>Helping Across Cultures</td>
<td>Provides an historical overview of selected cultural and racial groups. Promotes understanding of group differences and the impact on counseling services. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HMS 227</td>
<td>3 credits</td>
<td>The Helper as a Change Agent</td>
<td>Teaches the following skills for implementing alternative models of change and influence: action research, problem-solving, consultation, workshop development, outreach and advocacy for diverse client populations. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HMS 231-232</td>
<td>3 credits each</td>
<td>Gerontology I-II</td>
<td>Examines characteristics of the aging process and problems for the elderly. Considers both theoretical and applied perspectives on the following issues: biological, psychological, sociological, economic and political. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HMS 233</td>
<td>3 credits</td>
<td>Psycho and Socio Aspects of Older Adult Care</td>
<td>Provides psychological and sociological perspectives on aging. Examines changes in social roles and relationships, social aspects of individual aging, economics, and the politics of aging. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HMS 236</td>
<td>3 credits</td>
<td>Gerontology</td>
<td>Examines the process of aging; its implications in relation to health, recreation, education, transportation, meaningful work or activity, and to community resources. Emphasizes experiencing the aging process, facilitating retirement, and application of the helping relationship to work with older adults. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HMS 238</td>
<td>3 credits</td>
<td>Selected Topics in Aging</td>
<td>Provides students with an opportunity to explore a variety of major current issues in aging. Topics may include care giving and the elderly, elderly drug use and misuse, protective services, crisis interventions, homescare, elderly-abuse, and other current topics. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HMS 250</td>
<td>3 credits</td>
<td>Principles of Case Management</td>
<td>Provides an overview of current case management theory and practice in the field of mental health. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HMS 258</td>
<td>3 credits</td>
<td>Case Management and Substance Abuse</td>
<td>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.</td>
</tr>
<tr>
<td>HMS 238</td>
<td>3 credits</td>
<td>Hotel-Restaurant- Institutional Management</td>
<td>Provides psychological and sociological perspectives on aging. Examines changes in social roles and relationships, social aspects of individual aging, economics, and the politics of aging. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HRI 101-102</td>
<td>3 credits each</td>
<td>Hotel-Restaurant Organization and Management I-II</td>
<td>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.</td>
</tr>
<tr>
<td>HRI 105</td>
<td>1 credit</td>
<td>Introduction to Culinary Arts</td>
<td>Covers the historical perspective of the cooking and hospitality industry. Includes career paths and opportunities for culinarians, culinary professionalism, people skills, motivational and organizational skills. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>HRI 106-107</td>
<td>3 credits each</td>
<td>Principles of Culinary Arts I-II</td>
<td>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. Prerequisite or co-requisite: HRI 158. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>HRI 119</td>
<td>3 credits</td>
<td>Applied Nutrition for Food Service</td>
<td>Studies food composition, nutrition science, and application of nutrition principles by the food service professional. Provides the student with a basic understanding of human nutrition and application of nutrition in the service of commercially prepared meals. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HRI 128</td>
<td>3 credits</td>
<td>Principles of Baking</td>
<td>Teaches the following skills for implementing alternative models of change and influence: action research, problem-solving, consultation, workshop development, outreach and advocacy for diverse client populations. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>HRI 134</td>
<td>3 credits</td>
<td>Food and Beverage Service Management</td>
<td>Provides a conceptual and technical framework for managing the service of meals in a variety of commercial settings. Studies the integration of production and service delivery, guest contact dynamics, reservations management and point-of-sale systems. Prerequisite: HRI 106 and/or HRI 107. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>HRI 145</td>
<td>3 credits</td>
<td>Garde Manger</td>
<td>Studies garde manger, the art of decorative cold food preparation and presentation. Provides a detailed practical study of cold food preparation and artistic combination and display of cold foods. Prerequisite: HRI 106 and/or HRI 107. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>HRI 150</td>
<td>3 credits</td>
<td>Introduction to Hospitality Ownership</td>
<td>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.</td>
</tr>
</tbody>
</table>
COURSE DESCRIPTIONS

HRI 154  
Principles of Hospitality Management
Presents basic understanding of the hospitality industry by tracing the industry’s growth and development, reviewing the organization and management of lodging, food, and beverage operations, and focusing on industry opportunities and future trends. Lecture 3 hours per week.

HRI 158  
Sanitation and Safety
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 159  
Introduction to Hospitality Industry Computer Systems
Familiarizes students with computerized information technology to manage information, support decision-making and analysis, improve processes, increase productivity and enhance customer service in the hospitality industry. Prerequisite: ITE 115. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

HRI 160  
Executive Housekeeping
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 180  
Convention Management and Service
Examines the scope and different segments that make up the convention market, explains what is required to meet individual needs, and explores methods and techniques for better service. Lecture 3 hours per week.

HRI 205  
Fundamentals of Wine
Familiarizes the student with basic knowledge needed to make decisions related to the purchase, storage, and service of wine, as well as decisions relative to the use of wine in the hospitality and food service industry. Lecture 3 hours per week.

HRI 206  
International Cuisine
Introduces the concepts of cultural differences and similarities and the preparation of the food specialties of the major geographical areas of the world. Focuses on emerging cuisines as they become popular. Prerequisite: HRI 106 and/or HRI 107. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 207  
American Regional Cuisine
Studies the distinct regional cooking styles of America and its neighbors. Emphasizes the indigenous ingredients as well as the cultural aspect of each region’s cooking style. Includes the preparation of the various regional foods. Prerequisite: HRI 106 and/or HRI 107. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

HRI 215  
Food Purchasing
Presents the method and procedures for purchasing food for hotels, restaurants and institutions. Deals with markets, federal and trade grades, governmental regulations, packaging, comparative versions, price buying, yields and quality control. Lecture 3 hours per week.

HRI 224  
Recipe and Menu Management
Presents a comprehensive framework for creating and evaluating recipes and menus for commercial and non-commercial food service operations. Requires students to use microcomputer software to design recipes, recipe files, and menus. Teaches students menu engineering analysis and methods for optimizing menu contribution margin. Lecture 3 hours per week.

HRI 235  
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 241  
Supervision in the Hospitality Industry
Provides a comprehensive review of considerations for preparing students to become effective supervisors in restaurants and lodging operations. Prerequisite: HRI 154. Lecture 3 hours per week.

HRI 251  
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. Prerequisite: MTH 121 or higher. Lecture 3 hours per week.

HRI 255  
Human Resource 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  
Principles and Applications of Catering
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. Prerequisite: HRI 106. Lecture 3 hours per week.

HRI 257  
Catering Management
Studies special functions in the hospitality industry. Presents lecture and demonstration in banquet layout, menus, services, sales and supervision. Lecture 3 hours per week.
HRI 265 3 credits
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 credits
Strategic Lodging Management
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 credits
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.

HRI 280 3 credits
Principles of Advanced Baking and Pastry
Reviews foundation principles of classical and modern baking/pastry methods. Prerequisite: HRI 128 or equivalent. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Horticulture

HRT 110 3 credits
Principles of Horticulture
Introduces concepts of plant growth and development. Covers horticultural practices, crops and environmental factors affecting plant growth. Lecture 3 hours per week.

HRT 115 3 credits
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 division. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 116 3 credits
Home Horticulture
Introduces basic plant science. Covers soils and fertilizers, plant selection, and plant pests. Also covers installation, maintenance, and basic gardening techniques. Lecture 3 hours per week.

HRT 121 3 credits
Greenhouse Crop Production I
Covers commercial practices related to production of floriculture crops. Considers production requirements, environmental control and management, and cultural techniques. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 122 3 credits
Greenhouse Crop Production II
Continues commercial practices related to production of floriculture crops. Considers production requirements, environmental control and management, and cultural techniques. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 125 3 credits
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 150 3 credits
Theory of Landscape Design
Presents the theoretical aspects of landscape planning and design. Uses theory to analyze and solve design problems. Prerequisite: HRT 235. Lecture 3 hours per week.

HRT 155 3 credits
Plants and Society
Covers the relationship between plants and people and the uses of plants as sources of food, medicine, drugs, spices, beverages, poisons, fibers, oils and plants exudates. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 201-202 3 credits each
Landscape Plants I-II
Studies landscape use of plants. Considers ornamental value, growth habit, identification, and limitations. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 205 3 credits
Soils
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. Prerequisites: HRT 110 and HRT 125. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 207 3 credits
Plant Pest Management
Teaches principles of plant pest management. Covers morphology and life cycles of insects and other small animal pests and plant pathogens. Laboratory stresses diagnosis, chemical and non-chemical control of specified pests, and pesticide safety. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 225 3 credits
Nursery and Garden Center Management
Covers aspects of nursery management, including culture, plant handling, and facilities layout. Discusses aspects of garden center management, including planning and layout, purchasing, product selection, marketing, merchandising, and display. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

HRT 226 3 credits
Greenhouse Management
Discusses the theoretical and applied practices of managing a greenhouse facility. Emphasizes greenhouse construction and design, environmental control, energy conservation, and related topics. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.
<table>
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<tr>
<th>COURSE DESCRIPTIONS</th>
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</table>
| **HRT 227** 3 credits  
**Professional Landscape Management**  
Focuses on basic practices and techniques involving landscape management. Includes development of a year-round management calendar and preparation of bid and contract proposals. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. |
| **HRT 228** 3 credits  
**Turfgrass Management I**  
Applies scientific principles for the establishment and maintenance of intensely managed turfgrass. Topics covered include cultivar selection, seeding, sprigging and sodding techniques, fertilization, watering, weed identification and control, insect identification and control, soil structure, drainage, topdressing, and mowing frequency and height. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. |
| **HRT 229** 3 credits  
**Turfgrass Management II**  
Continuation of HRT 228. Applies scientific principles for the establishment and maintenance of intensely managed turfgrass. Topics covered include cultivar selection, seeding, sprigging and sodding techniques, fertilization, watering, weed identification and control, insect identification and control, fungus identification and control, soil structure, drainage, and mowing frequency and height. Prerequisite: HRT 110 and HRT 228. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. |
| **HRT 231** 3 credits  
**Planting Design I**  
Applies landscape theory and principles of drawing to the planning of residential and small scale commercial landscapes. Prerequisites: HRT 150, 235, 201, and 202 or instructor permission. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. |
| **HRT 235** 3 credits  
**Landscape Drawing**  
Teaches students the use of drafting equipment. Emphasizes drawing techniques and use of media. Includes hard line and free-style landscape drawing. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. |
| **HRT 240** 3 credits  
**Principles of Weed Science**  
Provides in-depth knowledge and expertise in handling the critical tasks of identifying and determining appropriate methods of controlling weeds of turfgrass, landscapes, and greenhouses. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. |
| **HRT 259** 3 credits  
**Arboriculture**  
Studies the techniques of tree care. Covers surgery, pruning, insect and disease recognition and control, fertilization, cabling, and lightning rod installation. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. |
| **HRT 275** 3 credits  
**Landscape Construction and Maintenance**  
Examines practical applications of commercial landscape construction techniques and materials used. Covers construction, planting, and maintenance. Prerequisite: HRT 110. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. |
| **HUM 150** 3 credits  
**Introduction to Viet Nam**  
Introduces the culture, history, religion, literature and poetry of Viet Nam. Lecture 3 hours per week. |
| **HUM 165** 3 credits  
**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, family values, and special interest lobbying in state and national governments. Focuses on the development of the student’s critical thinking skills by analyzing, evaluating, and reflecting on opposing sides of the same issue as expressed by public leaders, special interest groups and academicians. Lecture 3 hours per week. |
| **HUM 201** 3 credits  
**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 credits  
**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 220** 3 credits  
**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 credits  
**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 credits each  
**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. |
### Course Descriptions

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>HUM 246</td>
<td>3</td>
<td>Creative Thinking</td>
</tr>
<tr>
<td>HUM 247</td>
<td>3</td>
<td>Chronicles of the Sea</td>
</tr>
<tr>
<td>HUM 256</td>
<td>3</td>
<td>Mythology in Literature and the Arts</td>
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<tr>
<td>HUM 259</td>
<td>3</td>
<td>Greek Mythology</td>
</tr>
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<td>HUM 260</td>
<td>3</td>
<td>Survey of Twentieth-Century Culture</td>
</tr>
<tr>
<td>IDS 100</td>
<td>3</td>
<td>Theory and Techniques of Interior Design</td>
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<tr>
<td>IDS 105</td>
<td>3</td>
<td>Architectural Drafting for Interior Design</td>
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<tr>
<td>IDS 106</td>
<td>3</td>
<td>Three-Dimensional Drawing and Rendering</td>
</tr>
<tr>
<td>IDS 109</td>
<td>3</td>
<td>Styles of Furniture and Interiors</td>
</tr>
<tr>
<td>IDS 116</td>
<td>4</td>
<td>Period Residential Design</td>
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<tr>
<td>IDS 120</td>
<td>3</td>
<td>Estimation for Interior Coverings</td>
</tr>
<tr>
<td>IDS 195</td>
<td>3</td>
<td>Presentations for Interior Designers</td>
</tr>
<tr>
<td>IDS 205</td>
<td>3</td>
<td>Materials and Sources</td>
</tr>
<tr>
<td>IDS 206</td>
<td>3</td>
<td>Lighting and Furnishings</td>
</tr>
<tr>
<td>IDS 215</td>
<td>3</td>
<td>Theory and Research in Commercial Design</td>
</tr>
<tr>
<td>IDS 217</td>
<td>3</td>
<td>Advanced Rendering and Presentation</td>
</tr>
<tr>
<td>IDS 222</td>
<td>4</td>
<td>Designing Commercial Interiors II</td>
</tr>
<tr>
<td>IDS 225</td>
<td>3</td>
<td>Business Procedures</td>
</tr>
</tbody>
</table>

**Creative Thinking**
Examines and analyzes creative and effective thinking processes with applications in individual and group projects to solve business, scientific, environmental, and other practical problems. Lecture 3 hours per week.

**Chronicles of the Sea**
Studies the ocean and man's relationship with it. Covers the study of selected readings about the sea from a literary, historical and social/political perspective. May include field trips, reports, and a sea voyage. Lecture 3 hours per week.

**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 divergencies: Egyptian, Near-Eastern, Greek, Roman, Celtic, Norse, Asian, and African. Lecture 3 hours per week.

**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.

**Survey of Twentieth-Century Culture**
Explores literature, visual arts, philosophy, music, and history of our time from an interdisciplinary perspective. Lecture 3 hours per week.

**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.

**Architectural Drafting for Interior Design**
Introduces tools and equipment, lettering, methods of construction, designing and delineation of architecture. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**Three-Dimensional Drawing and Rendering**
Provides instruction in graphic presentation of three-dimensionally drawn interiors. Presents the use of colored media to render three-dimensional drawings. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**Styles of Furniture and Interiors**
Teaches history of furnishings and interiors from the ancient world to the present. Lecture 3 hours per week.

**Period Residential Design**
Plans a period-inspired interior. May use field trips and visual materials to enhance this project. Presents problems and their solutions found in this kind of project. May require a final visual presentation with all necessary furnishings, materials, and color boards with rendered perspectives. Prerequisites: IDS 105 and IDS 217. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

**Estimation for Interior Coverings**
Provides instruction in estimation of yardages for window treatments, carpet, custom carpet designs, wall coverings, tile, etc. Covers fixturing, labor costing, procedures of fabrication and styling options. May require site/research visits to fabricators. Lecture 3 hours per week.

**Presentations for Interior Designers**
Introduces color board design techniques, resume writing and portfolio construction. Includes oral presentations, digital presentations, interview techniques, and image creation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

**Materials and Sources**
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.

**Lighting and Furnishings**
Provides instruction in lighting terminology and calculations and instructions in techniques of recognizing quality of construction in furnishings and related equipment. Prerequisite: IDS 105. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**Theory and Research in Commercial Design**
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. Prerequisite: IDS 105 and IDS 217. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**Advanced Rendering and Presentation**
Gives advanced problems in rendering and visual presentation. Teaches methods of presentation and development of completed interior design projects with rendered perspectives and presentation boards of furnishings, fixtures, finishes, schedules, and related materials. Prerequisite: IDS 105 and IDS 106. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.

**Designing Commercial Interiors II**
Presents problems in designing and developing presentations with emphasis on office spaces. Prerequisite: IDS 105 and IDS 217. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

**Business Procedures**
Provides instruction in preparation of contracts, purchase orders, specifications, and other business forms used in the interior design field. Lecture 3 hours per week.
### Course Descriptions

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IDS 235</strong></td>
<td>3 credits</td>
<td>Antiques</td>
</tr>
<tr>
<td>Involves process of research, authentication, and determining provenance. Covers examples of furnishings, fixtures, textiles, glass, and ceramics. May provide field trips, lectures, examination, and discussion to assist in determining age, condition, and other properties. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</td>
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<tr>
<td><strong>IDS 245</strong></td>
<td>3 credits</td>
<td>Computer-Aided Drafting for Interior Designers</td>
</tr>
<tr>
<td>Instructs in the use of the computer for drafting of floor plans, elevations, perspectives, shadowing, lighting, and color applications using Auto Cad software and the architectural and engineering software. Prerequisite: IDS 105. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.</td>
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<tr>
<td><strong>IDS 250</strong></td>
<td>3 credits</td>
<td>Green Design for Interior Designers</td>
</tr>
<tr>
<td>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. Prerequisites: IDS 100 and IDS 105. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
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<tr>
<td><strong>IDS 255</strong></td>
<td>3 credits</td>
<td>Green Design for Commercial Interiors</td>
</tr>
<tr>
<td>Presents green design techniques through the application of principles and practices of green design through a commercial design application. Introduces the building certification process and applies this process to interior designs. Applies the LEED rating system to designs to determine the level of LEED certification. Prerequisite: IDS 250. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
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<tr>
<td><strong>IDS 293</strong></td>
<td>2 credits</td>
<td>Kitchen and Bath Design Software</td>
</tr>
<tr>
<td>Introduces software used primarily for the design of kitchens and bathrooms. Includes room design concepts and appliance and fixture layout. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.</td>
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<tr>
<td><strong>IND 101-102</strong></td>
<td>3 credits each</td>
<td>Quality Assurance Technology I-II</td>
</tr>
<tr>
<td>Studies principles and techniques of quality engineering for the management, design engineering economics, production, and assurance of quality. Emphasizes fundamentals of total quality assurance for product and process control. May include design review, fundamentals of statistics, procurement control, sampling and control chart systems, quality reporting, process capability analysis, tool and gauge control, document control, or troubleshooting quality control. Lecture 3 hours per week.</td>
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<tr>
<td><strong>IND 105</strong></td>
<td>3 credits</td>
<td>Nondestructive Inspection (NDI) and Testing</td>
</tr>
<tr>
<td>Studies nondestructive inspection and testing methods as they relate to industry. May include radiographic (RT), ultrasonic (UT), eddy current (ET), magnetic particle (MT), and liquid penetrant (PT) or other methods of testing. Lecture 3 hours per week.</td>
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<tr>
<td><strong>IND 106</strong></td>
<td>3 credits</td>
<td>Industrial Engineering Technology</td>
</tr>
<tr>
<td>Introduces basic skills required for a career in industrial engineering technology. Includes basic statistics for engineering technicians, the SI system, graphic analysis, and careers as an industrial engineering technician. Lecture 3 hours per week.</td>
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<tr>
<td><strong>IND 115</strong></td>
<td>4 credits</td>
<td>Materials and Processes of Industry</td>
</tr>
<tr>
<td>Studies materials and processes for the manufacture of products. Investigates the nature of various materials. Examines the manufacturing processes of industry and their effects on materials. Lecture 4 hours per week.</td>
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<tr>
<td><strong>IND 121</strong></td>
<td>3 credits</td>
<td>Industrial Supervision I</td>
</tr>
<tr>
<td>Introduces the concept of the Supervisor as a leader. Discusses the role of the Industrial Supervisor in the face of technology advances. Discusses the role of the Industrial Supervisor in leading organizational change and helping employees through transitions. Defines leadership styles and the selection of the appropriate style. Introduces the Industrial Supervisor as a motivator in terms of job satisfaction, morale, job design competition, communication, and promotions. Presents ethical behavior and dilemmas in organizations. Lecture 3 hours per week.</td>
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<tr>
<td><strong>IND 122</strong></td>
<td>3 credits</td>
<td>Industrial Supervision II</td>
</tr>
<tr>
<td>Introduces the concept of the supervisor as a Manager. Discusses the primary management functions and the differences between supervision and management. Discusses the planning process and scheduling techniques. Introduces concepts in organizing both formally and informally, accountability, span of control and delegation. Discusses the staffing process including legal considerations, forecasting, job analysis techniques, recruiting, interviewing and selection. Introduces the control process including what the Industrial Supervisor should control, control strategies, and how to control costs. Defines the decision making process and how to use employees, information and creativity in decision making. Lecture 3 hours per week.</td>
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<tr>
<td><strong>IND 135</strong></td>
<td>3 credits</td>
<td>Standards of Quality and Auditing</td>
</tr>
<tr>
<td>Presents general requirements of industrial, military and international quality standards. Reviews quality audit principles relative to products, processes and systems. Includes the design of an approach to the audit and audit standards, procedures, methods, facilities control, personnel, and reporting methods. Includes case studies and in-plant audits. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</td>
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<tr>
<td><strong>IND 137</strong></td>
<td>3 credits</td>
<td>Team Concepts and Problem Solving</td>
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<td>Studies team concepts and problem solving techniques to assist project teams in improving quality and productivity. Provides knowledge of how to work as a team, plan and conduct good meetings, manage logistics and details, gather useful data, communicate the results and implement changes. Lecture 3 hours per week.</td>
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<td>IND 142</td>
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<td>Biometrics and Technology</td>
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<td>IND 145</td>
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<td>Introduction to Metrology</td>
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<td>IND 146</td>
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<td>Statistical Quality Control</td>
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<td>IND 150</td>
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<td>IND 160</td>
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<td>IND 165</td>
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<td>Principles of Industrial Technology I</td>
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<td>IND 166</td>
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<td>Principles of Industrial Technology II</td>
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<td>IND 216</td>
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<td>Plant Layout and Materials Handling</td>
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<td>IND 236</td>
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<td>Total Quality Concepts</td>
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<td>IND 245</td>
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<td>Time and Motion Study</td>
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<td>IND 251</td>
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<td>Automated Manufacturing Systems I</td>
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<td>INS 230</td>
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<td>Instrumentation I</td>
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<td>INS 233</td>
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<td>Process Control Integration</td>
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<td>INT 105-106</td>
<td>3</td>
<td>Interpreting Foundations I-II</td>
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INT 107 3 credits
Translation Skills
Further develops fundamental skills needed for the task of interpreting. Targets comprehending source language (either ASL or English), transferring content into memory store (breaking from original form), restructuring into target language, maintaining message equivalence, conveying implicit and inferred information, and applying appropriate discourse structure. Reviews Process Models of Interpreting, and uses it to analyze translations. Further develops feedback skills essential to the team interpreting process. Prerequisite: INT 105. Lecture 3 hours per week.

