For more information about John Tyler Community College, including how to apply, go online to www.jtcc.edu, or call 804-796-4000.

Chester Campus
13101 Jefferson Davis Highway
Chester, Virginia 23831-5316

Midlothian Campus
800 Charter Colony Parkway
Midlothian, Virginia 23114-4383
Academic Calendar 2010-2011

**Fall Semester 2010**
- General Registration: July 12 - August 20
- Labor Day Holiday (College closed): September 6
- Founder's Day (no classes): October 5
- Thanksgiving Break (College closed): November 24 (noon) - 28
- Grades due (all sessions): December 20

**Regular Session**
- Classes begin: August 23
- Last day to add classes: August 27
- Last day to drop with a refund: September 9
- Last day to withdraw without academic penalty: November 1
- Classes end: December 11
- Final Examinations: December 13 - 18

**1st 8-Week Session**
- Classes begin: August 23
- Last day to add classes: August 25
- Last day to drop with a refund: August 31
- Last day to withdraw without academic penalty: September 27
- Classes end: October 19

**2nd 8-Week Session**
- Classes begin: October 20
- Last day to add classes: October 22
- Last day to drop with a refund: October 27
- Last day to withdraw without academic penalty: November 22
- Classes end: December 18

**Spring Semester 2011**
- General Registration: November 8 – January 7
- Holiday Online Registration (non-person registration available): December 22 – January 2
- Martin Luther King Holiday (College closed): January 17
- Spring Break (no classes): March 14 - 20
- Assessment Day (no classes): April 5
- Grades due (all sessions): May 13
- Commencement: May 14

**Regular Session**
- Classes begin: January 10
- Last day to add classes: January 14
- Last day to drop with a refund: January 28
- Last day to withdraw without academic penalty: March 24
- Classes end: May 3
- Final examinations: May 4 - 10

**1st 8-Week Session**
- Classes begin: January 10
- Last day to add classes: January 12
- Last day to drop with a refund: January 18
- Last day to withdraw without academic penalty: February 14
- Classes end: March 7

**2nd 8-Week Session**
- Classes begin: March 8
- Last day to add classes: March 11
- Last day to drop with a refund: March 24
- Last day to withdraw without academic penalty: April 21
- Classes end: May 10

Summer Semester 2011
- General Registration: April 4 - May 20
- Memorial Day Holiday (College closed): May 30
- Fourth of July Holiday (College closed): July 4
- Grades due (all sessions): August 10

**10-Week Session**
- Classes begin: May 23
- Last day to add classes: May 26
- Last day to drop with a refund: June 3
- Last day to withdraw without academic penalty: July 5
- Classes end: August 1

**8-Week Session**
- Classes begin: May 23
- Last day to add classes: May 25
- Last day to drop with a refund: May 31
- Last day to withdraw without academic penalty: June 27
- Classes end: July 18

**1st 5-Week Session**
- Classes begin: May 23
- Last day to add classes: May 24
- Last day to drop with a refund: May 27
- Last day to withdraw without academic penalty: June 13
- Classes end: June 27

**2nd 5-Week Session**
- Classes begin: June 28
- Last day to add classes: June 29
- Last day to drop with a refund: July 5
- Last day to withdraw without academic penalty: July 18
- Classes end: August 1

**8-Week Session**
- Classes begin: June 28
- Last day to add classes: July 1
- Last day to drop with a refund: July 5
- Last day to withdraw without academic penalty: July 18
- Classes end: August 1
Message
from the President

I am pleased that you have chosen John Tyler Community College as a place to define your future. Our institution has served the communities surrounding it for more than forty years. During that time, thousands of people have benefited from the quality, affordable education offered by our dedicated faculty and staff. The residents of Amelia, Charles City, Chesterfield, Dinwiddie, Prince George, Surry, and Sussex counties, as well as those from the cities of Hopewell, Colonial Heights, and Petersburg, know that John Tyler can be relied upon to provide flexible, innovative, and convenient academic programs for both college transfer and direct preparation for the workplace.

John Tyler Community College offers you countless opportunities to define your future; it is clear your lifetime earnings, success as a citizen, and productivity as a member of our society are predicated on a sound educational foundation. Our task is to enable you to visualize your future and help you reach your goals. We are committed to that task.

I can share with you many success stories from our students – stories that demonstrate perseverance, dedication, and desire for individual improvement and success. None of these stories would be possible unless the individual involved offered dedication to, and concentration on, the task at hand. I challenge you to undertake a similar commitment to your personal education. Should you do so, I know that you will be rewarded