INT 130 3 credits
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 credits
ASL-to-English Interpretation I
Begins consecutively interpreting monologues from the source language (ASL) to the target language (English). Watches entire ASL monologues, process them, analyze them, and then choose appropriate English to match the message. Eventually interprets 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. Prerequisite: INT 107. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

INT 134 3 credits
English-to-ASL Interpretation I
Begins consecutively interpreting monologues from the source language (English) to the target language (ASL). Listens 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 in the field of interpretation. Develops team interpreting techniques. Encourages interaction with consumers of ASL-English interpretation. Prerequisite: INT 107. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

INT 233 3 credits
ASL-to-English Interpretation II
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. Applies team interpreting techniques. Interacts with consumers of interpretation. Prerequisites: INT 133 and INT 134. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

INT 234 3 credits
English-to-ASL Interpretation II
Perform simultaneous interpretations of monologues in the source language (English) into the target language (ASL). Process an incoming English monologue while simultaneously producing an appropriate interpretation in ASL. Conduct research in the field of interpretation. Applies team interpreting techniques. Interacts with consumers of interpretation. Prerequisites: INT 133 and INT 134. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

INT 235 3 credits
Interpreting in the Educational Setting
Examines the roles, responsibilities, and communication techniques of 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. Prerequisite: ASL 102 and INT 130. Lecture 3 hours per week.

INT 236 3 credits
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. Prerequisite: ASL 102 and INT 130. Lecture 3 hours per week.

INT 250 3 credits
Dialogic Interpretation I

Information Technology Design & Database

ITD 110 4 credits
Web Page Design I
Stresses a working knowledge of web site designs, construction, and management using HTML or XHTML. Includes headings, lists, links, images, image maps, tables, forms, and frames. Lecture 4 hours per week.

ITD 112 4 credits
Designing Web Page Graphics
Explores the creation of digital graphics for web design. Explores basic design elements such as color and layout utilizing a computer graphics program(s). Lecture 4 hours per week.

ITD 132 4 credits
Structured Query Language
Incorporates a working introduction to commands, functions and operators used in SQL for extracting data from standard databases. Lecture 4 hours per week.

ITD 134 4 credits
PL/SQL Programming
Presents a working introduction to PL/SQL programming within the Oracle RDBMS environment. Includes PL/SQL fundamentals of block program structure, variables, cursors and exceptions, and creation of program units of procedures, functions, triggers and packages. Prerequisite: ITD 132 or SQL knowledge. Lecture 4 hours per week.

ITD 136 4 credits
Database Management Software
Covers an introduction to relational database theory and how to administer and query databases using multiple commercial database systems. Prerequisite: ITD 132 or SQL knowledge. Lecture 4 hours per week.
COURSE DESCRIPTIONS

**ITD 152** 4 credits

**Oracle Forms Developer**
Provides a working introduction to building and testing interactive Oracle applications. Includes customizing forms with user input items such as check boxes, list items, and radio groups for use in a graphical user interface (GUI) environment. Includes modification of data access by creating event-related triggers. Prerequisite: ITD 134 or SQL and PL/SQL knowledge. Lecture 4 hours per week.

**ITD 210** 4 credits

**Web Page Design II**
Incorporates advanced techniques in web site planning, design, usability, accessibility, advanced site management, and maintenance utilizing web editing software(s). Prerequisite: ITD 110. Lecture 4 hours per week.

**ITD 212** 4 credits

**Interactive Web Design**
Provides techniques in interactive design concepts to create cross-platform, low-bandwidth animations utilizing a vector-based application. Emphasizes the importance of usability, accessibility, optimization and performance. Note: Students should be proficient in graphic image creation and manipulation. Prerequisite: ITD 112. Lecture 4 hours per week.

**ITD 250** 4 credits

**Database Architecture and Administration**
Involves in-depth instruction about the underlying architecture of databases and the handling of database administration. Prerequisites: ITD 132 and ITN 171. Lecture 4 hours per week.

**ITD 251** 3 credits

**Database System Development**
Provides the student the opportunity to solve a business problem from identification of the problem through the logical design and implementation on a database. Makes use of the knowledge that was gained in the prerequisite courses. Prerequisites: ITD 250 and ITD 260. Lecture 3 hours per week.

**ITD 252** 3 credits

**Database Backup and Recovery**
Concentrates instruction in the key tasks required to plan and implement a database backup and recovery strategy. Includes instruction in multiple strategies to recover from multiple types of failure. Prerequisite: ITD 250. Lecture 3 hours per week.

**ITD 258** 4 credits

**Database Performance and Tuning**
Emphasizes instruction to optimize the performance of a database management system. Includes methods for tuning data access and storage and discussions of resolving data performance problems. Prerequisite: ITD 250. Lecture 4 hours per week.

**ITD 260** 4 credits

**Data Modeling and Design**
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. Prerequisite or co-requisite: ITD 132. Lecture 4 hours per week.

**Information Technology Essentials**

**ITE 55** 1 credit

**Certification Preparation**
Serves as a review of objectives for a specific certification. Uses certification test preparation software, when available, in conjunction with a faculty resource person. May be repeated for credit. Lecture 1 hour per week.

**ITE 95** 1 credit

**Advanced Photo Image Editing Techniques**
Introduces the student to advanced digital photo editing techniques, including selections, masking, image and color adjustments, as well as techniques for creating photo galleries, and various automated features using image editing software. Lecture 1 hour per week.

**ITE 95** 1 credit each

**Using Your Digital Camera and Your Computer I-II**
Introduces the student to the use of the digital camera, including how to use it with a computer to save, print, and edit photographs and how to share digital photographs on the computer and on the internet. Lecture 1 hour per week.

**ITE 101** 2 credits

**Introduction to Microcomputers**
Examines concepts and terminology related to microcomputers and introduces specific uses of microcomputers. Lecture 2 hours per week.

**ITE 109** 3 credits

**Information Systems for Legal Assistants**
Presents terminology and concepts of computer-based systems, an introductory coverage of operating systems and business application software to conduct legal research for litigation and other application programs traditionally used in the practice of law. Lecture 3 hours per week.

**ITE 115** 4 credits

**Introduction to Computer Applications and Concepts**
Covers computer concepts and internet skills and uses a software suite which includes word processing, spreadsheet, database, and presentation software to demonstrate skills. Lecture 4 hours per week.

**ITE 127** 1 credit

**Microcomputer Software: Beginning Windows**
Imparts first-time users with sufficient information to make practical use of the Windows software package. Presents the basics of the features and applications included in the Windows operating system package. Lecture 1 hour per week.
 COURSE DESCRIPTIONS

ITE 130 4 credits
Introduction to Internet Services
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 4 hours per week.

ITE 131 1 credit
Survey of Internet Services
Introduces students to basic Internet terminology and services including e-mail, www browsing, search engines, ftp, telnet, and other services. Lecture 1 hour per week.

ITE 140 4 credits
Spreadsheet Software
Covers the use of spreadsheet software to create spreadsheets with formatted cells and cell ranges, control pages, multiple sheets, charts, and macros. Topics include type and edit text in a cell, enter data on multiple worksheets, work with formulas and functions, create charts, pivot tables, and styles, insert headers and footers, and filter data. Lecture 4 hours per week.

ITE 141 1 credit
Microcomputer Software: Spreadsheets
Provides first-time users with sufficient information to make practical use of spreadsheet software using the basics of building spreadsheets. Lecture 1 hour per week.

ITE 150 4 credits
Desktop Database Software
Incorporates instruction in planning, defining, and using a database; performing queries; producing reports; working with multiple files; and concepts of database programming. Includes database concepts, principles of table design and table relationships, entering data, creating and using forms, using data from different sources, filtering, creating mailing labels. Lecture 4 hours per week.

ITE 151 1 credit
Microcomputer Software: Database Management
Presents first-time users with sufficient information to make practical use of database management software using the basics of building databases. Covers specific business applications. Lecture 1 hour per week.

ITE 200 3 credits
Technology for Teachers (TISP)
Provides K-12 classroom teachers with the knowledge and skills needed to fulfill the Commonwealth of Virginia’s Technology Standards for Instructional Personnel. Students will finish the course with a solid understanding of educational technology, including how to use computers, how to access information on the World Wide Web, and how to integrate computers and educational technology into classroom curriculum. Students will learn how to base technology integration decisions on contemporary learning theories. Prerequisite: ITE 115. Lecture 3 hours per week.

ITE 215 4 credits
Advanced Computer Applications and Integration
Incorporates advanced computer concepts including the integration of a software suite. Prerequisite: ITE 115 or AST 236. Lecture 4 hours per week.

Information Technology Networking

ITE 101 4 credits
Introduction to Network Concepts
Provides instruction in networking media, physical and logical topologies, common networking standards and popular networking protocols. Emphasizes the TCP/IP protocol suite and related IP addressing schemes, including CIDR. Includes selected topics in network implementation, support and LAN/WAN connectivity. Prerequisite: ITN 106 or ITN 171. Lecture 4 hours per week.

ITE 106 4 credits
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 graphical user interfaces. Lecture 4 hours per week.

ITE 107 4 credits
Personal Computer Hardware and Troubleshooting
Includes specially designed instruction to give the student a basic knowledge of hardware and software configurations. Includes the installation of various peripheral devices as well as basic system hardware components. Lecture 4 hours per week.

ITE 109 4 credits
Internet and Network Foundations
Provides a basic comprehension of Internet and network technologies including IT job roles, connection methods, TCP/IP functionality and DNS. Explores web server technologies with security and project management concepts. Introduces network server creation, physical and logical topologies including media properties, server types, IP addressing and network security. Lecture 4 hours per week.

ITE 110 4 credits
Client Operating System (Windows 7)
Covers installation, configuration, administration, management, maintenance, and troubleshooting of the desktop client operating system in a networked environment. Lecture 4 hours per week.

ITE 111 4 credits
Server Administration (Windows 2008)
Covers installation, configuration, administration, management, maintenance, and troubleshooting of a server in a networked environment. Lecture 4 hours per week.

ITE 112 4 credits
Network Infrastructure (Windows 2008)
Covers planning, installation, configuration, administration, management, maintenance, monitoring, and troubleshooting of network infrastructure components. Prerequisite: ITE 111. Lecture 4 hours per week.

ITE 113 4 credits
Active Directory (Windows 2008)
Covers planning, installation, configuration, administration, management, maintenance, monitoring, and troubleshooting of Active Directory (AD) and Domain Naming Service (DNS) in a networked environment. Prerequisite: ITN 111. Lecture 4 hours per week.
ITN 116  4 credits  
Windows 2003 Network Infrastructure Implementation, Management and Maintenance (NI-IMM)  
Provides instruction on how to implement, manage, and maintain a Microsoft Windows Server 2003 network infrastructure. Lecture 4 hours per week.

ITN 117  4 credits  
Windows 2003 Network Infrastructure Planning and Maintenance (NI-PIM)  
Includes instruction on how to plan and maintain a Microsoft Windows Server 2003 network infrastructure. Lecture 4 hours per week.

ITN 170  4 credits  
Linux System Administration  
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. Prerequisite: ITN 171. Lecture 4 hours per week.

ITN 171  4 credits  
Unix I  
Provides an introduction to UNIX operating systems. Teaches login procedures, file creation, UNIX file structure, input/output control, and the UNIX shell. Lecture 4 hours per week.

ITN 195  4 credits  
Network Fundamentals, Router Basics, and Configuration (ICND1) - Cisco  
Provides instruction in the fundamentals of networking environments, the basics of router operations, and basic router configuration. Lecture 4 hours per week.

ITN 195  4 credits  
Switching, Wireless, and WAN Technologies (ICND2) - Cisco  
Provides the skills and knowledge to install, operate, and troubleshoot a small-to-medium sized branch office enterprise network, including configuring several switches and routers, configuring wireless devices, configuring VLANs, connecting to a WAN, and implementing network security. Prerequisite or co-requisite: ITN 195 (ICND1). Lecture 4 hours per week.

ITN 212  4 credits  
Applications Infrastructure (Windows 2008)  
Covers design of the applications infrastructure and global configuration changes in an enterprise networked environment. Prerequisite: ITN 111. Lecture 4 hours per week.

ITN 213  4 credits  
Information Storage and Management  
Focuses on advanced storage systems, protocols, and architectures, including Storage Area Networks (SAN), Network-Attached Storage (NAS), Fibre Channel Networks, Internet Protocol San (IPSAN), iSCSI, and Content-Addressable Storage (CAS). Prerequisite: ITN 101. Lecture 4 hours per week.

ITN 214  4 credits  
Messaging Server Administration (Exchange Server 2007)  
Covers planning, installation, configuration, administration, management, maintenance, monitoring, and troubleshooting of a messaging server in a networked environment. Prerequisites: ITN 112 and ITN 113. Lecture 4 hours per week.

ITN 215  4 credits  
Enterprise Administration (Windows 2008)  
Covers network infrastructure design, evaluation of technology solutions, development of policies and procedures, and analysis of network performance at an enterprise level. Prerequisite: ITN 111. Lecture 4 hours per week.

ITN 216  4 credits  
Database Server Administration (SQL Server 2008)  
Covers planning, installation, configuration, administration, management, maintenance, monitoring, and troubleshooting of a database server in a networked environment. Prerequisites: ITN 112 and ITN 113. Lecture 4 hours per week.

ITN 224  4 credits  
Web Server Management  
Focuses on the web server as a workhorse of the world wide web (www). Teaches how to set up and maintain a Web server and provides in-depth instruction in Web server operations and provides hands-on experience in installation and maintenance of a Web server. Prerequisite: ITN 109. Lecture 4 hours per week.

ITN 241  4 credits  
Windows 2003 Security Design (SD)  
Provides instruction that shows students how to gather and analyze business requirements for a secure network infrastructure and design a security solution that meets those requirements. Prerequisite: ITN 115. Lecture 4 hours per week.

ITN 260  4 credits  
Network Security Basics  
Provides instruction in the basics of network security in depth. Includes security objectives, security architecture, security models and security layers, risk management, network security policy, and security training. Includes the give security keys, confidentiality integrity, availability, accountability, and auditability. Prerequisite: ITN 101 or substantial networking experience. Lecture 4 hours per week.

ITN 261  4 credits  
Network Attacks, Computer Crime and Hacking  
Encompasses in-depth exploration of various methods for attacking and defending a network. Explores network security concepts from the viewpoint of hackers and their attack methodologies. Includes topics about hackers, attacks, Intrusion Detection Systems (IDS), malicious code, computer crime and industrial espionage. Prerequisite: ITN 260. Lecture 4 hours per week.

ITN 262  4 credits  
Network Communication, Security and Authentication  
Covers an in-depth exploration of various communication protocols with a concentration on TCP/IP. Explores communication protocols from the point of view of the hacker in order to highlight protocol weaknesses. Includes Internet architecture, routing, addressing, topology, fragmentation and protocol analysis, and the use of various utilities to explore TCP/IP. Prerequisite: ITN 260. Lecture 4 hours per week.
### COURSE DESCRIPTIONS

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<th>Course Code</th>
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<tr>
<td>ITN 263</td>
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<tr>
<td><strong>Internet/Intranet Firewalls and E-Commerce Security</strong></td>
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<td>Provides an in-depth exploration of firewall, web security, and e-commerce security. Explores firewall concepts, types, topology and the firewall’s relationship to the TCP/IP protocol. Includes client/server architecture, the web server, HTML and HTTP in relation to web security, and digital certification, D.509, and public key infrastructure (PKI). Prerequisite: ITN 260. Lecture 4 hours per week.</td>
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| ITN 266 | 4 credits |
| **Network Security Layers** |
| Provides an in-depth exploration of various security layers needed to protect the network. Explores network security from the viewpoint of the environment in which the network operates and the necessity to secure that environment to lower the security risk to the network. Includes physical security, personnel security, operating system security, software security and database security. Prerequisite: ITN 260. Lecture 4 hours per week. |

| ITN 267 | 3 credits |
| **Legal Topics in Network Security** |
| Conveys an in-depth exploration of the civil and common law issues that apply to network security. Explores statutes, jurisdictional, and constitutional issues related to computer crimes and privacy. Includes rules of evidence, seizure and evidence handling, court presentation and computer privacy in the digital age. Prerequisite or co-requisite: ITN 260. Lecture 3 hours per week. |

| ITN 270 | 4 credits |
| **Advanced Linux Network Administration** |
| Focuses instruction on the configuration and administration of the Linux operating system as a network server. Emphasizes the configuration of common network services such as routing, http, DNS, DHCP, ftp, telnet, SMB, NFS, and NIS. Prerequisite: ITN 170. Lecture 4 hours per week. |

| ITN 271 | 4 credits |
| **Unix II** |
| Concentrates on instruction in advanced topics of Unix. Lecture 4 hours per week. |

| ITN 275 | 4 credits |
| **Incident Response and Computer Forensics** |
| Prepares the student for a role on an organizational IT support staff where the need for resolving computer incidents is becoming increasingly common. Includes legal and ethical issues of search and seizure of computer and peripheral storage media leading to laboratory exercises examining computers configured with a mix of both simulated criminal and other activities which are not criminal in nature, but do violate scenario-driven organizational policy. Requires the student to make choices/recommendations for further pursuit of forensics evidence gathering and analysis. Students will select and gather the utilities and procedures necessary for a court-acceptable forensics toolkit which will then be used to gather and examine specially configured desktop computers. Students will then participate in a mock court proceeding using the collected evidence. Prerequisite: ITN 260. Lecture 4 hours per week. |

| ITN 279 | 4 credits |
| **VMware Virtual Infrastructure: Deployment, Security, and Analysis** |
| Focuses on the deployment, security, and analysis of the VMware 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 4 hours per week. |

| ITN 293 | 4 credits |
| **VMware Virtual Infrastructure: Installation and Configuration** |
| Explores concepts and capabilities of virtual architecture with a focus on the installation, configuration, and management of a VMware virtual infrastructure, ESX Server, and VirtualCenter. Covers fundamentals of virtual network design and implementation, fundamentals of storage area networks, virtual switching, virtual system management, and engineering for high availability. Prerequisites: ITN 171 and ITN 260. Lecture 4 hours per week. |

| ITN 295 | 4 credits |
| **Converged Networks Optimization (ONT) - Cisco** |
| Provides the skills and knowledge to optimize and provide effective QoS techniques in converged networks that run voice, wireless, and security applications. Prerequisite: ITN 195 (ICND2). Lecture 4 hours per week. |

| ITN 295 | 4 credits |
| **Multilayer Switched Networks (BCMSN) - Cisco** |
| Provides the skills and knowledge to create an efficient and expandable enterprise network by installing, configuring, monitoring, and troubleshooting network infrastructure equipment, especially Catalyst Multilayer Switches, according to the Campus Infrastructure module in the Enterprise Composite Network model, including converged IP data, IPC (Voice) and Airspace WLAN (wireless). Prerequisite: ITN 195 (ICND2). Lecture 4 hours per week. |

| ITN 295 | 4 credits |
| **Scalable Internetworks (BSICI) - Cisco** |
| Provides the skills and knowledge to create an efficient and expandable enterprise network by installing, configuring, monitoring, and troubleshooting network infrastructure equipment according to the Campus Infrastructure module in the Enterprise Composite Network model and implementing the most commonly used and emerging IP routing protocols. Prerequisite: ITN 195 (ICND1). Lecture 4 hours per week. |

| ITN 295 | 4 credits |
| **Secure Converged Wide Area Networks (ISCW) - Cisco** |
| Provides the skills and knowledge to secure and expand the reach of the enterprise network to teleworkers and remote sites, focusing on remote access security and VPN client configuration. Prerequisite: ITN 195 (ICND2). Lecture 4 hours per week. |

| ITN 295 | 4 credits |
| **SharePoint Server Administration (2007)** |
| Covers planning, installation, configuration, administration, management, maintenance, monitoring, and troubleshooting of SharePoint Server and applications in a networked environment. Prerequisites: ITN 112 and ITN 113. Lecture 4 hours per week. |
Information Technology Programming

ITP 100 4 credits
Software Design
Introduces principles and practices of software development. Includes instruction in critical thinking, problem solving skills, and essential programming logic in structured and object-oriented design using contemporary tools. Lecture 4 hours per week.

ITP 112 4 credits
Visual Basic.NET I
Concentrates instruction in fundamentals of object-oriented programming using Visual Basic.NET and the .NET Framework. Emphasizes program construction, algorithm development, coding, debugging, and documentation of graphical user interface applications. Prerequisite: ITP 100 or programming experience. Lecture 4 hours per week.

ITP 120 4 credits
Java Programming I
Entails instruction in fundamentals of object-oriented programming using Java. Emphasizes program construction, algorithm development, coding, debugging, and documentation of console and graphical user interface applications. Prerequisite: ITP 100 or programming experience. Lecture 4 hours per week.

ITP 132 4 credits
C++ Programming I
Centers instruction in fundamentals of object-oriented programming and design using C++. Emphasizes program construction, algorithm development, coding, debugging, and documentation of C++ applications. Prerequisite: ITP 100 or programming experience. Lecture 4 hours per week.

ITP 136 4 credits
C# Programming I
Presents instruction in fundamentals of object-oriented programming and design using C#. Emphasizes program construction, algorithm development, coding, debugging, and documentation of applications within the .NET Framework. Prerequisite: ITP 100 or programming experience. Lecture 4 hours per week.

ITP 160 4 credits
Introduction to Game Design and Development
Introduces object-oriented game design and development. Provides overview of the electronic game design and development process and underlines the historical context, content creation strategies, game careers, and future trends in the industry. Utilizes a game language environment to introduce game design, object-oriented paradigms, software design, software development and product testing. Teaches skills of writing a game design document and creating a game with several levels and objects. Integrates 2D animations, 3D models, sound effects, and background music as well as graphic backgrounds. Prerequisite: ITP 100 or programming experience. Lecture 4 hours per week.

ITP 165 4 credits
Gaming and Simulation
Introduces students to the concepts and applications of gaming and simulation through the use of gaming and simulation tools, as well as through basic programming skills. Prerequisites: ITP 100 and ITP 120. Lecture 4 hours per week.

ITP 170 4 credits
Project Management
Introduces the concepts of project management as defined by the Project Management Institute, the accreditation body for project management. Lecture 4 hours per week.

ITP 212 4 credits
Visual Basic.NET II
Includes instruction in application of advanced event-driven techniques to application development. Emphasizes database connectivity, advanced controls, web forms, and web services using Visual Basic.NET. Prerequisite: ITP 112. Lecture 4 hours per week.

ITP 220 4 credits
Java Programming II
Imparts instruction in application of advanced object-oriented techniques to application development using Java. Emphasizes database connectivity, inner classes, collection classes, networking, and threads. Prerequisite: ITP 120. Lecture 4 hours per week.

ITP 232 4 credits
C++ Programming II
Presents in-depth instruction of advanced object-oriented techniques for data structures using C++. Prerequisite: ITP 132. Lecture 4 hours per week.

ITP 236 4 credits
C# Programming II
Focuses instruction in advanced object-oriented techniques using C# for application development. Emphasizes database connectivity and networking using the .NET Framework. Prerequisite: ITP 136. Lecture 4 hours per week.

ITP 240 4 credits
Server Side Programming
Centers around instruction in fundamentals of Internet application design, development, and deployment. Includes implementation of server component models, security, and database connectivity using server-side programming. Prerequisite: Programming experience. Lecture 4 hours per week.

ITP 242 4 credits
ASP Server Side Scripting
Provides instruction in creation of ASP.NET web applications to deliver dynamic content to a web site utilizing server controls, web forms, and web services to accomplish complex data access tasks. Prerequisite: ITP 132. Lecture 4 hours per week.

ITP 251 3 credits
Systems Analysis and Design
Focuses on application of information technologies (IT) to system life cycle methodology, systems analysis, systems design, and system implementation practices. Covers methodologies related to identification of information requirements, feasibility in the areas of economic, technical and social requirements, and related issues. Software applications may be used to enhance student skills. Prerequisite: ITP 100. Lecture 3 hours per week.
Library Technology

LBR 105  1 credit
Library Skills for Research
Introduces students to library skills and resources. Employs a laboratory approach to develop skills in the use of library materials. Presents general information about library procedures, specific methods for utilizing varied reference materials including dictionaries, indexes, special subject area tools, on-line information retrieval, classification systems, and the card catalog.

Legal Administration (Paralegal Studies)

LGL 110  3 credits
Introduction to Law and the Legal Assistant
Introduces various areas of law in which a legal assistant may be employed. Includes study of court systems (Virginia and federal) as well as a brief overview of criminal law, torts, domestic relations, evidence, ethics, the role of the legal assistant, and other areas of interest. Prerequisite: Placement into ENG 111. Lecture 3 hours per week.

LGL 115  3 credits
Real Estate Law for Legal Assistants
Studies law of real property and gives in-depth survey of the more common types of real estate transactions and conveyances such as deeds, contracts, leases, and deeds of trust. Focuses on drafting of various instruments and studies the system of recording and search of public documents. Prerequisite or co-requisite: LGL 110. Lecture 3 hours per week.

LGL 117  3 credits
Family Law
Studies elements of a valid marriage, grounds for divorce and annulment, separation, defenses, custody, support, adoptions, and applicable tax consequences. Includes property settlement, pre- and ante-nuptial agreements, pleadings, and rules of procedure. May include specific federal and Virginia consumer laws. Prerequisite or co-requisite: LGL 110. Lecture 3 hours per week.

LGL 118  3 credits
Family Mediation
Explores concepts in the resolution of family disputes, such as a comparison of family mediation with general mediation, custody and visitation, divorce and separation, parenting issues and parenting arrangements, support and property issues, tax consequences of divorce, and ethics of family mediation. Focuses on experiential learning as informed by role-play, demonstration, and critique. Introduces students to the variety of settings in which family mediation processes are utilized, and the ethical and unauthorized practice of law opinions encountered in family mediation practice. Prerequisite: LGL 150. Lecture 3 hours per week.

LGL 125  3 credits
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. May include overview of computer applications and writing projects. Prerequisite: LGL 110. Lecture 3 hours per week.

LGL 126  3 credits
Legal Writing
Studies proper preparation of various legal documents, including legal memoranda, letters, and pleadings. Involves practical applications. May include case and appellate briefs. Prerequisites: ENG 111 and LGL 125. Lecture 3 hours per week.

LGL 130  3 credits
Law Office Administration and Management
Introduces management principles and systems applicable to law firms, including record keeping, disbursements, escrow accounts, billing, and purchasing. May include accounting methods and software packages applicable to law firms. Prerequisite: LGL 110. Lecture 3 hours per week.

Japanese

JPN 15 - 16  2 credits each
Japanese for Business I-II
Introduces students with little or no prior instruction in the Japanese language to the basic vocabulary and conversation skills needed for various situations in business settings, including cultural mores and customs. Prerequisite: JPN 15 for JPN 16 or previous experience with the language. Lecture 2 hours per week.

JPN 17 - 18  2 credits each
Japanese for the Tourist I-II
Introduces spoken Japanese to people intending to travel to a Japanese speaking country. Lecture 2 hours per week.

Law Office Administration and Management

LGL 130  3 credits
Law Office Administration and Management
Introduces management principles and systems applicable to law firms, including record keeping, disbursements, escrow accounts, billing, and purchasing. May include accounting methods and software packages applicable to law firms. Prerequisite: LGL 110. Lecture 3 hours per week.

LGL 150  3 credits
Law and Mediation
Explores concepts, such as conflict resolution, communication and problem solving, as the basis for the exploration of the mediation process. Significant focus is on experiential learning, as informed by initial introduction to the theoretical basis. Students will be introduced to the variety of settings in which mediation processes are utilized, and the utilization of mediation within the Commonwealth of Virginia. Prerequisite or co-requisite: LGL 110. Lecture 3 hours per week.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisite</th>
<th>Hours per week</th>
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</thead>
<tbody>
<tr>
<td>LGL 200</td>
<td>1</td>
<td>Ethics for the Legal Assistant</td>
<td>Examines general principles of ethical conduct applicable to legal assistants. Includes the application of rules of ethics to the practicing legal assistant. Prerequisite or co-requisite: LGL 110. Lecture 1 hour per week.</td>
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<tr>
<td>LGL 215</td>
<td>3</td>
<td>Torts</td>
<td>Studies fundamental principles of the law of torts. May include preparation and use of pleadings and other documents involved in the trial of a civil action. Emphasizes personal injury, products liability, and malpractice cases. Prerequisite: LGL 110. Lecture 3 hours per week.</td>
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<tr>
<td>LGL 216</td>
<td>3</td>
<td>Trial Preparation and Discovery Practice</td>
<td>Examines the trial process, including the preparation of a trial notebook, pretrial motions, and orders. May include preparation of interrogatories, depositions, and other discovery tools used in assembling evidence in preparation for the trial or an administrative hearing. Prerequisite: LGL 110. Lecture 3 hours per week.</td>
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<tr>
<td>LGL 218</td>
<td>3</td>
<td>Criminal Law</td>
<td>Focuses on major crimes, including their classification, elements of proof, intent, conspiracy, responsibility, parties, and defenses. Emphasizes Virginia law. May include general principles of applicable constitutional law and criminal procedure. Prerequisite: LGL 110. Lecture 3 hours per week.</td>
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<tr>
<td>LGL 225</td>
<td>3</td>
<td>Estate Planning and Probate</td>
<td>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. Prerequisite: LGL 110. Lecture 3 hours per week.</td>
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<tr>
<td>LGL 226</td>
<td>3</td>
<td>Real Estate Abstracting</td>
<td>Reviews aspects of abstracting title to real estate, recordation of land transactions, liens, grantor-grantee indices, warranties, covenants, restrictions, and easements. Prerequisite: LGL 115. Lecture 3 hours per week.</td>
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<tr>
<td>LGL 230</td>
<td>3</td>
<td>Legal Transactions</td>
<td>Presents an in-depth study of general contract law, including formation, breach, enforcement, and remedies. May include an overview of UCC sales, commercial paper, and collections. Prerequisite or co-requisite: LGL 110. Lecture 3 hours per week.</td>
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<tr>
<td>LGL 235</td>
<td>3</td>
<td>Legal Aspects of Business Organizations</td>
<td>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 the organization and operation of businesses. Prerequisite: LGL 110. Lecture 3 hours per week.</td>
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<tr>
<td>LGL 238</td>
<td>3</td>
<td>Bankruptcy</td>
<td>Provides a practical understanding of non-bankruptcy alternatives and the laws of bankruptcy including Chapters 7, 11, 12 and 13 of the Bankruptcy Code. Emphasis will be placed on preparing petitions, schedules, statements and other forms. Prerequisite or co-requisite: LGL 110. Lecture 3 hours per week.</td>
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<tr>
<td>LGL 250</td>
<td>3</td>
<td>Immigration Law</td>
<td>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. Prerequisite or co-requisite: LGL 110. Lecture 3 hours per week.</td>
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<tr>
<td>MAR 120</td>
<td>3</td>
<td>Introduction to Ship Systems</td>
<td>Introduces basic aspects of shipboard work, including: shipboard jobs, shipboard safety, ship classes, knot tying, ships nomenclature, compartmentation, basic applied math skills, basic hand tools, and working in confined spaces. Provides introductory information regarding career options in the shipbuilding/repair Industry with information on career pathways and registered apprenticeship opportunities in the region. Lecture 3 hours per week.</td>
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<tr>
<td>MAR 130</td>
<td>3</td>
<td>Marine Maintenance Mechanics</td>
<td>Introduces the various subjects comprising the study of mechanics to meet the unique requirements of marine practice. Includes basic nomenclature, construction and function of hulls, motive power principles, propellers, steering systems, controls, electrical equipment, instruments, and accessories. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
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<tr>
<td>MAR 137</td>
<td>4</td>
<td>Basic Marine Electrical Circuits</td>
<td>Focuses on basic electrical circuits common to small boat operations. Includes fundamentals of generators, alternators and their regulators, storage batteries, lighting systems instruments, protective devices, and all other primary power circuits, and the proper methods of installation, testing, troubleshooting, and repair. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.</td>
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<tr>
<td>MAR 140</td>
<td>4</td>
<td>Introduction to Hydraulics and Hydraulic Systems</td>
<td>Focuses on the fundamentals of basic symbols and diagrams of fluid power circuits. Includes control circuits from single motion to multiple interlocks, selection and use of common hydraulic components, operation and maintenance of shipboard pumps to include fuel transfer, raw water, fresh water, deck power, bilge and ballast, and sanitary electrical control of hydraulic circuits by switches, relays and solenoids. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.</td>
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<tr>
<td>MAR 157</td>
<td>4</td>
<td>Small Outboard Engine Service</td>
<td>Focuses on the construction, theory of operation, maintenance and repair of small outboard motors. Includes modern diagnostic and test procedures, trouble shooting and repair followed by actual test tank operation. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.</td>
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</table>
## COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Code</th>
<th>Credits</th>
<th>Title</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>MAR 158</td>
<td>4</td>
<td>Inboard Engine Service</td>
<td>Focuses on maintenance, repair and overhaul of modern gasoline inboard engines, drive components and stern drives. Stresses water diagnosis and test procedures. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.</td>
</tr>
<tr>
<td>MAR 159</td>
<td>4</td>
<td>Large Outboard Engine Service</td>
<td>Focuses on the construction, theory of operation, maintenance and repair of larger outboard motors. Includes conventional D.C. battery charging systems and alternator theory, operation and maintenance, conventional and capacitive discharge ignition system, hydraulic system, modern diagnostic and test procedures, trouble shooting and repair followed by actual test tank operation. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.</td>
</tr>
<tr>
<td>MAR 160</td>
<td>3</td>
<td>Marine Electrical for Maritime Vessels</td>
<td>Focuses on basic electrical circuits common to maritime vessels electrical systems. Includes fundamentals of AC power plants, electrical and lighting circuits, protective devices, and all other primary power circuits, and the proper methods of installation, testing, trouble shooting, and repair. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>MAR 165</td>
<td>4</td>
<td>Stern Drive Transmission Service</td>
<td>Teaches the fundamentals of stern drive marine propulsion units versus conventional shaft and propeller configurations. Stresses differences in shafting, bearings, lubrication, and steering. Includes proper methods of operation and maintenance; also minor and major repair operations to include complete disassembly, inspection and trouble-shooting and repair. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.</td>
</tr>
<tr>
<td>MAR 210</td>
<td>4</td>
<td>Marine Electronics for Maritime Vessels</td>
<td>Focuses on theory of operation, service and repair of marine electronic systems. Includes control systems, navigation, radar, GPS, HF, VHF, satellite communications, lightning and corrosion protection systems. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>MDA 100</td>
<td>1</td>
<td>Introduction to Medical Assisting</td>
<td>Introduces the student to the medical practice environment. Stresses the responsibilities of the humanistic approach in the rendering of health care. Prerequisite: Instructor permission. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>MDA 101</td>
<td>4</td>
<td>Medical Assistant Science I</td>
<td>Provides an in-depth study of medical terminology, anatomy and physiology and pathology for the medical assistant. Focuses on clinical application and decision making in the health care environment. Prerequisite: Instructor permission. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>MDA 102</td>
<td>2</td>
<td>Medical Assistant Science II</td>
<td>Prepares students to perform patient-care procedures including, but not limited to, respiratory care procedures, basic nursing arts, equipment maintenance, and patient teaching. Prerequisite: Instructor permission. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>MDA 103</td>
<td>2</td>
<td>Medical Assistant Science III</td>
<td>Prepares students to perform clinical assistant skills and emergency care procedures and to meet the state requirements for licensure in radiography, including basic life support, bandage application, physical assessment of patient, surgical asepsis, and basic diagnostic techniques. Prerequisite: Instructor permission. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>MDA 104</td>
<td>3</td>
<td>Medical Assistant Science IV</td>
<td>Prepares students to perform diagnostic tests and assist with physical examinations including ECG administration, basic pulmonary function, testing, catheterization and assisting with minor surgery including sterilization. basic radio logic procedures, ECG administration, basic pulmonary functions, and allergy testing. Prerequisite: Instructor permission. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>MDA 107</td>
<td>2</td>
<td>Pharmacology for Medical Assistants</td>
<td>Focuses on the administration of medications by the medical assistant. Introduces general principles of drug action, pharmacology of the major drug classifications, and drug effects. Prerequisite: Instructor permission. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>MDA 203</td>
<td>3</td>
<td>Medical Office Procedures</td>
<td>Instructs students in the practice of the management of a medical office in areas such as receptionist duties, telephone techniques, appointment scheduling, verbal and written communications, medical and non-medical record management. Explains library and editorial duties, inventory, care of equipment and supplies, security, office maintenance, management responsibilities, placement, and professional ethics and professionalism. Prerequisite: Instructor permission. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>MDA 207</td>
<td>2</td>
<td>Medical Law and Ethics</td>
<td>Instructs students in the legal relationship of the physician, patient, and medical assistant, professional liabilities, Medical Practice Acts, professional attitudes and behavior and the types of medical practice. Also includes a basic history of medicine. Prerequisite: Instructor permission. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>MDA 208</td>
<td>2</td>
<td>Medical Office Coding</td>
<td>Introduces students to ICD-9 and CPT-4 classification coding systems used in physician offices, hospitals, and ambulatory care settings. Prerequisite: Instructor permission. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.</td>
</tr>
<tr>
<td>MDA 209</td>
<td>2</td>
<td>Medical Office Insurance</td>
<td>Focuses on various medical insurance policies with in-depth study of health insurance and managed care including capitation versus fee for service in the HMO area. Discusses managed care companies in this area and their requirements. Prerequisite: Instructor permission. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.</td>
</tr>
</tbody>
</table>
of materials subjected to external stresses. Addresses as required the earth’s limited material resources, energy efficient materials, dependence on foreign sources of materials, material systems, thermal processing, and electronic-related materials. Lecture 3 hours per week.

MEC 120 3 credits
Principles of Machine Technology
Studies fundamental machine operations and practices, including layout, measuring devices, hand tools, drilling, reaming, turning between centers, cutting tapers and threads, and milling; fabrication of mechanical parts on drill press, lathe and mill. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

MEC 126 3 credits
Computer Programming for Technologists
Introduces computer software and programming. Covers programming for the microcomputer using high level languages. Teaches computer solutions of mathematical problems in applications such as circuit analysis and static equilibrium. Prerequisite: ELE 150. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MEC 131 3 credits
Mechanics I - Statics for Engineering Technology
Teaches Newton’s laws, resultants and equilibrium of force systems, trusses and frames, determination of centroids, and distributed loads and moments of inertia. Introduces dry friction and force systems in space. Prerequisite: MTH 116 or MTH 164. Lecture 3 hours per week.

MEC 132 3 credits
Mechanics II - Strength of Materials for Engineering Technology
Teaches the concepts of stress and strain. Provides an analysis of stresses and deformations in loaded members, connectors, shafts, beams, columns, and combined stress. Prerequisite: MEC 131. Lecture 3 hours per week.

MEC 268 3 credits
Fluid Power - Hydraulic Systems
Studies hydraulic components and their integration into complex systems including system analysis and trouble-shooting. Introduces design considerations necessary for repair and modification. Covers closed loop control and proportional valves with electronic control. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MEC 269 3 credits
Fluid Power - Pneumatic Systems
Teaches pneumatic components, systems and trouble analysis. Introduces basic design for modification and repair. Covers open-loop control, fluidics, robotics and computer controls. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

Mental Health

MEN 135 3 credits
Human Services and the Law
Examines current issues in mental health and impact of federal and state laws on delivery of services. Considers issues of civil commitment of the mentally ill and confidentiality and rights of clients. Lecture 3 hours per week.

Marketing

MKT 100 3 credits
Principles of Marketing
Presents principles, methods, and problems involved in marketing to consumers and organizational buyers. Discusses problems and policies connected with distribution and sale of products, pricing, promotion, and buyer motivation. Examines variations of marketing research, legal, social, ethical, e-commerce, and international considerations in marketing. Lecture 3 hours per week.

MKT 110 3 credits
Principles of Selling
Presents a fundamental, skills-based approach to selling and relationship building. Emphasizes learning effective interpersonal communication skills in all areas of the sales process through skill-building activities. Examines entry-level sales careers in retailing, wholesaling, services and industrial selling. Lecture 3 hours per week.
## Course Descriptions

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>MKT 160</td>
<td>3 credits</td>
<td>Marketing for Small Business</td>
<td>Presents the development of the marketing mix for a small business. Includes areas such as product development, pricing, promotion, salesmanship, customer relations, and consumer behavior. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>MKT 216</td>
<td>3 credits</td>
<td>Retail Organization and Management</td>
<td>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.</td>
</tr>
<tr>
<td>MKT 220</td>
<td>3 credits</td>
<td>Principles of Advertising</td>
<td>Emphasizes the role of advertising in the marketing of goods, services, and ideas. Discusses the different uses of advertising; types of media; how advertising is created; agency functions; and legal, social, and economic aspects of the industry. Introduces advertising display, copy and art work preparation, printing and selection of media. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>MKT 260</td>
<td>3 credits</td>
<td>Customer Service Management</td>
<td>Examines the role of customer service in achieving a firm’s long-term goals; discusses the basic principles of effective customer service; explores the tasks and responsibilities of a customer service manager. Includes such topics as purpose of customer service; establishment of customer service goals and policies; recruitment, selection and training of customer service employees; motivation techniques; empowering employees for better decision making; and evaluation of customer service employees and program. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>MKT 271</td>
<td>3 credits</td>
<td>Consumer Behavior</td>
<td>Examines the various influences affecting consumer buying behavior before, during, and after product purchases. Describes personal, societal, cultural, environmental, group, and economic determinants on consumer buying. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>MKT 276</td>
<td>3 credits</td>
<td>International Marketing Management</td>
<td>Presents the process of marketing and management and applies it to the marketing of products within the global marketplace. Introduces the student to activities involving the gathering and analyzing of information in the development and implementation of an international marketing plan. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>MKT 282</td>
<td>3 credits</td>
<td>Principles of E-Commerce</td>
<td>Studies on-line business strategies, and the hardware and software tools necessary for Internet commerce. Includes the identification of appropriate target segments, the development of product opportunities, pricing structures, distribution channels and execution of marketing strategies. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>MSC 111</td>
<td>2 credits</td>
<td>Introduction to Army ROTC</td>
<td>Covers the first year of general military science: organization of the Army and ROTC, U.S. Army and national security, individual weapons, marksmanship, and leadership laboratory. Courses offered only in cooperation with four-year colleges authorized to offer Army ROTC programs. Part I of II. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>MSC 112</td>
<td>2 credits</td>
<td>Introduction to Leadership</td>
<td>Covers the first year of general military science: organization of the Army and ROTC, U.S. Army and national security, individual weapons, marksmanship, and leadership laboratory. Courses offered only in cooperation with four-year colleges authorized to offer Army ROTC programs. Part I of II. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>MSC 125</td>
<td>3 credits</td>
<td>Sea Power and Maritime Affairs</td>
<td>Provides an in-depth assessment of the broad principles, concepts and elements of sea power with historical and modern applications to the United States and other world powers. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>MSC 130</td>
<td>3 credits</td>
<td>Introduction to Naval Science</td>
<td>Provides an introduction for midshipmen to the organization of the naval service, the varied career opportunities available, the long-held customs and traditions of the service, basic leadership, ethics and character development, the duties of a junior officer and Navy policies on wellness issues. Prepares NROTC midshipmen for their first experience onboard a Navy ship by imparting basic information concerning shipboard procedures and safety. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>MSC 132</td>
<td>1 credit</td>
<td>Naval Science Laboratory I</td>
<td>Introduces basic military formations, drill movements, commands, customs, courtesies, honors and inspections. Covers applications of naval service concepts and principles in cruise preparation, shipboard safety, security, equal opportunity and military justice. First year Naval Science students only. May be repeated for credit. Co-requisite: MSC 125 and/or MSC 130. Laboratory 2 hours per week.</td>
</tr>
<tr>
<td>MSC 211</td>
<td>2 credits</td>
<td>Leadership Skills</td>
<td>Focuses on the second year of general military science. American military history, introduction to operations and basic tactics, map and aerial photo reading, and leadership laboratory. Courses offered only in cooperation with four-year colleges authorized to offer Army ROTC programs. Part I of II. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>MSC 212</td>
<td>2 credits</td>
<td>Foundations of the Military Profession</td>
<td>Focuses on the second year of general military science. American military history, introduction to operations and basic tactics, map and aerial photo reading, and leadership laboratory. Courses offered only in cooperation with four-year colleges authorized to offer Army ROTC programs. Part I of II. Lecture 2 hours per week.</td>
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### Course Descriptions

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<tr>
<td>MSC 230</td>
<td>3</td>
<td>Naval Ship Systems I: Naval Engineering</td>
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<td>Provides an understanding of the physical properties and laws of thermodynamic systems, shipboard auxiliary systems, main propulsion, and electrical theory of shipboard power generation and distribution systems. Examines the criteria of ship design for seaworthiness, structural integrity and operational employment, the principles of fluid dynamics and shipboard safety. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>MSC 231</td>
<td>3</td>
<td>Naval Ship Systems II: Weapons</td>
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<td>Provides an in-depth understanding of Naval Weapons, their associated systems, and the integration of these weapon systems into the overall naval strategy. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>MSC 232</td>
<td>1</td>
<td>Naval Science Laboratory II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Builds on skills and knowledge of basic military formations, drill movements, commands, customs, courtesies, honors and inspections. Covers applications of naval service concepts and principles to ship design for seaworthiness, shipboard safety, systems administration, and naval strategy. Second year Naval Science students only. May be repeated for credit. Co-requisite: MSC 230 and/or MSC 231. Laboratory 2 hours per week.</td>
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#### Mathematics

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<tr>
<th>Course Code</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MTH 1</td>
<td>1</td>
<td>Developmental Mathematics</td>
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<td>Designed to bridge the gap between a weak mathematical foundation and the knowledge necessary for the study of mathematics courses in technical, professional, and transfer programs. Topics may include arithmetic, algebra, geometry, and trigonometry. Credits not applicable toward graduation. Lecture 1 hour per week.</td>
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<tr>
<td>MTH 2</td>
<td>4</td>
<td>Arithmetic</td>
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<td>Covers arithmetic principles and computations including whole numbers, fractions, decimals, percents, measurement, graph interpretation, geometric forms, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Lecture 4 hours per week.</td>
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<tr>
<td>MTH 3</td>
<td>5</td>
<td>Algebra I</td>
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<td>Covers the topics of Algebra I including real numbers, equations and inequalities, exponents, polynomials, Cartesian coordinate system, rational expressions, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Prerequisites: Placement Test and Diagnostic Test. Lecture 5 hours per week.</td>
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<tr>
<td>MTH 3A</td>
<td>1</td>
<td>Modular Algebra I</td>
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<tr>
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<td></td>
<td>Covers the topics of Algebra I including equations, inequalities and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Prerequisites: Placement Test and Diagnostic Test. Lecture 1 hour per week.</td>
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<tr>
<td>MTH 3B</td>
<td>1</td>
<td>Modular Algebra II</td>
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<td></td>
<td>Covers the topics of Algebra I including Cartesian coordinate system. Develops the mathematical proficiency necessary for selected curriculum entrance. Prerequisites: Placement Test and Diagnostic Test. Lecture 1 hour per week.</td>
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<tr>
<td>MTH 3C</td>
<td>1</td>
<td>Modular Algebra III</td>
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<tr>
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<td></td>
<td>Covers the topics of Algebra I including factoring polynomials. Develops the mathematical proficiency necessary for selected curriculum entrance. Prerequisites: Placement Test and Diagnostic Test. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>MTH 3D</td>
<td>1</td>
<td>Modular Algebra IV</td>
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<td>Covers the topics of Algebra I including radicals and exponents. Develops the mathematical proficiency necessary for selected curriculum entrance. Prerequisites: Placement Test and Diagnostic Test. Lecture 1 hour per week.</td>
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<tr>
<td>MTH 4</td>
<td>5</td>
<td>Algebra II</td>
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<td>Expands upon the topics of Algebra I including rational expressions, radicals and exponents, quadratic equations, systems of equations, and applications. Develops the mathematical proficiency necessary for selected curriculum entrance. Credits not applicable toward graduation. Prerequisites: Placement Test and Diagnostic Test. Lecture 5 hours per week.</td>
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<tr>
<td>MTH 4A</td>
<td>1</td>
<td>Modular Algebra II</td>
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<td>Covers topics of Algebra II including systems of equations. Develops the mathematical proficiency necessary for selected curriculum entrance. Prerequisites: Diagnostic Test and Placement Test. Lecture 1 hour per week.</td>
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<tr>
<td>MTH 4B</td>
<td>1</td>
<td>Modular Algebra III</td>
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<td>Covers topics of Algebra II including radicals and exponents. Develops the mathematical proficiency necessary for selected curriculum entrance. Prerequisites: Diagnostic Test and Placement Test. Lecture 1 hour per week.</td>
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<tr>
<td>MTH 4C</td>
<td>1</td>
<td>Modular Algebra IV</td>
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<td>Covers topics of Algebra II including systems of equations. Develops the mathematical proficiency necessary for selected curriculum entrance. Prerequisites: Diagnostic Test and Placement Test. Lecture 1 hour per week.</td>
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<tr>
<td>MTH 4D</td>
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<td>Modular Algebra V</td>
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<td></td>
<td>Covers topics of Algebra II including radicals and exponents. Develops the mathematical proficiency necessary for selected curriculum entrance. Prerequisites: Diagnostic Test and Placement Test. Lecture 1 hour per week.</td>
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### COURSE DESCRIPTIONS

<table>
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<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Description</th>
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</table>
| MTH 103-104 | 3 credits each | Applied Technical Mathematics I-II  
Prepares students for further study in technical fields. Covers algebra, geometry, and trigonometry. Prerequisites: A placement recommendation for MTH 103 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 115-116 | 3 credits each | Technical Mathematics I-II  
Introduces students to the application of mathematics in technical fields. Covers algebra, geometry, and trigonometry. Prerequisites: A placement recommendation for MTH 115 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 121 | 3 credits | Fundamentals of Mathematics I  
Introduces students to the fundamentals of algebra, geometry, and trigonometry. Prerequisites: A placement recommendation for MTH 121 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 126 | 3 credits | Mathematics for Allied Health  
Introduces students to the fundamentals of mathematics relevant to allied health professions. Prerequisites: A placement recommendation for MTH 126 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 150 | 3 credits | Topics in Geometry  
Introduces students to the fundamentals of plane and solid geometry. Prerequisites: A placement recommendation for MTH 150 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 152 | 3 credits | Mathematics for the Liberal Arts II  
Covers the fundamentals of plane and solid geometry, vectors, analytic geometry, and complex numbers. Prerequisites: A placement recommendation for MTH 152 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 158 | 3 credits | College Algebra  
Covers the fundamentals of plane and solid geometry, vectors, analytic geometry, and complex numbers. Prerequisites: A placement recommendation for MTH 158 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 163 | 3 credits | Precalculus I  
Covers the fundamentals of plane and solid geometry, vectors, analytic geometry, and complex numbers. Prerequisites: A placement recommendation for MTH 163 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 164 | 3 credits | Precalculus II  
Covers the fundamentals of plane and solid geometry, vectors, analytic geometry, and complex numbers. Prerequisites: A placement recommendation for MTH 164 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 166 | 5 credits | Precalculus with Trigonometry  
Covers the fundamentals of plane and solid geometry, vectors, analytic geometry, and complex numbers. Prerequisites: A placement recommendation for MTH 166 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 167 | 5 credits | Calculus with Analytic Geometry I  
Covers the fundamentals of plane and solid geometry, vectors, analytic geometry, and complex numbers. Prerequisites: A placement recommendation for MTH 167 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 173 | 5 credits | Calculus with Analytic Geometry II  
Covers the fundamentals of plane and solid geometry, vectors, analytic geometry, and complex numbers. Prerequisites: A placement recommendation for MTH 173 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 174 | 4 credits | Calculus with Analytic Geometry III  
Covers the fundamentals of plane and solid geometry, vectors, analytic geometry, and complex numbers. Prerequisites: A placement recommendation for MTH 174 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
| MTH 175 | 4 credits | Statistics  
Covers the fundamentals of plane and solid geometry, vectors, analytic geometry, and complex numbers. Prerequisites: A placement recommendation for MTH 175 and one unit of high school mathematics or equivalent. Lecture 3 hours per week. |
MTH 279  4 credits
Ordinary Differential Equations
Introduces ordinary differential equations. Includes first-order differential equations, second and higher-order ordinary differential equations with applications. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 174 or equivalent. Lecture 4 hours per week.

Music

MUS 101-102  3 credits each
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 credits each
Music Theory I-II
Discusses elements of musical construction of scales, intervals, triads, and chord progressions. Develops ability to sing at sight and write from dictation. Introduces the analysis of the Bach chorale style. Expands facility with harmonic dictation and enables the student to use these techniques at the keyboard. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

MUS 121-122  3 credits each
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 131-132  2 credits each
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 136  2 credits
Applied Music - Voice
Teaches singing, proper breath control, diction, and development of tone. Studies the standard vocal repertoire. Two half-hour lessons per week. 4 hours practice required. Prerequisite: Divisional approval.

MUS 137  1 credit
Chorus Ensemble
Ensemble consists of performance from the standard repertoire, including study of ensemble techniques and interpretation. Prerequisite: Divisional approval. May be repeated for credit. Laboratory 3 hours per week.

MUS 141-142  2 credits each
Class Piano I-II
Offers the beginning piano student activities in learning musical notation, 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 145  2 credits
Applied Music - Keyboard
Teaches piano, organ, harpsichord, or synthesizer. Studies the standard repertoire. Two half-hour lessons per week. 4 hours practice required. Prerequisite: Divisional approval.

MUS 155  2 credits
Applied Music - Woodwinds
Teaches fundamentals of the woodwind instruments. Studies the standard repertoire. Two half-hour lessons per week. 4 hours practice required. Prerequisite: Divisional approval.

MUS 159  3 credits
Improvisational Techniques
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. Prerequisite: selected Applied Music or freshman level proficiency. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

MUS 165  2 credits
Applied Music - Strings
Teaches fundamentals of string instruments, harp or guitar. Studies the standard repertoire. Two half-hour lessons per week. 4 hours practice required. Prerequisite: Divisional approval.

MUS 175  2 credits
Applied Music - Brass
Teaches fundamentals of brass instruments. Studies the standard repertoire. Two half-hour lessons per week. 4 hours practice required. Prerequisite: Divisional approval.

MUS 185  2 credits
Applied Music - Percussion
Teaches fundamentals of percussion instruments. Studies the standard repertoire. Two half-hour lessons per week. 4 hours practice required. Prerequisite: Divisional approval.

MUS 211-212  4 credits each
Advanced Music Theory I-II
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. Prerequisite: MUS 111-112 or equivalent. Lecture 3 hours. Laboratory 2 hours. Total 5 hours per week.

MUS 221-222  3 credits each
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 236  2 credits
Advanced Applied Music - Voice
Continues MUS 136. Two half-hour lessons per week. 4 hours practice required. Prerequisite: Divisional approval.

MUS 237  1 credit
Chorus Ensemble
Continues MUS 137. Laboratory 3 hours per week.
COURSES – M

MUS 245 2 credits
Advanced Applied Music - Keyboard
Continues MUS 145. Two half-hour lessons per week. 4 hours practice required. Prerequisite: Divisional approval.

MUS 265 2 credits
Advanced Applied Music - Strings
Continues MUS 165. Two half-hour lessons per week. 4 hours practice required. Prerequisite: Divisional approval.

Natural Science

NAS 115 3 credits
Science in the Workplace
Explores concepts of basic physical sciences as they apply to the workplace. Presents scientific methods, energy, heat, and temperature as related to various materials used in the workplace. Designed for trade workers that work with a variety of materials in many different applications. Assists workers with the physical properties of materials as they relate to various manufacturing methods. Lecture 3 hours per week.

NAS 120 3 credits
Introductory Meteorology
Studies cloud formation, weather maps, forecasting, and wind systems with emphasis on local weather patterns. Lecture 3 hours per week.

NAS 125 4 credits
Meteorology
Presents a non-technical 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 4 credits
Elements of Astronomy
Covers history of astronomy and its recent developments. Stresses the use of astronomical instruments and measuring techniques and includes the study and observation of the solar system, stars, and galaxies. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

NAS 131-132 4 credits each
Astronomy I-II
Studies the major and minor bodies of the solar system, stars and nebulae of the Milky Way, and extragalactic objects. Examines life and death of stars, origin of the universe, history of astronomy, and instruments and techniques of observation. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

NAS 177 2 credits
Upper Extremity Anatomy and Kinesiology
Focuses on the upper extremity anatomy to include the entire shoulder girdle and the impact of pathology and injury related to the skeletal, nervous and muscular systems. Covers planes of movement of the upper extremity associated with basic physics and types of levers. Lecture 2 hours per week.

NAS 215 6 credits
Man in His Environment
Analyzes ecological and technological forces at work in today’s world including air and water pollution, pesticides, and land use. Lecture 4 hours per week. Recitation and laboratory 6 hours per week. Total 10 hours per week.

NUR 108 6 credits
Nursing Principles and Concepts I
Introduces principles of nursing, health and wellness concepts, and the nursing process. Identifies nursing strategies to meet the multidimensional needs of individuals. Includes math computational skills, basic computer instruction related to the delivery of nursing care, introduction to the profession of nursing, nursing process, documentation; basic needs related to integumentary system, teaching/learning, stress, psychosocial, safety, nourishment, elimination, oxygenation, circulation, rest, comfort, sensory, fluid and electrolyte and mobility needs in adult clients. Also includes care of the pre/post operative client. Provides supervised learning experience in college nursing laboratories and/or cooperating agencies. Prerequisite: Admission to the Nursing Program. Lecture 3 hours. Laboratory 9 hours. Total 12 hours per week.

NUR 115 6 credits
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. Prerequisite: Admission to Nursing Program. Lecture 4 hours. Laboratory 6 hours. Total 10 hours per week.

NUR 130 3 credits
Physical Assessment and Basic Pharmacology
Teaches a systematic approach to performing physical assessment skills and basic pharmacological concepts. Includes basic principles of data collection and basic analysis using skills of interviewing and techniques of inspection, palpation, percussion and auscultation. Principles of pharmacology include dosage calculations, major drug classifications, drug legislation, legal aspects of medication administration, drug action on specific body systems, and basic computer applications. Provides supervised learning experiences in a college laboratory. Prerequisite: NUR 108. Lecture 1 hour. Laboratory 6 hours. Total 7 hours per week.

NUR 170 4 credits
Essentials of Medical/Surgical Nursing
Focuses on the care of individuals/families requiring medical or surgical treatment. Uses all components of the nursing process with increasing degrees of skill. Includes mathematical 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. Prerequisites: NUR 108 and NUR 130. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.
NUR 180 4 credits
Essentials of Maternal/Newborn Nursing
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. Prerequisite: NUR 170. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

NUR 201 4 credits
Psychiatric Nursing
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. Prerequisite: NUR 180. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

NUR 255 3 credits
Nursing Organization and Management
Addresses management and organizational skills as they relate to nursing. Emphasizes group dynamics, resolution of conflicts, and leadership styles. Prerequisite: NUR 271. Lecture 3 hours per week.

NUR 270 4 credits
Essential Nursing Concepts II
Focuses on complex nursing care of individuals, families and/or groups in various stages of development who are experiencing alterations related to their biopsychosocial needs. 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 with patients having altered transport to and from cells related to anemia, hemophilia, hypertension, coronary artery disease, heart failure, cystic fibrosis; abnormal proliferation and maturation of cells related to cancer. Provides supervised learning experience in college nursing laboratories and/or cooperating agencies. Prerequisite: NUR 270. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

NUR 271 4 credits
Essential Nursing Concepts III
Focuses on complex nursing care of individuals, families and/or groups in various stages of development who are experiencing alterations related to their biopsychosocial needs. 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 with patients having altered transport to and from cells related to glomerulonephritis; multi-system disorders. Provides supervised learning experience in college nursing laboratories and/or cooperating agencies. Prerequisite: NUR 270. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

NUR 272 4 credits
Essential Nursing Concepts IV
Focuses on complex 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 with patients having altered transport to and from cells related to tuberculosis, chronic obstructive pulmonary disease, croup, congenital heart defects, peripheral vascular disease, brain attack, chest injuries; altered neural regulatory mechanisms related to meningitis, spinal cord injury, spina bifida, myelomeningocele, scoliosis, seizure disorder, Parkinson’s disease; altered sensory motor function related to multiple sclerosis. Provides supervised learning experience in college nursing laboratories and/or cooperating agencies. Prerequisite: NUR 271. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

NUR 273 4 credits
Essential Nursing Concepts V
Focuses on complex 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 with patients having abnormal proliferation and maturation of cells related to cancer; altered fluid and electrolyte imbalance related to burns, renal failure, nephritic syndrome, glomerulonephritis; multi-system disorders.

NUR 274 1 credit
Nursing Civic Responsibility
Focuses upon critical reflective learning that integrates the core components of the associate degree nurse through community services that enhance civic and social responsibilities. Prerequisite: NUR 271. Co-requisite: NUR 272. Laboratory 3 hours per week.

OCT 100 3 credits
Introduction to Occupational Therapy
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 health care team. Prerequisite: Admission into the Occupational Therapy Program. Lecture 3 hours per week.

OCT 201 3 credits
Occupational Therapy with Psychosocial Dysfunction
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 credits
Occupational Therapy with Physical Disabilities
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 credits
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 credits
Therapeutic Media
Develops proficiency in various crafts used as treatment modalities in occupational therapy. Emphasizes how to analyze, adapt and teach select activities as well as how to equip and maintain a safe working environment. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

OCT 206  3 credits
Dyadic and Group Dynamics
Provides theory and activity to develop positive interpersonal relationships and effective communication ability. Includes non-verbal communication, listening, observation, interviewing and documentation. Covers group process and its application to occupational therapy, including types of therapeutic groups, group membership roles, leadership skills and forces which affect group function and decision making. Lecture 3 hours per week.

OCT 207  4 credits
Therapeutic Skills
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 3 hours. Laboratory 3 hours. Total 6 hours per week.

OCT 208  3 credits
Occupational Therapy Service Management
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 credits
Assistive Technology in Occupational Therapy
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 220  2 credits
Occupational Therapy for the Adult
Reviews normal changes related to aging and factors contributing to dysfunction. Analyzes intervention strategies for common problems, including wellness programs and home modifications. Reviews relevant legislation, continuum of care and caregiver issues. Lecture 2 hours per week.

OCT 225  4 credits
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 lifespan. Prerequisite: BIO 141. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

Public Service
PBS 265  3 credits
Interviewing
Analyzes the principles and techniques of interviewing in various organizational settings. Examines reliability and validity of information gained through information interviewing, employment and selection interviewing, performance appraisal and disciplinary interviewing, as well as counseling interviewing. Lecture 3 hours per week.

Physical Education
PED 100  2 credits
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 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 101-102  2 credits each
Fundamentals of Physical Activity I-II
Presents principles underlying the components of physical fitness. Utilizes conditioning activities involving cardiovascular strength and endurance, respiratory efficiency, muscular strength, and flexibility. May include fitness assessment, nutrition and weight control information, and concepts of wellness. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 103  2 credits
Aerobic Fitness I
Develops cardiovascular fitness though activities designed to elevate and sustain heart rates appropriate to age and physical condition. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 105  2 credits
Aerobic Dance I
Focuses on physical fitness through dance exercises. Emphasizes the development of cardiovascular endurance, muscular endurance, and flexibility. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.
COURSE DESCRIPTIONS

PED 109 2 credits
Yoga
Focuses on the forms of yoga training emphasizing flexibility. Special emphasis given to cardiovascular endurance. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 111 2 credits
Weight Training I
Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight training equipment. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 113 2 credits
Lifetime Activities I
Presents lifetime sports and activities. Teaches skills and methods of lifetime sports and activities appropriate to the local season and facilities available. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 116 2 credits
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. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 117 1 credit
Fitness Walking
Teaches content and skills needed to design, implement, and evaluate an individualized program of walking, based upon fitness level. Laboratory 2 hours per week.

PED 123 2 credits
Tennis I
Teaches tennis skills with emphasis on stroke development and strategies for individual and team play. Includes rules, scoring, terminology, and etiquette. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 127 2 credits
Cycling
Introduces cycling techniques, equipment selection, care and maintenance, safety, and physical conditioning. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 129 2 credits
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 1 hour. Laboratory 2 hours. Total 3 hours per week.

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

PED 135 2 credits
Bowling I
Teaches basic bowling skills and techniques, scoring, rules, etiquette, and terminology. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 137-138 2 credits each
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 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 140 2 credits
Water Aerobics
Focuses on cardiovascular endurance, muscular endurance, and flexibility using water resistance. Includes the principles and techniques of aerobic exercise. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 141-142 2 credits each
Swimming I-II
Introduces skills and methods of swimming strokes. Focuses on safety and physical conditioning. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 154 2 credits
Volleyball
Introduces volleyball skills, techniques, strategies, rules, and scoring. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 156 2 credits
Softball
Emphasizes softball skills, techniques, strategies, and rules. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 170 2 credits
Tai Chi I
Develops an understanding of the theories and practices of Tai Chi. Explores the energy of exercise that will tone muscles, improve circulation and increase flexibility and balance. Discusses history and philosophy of exercise and relaxation techniques for stress reduction. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 171 2 credits
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 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 181 2 credits
Downhill Skiing I
Teaches basic skills of downhill skiing; selection and use of equipment; terminology and safety rules. Includes field experience. Lecture 1 hour. Laboratory 2 hours. Total 3 hours per week.

PED 206 2 credits
Sports Appreciation
Focuses on the history, trends, rules, methods, strategy, and terminology of selected sports activities. Provides student awareness as a spectator and/or participant. Lecture 2 hours per week.
## COURSE DESCRIPTIONS

### Philosophy

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<tr>
<th>Course</th>
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| PHI 101-102  | 3 credits each | 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 credits | Logic I  
Introduces inductive and deductive reasoning with an emphasis on common errors and fallacies. Lecture 3 hours per week. |
| PHI 115      | 3 credits | 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 220      | 3 credits | Ethics  
Provides a systematic study of representative ethical systems. Lecture 3 hours per week. |
| PHI 226      | 3 credits | 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 260      | 3 credits | Studies in Eastern Thinking  
Introduces an in-depth study of the East through a variety of approaches which include music, literature, drama and cinema. Places special emphasis on Chinese and Japanese philosophy and religion, especially Buddhism. Lecture 3 hours per week. |
| PHI 220-222  | 3 credits each | Studio Lighting I-II  
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. Prerequisite: PHT 135. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. |

### Photography

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<tr>
<th>Course</th>
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| PHT 101      | 3 credits | Photography I  
Teaches principles of photography and fundamental camera techniques. Requires outside shooting and laboratory work. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week. |
| PHT 110      | 3 credits | History of Photography  
Surveys important photographers, processes, and historical influences of the nineteenth and twentieth centuries. Lecture 3 hours per week. |
| PHT 126      | 3 credits | Introduction to Video Techniques  
Concentrates on skills necessary to light, edit, and record on video tape. Covers situations such as weddings, meetings, and small corporate productions. Prerequisite: PHT 101. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week. |
| PHT 135      | 3 credits | Electronic Darkroom  
Teaches students to create and manipulate digital photographs. Covers masking, color corrections, and merging of illustrations with photographs. Examines the ethical and property-rights issues which are raised in the manipulation of images. Prerequisite: PHT 101. Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week. |
| PHT 201      | 3 credits | Advanced Photography I  
Provides weekly critiques of students’ work. Centers on specific problems found in critiques. Includes working procedures and critical skills in looking at photographs. Prerequisite: PHT 135. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. |
| PHT 221-222  | 3 credits each | Studio Lighting I-II  
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. Prerequisite: PHT 135. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. |
| PHT 231-232  | 3 credits each | Photojournalism I-II  
Introduces equipment, techniques, skills, and concepts of photojournalism. Teaches photography for features, spot news, and photo essays. Emphasizes editing, captioning, and layout. May require individual projects. Prerequisite: PHT 135. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week. |
| PHT 256      | 3 credits | Communicating Through the Photographic Sequence  
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. |

### Physics

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
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</thead>
</table>
| PHY 100      | 4 credits | Elements of Physics  
Covers basic concepts of physics, including Newtonian mechanics, properties of matter, heat and sound, fundamental behavior of gases, ionizing radiation, and fundamentals of electricity. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. |
| PHY 130      | 3 credits | 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. |
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<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHY 201-202</td>
<td>4 credits each</td>
<td>General College Physics I-II</td>
</tr>
<tr>
<td>PSG 101</td>
<td>4 credits</td>
<td>Polysomnographic Technology I</td>
</tr>
<tr>
<td>PSG 103</td>
<td>3 credits</td>
<td>Polysomnography Record Evaluation</td>
</tr>
<tr>
<td>PSG 104</td>
<td>4 credits</td>
<td>Polysomnography Clinical Procedures I</td>
</tr>
<tr>
<td>PSY 105</td>
<td>3 credits</td>
<td>Psychology of Personal Adjustment</td>
</tr>
<tr>
<td>PSY 116</td>
<td>3 credits</td>
<td>Psychology of Death and Dying</td>
</tr>
<tr>
<td>PSY 125</td>
<td>3 credits</td>
<td>Interpersonal Relationships</td>
</tr>
<tr>
<td>PSY 126</td>
<td>3 credits</td>
<td>Psychology for Business and Industry</td>
</tr>
<tr>
<td>PSY 165</td>
<td>3 credits</td>
<td>Psychology of Human Sexuality</td>
</tr>
<tr>
<td>PSY 166</td>
<td>3 credits</td>
<td>Psychology of Marriage</td>
</tr>
<tr>
<td>PSY 167</td>
<td>3 credits</td>
<td>Psychology of Death and Dying</td>
</tr>
</tbody>
</table>

**Polysomnographic Technology**

*Polysomnographic Technology I*
Surveys the dynamics of normal and abnormal human sleep and the practice of sleep diagnosis and treatment. Studies methods of acquisition, diagnosis, and treatment of sleep disorders. Includes practice in the use of polysomnographic equipment. Familiarizes students with medical terminology, instrumentation setup and calibration, recording and monitoring techniques, documentation, professional issues, and patient-technologist interactions related to polysomnographic technology. Co-requisite: PSG 190. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

*Polysomnography Record Evaluation*
Draws the general principles of analyzing and scoring polysomnographic records. Studies sleep staging, recognition and analysis of various abnormal respiratory and neurophysiologic events, and recognition and elimination of artifact. Includes scoring and analyzing raw data for the purpose of generating full reports. Co-requisite: PSG 164. Lecture 3 hours per week.

*Polysomnography Clinical Procedures I*
Offers a practicum in a functioning Sleep Disorders Center. Provides practice in patient set-up, machine calibrations, equipment usage, Neurophysiological Polysomnographs, BiPAP and CPAP Titration Trials, and patient education under the supervision of Polysomnographic Technicians. Co-requisite: PSG 103. Clinicals 16 hours per week.

**Psychology**

*Psychology of Personal Adjustment*
Introduces psychological principles that contribute to well-adjusted personality. Considers the effects of stress and coping with the problems of everyday life. Lecture 3 hours per week.
## Course Descriptions

### PSY 200  3 credits
**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, learning, memory, motivation, emotion, stress, development, intelligence, personality, psychopathology, therapy, and social psychology. **Lecture 3 hours per week.**

### PSY 201-202  3 credits each
**** Introduction to Psychology I-II
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.**

### PSY 215  3 credits
**Abnormal Psychology**
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. Prerequisites: PSY 200, 201, or 202. **Lecture 3 hours per week.**

### PSY 216  3 credits
**Social Psychology**
Examines individuals in social contexts, their social roles, group processes and intergroup relations. Includes topics such as small group behavior, social behavior, social cognition, conformity, attitudes, and motivation. Prerequisites: PSY 200, 201, or 202. **Lecture 3 hours per week.**

### PSY 219  3 credits
**Cross-Cultural Psychology**
Investigates psychological principles from a cross-cultural perspective. Examines cultural basics for views of reality. Describes topics such as time, space, values, sex-roles, and human development in relation to culture. Prerequisites: PSY 200, 201, or 202. **Lecture 3 hours per week.**

### PSY 220  3 credits
**Introduction to Behavior Modification**
Studies the history of behaviorism and the principles and applications of behavior modification. Emphasizes observation and application of behavior modification principles. **Lecture 3 hours per week.**

### PSY 230  3 credits
**Developmental Psychology**
Studies the development of the individual from conception to death. Follows a life-span perspective on the development of the person’s physical, cognitive, and psychosocial growth. **Lecture 3 hours per week.**

### PSY 231-232  3 credits each
**** Life Span Human Development I-II
Investigates human behavior through the life cycle. Describes physical, cognitive, and psychosocial aspects of human development from conception to death. **Lecture 3 hours per week.**

### PSY 235  3 credits
**Child Psychology**
Studies development of the child from conception to adolescence. Investigates physical, intellectual, social and emotional factors involved in the child’s growth. **Lecture 3 hours per week.**

### PSY 236  3 credits
**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 255  3 credits
**Psychological Aspects of Criminal Behavior**
Studies psychology of criminal behavior. Includes topics such as violent and non-violent crime, sexual offenses, insanity, addiction, white collar crime, and other deviant behaviors. Provides a background for law enforcement occupations. Prerequisites: PSY 125, 200, 201, or 202 or divisional approval. **Lecture 3 hours per week.**

### PSY 265  3 credits
**Psychology of Men and Women**
Examines the major determinants of sex differences. Emphasizes psychosexual differentiation and gender identity from theoretical, biological, interpersonal, and socio-cultural perspectives. Includes topics such as sex roles, socialization, rape, abuse, and androgyny. Prerequisites: PSY 125, 200, 201, or 202. **Lecture 3 hours per week.**

### PTH 105  3 credits
**Introduction to Physical Therapist Assistant**
Introduces the physical therapist assistant student to the field of physical therapy practice and develops basic patient care skills for application in the initial physical therapy clinical experience. Prerequisite: Instructor permission. **Lecture 1 hour. Laboratory 4 hours. Total 5 hours per week.**

### PTH 110  1 credit
**Medical Reporting**
Emphasizes the principles of medical reporting, including the ability to abstract pertinent information from actual medical records. Includes the writing of patient progress notes in standardized formats and medical terminology. Prerequisite: Instructor permission. **Lecture 1 hour per week.**

### PTH 115  4 credits
**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 neurologic 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. Prerequisite: Instructor permission. **Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.**
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>PTH 121-122</td>
<td>5 credits each</td>
<td>Therapeutic Procedures I-II</td>
<td>Prepares the students to properly and safely administer basic physical therapy procedures utilized by physical therapist assistants. The procedures include therapeutic modalities. Procedures may include therapeutic exercise, electrotherapy and cardiopulmonary rehabilitation. Prerequisite: Instructor permission. Lecture 3 hours. Laboratory 6 hours. Total 9 hours per week.</td>
</tr>
<tr>
<td>PTH 131</td>
<td>2 credits</td>
<td>Clinical Education</td>
<td>Provides supervised instruction in the delivery of physical therapy in one of various clinical settings. Emphasizes the practice of all therapeutic skills learned in the first year, including direct patient care skills and all forms of communication. Prerequisite: Instructor permission. Laboratory 10 hours per week.</td>
</tr>
<tr>
<td>PTH 210</td>
<td>2 credits</td>
<td>Psychological Aspects of Therapy</td>
<td>Focuses on the psychological reactions and sociological impact of illness and injury in clients and their families, and among health caregivers who work with them. Examines individual self-identity and the nature of changing client/therapist relationships across the life span. Prerequisite: Instructor permission. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>PTH 225</td>
<td>5 credits</td>
<td>Rehabilitation Procedures</td>
<td>Focuses on treatment techniques typical of long-term rehabilitation, e.g., the rehabilitation of congenital, neurological, and disfigurement associated with chronic injury and disease. Prerequisite: Instructor permission. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.</td>
</tr>
<tr>
<td>PTH 226</td>
<td>4 credits</td>
<td>Therapeutic Exercise</td>
<td>Emphasizes the basic principles underlying different approaches to exercise including rationale for treatment and may include neurological treatments such as a simple facilitation and inhibitory techniques and the teaching of home programs. Prerequisite: Instructor permission. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.</td>
</tr>
<tr>
<td>PTH 251-252</td>
<td>3 credits and 4 credits</td>
<td>Clinical Practicum I-II</td>
<td>Provides instruction in local health care facilities in the actual administration of physical therapy treatments under the supervision of licensed physical therapists. Provides experience in a variety of clinical settings. Prerequisite: Instructor permission. Laboratory 15-20 hours per week.</td>
</tr>
<tr>
<td>PTH 255</td>
<td>2 credits</td>
<td>Seminar in Physical Therapy</td>
<td>Includes preparation for licensing examination, specialized lectures, and preparation of a student project. Prerequisite: Instructor permission. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>RAD 105</td>
<td>3 credits</td>
<td>Introduction to Radiology, Protection and Patient Care</td>
<td>Presents a 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 3 hours per week.</td>
</tr>
<tr>
<td>RAD 115</td>
<td>3 credits</td>
<td>Principles of Magnetic Resonance Imaging</td>
<td>Presents concepts of Magnetic Resonance Imaging and Physics. Teaches fundamentals of Magnetic Resonance and application of principles. Prerequisite: ARRT or eligible. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>RAD 120</td>
<td>3 credits</td>
<td>Medical Care Procedures &amp; Safety in Radiology</td>
<td>Teaches the fundamentals of radiation safety, body mechanics and medical legal considerations in Radiology. Presents techniques in infection control, patient care safety, and response to emergency situations. Introduces pharmacology, contrast media, and treatment of adverse reactions. Students acquire skills in vital sign assessment, sterile technique, venipuncture, and other medical care procedures. Prerequisite: Admission to RAD program. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>RAD 121</td>
<td>4 credits</td>
<td>Radiographic Procedures I</td>
<td>Introduces procedures for positioning the patient’s anatomical structures relative to X-ray beams and image receptors. Emphasizes procedures for routine examination of the chest, abdomen, extremities, and axial skeleton. Prerequisite: Admission to RAD program. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.</td>
</tr>
<tr>
<td>RAD 141-142</td>
<td>4 credits each</td>
<td>Principles of Radiographic Quality I-II</td>
<td>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. Prerequisite for RAD 141: Admission to RAD program. Prerequisite for RAD 142: RAD 141. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.</td>
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<tr>
<td>RAD 205</td>
<td>3</td>
<td>Radiation Protection and Radiobiology</td>
<td>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. Prerequisite: Admission to RAD program. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>RAD 206</td>
<td>2</td>
<td>Human Disease and Radiography</td>
<td>Introduces the various diseases and anomalies that may be manifested on the radiograph. Presents diseases related to the various body systems. Places emphasis on the relationship of the disease process and radiographic density. Prerequisite: Admission to RAD program. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>RAD 221</td>
<td>4</td>
<td>Radiographic Procedures II</td>
<td>Continues procedures for positioning the patient's anatomical structures relative to X-ray beams and image receptors. Emphasizes procedures for routine examination of the skull, contrast studies of internal organs, and special procedures employed in the more complicated investigation of the human body. Prerequisite: RAD 121. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.</td>
</tr>
<tr>
<td>RAD 231-232</td>
<td>5</td>
<td>Advanced Clinical Procedures I-II</td>
<td>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.</td>
</tr>
<tr>
<td>RAD 233</td>
<td>1</td>
<td>Anatomy and Positioning of the Breast</td>
<td>Presents the risk factors for breast disease, anatomy and physiology of the breast and discusses the various pathologies identified through mammography. Includes routine and special projections of the breast. Prerequisite: ARR or eligible. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>RAD 234</td>
<td>1</td>
<td>Breast Imaging/Instrumentation</td>
<td>Discusses the dedicated radiography equipment necessary for breast imaging. Includes proper technical factors, radiation protection techniques, and proper accessory equipment. Prerequisite: ARR or eligible. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>RAD 235</td>
<td>1</td>
<td>Quality Assurance in Mammography</td>
<td>Discusses the components of quality assurance in mammography and the accreditation programs developed to ensure quality in breast imaging facilities. Prerequisite: ARR or eligible. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>RAD 236</td>
<td>1</td>
<td>Radiologic Specialties</td>
<td>Introduces the study of treatment of disease as it relates to various imaging modalities, computerized tomography, and magnetic resonance imaging. Introduces computers and other innovations in radiology. Emphasizes theory, principle of operation, and clinical application of these topics. Lecture 1 hour per week. Prerequisite: Admission to RAD Program. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>RAD 244</td>
<td>1</td>
<td>Case Studies in CT (Computed Tomography)</td>
<td>Presents case studies in computed tomography. Focuses on both abnormal and normal studies. Prerequisite: ARR or eligible. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>RAD 245</td>
<td>1</td>
<td>Radiologic Procedures</td>
<td>Discusses the dedicated radiography equipment necessary for breast imaging. Includes proper technical factors, radiation protection techniques, and proper accessory equipment. Prerequisite: ARR or eligible. Lecture 1 hour per week.</td>
</tr>
<tr>
<td>RAD 247</td>
<td>3</td>
<td>Cross-Sectional Anatomy</td>
<td>Presents a specialized study of cross-sectional anatomy relevant to sectional imaging modalities such as computed tomography and magnetic resonance imaging. Prerequisite: ARR or eligible. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>RAD 255</td>
<td>3</td>
<td>Radiographic Equipment</td>
<td>Studies principles and operation of general and specialized X-ray equipment. Prerequisite: Admission to RAD program. Lecture 3 hours per week.</td>
</tr>
<tr>
<td>RAD 280</td>
<td>1</td>
<td>Terminal Competencies in Radiography</td>
<td>Includes preparation and ensures that students possess competencies which relate to materials covered by the ARRT Content Specifications for national exam eligibility. Incorporates activities designed to verify that students have mastered skills in the critical content areas to include equipment operation and maintenance, image production and evaluation, radiographic procedures, radiation protection and patient care. Prerequisite: Admission to RAD program. Laboratory 3 hours per week.</td>
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**Real Estate**

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<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>REA 100</td>
<td>4</td>
<td>Principles of Real Estate</td>
<td>Examines practical applications of real estate principles. Includes a study of titles, estates, land descriptions, contracts, legal instruments and concepts, real estate mathematics, financing, agency, appraisal, fair housing, and management of real estate. Lecture 4 hours per week.</td>
</tr>
<tr>
<td>REA 110</td>
<td>3</td>
<td>Real Estate Sales</td>
<td>Focuses on the fundamentals of sales principles as they apply to real estate. Includes prospect, motives, needs, and abilities to buy real estate. Lecture 3 hours per week.</td>
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</table>
### Religion

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<tbody>
<tr>
<td>REL 100</td>
<td>3</td>
<td>Introduction to the Study of Religion</td>
</tr>
<tr>
<td>REL 200</td>
<td>3</td>
<td>Survey of the Old Testament</td>
</tr>
<tr>
<td>REL 210</td>
<td>3</td>
<td>Survey of the New Testament</td>
</tr>
<tr>
<td>REL 215</td>
<td>3</td>
<td>New Testament and Early Christianity</td>
</tr>
<tr>
<td>REL 216</td>
<td>3</td>
<td>Life and Teachings of Jesus</td>
</tr>
<tr>
<td>REL 217</td>
<td>3</td>
<td>Life and Letters of Paul</td>
</tr>
<tr>
<td>REL 230</td>
<td>3</td>
<td>Religions of the World</td>
</tr>
<tr>
<td>REL 233</td>
<td>3</td>
<td>Introduction to Islam</td>
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<tr>
<td>REL 255</td>
<td>3</td>
<td>Selected Problems and Issues in Religion</td>
</tr>
</tbody>
</table>

### Respiratory Therapy

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>RTH 102</td>
<td>3</td>
<td>Integrated Sciences for Respiratory Care I</td>
</tr>
<tr>
<td>RTH 120</td>
<td>2</td>
<td>Fundamental Theory for Respiratory Care</td>
</tr>
<tr>
<td>RTH 121</td>
<td>3</td>
<td>Cardiopulmonary Science I</td>
</tr>
<tr>
<td>RTH 130-132</td>
<td>4</td>
<td>Respiratory Care Theory and Procedures I-II</td>
</tr>
<tr>
<td>RTH 145</td>
<td>1</td>
<td>Pharmacology for Respiratory Care I</td>
</tr>
<tr>
<td>RTH 217</td>
<td>2</td>
<td>Pulmonary Rehabilitation, Home Care and Health Promotion</td>
</tr>
<tr>
<td>RTH 222</td>
<td>3</td>
<td>Cardiopulmonary Science II</td>
</tr>
<tr>
<td>RTH 225</td>
<td>3</td>
<td>Neonatal and Pediatric Respiratory Procedures</td>
</tr>
<tr>
<td>RTH 235</td>
<td>3</td>
<td>Diagnostic and Therapeutic Procedures II</td>
</tr>
</tbody>
</table>

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Lecture 3 hours per week.

Survey 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 of the writings. Lecture 3 hours per week.

Lecture 3 hours per week.

Surveys books of the New Testament, with special attention upon placing the writings within their historical and geographical setting. Lecture 3 hours per week.

Surveys the history, literature, and theology of early Christianity in the light of the New Testament. Lecture 3 hours per week.

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.

Studies the journeys and religious thought of the apostle Paul. Lecture 3 hours per week.

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.

Examines selected problems and issues of current interest in religion. May be repeated for credit. Lecture 3 hours per week.

Integrates the concepts of mathematics, chemistry, physics, microbiology, and computer technology as these sciences apply to the practice of respiratory care. Prerequisite: MTH 3 and Instructor permission. Lecture 3 hours per week.

Presents the theory of basic patient assessment and functional medical terminology. Prerequisite: Instructor permission. Lecture 2 hours per week.

Focuses on the cardiopulmonary physiology, assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary and neuromuscular physiology, and pathophysiology. Prerequisite: Instructor permission. Lecture 3 hours per week.

Focuses on pathophysiology, assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary and neuromuscular physiology and pathophysiology. Prerequisite: Instructor permission. Lecture 3 hours per week.

Focuses on purpose and implementation of respiratory care programs applied to cardiopulmonary patients. Identifies and discusses major health and wellness programs applied to cardiopulmonary patients. Prerequisite: Instructor permission. Lecture 2 hours, Laboratory 3 hours. Total 5 hours per week.

Focuses on assessing, treating, and evaluating patients with cardiopulmonary disease. Explores cardiopulmonary and neuromuscular physiology, and pathophysiology. Prerequisite: Instructor permission. Lecture 2 hours, Laboratory 3 hours. Total 5 hours per week.

Focuses on the cardiopulmonary physiology, pathology and application of therapeutic procedures in the management of the newborn and pediatric patient. Prerequisite: Instructor permission. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Focuses on assessment, treatment, and evaluation of patients with cardiopulmonary disease. Explores cardiopulmonary and neuromuscular physiology, and pathophysiology. Prerequisite: Instructor permission. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Presents selection criteria for the use of and detailed information on pharmacologic agents used in pulmonary care. Prerequisite: Instructor permission. Lecture 1 hour per week.

Focuses on the use of multiple diagnostic and therapeutic techniques used in ambulatory and critical care patients. Prerequisite: Instructor permission. Lecture 2 hours. Laboratory 3 hours. Total 6 hours per week.
COURSE DESCRIPTIONS

RTH 236  3 credits
Critical Care Monitoring
Focuses on techniques and theory necessary for the evaluation and treatment of the critical care patient, especially arterial blood gases and hemodynamic measurements. Explores physiologic effects of advanced mechanical ventilation. Prerequisite: Instructor permission. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

Russian
RUS 101-102  4 credits each
Beginning Russian I-II
Develops the understanding, speaking, reading, and writing of Russian, and emphasizes the structure of the language. Lecture 4 hours per week. May include one additional hour of oral practice per week.

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

SAF 125  4 credits
Computer Applications for Technicians
Introduces the use of the personal computer with emphasis on technical software applications for occupational/technical professionals. Lecture 4 hours per week.

SAF 126  3 credits
Principles of Industrial Safety
Teaches principles and practices of accident prevention, analysis of accident causes, mechanical safeguards, fire prevention, housekeeping, occupational diseases, first aid, safety organization, protection equipment and general safety principles and promotion. Lecture 3 hours per week.

SAF 127  2 credits
Industrial Safety
Provides basic understanding of safety and health in an industrial situation. Includes hazardous materials, substances, conditions, activities and habits as well as the prescribed methods and equipment needed for the apprentice to protect himself/herself and others. Lecture 2 hours per week.

SAF 135  3 credits
Safety Program Organization and Administration
Introduces techniques of organizing and administering practical safety programs. Emphasizes safety as a management function. Includes an examination of history, occupational safety and health regulations, and a survey of current laws, codes and standards. Lecture 3 hours per week.

SAF 140  3 credits
Introduction to Industrial Hygiene
Studies environmental energy, physical and chemical hazards, including gases, vapors, dusts, fumes, and mists; the importance of personal protective equipment, and contamination control methodology. Lecture 3 hours per week.

SAF 205  3 credits
Human Factors and Safety Psychology
Studies stresses on the human system, both physiologically and psychologically, that contribute to the severity of industrial accidents. Includes the interrelationship of industrial medicine and industrial hygiene and a study of the various occupational illnesses. Lecture 3 hours per week.

SAF 246  3 credits
Hazardous Chemicals, Materials, and Waste in the Workplace
Introduces the rules and regulations governing use, exposure to, and disposal of hazardous chemicals, materials and waste by-products. Discusses OSHA “Right to Know Laws,” EPA and RCRA regulations. Provides the techniques to interpret and understand the code of Federal Regulations. Emphasizes management mandates, strategies, and options to comply with these regulations. Lecture 3 hours per week.

Student Development
SDV 100  1 credit
College Success Skills
Assists students in transition to college. Provides overviews of college policies, procedures, and curricular offerings. Encourages contacts with other students and staff. Assists students toward college success through information regarding effective study habits, career and academic planning, and other college resources available to students. May include English and Math placement testing. Strongly recommended for beginning students. Required for graduation. Lecture 1 hour per week.

SDV 101  1 credit
Orientation to (Specific Disciplines)
Introduces students to the skills which are 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 services offered at the college, including the learning resources center; counseling and advising; listening, test taking, and study skills; and topical areas which are applicable to their particular discipline. Lecture 1 hour per week.

SDV 104  2 credits
Study Skills
Assists students in planning strategies to overcome nonproductive study habits and in implementing positive study behaviors. Includes management, memory improvement, note taking, and test taking. Lecture 2 hours per week.

SDV 105  1 credit
Personal Development From a Woman's Perspective
Addresses the psychological and educational adjustment needs of the female college student. Covers three segments: personal development, career education, and study skills. Emphasizes the special needs of the re-entry woman. Provides education and support for the individual. Lecture 1 hour per week.
Sociology

SOC 201-202 3 credits each
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 population, social change, and social institutions (family, education, religion, political system, economic system). Lecture 3 hours per week.

SOC 211-212 3 credits each
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 credits
Sociology of the Family
Studies topics such as marriage and family in social and cultural contexts. Addresses the singles scene, dating and marriage styles, child-rearing, husband and wife interaction, single parent families, and alternative lifestyles. Lecture 3 hours per week.

SOC 246 3 credits
Death and Society
Analyzes death and its relationship to social behavior and social institutions. Focuses attention on types of death, bereavement, funerals, estate planning/inheritance, and the student's own responses to these issues. Lecture 3 hours per week.

SOC 266 3 credits
Minority Group Relations
Investigates minorities such as racial and ethnic groups. Addresses social and economic conditions promoting prejudice, racism, discrimination, and segregation. Lecture 3 hours per week.

SOC 268 3 credits
Social Problems
Applies sociological concepts and methods to analysis of current social problems. Includes delinquency and crime, mental illness, drug addiction, alcoholism, sexual behavior, population crisis, race relations, family and community disorganization, poverty, automation, wars, and disarmament. Lecture 3 hours per week.

Spanish

SPA 16 2 credits
Spanish for Business
Introduces the student to Spanish used in business transactions. Lecture 2 hours per week.

SPA 17 2 credits
Spanish for the Tourist
Introduces spoken Spanish to people intending to travel in a Spanish-speaking country. Lecture 2 hours per week.

SPA 101-102 4 credits each
Beginning Spanish I-II
Introduces understanding, speaking, reading, and writing skills and emphasizes basic Spanish sentence structure. May include an additional hour of oral drill and practice per week. Lecture 4 hours per week.

SPA 150 3 credits
Spanish for Law Enforcement
Introduces Spanish to those in the criminal justice field. Emphasizes oral communication and practical first-hand police and justice vocabulary. May include oral drill and practice. Lecture 3 hours per week.

SPA 160 3 credits
Spanish for the Green Industry I
Introduces basic conversation skills in Spanish to those working in the “Green” industry. Emphasizes the use of vocabulary and expressions needed for communication in horticulture, landscaping, nursery/greenhouse, and turf management. Addresses cultural aspects of working with Spanish speaking populations. Lecture 3 hours per week.

SPA 163 3 credits
Spanish for Health Professionals I
Introduces Spanish to those in the health sciences. Emphasizes oral communication and practical medical vocabulary. May include oral drill and practice. Lecture 3 hours per week.

SPA 203-204 3 credits each
Intermediate Spanish I-II
Continues to develop understanding, speaking, reading, and writing skills. Classes conducted in Spanish. Prerequisite: SPA 102 or equivalent. May include oral drill and practice. Lecture 3 hours per week.

Social Science

SSC 210 3 credits
Introduction to Women’s Studies
Introduces interdisciplinary and cross-cultural theories that explore gender, race, and class issues relating to women’s lives, past and present. Prerequisite: ENG 111. Lecture 3 hours per week.
COURSE DESCRIPTIONS

Trucking

TRK 101 2 credits
DOT Safety Rules and Regulations
Includes an intensive study of the Department of Transportation and state and local laws and regulations governing the motor carrier industry as applied to the professional operation of commercial vehicles. Lecture 2 hours per week.

TRK 102 1 credit
Preventive Maintenance for Truck Drivers
Focuses on the fundamentals of preventive maintenance and inspection procedures for gasoline and diesel powered tractor trailers. Includes drivelines, brake systems, electrical systems and accessories encountered by the professional truck driver. Lecture 1 hour per week.

TRK 103 9 credits
Tractor Trailer Driving
Prepares the prospective driver to operate a motor vehicle in a safe and responsible manner. Provides practical training in over-the-road and city driving, including backing skills, and pre-trip inspection. Emphasizes defensive driving. Lecture 3 hours. Laboratory 12 hours. Total 15 hours per week.

TRK 105 5 credits
Class B Truck Driving
Prepares the prospective driver to operate a Class B vehicle in a safe and responsible manner. Provides practical experience. Lecture 3 hours. Laboratory 4 hours. Total 7 hours per week.

TRK 110 3 credits
Survey of the Trucking Industry
Provides an overview of the trucking industry and the characteristics of the professional truck driver. Emphasizes the uses of technology in the trucking industry, including simulators, mobile information management and communication, and electronic mapping techniques. Provides an introduction to the transportation of hazardous materials and environmental issues. Lecture 3 hours per week.

TRK 193 3 credits
Truck Driver/Owner Operator
Focuses on basic aspects and skills involved in owning a trucking business. Covers the entire spectrum of ownership, treating all aspects with a broad approach. Places emphasis on types of ownership, start-up procedures, marketing, finances, business practices, finding employment and employee/employer relationships. Provides a general overview of the owner operator regulations of the Federal Motor Carrier Safety Regulations. Lecture 3 hours per week.

Welding

WEL 100 3 credits
Fundamentals of Welding
Introduces arc and oxyfuel welding and cutting. Provides fundamental principles of joining ferrous and non-ferrous metals, welding and cutting processes, equipment operation, and safety procedures with emphasis upon welding and cutting procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 117 3 credits
Oxyfuel Welding and Cutting
Introduces history of oxyacetylene welding, principles of welding and cutting, nomenclature of the equipment, development of the puddle, running flat beads, and butt welding in different positions. Explains silver brazing, silver and soft soldering, and safety procedures in the use of tools and equipment. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 123 3 credits
Shielded Metal Arc Welding (Basic)
Teaches operation of AC and DC power sources, welding polarities, heats and electrodes for use in joining various metal alloys by the arc welding process. Deals with running beads, butt, and fillet welds in all positions. Emphasizes safety procedures. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 124 3 credits
Shielded Metal Arc Welding (Advanced)
Continues instruction on operation of AC and DC power sources, welding polarities, heats and electrodes for use in joining various metal alloys by the arc welding process. Deals with running beads, butt, and fillet welds in all positions. Emphasizes safety procedures. Prerequisite: WEL 123. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

WEL 126 3 credits
Pipe Welding I
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 135 2 credits
Inert Gas Welding
Introduces practical operations in the use of inert gas shielded arc welding. Studies equipment operation, setup, safety and practice of GMAW (MIG) and GTAW (TIG). Prerequisite: WEL 124. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 136 2 credits
Welding III (Inert Gas)
Studies Tungsten and metallic inert gas procedures and practices including principles of operation, shielding gasses, filler rods, process variations and applications, manual and automatic welding, equipment and safety. Prerequisite: WEL 117. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

WEL 138 2 credits
Pipe and Tube Welding
Develops entry level skills for the inert gas tungsten welding process (TIG) with emphasis upon thin and thick wall carbon and stainless piping and tubing. Prerequisite: WEL 136. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL 141-142</td>
<td>3 credits each</td>
<td>Welder Qualification Test I-II</td>
<td>Studies techniques and practices of testing welded joints through destructive and non-destructive testing. Prerequisite for WEL 142: WEL 141. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>WEL 150</td>
<td>2 credits</td>
<td>Welding Drawing and Interpretation</td>
<td>Teaches fundamentals required for successful drafting as applied to the welding industry. Includes blueprint reading, geometric principles of drafting and freehand sketching, basic principles of orthographic projection, preparation of drawings and interpretation of symbols. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>WEL 165</td>
<td>2 credits</td>
<td>Introduction to Maritime Welding</td>
<td>Teaches general welding terms, symbols, and joint designs used by maritime industries. Develops skills to recognize weld defects, develops familiarization of drawings and craftsmanship specifications used for welding applications in the maritime industry, and certifies the student as a Maritime Industrial Fire Watch. Lecture 2 hours per week.</td>
</tr>
<tr>
<td>WEL 170</td>
<td>3 credits</td>
<td>Maritime Shielded Metal Arc Fillet Welding (SMAW I)</td>
<td>Provides an introduction to Maritime Shielded Metal Arc Fillet Welding and covers equipment setup, adjustment and maintenance, safety, and electrode selection. Includes preparation of labs to develop welding skills on carbon steels using small and large diameter covered electrodes in all positions on fillet welds. Provides an introduction to specific types of electrodes and base materials used in SMAW I welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>WEL 171</td>
<td>3 credits</td>
<td>Maritime Shielded Metal Arc Groove Welding (SMAW II)</td>
<td>Provides an introduction to Maritime Shielded Metal Arc Groove Welding and covers equipment setup, adjustment and maintenance, safety, and electrode selection. Includes preparation of labs to develop welding skills on carbon steels using small and large diameter covered electrodes in all positions on groove welds. Provides an introduction to specific types of electrodes and base materials used in SMAW II welding. Prerequisite: WEL 170. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>WEL 210</td>
<td>3 credits</td>
<td>Maritime Flux Core Arc Fillet Welding (FCAW)</td>
<td>Provides an introduction to Maritime Flux Core Arc Fillet Welding and covers equipment setup, adjustment and maintenance, safety, electrode selection, training to develop welding skills on carbon steels using small and large diameter flux-cored electrodes in all positions on fillet and groove welds. Provides an introduction to specific types of electrodes and base materials used in FCAW welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>WEL 220</td>
<td>3 credits</td>
<td>Maritime Gas Metal Arc Fillet Welding (GMAW)</td>
<td>Provides an introduction to Maritime Gas Metal Arc Fillet Welding and discusses equipment setup, adjustment and maintenance, safety, electrode selection, training to develop welding skills on carbon steels using small and large diameter bare wire electrodes in all positions on fillet welds. Provides an introduction to specific types of electrodes and base materials used in GMAW welding. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.</td>
</tr>
<tr>
<td>WEL 230</td>
<td>2 credits</td>
<td>Maritime Gas Tungsten Arc Fillet Welding (GTAW)</td>
<td>Provides an introduction to Maritime Gas Tungsten Arc Fillet Welding and discusses equipment setup, adjustment and maintenance, safety, electrode selection, training to develop welding skills on carbon steels using small and large diameter bare wire electrodes in all positions on fillet welds. Provides an introduction to specific types of electrodes and base materials used in GTAW welding. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.</td>
</tr>
</tbody>
</table>
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Certificate of CompTIA

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Ph.D., Old Dominion University

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A.A.S., Tidewater Community College  
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M.S., Old Dominion University

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Director—Human Resources  
B.S., James Madison University  
M.P.A., Virginia Commonwealth University

Peter F. Sommer  
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A.S., Northeastern University  
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M.P.A., Old Dominion University

Kellie C. Sorey  
College Registrar  
B.S., Virginia Polytechnic Institute and State University  
M.A.Ed., Virginia Polytechnic Institute and State University  
Ph.D., Old Dominion University

Sharon C. Waters  
Grants Officer/Writer  
B.A., Hampton University  
M.F.A., University of Southern California  
Ph.D., Regent University

C. Mike Williams  
Associate Vice President—Educational Technology  
A.A., Navarro College  
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B.S., Northern Illinois University  
M.S.Ed., Northern Illinois University
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M.S., Old Dominion University
Ph.D., Old Dominion University

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B.A., Virginia State University
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M.Ed., Virginia State University

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Coordinator—Enrollment and Financial Support Services
B.S., Virginia State University
M.A. Ed., Norfolk State University

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Business Manager
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Campus Dean—Student Services
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M.S., University of Memphis
Ph.D., University of Memphis

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B.A., North Carolina Wesleyan College
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Ph.D., University of Maryland

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Business Manager
B.S., Norfolk State University
M.B.A., Western New England College
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M.A., Morgan State University

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Coordinator—Library Services  
B.S., Longwood University  
M.S.L.S., University of Kentucky

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Ed.D., University of Louisville

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M.A., Regent University

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Associate Professor of Chemistry
(1978 – 2001)

Bill C. DeWeese
Professor of English
(1972 – 2008)

Anita Dial
Education Support Specialist II

Nancy S. Duncan
Director of Human Resources

Nancy S. M. Guarnieri
Professor of Early Childhood Education
(1973 – 2006)

Sandra H. Harris
Associate Professor of English
(1973 – 2007)

Joseph E. Browne
Professor of Biology

William J. Clark III
Dean of Academics, Norfolk Campus
(1978 – 2004)

Mary Ruth Clowdsley
Director of Grants
(1976 – 2001)

Robert S. Cool
Dean of Information Technology & Business, Virginia Beach Campus
(1989 – 2007)

Allan Crandall
Associate Professor of History
(1968 – 2000)

Cheryl W. Creager
Professor of Business Management & Administration
(1972 – 2007)

Elizabeth S. Daughtry
Associate Professor of Chemistry
(1978 – 2001)

Bill C. DeWeese
Professor of English
(1972 – 2008)

Anita Dial
Education Support Specialist II

Nancy S. Duncan
Director of Human Resources

Nancy S. M. Guarnieri
Professor of Early Childhood Education
(1973 – 2006)

Sandra H. Harris
Associate Professor of English
(1973 – 2007)
Teaching and Professional Faculty

The locations of principal assignment are indicated as follows: Chesapeake Campus (C), Chesapeake Campus—Regional Automotive Center (C-RAC), Norfolk Campus (N), Portsmouth Campus (P), Portsmouth Campus—Visual Arts Center (P-VAC), and Virginia Beach Campus (V).

Rick G. Alley  
*Instructor—English (C)*  
B.A., Old Dominion University  
M.F.A., University of Massachusetts

Kathy S. Anderson  
*Assistant Professor—Accounting (N)*  
B.S., Old Dominion University  
M.B.A., College of William and Mary

Cassandra L. Andrews  
*Associate Professor—Early Childhood Education (N)*  
B.S., Hampton University  
M.A., Hampton University

Rachel B. Ankney  
*Assistant Professor—English (V)*  
B.A., Old Dominion University  
M.F.A., Old Dominion University

Joseph C. Antinarella  
*Assistant Professor—English (C)*  
B.A., State University of New York at Cortland  
M.A., State University of New York at Stony Brook

Julia S. Arnold  
*Professor—Mathematics (N)*  
B.A., University of South Florida  
M.A., University of Georgia  
M.S., Old Dominion University  
Ph.D., Old Dominion University

M. Yvonne Aucoin  
*Assistant Professor—Mathematics (N)*  
B.S., James Madison University  
M.A., East Carolina University

Donald V. Averso  
*Assistant Professor—Culinary Arts (N)*  
B.S., Seton Hall University

Martha A. Bagby  
*Associate Professor—Reading (C)*  
B.A., Wake Forest University  
M.S.Ed., Old Dominion University

Michael W. Bales  
*Associate Professor—History (N)*  
B.A., Salisbury University  
M.A., Salisbury University

Colleen A. Banks  
*Assistant Professor—Mathematics (N)*  
B.S., St. Augustine College  
M.S., Old Dominion University

Travis C. Baran  
*Instructor—English (P)*  
A.A., State University of New York at Cayuga Community College  
B.A., State University of New York at Oswego  
M.A., State University of New York at Oswego

Rita J. Barnes  
*Assistant Professor—Counselor (C)*  
B.A., Olivet College  
M.S., Old Dominion University

Regina I. Barnett  
*Instructor—English (V)*  
B.S., West Virginia University  
M.Ed., Valdosta State University

Melanie C. Basinger  
*Associate Professor—Physical Therapy (V)*  
B.S., Ithaca College  
M.S., Old Dominion University

Bernice Baxter  
*Instructor—Certified Nurse Aide (V)*  
L.P.N., Virginia Beach School of Practical Nursing  
A.A.S., Tidewater Community College
Rodney C. Beckner
Instructor—Mathematics (C)
B.S., Old Dominion University
M.S., Old Dominion University

Lisa L. Behm
Instructor—Biology (C)
B.S., State University of New York College of Environmental Science and Forestry
M.S., Old Dominion University

Amy C. Beldon
Instructor—Counselor (V)
B.S., Southern Illinois University
M.S.Ed., Old Dominion University

Denise A. Bell
Professor—Nursing (P)
A.S., Norfolk State University
B.S., Hampton University
M.S., Hampton University

Debra K. Benham
Professor—Information Systems Technology (V)
B.S., Ball State University
M.A.Ed., Ball State University

James E. Benson
Associate Professor—Speech (P)
B.A., Vanguard University of Southern California
M.A., Regent University

Enoch A. Bentley III
Instructor—Mathematics (V)
A.S., Tidewater Community College
B.S., Old Dominion University
M.S., Old Dominion University

Stephen P. Bergfield
Associate Professor—Environmental Protection (P)
A.A.S., Tidewater Community College
B.S., Old Dominion University

Robert L. Bernardini
Professor—Nursing (P)
B.S.N., Mount Mercy College
M.S., University of Michigan

Denise M. Bieszczad
Associate Professor—Respiratory Therapy (V)
B.S., Indiana University of Pennsylvania
M.A., George Washington University

Cynthia M. Bird
Associate Professor—Accounting (V)
B.S., Virginia Polytechnic Institute and State University
M.A., Virginia Polytechnic Institute and State University

Philip L. Black
Associate Professor—Psychology (P)
A.A., Lon Morris Junior College
B.B.A., North Texas State University
M.B.A., East Texas State University

Amy C. Beldon
Assistant Professor—Counselor (V)
B.S., Southern Illinois University
M.S.Ed., Old Dominion University

Cheryl Cobb Blythe
Professor—English (V)
B.A., College of William and Mary
M.A., Old Dominion University
Ph.D., George Washington University

Maryann D.E. Bohr
Associate Professor—Accounting (V)
B.S., West Virginia University Institute of Technology
M.B.A., Owen Graduate School of Business at Vanderbilt University

Susan D. Boland
Assistant Professor—English as a Second Language (V)
B.A., The New School
M.A., George Mason University
M.F.A., Old Dominion University

Dwight Bolling
Associate Professor—Sociology (V)
B.S., Florida State University
M.S., Florida State University

Ian M. Bolling
Associate Professor—Sociology (C)
B.A., Virginia Wesleyan College
M.S., Florida State University
J.D., College of William and Mary

Rita T. Bouchard
Assistant Professor—Nursing (P)
B.S., Mount St. Mary's College
M.S.N., University of California at Los Angeles

Kimberly M. Bovee
Associate Professor—English (V)
B.A., Virginia Polytechnic Institute and State University
M.A., Virginia Polytechnic Institute and State University
Ph.D., Loyola University

Robert L. Braaten
Associate Professor—Business Management and Administration (P)
B.S., Old Dominion University
M.B.A., Old Dominion University

Kevin M. Brady
Assistant Professor—History (C)
B.S.E., Baylor University
M.A., Baylor University

Patrick F. Brady
Assistant Professor—Spanish (V)
A.B., University of Missouri
M.A., University of Missouri

Robin C. Brevard
Professor—Nursing - CNA (V)
A.A.S., Tidewater Community College

Robert N. Brewer, Jr.
Instructor—Trucking (P)
Commercial Driver's License

Tracy K. Brierer
Instructor—Horticulture (C)
A.A.S, Tidewater Community College
B.A., Indiana University of Pennsylvania

Kenneth O. Broun, Jr.
Associate Professor—Mathematics (V)
B.S., Old Dominion University
M.S., Old Dominion University

Robyn S. Browder
Associate Professor—English (V)
B.A., Frederick College
M.S.Ed., Old Dominion University

Walter H. Brueggeman, Jr.
Associate Professor—Automotive Technology (C-RAC)
C.M.A.T., C.M.T.T., National Institute for Automotive Service Excellence

Katherine D. Buhrer
Assistant Professor—Biology (V)
B.S., Old Dominion University
M.S., Old Dominion University

Wendy D. Buie
Associate Professor—Counselor (V)
B.A., University of North Carolina at Asheville
M.S., North Carolina A&T State University
Maureen A. Cahill  
Professor—Reading (V)  
B.S., Norfolk State University  
M.S., Old Dominion University  
Ed.D., Nova Southeastern University

Carlos H. Cajares  
Assistant Professor—Emergency Medical Services (V)  
Certificate, Tidewater Community College  
B.S., Hampton University  
M.P.A., Old Dominion University

Beth A. Callahan  
Assistant Professor—Counselor (V)  
B.S., Longwood University  
M.S., Longwood University  
Ed.S., Old Dominion University

April M. Campbell  
Instructor—English (P)  
B.A., Florida State University  
M.A., Florida State University

Jesse L. Cannady, Jr.  
Instructor—Welding (P)

Carla A. Cannon  
Assistant Professor—Biology (N)  
B.S., Tennessee State University  
M.A., Hampton University

Scott N. Carlson  
Assistant Professor—Accounting (C)  
B.S., Loyola Marymount University  
M.S., Golden Gate University  
CPA License

Lisa D. Carter  
Professor—Information Systems Technology (V)  
B.S., Old Dominion University  
M.B.A., Old Dominion University

Christopher W. Cartwright  
Associate Professor—Civil Engineering (V)  
A.S., Tidewater Community College  
B.S., Virginia Polytechnic Institute and State University  
M.S., University of Arkansas

James D. Chandler  
Professor—Mathematics (C)  
B.S., Davidson College  
M.A., University of Virginia  
Ph.D., University of Virginia

Emanuel Chestnut  
Instructor—Counselor (V)  
A.A., Saint Leo University  
B.A., Saint Leo University  
M.A., Norfolk State University

Gabriela J. Christie-Toletti  
Professor—Spanish (P)  
B.S., University of Uruguay  
E.S.L., Alianza Cultural, Uruguay  
M.A., State University of New York at Buffalo  
Ph.D., State University of New York at Buffalo

Ives E. Clark  
Professor—Administrative Support Technology (V)  
B.S., Elizabeth City State University  
M.S., North Carolina Central University

Rodney L. Clayton  
Assistant Professor—Geophysical Sciences (V)  
A.S., Tidewater Community College  
B.S., Old Dominion University  
M.S., Old Dominion University

William Clement  
Professor—Information Systems Technology (V)  
B.S., State University of New York at Oswego  
M.S.Ed., Old Dominion University

James F. Coble  
Professor—Geophysical Sciences (V)  
B.S., Western Carolina University  
M.S., East Carolina University  
Ph.D., University of Kentucky

Steven A. Coco  
Instructor—Emergency Medical Services (V)  
A.A., Saint Leo University  
A.A.S., Tidewater Community College

Frederick B. Cole  
Instructor—Automotive Technology (C-RAC)  
B.S., Christopher Newport University  
M.A., Miami University of Ohio

A. Judith L. Cook  
Instructor—Radiologic Technology (V)  
A.A.S., Owens Technical College  
B.Ed., University of Toledo

Wendy E. Cook  
Instructor—Counselor (N)  
B.S., North Carolina State University  
M.S., East Carolina University

Forrest B. Crock  
Instructor—Biology (C)  
B.S., Longwood University  
M.S., Old Dominion University

Gary L. Cross  
Assistant Professor—Respiratory Therapy (V)  
A.A.S., Tidewater Community College  
B.S., Old Dominion University

Mittie J. Crouch  
Associate Professor—Speech and Drama (N)  
B.A., Montreat College  
M.A., Regent University  
Ph.D., Regent University

Susan B. Day  
Associate Professor—Economics (V)  
B.A., University of Illinois  
M.S.Ed., Old Dominion University  
M.A., Old Dominion University

Susan M. de Veer  
Instructor—International Student Advisor (V)  
B.A., Old Dominion University  
M.A., Old Dominion University

Ralph D. Denton  
Associate Professor—Drafting (V)  
B.S., Old Dominion University  
M.S.Ed., Virginia Polytechnic Institute and State University  
Machine Diploma, Newport News Apprentice School, Newport News Shipbuilding, and Drydock Company

Stacey E. Deputy  
Instructor—Biology (C)  
B.S., Randolph-Macon Woman’s College  
M.S., Old Dominion University
Terry A. DeRoche  
Associate Professor—Mathematics (V)  
B.S., Radford University  
M.S.Ed., Old Dominion University

Jacquelyn A. Dessino  
Associate Professor—Librarian (P)  
B.A., Shippensburg State College  
B.S., Nichols State University  
M.S.L.S., Louisiana State University

Sarah E. DiCalogero  
Instructor—Mathematics (N)  
B.S., University of Virginia  
M.S., University of Virginia

Dixie D. Dickinson  
Associate Professor—Sociology (V)  
A.B., Wesleyan College  
M.A., University of Georgia

Joanne Didlemeyer  
Professor—English & Reading  
(Developmental) (N)  
B.A., Regis College  
M.S.Ed., Old Dominion University  
Ed.D., George Washington University

Richard A. Dienst  
Associate Professor—Fire Science (V)  
A.S., Community College of the Air Force  
B.S., Southern Illinois University  
M.P.A., Governors State University

Sergei Dolgalev  
Professor—Drafting (V)  
B.A., Moscow Architectural Institute  
Ph.D., Central Research and Design Institute

Maria Silvina Doncel  
Assistant Professor—Spanish (N)  
B.A., Instituto Nacional deEnseñanza  
B.A., Superior enLenguas Vivas  
M.A., Old Dominion University

Susan N. Dozier  
Professor—Information System Technology (V)  
B.A., Virginia Polytechnic Institute and State University  
M.S.Ed., Old Dominion University

Lorenz N. C. Drake  
Professor—Drafting (P)  
B.S., University of Maryland  
M.S.Ed., Virginia Polytechnic Institute and State University

Richard B. Duncan  
Associate Professor—Mathematics (P)  
A.B., East Carolina University  
M.A., East Carolina University

Sandra K. Dunn  
Assistant Professor—Counselor (V)  
A.A.S., Tidewater Community College  
B.S., Norfolk State University  
M.S.Ed., Troy State University  
M.A., Norfolk State University

Gillian L. Durham  
Instructor—English as a Second Language (V)  
B.A., Elon University  
M.A., Old Dominion University

Edward L. Dye  
Professor—Business Management and Administration (V)  
B.B.A., Ohio University  
M.Ed., Bowling Green State University  
M.B.A., Averett University

Deborah M. Edson  
Assistant Professor—Spanish (V)  
B.A., Texas Tech University  
M.A., Texas Tech University

Kimberly S. Edwards  
Instructor—English (C)  
B.S., Eastern Michigan University  
M.A., Eastern Michigan University

David A. Ekker  
Assistant Professor—Industrial Management (V)  
A.A.E., Naval Postgraduate School  
B.S., University of Illinois  
M.B.A., Chaminade University

Marshall H. Ellis  
Assistant Professor—English (V)  
B.A., Old Dominion University  
M.A., George Washington University

Thomas I. Ellis  
Professor—English (N)  
B.A., Ohio Wesleyan University  
M.A., University of Oregon  
Ph.D., University of Oregon

Faith A. Emmons  
Instructor—English (P)  
B.A., University of Virginia  
M.Ed., University of Virginia

Paul G. English  
Professor—Business Management and Administration (C)  
B.S., University of Richmond  
M.B.A., Old Dominion University  
M.A., Old Dominion University

Terry M. Eusebio III  
Instructor—Counselor (V)  
B.S., Old Dominion University  
M.S., Old Dominion University

Stephen M. Ezzell  
Associate Professor—Engineering (V)  
B.S., North Carolina State University  
M.S., Rollins College  
M.S., Naval Postgraduate School

Jennifer J. Ferguson  
Assistant Professor—Respiratory Therapy (V)  
A.A.S., Tidewater Community College  
B.A., Ottawa University  
M.S.Ed., Old Dominion University

Raymond S. Fernandez  
Associate Professor—Information Systems Technology (V)  
B.A., Old Dominion University  
M.B.A., Old Dominion University  
Ed.D., Vanderbilt University  
CDP, CNA, CNE, CNI

William A. Fittin, Jr.  
Professor—Biology (V)  
B.S., Old Dominion University  
M.S.Ed., Old Dominion University  
Certificate, Eastern Virginia Medical School
Glenn E. Fox, Jr.
Professor—Psychology (C)
B.S., Virginia Polytechnic Institute and State University
M.A., Radford University
Ph.D., Virginia Polytechnic Institute and State University

Roger D. Frampton
Professor—Chemistry (P)
B.S., University of Durham U.K.
Ph.D., University of East Anglia, Norwich, U.K.

Edward B. Francis
Assistant Professor—Art (P-VAC)
B.S., Southern Connecticut State University
M.F.A., Kent State University

Jeanine L. Freeze
Professor—Nursing (P)
B.S.N., George Mason University
M.S.N., Old Dominion University
Ph.D., Virginia Commonwealth University

David J. French
Associate Professor—Mathematics (P)
B.S., Bluefield College
M.A., Marshall University

Mary A. Froncillo
Instructor—Mathematics (V)
A.A., Pensacola Junior College
B.A., University of West Florida
M.S., Old Dominion University

Roger A. Fuller
Associate Professor—Librarian (N)
A.S., Chesapeake College
B.S., Old Dominion University
M.S., Old Dominion University
M.S.Ed., Old Dominion University

John R. F. Gallo
Instructor—Mathematics (V)
B.S., United States Military Academy
M.S., George Washington University

George W. Garrett, Sr.
Associate Professor—Mathematics (V)
B.S., United States Naval Academy
M.S., Naval Postgraduate School

Thomas L. Garrett, Jr.
Associate Professor—Mathematics (P)
B.A., University of Mississippi
M.T.S., College of William and Mary
M.S., Old Dominion University

John E. Gibbs, Jr.
Professor—Photography (P-VAC)
B.S., Old Dominion University
M.F.A., Norfolk State University

Judith Gill
Assistant Professor—Mathematics (N)
B.A., Christopher Newport University
M.S., Old Dominion University

Richard W. Gill
Associate Professor—Mathematics (N)
B.S., College of William and Mary
M.S., University of South Carolina

Kelly T. Gillerlain
Associate Professor—Business (C)
B.A., American University
M.B.A., Troy State University

Carrie L. Gordon
Instructor—Biology (V)
B.S., Campbell University
M.S., Virginia Polytechnic Institute and State University

Paul E. Gordy
Associate Professor—Engineering (V)
B.S.E.E., Old Dominion University
M.E., Old Dominion University

Matthew S. Gorris
Assistant Professor—Theatre Arts (V)
B.G.S., Kent State University
M.F.A., Kent State University

Phyllis E. Gowdy
Assistant Professor—English (N)
B.A., Western Maryland College
M.A., Old Dominion University

Teresa A. Granger
Associate Professor—Nursing (P)
Diploma, Riverside School of Professional Nursing
B.S.N., Christopher Newport University
M.S.N., Hampton University

George C. Grant
Professor—Chemistry (V)
B.A., Lehigh University
Ph.D., Rensselaer Polytechnic Institute

Gloria I. Grant
Professor—English (V)
B.A., Old Dominion University
M.A., Old Dominion University
Ph.D., University of South Carolina

Arthur A. Gray
Associate Professor—Culinary Arts (N)
A.A., Columbia College
A.S., Florida Community College
B.A., Columbia College
M.A., University of North Florida

David C. Green
Associate Professor—Business Management and Administration (P)
B.A., Wake Forest University
M.B.A., George Washington University

Sarah E. Greene
Instructor—Librarian (V)
B.A., New York University
M.S.L.S., University of Maryland

Mark D. Greer
Assistant Professor—Physics (V)
B.S., Old Dominion University
M.S., Old Dominion University

Star G. Grieser
Associate Professor—American Sign Language (C)
B.S., Rochester Institute of Technology

Joseph W. Grimsley
Associate Professor—History (V)
B.A., University of North Carolina at Greensboro
M.A., North Carolina State University
Ph.D., Mississippi State University

Robert O. Guess II
Associate Professor—Information Systems Technology (C)
B.G.S., Virginia Commonwealth University
M.S., Norwich University

KeratiLo N. Gwebu
Assistant Professor—Nursing (P)
B.S.N., University of Alabama
M.S.N., University of Alabama
Leah E. Hagedorn  
Professor—History (N)  
B.A., Goucher College  
M.A., University of North Carolina at Chapel Hill  
Ph.D., University of North Carolina at Chapel Hill

Donald V. Haley  
Associate Professor—Administration of Justice (V)  
A.A.S., Tidewater Community College  
B.A., Saint Leo University  
M.P.A., Troy State University

Eldridge C. Hamm, Jr.  
Professor—Business Management and Administration (V)  
B.S., University of Richmond  
M.S., Virginia Commonwealth University  
Ed.D., Vanderbilt University

Mary E. Hanlin  
Assistant Professor—Librarian (N)  
B.A., Christopher Newport University  
M.S.L.S., University of Pittsburgh

Thomas J. Hargrove  
Professor—English (C)  
B.A., Fordham College  
M.A., Fordham College  
Ph.D., St. John’s University

Joseph V. Harrell  
Professor—Physics (C)  
B.S., Old Dominion University  
M.S., Old Dominion University  
Ph.D., Old Dominion University

Elise B. Harris  
Assistant Professor—Mathematics (V)  
B.S., Norfolk State University  
M.Ed., Old Dominion University

Katina L. Harris-Carter  
Instructor—Biology (P)  
B.S., Western Illinois University  
M.S., Hampton University

Robert E. Harrison  
Instructor—Librarian (C)  
B.A., Clarion University  
M.S.L.S., Clarion University

Tricia J. Hartley  
Instructor—English (V)  
B.A., Old Dominion University  
M.A., Old Dominion University

Aubrey E. Hartman  
Associate Professor—Physics (P)  
B.S., Roanoke College  
M.S., University of Tennessee

Alison H. Harwell  
Associate Professor—Counselor (V)  
B.S., Cornell University  
M.S., Cornell University

Robert H. Hawkes  
Professor—Arts (P-VAC)  
B.F.A., Virginia Commonwealth University  
M.F.A., Ohio University

Eric T. Hayes  
Professor—Chemistry (C)  
B.S., Virginia Polytechnic Institute and State University  
M.S., University of Cincinnati  
Ph.D., University of Cincinnati

Christy A. Hewett  
Assistant Professor—Mathematics (V)  
B.S., Southern Illinois University  
M.S., Southern Illinois University

Rosemary S. Hill  
Professor—Arts (P-VAC)  
B.F.A., University of Mississippi  
M.Ed., University of Memphis  
M.F.A., Louisiana State University

Beverly D. Hills  
Assistant Professor—Librarian (V)  
A.S., Tidewater Community College  
B.S., Old Dominion University  
M.S.L.S., Catholic University of America

Thomas P. Hilton  
Associate Professor—Philosophy (V)  
B.S., East Tennessee State University  
M.A., East Tennessee State University  
M.A., Old Dominion University

David S. Hodge  
Instructor—Librarian (V)  
B.S., Pennsylvania State University  
M.S.L.S., Clarion University

Carol F. Hodges  
Instructor—Librarian (C)  
A.A.S., Niagara County Community College  
B.A., State University of New York at Oswego  
M.L.S., Syracuse University

Elyn J. Hodges  
Associate Professor—Radiologic Technology (V)  
A.A.S., Tidewater Community College  
B.S., Old Dominion University  
M.Ed., Troy State University

James R. Holden  
Professor—Biology (P)  
B.S., Ohio Northern University  
M.S., Clemson University  
Ph.D., University of Northern Colorado

Jack L. Hollinger  
Professor—Speech and Drama (V)  
B.A., Tusculum College  
M.F.A., Ohio University

Catherine D. Holroyd  
Associate Professor—Chemistry (V)  
B.S., University of Richmond  
Ph.D., University of Virginia

Richard L. Holtz  
Associate Professor—Administration of Justice (V)  
A.A., Old Dominion University  
B.A., Old Dominion University

Diana B. Homsi  
Assistant Professor—Biology (V)  
B.S., Old Dominion University  
M.S., Old Dominion University

C. Gregory Hood  
Professor—Physics/Mathematics (V)  
B.S., Massachusetts Institute of Technology  
M.A., Boston University  
Ph.D., Boston University

Dale R. Horeth  
Associate Professor—Biology (V)  
A.S., Tidewater Community College  
B.S., University of New York at Regents College  
M.S., Old Dominion University

Brittany P. Horn  
Instructor—Librarian (V)  
B.A., Old Dominion University  
M.S.L.S., University of Maryland
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Education Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert E. House, Jr.</td>
<td>Assistant Professor—English (V)</td>
<td>B.A., Bard College M.A., University of Colorado</td>
</tr>
<tr>
<td>David E. Howell</td>
<td>Instructor—Automotive Technology (C-RAC)</td>
<td>B.S., Old Dominion University</td>
</tr>
<tr>
<td>John B. Huddleston</td>
<td>Associate Professor—Air Conditioning/Refrigeration (P)</td>
<td>A.A.S., Daytona Beach Community College Certificate, Daytona Beach Community College</td>
</tr>
<tr>
<td>Velma Hunter</td>
<td>Counselor (N)</td>
<td>B.A., Coker College M.S., University of Louisville</td>
</tr>
<tr>
<td>Cornelius Matthew Isaac</td>
<td>Instructor—Tracking (P)</td>
<td>Commercial Driver’s License</td>
</tr>
<tr>
<td>Edwin S. Jacob</td>
<td>Associate Professor—Speech and Drama (C)</td>
<td>B.F.A., University of Arizona M.F.A., Virginia Commonwealth University</td>
</tr>
<tr>
<td>Frances M. Jacobson</td>
<td>Professor—History (V)</td>
<td>B.A., Old Dominion University M.A., Old Dominion University Ph.D., Old Dominion University</td>
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<td>Doris O. Jellig</td>
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<td>William D. Jenkins</td>
<td>Professor—Marketing and Economics (V)</td>
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<td>Nancy H. Jolemire</td>
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<td>Instructor—Economics (C)</td>
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<td>Samuel H. Lamb II</td>
<td>Professor—Psychology (V)</td>
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<td>Sonya L. Landas</td>
<td>Associate Professor—Psychology (V)</td>
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Edmond P. LaSalle  
Instructor—English (P)  
B.A., Charter Oak State College  
M.A., Excelsior College

Constance M. Lawson  
Associate Professor—Counselor (C)  
A.A., Charles Stewart Mott Community College  
B.S., University of Michigan  
M.S.Ed., University of Wisconsin

Jerry W. Ledbetter  
Instructor—Trucking (P)  
Commercial Driver’s License

David L. Lee  
Instructor—Automotive Technology (C-RAC)  
A.A.S., Tidewater Community College

Amanda V. Leo  
Assistant Professor—Occupational Therapy (V)  
B.S., Duquesne University  
M.S., Duquesne University

Thomas E. Leonard  
Professor—Accounting (N)  
B.S., University of Richmond  
M.B.A., College of William and Mary

Lydia A. Leporte  
Associate Professor—Accounting (V)  
B.S., University of Pennsylvania  
M.A., American University  
M.A.C.C., University of West Florida

Corinne V. Lilyard-Mitchell  
Associate Professor—Arts (P-VAC)  
A.A., Tidewater Community College  
B.A., Norfolk State University  
M.F.A., Norfolk State University

Steven E. Litherland  
Instructor—Librarian (P)  
A.S., Tidewater Community College  
B.A., Old Dominion University  
M.S., University of Tennessee

L. Muriel Locke  
Associate Professor—Mathematics (C)  
B.S.Ed., Temple University  
M.A., University of North Carolina at Charlotte

Theresa A. Long  
Assistant Professor—Nursing (P)  
A.A.S., Tidewater Community College  
B.S., Rutgers University  
M.S., Virginia Commonwealth University

Michael E. Lyle  
Instructor—Geophysical Sciences (V)  
B.S., Old Dominion University  
M.S., East Carolina University

Anne F. Mach  
Associate Professor—Emergency Medical Services (V)  
B.S.N., University of Phoenix

Claudia D. Macon  
Assistant Professor—Business Management and Administration (V)  
B.S., Old Dominion University  
M.B.A., Old Dominion University

William M. Marcell  
Assistant Professor—Occupational Therapy (V)  
A.A.S., Maria College  
B.S., State University of New York at Buffalo  
M.S., State University of New York at Buffalo  
Ph.D., Regent University

Michele A. Marits  
Assistant Professor—English (V)  
B.A., Old Dominion University  
M.A., Old Dominion University

Clifton E. Marsh  
Associate Professor—Sociology (N)  
B.A., California State University at Long Beach  
M.A., California State University at Long Beach  
Ph.D., Syracuse University

Kathleen A. Masciangelo  
Associate Professor—Emergency Medical Services (V)  
B.S.N., West Virginia University  
M.S., Old Dominion University

Angela C. Mason  
Instructor—Biology (C)  
B.S., University of Cincinnati  
M.S., Ohio University

Virginia A. May  
Associate Professor—Physical Therapy (V)  
A.A.S., Northern Virginia Community College  
B.S., Old Dominion University  
M.P.T., Old Dominion University  
Ph.D., Nova Southeastern University

Gerald L. Mayhew  
Professor—Psychology/Developmental Disabilities (C)  
B.A., Arizona State University  
Ph.D., Arizona State University

Robert A. Maynard  
Associate Professor—Mathematics (V)  
B.S., Ohio State University  
M.S., Ohio State University  
M.E., Old Dominion University

Kevin McCarthy  
Instructor—Counselor (C)  
B.S., Old Dominion University  
M.S.Ed., Old Dominion University

Thomas J. McHugh  
Associate Professor—Chemistry (N)  
B.S., Old Dominion University  
M.S., Old Dominion University  
Ph.D., Arizona State University

Iain McKaig  
Professor—Mathematics (V)  
B.A., Virginia Wesleyan College  
M.S., Old Dominion University  
Ph.D., Old Dominion University

Danielle G. McLemore  
Instructor—Counselor (N)  
A.A., City College of Chicago at Harold Washington  
B.S., Southern Illinois University  
M.A., Norfolk State University

Kathleen C. McNamara  
Associate Professor—Medical Assistant (V)  
A.A.S., Tidewater Community College  
B.A., Saint Leo University  
Certified Medical Assistant

William McNamara  
Assistant Professor—Information Systems Technology (V)  
A.A., Saint Leo University  
B.A., Saint Leo University
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<td>Christine L. Medlin</td>
<td>Professor—Dietetics (V)</td>
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<td>B.S., Drexel University, M.S., University of Kentucky, Ph.D., University of Tennessee</td>
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<tr>
<td>Arthur A. Mendonsa</td>
<td>Professor—Information Systems Technology (C)</td>
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<td>B.S., United States Naval Academy, M.S., Old Dominion University</td>
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<td>Annette S. Mewborn</td>
<td>Instructor—English (V)</td>
<td></td>
<td>A.S., Tidewater Community College, B.A., Norfolk State University, M.A., Old Dominion University</td>
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<td>Wallace E. Miller</td>
<td>Instructor—Trucking (P)</td>
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<td>Richard A. Mims</td>
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<td>Instructor—Mathematics (C)</td>
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<td>B.S., Virginia Polytechnic Institute and State University, M.B.A., Old Dominion University, M.A., University of North Carolina-Charlotte</td>
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<td>William E. Moore III</td>
<td>Professor—Drafting and Design (P)</td>
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<td>Jane F. Mosher</td>
<td>Assistant Professor—Information Systems Technology (V)</td>
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<td>Cheryl Nabati</td>
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<td>Professor—History (V)</td>
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<td>Karl H. Oyster, Jr.</td>
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<td>Marilyn L. Peacock</td>
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<td>Allan V. Pearce, Jr.</td>
<td>Associate Professor—Mathematics (P)</td>
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<td>Andrea A. Pearman</td>
<td>Instructor—Speech (V)</td>
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<td>Cynthia H. Pedigo</td>
<td>Associate Professor—Legal Assisting (V)</td>
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<td>Betty J. Perkinson</td>
<td>Professor</td>
<td>English and Reading (P)</td>
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<td>Jimmy L. Peterson</td>
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<td>Emergency Medical Services (V)</td>
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<td>Air Conditioning/Refrigeration (P)</td>
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<td>Early Childhood Education (V)</td>
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<td>Associate Professor</td>
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<td>Associate Professor</td>
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<td>Associate Professor</td>
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<td>Instructor</td>
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<td>Caroline C. Rivera</td>
<td>Associate Professor</td>
<td>Biology (N)</td>
<td>B.A., Cleveland State University</td>
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<td>James N. Roberts</td>
<td>Assistant Professor</td>
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<td>William S. Rodner</td>
<td>Professor</td>
<td>History (V)</td>
<td>B.A., Mansfield University</td>
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<td>Sylvia T. Ross</td>
<td>Associate Professor</td>
<td>English (N)</td>
<td>B.A., University of Notre Dame</td>
</tr>
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</table>
Bobby G. Rowe  
Assistant Professor—Automotive Technology (C-RAC)  
A.A.S., Tidewater Community College  
A.A., State University of New York at Albany  
B.S., State University of New York at Albany  
M.S., Troy State University

Beno Rubin  
Associate Professor—Automotive Technology (C-RAC)  
A.A.S., State University of New York at Westchester Community College  
B.S., City University of New York at Lehman College  
M.S., Nova Southeastern University

Amy L. Ruedisueli  
Assistant Professor—Sociology (V)  
B.S., Eastern Michigan University  
M.A., Eastern Michigan University

Cameron L. Russell  
Assistant Professor—Biology (N)  
B.S., Old Dominion University  
M.S., Old Dominion University

Diane N. Ryan  
Assistant Professor—Speech (V)  
B.A., Western Illinois University  
M.A., Western Illinois University

Lawrence A. Saffioti  
Assistant Professor—Counselor (P)  
B.A., University of North Carolina at Greensboro  
M.Ed., University of North Carolina at Greensboro

Patricia E. Saffioti  
Instructor—Counselor (P)  
B.S., Old Dominion University  
M.S.Ed., Old Dominion University

Carolyn D. Satz  
Assistant Professor—Accounting (C)  
A.S., Tidewater Community College  
B.S., Old Dominion University  
M.T., Old Dominion University

Mario R. Scribner  
Assistant Professor—Mathematics (V)  
B.S., Old Dominion University  
M.S., Old Dominion University

Robin L. Seymore  
Assistant Professor—Psychology (V)  
B.A., College of William and Mary  
M.A., Regent University  
Psy.D., Regent University

Linda L. Shackelford  
Assistant Professor—Mathematics (P)  
B.S., James Madison University  
M.S.Ed., James Madison University

Indu J. Sharma  
Assistant Professor—Diagnostic Medical Sonography (V)  
A.S., Tidewater Community College  
B.A., College of William and Mary

Peter M. Shaw  
Professor—Business Management and Administration (N)  
B.S., Old Dominion University  
M.B.A., College of William and Mary

Amy K. Shay  
Instructor—Health Information Management (V)  
A.A.S., Tidewater Community College  
B.S., Old Dominion University

William L. Sherrill  
Professor—Economics (N)  
A.A., Old Dominion University  
B.S., Old Dominion University  
M.A., Old Dominion University

Richard L. Shoaf  
Professor—History (P)  
A.B., University of North Carolina at Chapel Hill  
M.A., Harvard University  
Ph.D., Harvard University

Ruth H. Shumate  
Assistant Professor—Librarian (P)  
A.S., Tidewater Community College  
B.S., Old Dominion University  
M.S.L.S., Catholic University of America

Thomas D. Siegmund  
Associate Professor—Photography (P-VAC)  
B.F.A., Old Dominion University  
M.F.A., Norfolk State University

Lawrence A. Singleton  
Assistant Professor—Mathematics (P)  
B.S., Virginia State University  
M.Ed., Virginia State University

Dania O. Sinibaldi  
Instructor—Mathematics (V)  
B.S., Old Dominion University  
M.S., Montana State University

Laura M. Smith  
Assistant Professor—American Sign Language (C)  
C.D.I., California State University  
B.A., Gallaudet University

Thomas Smith, Jr.  
Assistant Professor—Mathematics (P)  
B.S., Norfolk State University  
M.Ed., Virginia State University

Viola A. Smith  
Assistant Professor—Nursing (P)  
B.S., Indiana University of Pennsylvania  
M.S., Indiana University of Pennsylvania

Kathryn T. Soubbeer  
Instructor—Biology (C)  
B.S., Old Dominion University  
M.S., Old Dominion University

William Ken Spencer  
Professor—Horticulture (C)  
B.A., University of North Carolina at Chapel Hill  
B.S., North Carolina State University  
M.S., Virginia Polytechnic Institute and State University

Maura J. Spreen  
Instructor—Counselor (V)  
B.A., St. Ambrose University  
M.S.Ed., Old Dominion University

Ian Thomas Springer  
Instructor—English (V)  
B.S., Michigan Technological University  
M.A., Eastern Michigan University

Bonita G. Startt  
Assistant Professor—English (V)  
B.S., Old Dominion University  
M.S.Ed., Old Dominion University
Brice E. Stegall  
Associate Professor—Information Systems Technology (V)  
A.S., Allegheny County Community College  
B.S., Robert Morris College  
M.S.Ed., Old Dominion University  
CNA, CNI, Network

David A. Steinhauer  
Professor—Drafting (P)  
B.S.Ed., Kent State University  
M.S.Ed., Old Dominion University

Fredrick E. Stemple, Jr.  
Assistant Professor—Biology (V)  
B.S., Old Dominion University  
M.S., Old Dominion University

Robert W. Sterling  
Instructor—Computer Science (V)  
B.A., State University of New York at Buffalo  
M.S., Old Dominion University

Laetitia S. Stone  
Associate Professor—French (V)  
B.A., Old Dominion University  
M.A., Old Dominion University

Thomas B. Stout  
Assistant Professor—Electromechanical Controls Technology (C)  
A.S., Tidewater Community College  
B.S.E.T., Old Dominion University  
M.S., Norfolk State University

Jody A. Strausser  
Assistant Professor—Modeling and Simulation (C)  
B.S., Moravian College  
M.S., College of William and Mary

Martha R. Sugarmeyer  
Associate Professor—Biology (V)  
A.A., Pensacola Junior College  
B.A., Florida State University  
M.S., Old Dominion University

Azam M. Tabrizi  
Instructor—Geophysical Science (C)  
B.S., Tabriz University  
M.S., University of London

Michael P. Tarpey  
Instructor—Philosophy (C)  
B.A., Calvin College  
M.A., Old Dominion University  
M.A., Old Dominion University

Eugenia B. Taylor  
Associate Professor—Mathematics (C)  
B.S., University of South Carolina  
M.A., College of William and Mary

Lara B. Tedrow  
Assistant Professor—Psychology (N)  
B.S., Old Dominion University  
M.S., Old Dominion University  
M.S.Ed., Old Dominion University

C. Gregg Tennefoss  
Professor—Information Systems Technology (V)  
A.A.S., Tidewater Community College  
B.S., Old Dominion University  
M.S.Ed., Old Dominion University

Marcia L. Tharp  
Professor—Mathematics (N)  
B.S., University of Illinois  
M.S., University of Illinois  
Ph.D., University of South Florida

Douglas M. Thiele  
Instructor—English (C)  
B.S., Indiana University  
M.A., Indiana University

E. Phillip Thompke  
Associate Professor—History (V)  
B.A., Olivet College  
M.A., University of Southwestern Louisiana

Kathleen A. Tilton  
Instructor—Librarian (N)  
B.A., University of Hawaii  
M.S.L.S., Catholic University of America

Louis M. Tinaro III  
Professor—Information Systems Technology (V)  
B.S., Old Dominion University  
M.B.A., Old Dominion University  
Certificate in Data Processing

Suki E. Tooley  
Instructor—English (N)  
B.A., Christopher Newport University  
M.A., University of Kansas

Felicia M. Toreno  
Professor—Diagnostic Medical Sonography (V)  
A.S., Butler University  
B.S., Butler University  
M.S.Ed., Old Dominion University  
Ph.D., Old Dominion University

Robert C. Tyler  
Instructor—Counselor (P)  
B.A., Johnson State University  
M.S., City University of New York at Hunter College

Kim B. Utley  
Associate Professor—Radiologic Technology (V)  
A.A.S., Central Virginia Community College  
B.S., Old Dominion University  
M.S., Old Dominion University

David M. Vann  
Instructor—Trucking (P)  
Commercial Driver’s License

Nancy C. Verdirame  
Assistant Professor—Nursing (P)  
B.S.N., University of Virginia  
M.S.N., Adelphi University Graduate School of Nursing

Elizabeth M. Vihnanek  
Assistant Professor—Librarian (V)  
B.A., Concordia College Teachers College  
M.A., Concordia College  
M.S., Dominican University

Lisa S. Villamil  
Assistant Professor—Graphic Design (P-VAC)  
B.F.A., University of Missouri  
B.A., University of Missouri  
M.A.Ed., Virginia Commonwealth University

Bonita J. Volker  
Assistant Professor—Information Systems Technology (N)  
A.S., Tidewater Community College  
B.S., Old Dominion University  
M.B.A., Old Dominion University
FACULTY AND STAFF

Robert J. Vollbrecht  
Instructor—Maritime Project (N)  
B.S., United States Coast Guard Academy

Scotty E. Wade  
Instructor—History (V)  
A.A.S., Mountain Empire Community College  
B.A., University of Virginia at Wise  
M.A., George Mason University

James E. Walsh, Jr.  
Associate Professor—Business Management and Administration (P)  
B.S., Old Dominion University  
M.B.A., Old Dominion University

Dawn J. Walton  
Instructor—Librarian (V)  
B.A., Edinboro University  
M.L.S., University of Buffalo

Joseph F. Walton  
Assistant Professor—Funeral Services (V)  
A.S., Gupton-Jones College  
B.S., Hampton University  
M.A., Norfolk State University

Jacqueline M. Warren  
Professor—Administrative Support Technology (V)  
A.A., Old Dominion University  
B.S., Old Dominion University  
M.A.Ed., Virginia Polytechnic Institute and State University

Richard L. Watkins  
Associate Professor—Mathematics (V)  
B.S., Davidson College  
M.A., University of Virginia

Debra A. Wells  
Associate Professor—Administrative Systems Technology (P)  
B.S., Norfolk State University  
M.Ed., Regent University

Mark J. Wheaton  
Instructor—Chemistry (N)  
B.S., Hampden-Sydney College  
M.A., University of Arizona

Jeffrey A. White  
Associate Professor—Sociology (V)  
A.A., Greenfield Community College  
B.A., University of Massachusetts  
M.S., Florida State University  
M.A., Old Dominion University

Carole B. Whitener  
Assistant Professor—Early Childhood Development (C)  
B.M., East Carolina University  
M.S.Ed., Old Dominion University

Gordon L. Whitman  
Assistant Professor—Psychology (N)  
A.B., West Virginia University  
M.A., Ohio State University

F. Christian Widmer  
Professor—Business Management and Administration (V)  
B.S., State University of New York at Buffalo  
M.B.A., Western Michigan University  
Ed.D., North Carolina State University

Carolyn W. Williams  
Instructor—Counselor (V)  
B.S., Fayetteville State University  
M.A.Ed., East Carolina University

John T. Williams, Jr.  
Associate Professor—English (V)  
B.A., Waynesburg College  
M.A., Fitchburg State College

Judy H. Williams  
Associate Professor—Mathematics (V)  
B.A., Frostburg State College  
M.A., West Virginia University

Linda S. Williams  
Associate Professor—Business Management and Administration (C)  
B.A., University of Richmond  
M.B.A., East Carolina University  
M.S., Strayer University

Emily L. Wilson  
Assistant Professor—Biology (C)  
B.A., University of Florida  
Ph.D., University of Miami School of Medicine

Marc C. Wingett  
Instructor—Biology (N)  
B.S., Virginia Polytechnic Institute and State University  
B.S., Old Dominion University  
M.S., Old Dominion University

David L. Winters  
Associate Professor—Chemistry (V)  
B.S., West Virginia State College  
M.S., West Virginia University

James D. Wolfe  
Associate Professor—Mathematics (C)  
B.S., Pennsylvania State University  
M.Ed., Pennsylvania State University

Naaman K. Wood  
Assistant Professor—Speech (C)  
B.A., Evangel University  
M.A., Regent University  
Ph.D., Regent University

Nita B. Wood  
Assistant Professor—English (P)  
B.A., Norfolk State University  
M.A., Norfolk State University

Geraldine Woodberry-Wright  
Professor—Biology (P)  
B.A., Lehigh University  
D.P.M., New York College of Podiatric Medicine

Matthew B. Woods  
Assistant Professor—Trucking (P)  
A.A.S., Tidewater Community College

Lisa A. Wrenn  
Instructor—Biology (V)  
A.S., Tidewater Community College  
B.S., James Madison University  
M.S., Old Dominion University

Linda S. Williams  
Associate Professor—Business Management and Administration (C)  
B.A., University of Richmond  
M.B.A., East Carolina University  
M.S., Strayer University

Emily L. Wilson  
Assistant Professor—Biology (C)  
B.A., University of Florida  
Ph.D., University of Miami School of Medicine

Marc C. Wingett  
Instructor—Biology (N)  
B.S., Virginia Polytechnic Institute and State University  
B.S., Old Dominion University  
M.S., Old Dominion University

David L. Winters  
Associate Professor—Chemistry (V)  
B.S., West Virginia State College  
M.S., West Virginia University

James D. Wolfe  
Associate Professor—Mathematics (C)  
B.S., Pennsylvania State University  
M.Ed., Pennsylvania State University

Naaman K. Wood  
Assistant Professor—Speech (C)  
B.A., Evangel University  
M.A., Regent University  
Ph.D., Regent University

Nita B. Wood  
Assistant Professor—English (P)  
B.A., Norfolk State University  
M.A., Norfolk State University

Geraldine Woodberry-Wright  
Professor—Biology (P)  
B.A., Lehigh University  
D.P.M., New York College of Podiatric Medicine

Matthew B. Woods  
Assistant Professor—Trucking (P)  
A.A.S., Tidewater Community College

Lisa A. Wrenn  
Instructor—Biology (V)  
A.S., Tidewater Community College  
B.S., James Madison University  
M.S., Old Dominion University

Linda S. Williams  
Associate Professor—Business Management and Administration (C)  
B.A., University of Richmond  
M.B.A., East Carolina University  
M.S., Strayer University

Emily L. Wilson  
Assistant Professor—Biology (C)  
B.A., University of Florida  
Ph.D., University of Miami School of Medicine

Mr. C. Wingett  
Instructor—Biology (N)  
B.S., Virginia Polytechnic Institute and State University  
B.S., Old Dominion University  
M.S., Old Dominion University

David L. Winters  
Associate Professor—Chemistry (V)  
B.S., West Virginia State College  
M.S., West Virginia University

James D. Wolfe  
Associate Professor—Mathematics (C)  
B.S., Pennsylvania State University  
M.Ed., Pennsylvania State University

Naaman K. Wood  
Assistant Professor—Speech (C)  
B.A., Evangel University  
M.A., Regent University  
Ph.D., Regent University

Nita B. Wood  
Assistant Professor—English (P)  
B.A., Norfolk State University  
M.A., Norfolk State University

Geraldine Woodberry-Wright  
Professor—Biology (P)  
B.A., Lehigh University  
D.P.M., New York College of Podiatric Medicine

Matthew B. Woods  
Assistant Professor—Trucking (P)  
A.A.S., Tidewater Community College

Lisa A. Wrenn  
Instructor—Biology (V)  
A.S., Tidewater Community College  
B.S., James Madison University  
M.S., Old Dominion University

Linda S. Williams  
Associate Professor—Business Management and Administration (C)  
B.A., University of Richmond  
M.B.A., East Carolina University  
M.S., Strayer University

Emily L. Wilson  
Assistant Professor—Biology (C)  
B.A., University of Florida  
Ph.D., University of Miami School of Medicine

Mr. C. Wingett  
Instructor—Biology (N)  
B.S., Virginia Polytechnic Institute and State University  
B.S., Old Dominion University  
M.S., Old Dominion University

David L. Winters  
Associate Professor—Chemistry (V)  
B.S., West Virginia State College  
M.S., West Virginia University

James D. Wolfe  
Associate Professor—Mathematics (C)  
B.S., Pennsylvania State University  
M.Ed., Pennsylvania State University

Naaman K. Wood  
Assistant Professor—Speech (C)  
B.A., Evangel University  
M.A., Regent University  
Ph.D., Regent University

Nita B. Wood  
Assistant Professor—English (P)  
B.A., Norfolk State University  
M.A., Norfolk State University

Geraldine Woodberry-Wright  
Professor—Biology (P)  
B.A., Lehigh University  
D.P.M., New York College of Podiatric Medicine

Matthew B. Woods  
Assistant Professor—Trucking (P)  
A.A.S., Tidewater Community College

Lisa A. Wrenn  
Instructor—Biology (V)  
A.S., Tidewater Community College  
B.S., James Madison University  
M.S., Old Dominion University

Linda S. Williams  
Associate Professor—Business Management and Administration (C)  
B.A., University of Richmond  
M.B.A., East Carolina University  
M.S., Strayer University

Emily L. Wilson  
Assistant Professor—Biology (C)  
B.A., University of Florida  
Ph.D., University of Miami School of Medicine

Mr. C. Wingett  
Instructor—Biology (N)  
B.S., Virginia Polytechnic Institute and State University  
B.S., Old Dominion University  
M.S., Old Dominion University

David L. Winters  
Associate Professor—Chemistry (V)  
B.S., West Virginia State College  
M.S., West Virginia University

James D. Wolfe  
Associate Professor—Mathematics (C)  
B.S., Pennsylvania State University  
M.Ed., Pennsylvania State University

Naaman K. Wood  
Assistant Professor—Speech (C)  
B.A., Evangel University  
M.A., Regent University  
Ph.D., Regent University

Nita B. Wood  
Assistant Professor—English (P)  
B.A., Norfolk State University  
M.A., Norfolk State University

Geraldine Woodberry-Wright  
Professor—Biology (P)  
B.A., Lehigh University  
D.P.M., New York College of Podiatric Medicine

Matthew B. Woods  
Assistant Professor—Trucking (P)  
A.A.S., Tidewater Community College

Lisa A. Wrenn  
Instructor—Biology (V)  
A.S., Tidewater Community College  
B.S., James Madison University  
M.S., Old Dominion University

Linda S. Williams  
Associate Professor—Business Management and Administration (C)  
B.A., University of Richmond  
M.B.A., East Carolina University  
M.S., Strayer University

Emily L. Wilson  
Assistant Professor—Biology (C)  
B.A., University of Florida  
Ph.D., University of Miami School of Medicine

Mr. C. Wingett  
Instructor—Biology (N)  
B.S., Virginia Polytechnic Institute and State University  
B.S., Old Dominion University  
M.S., Old Dominion University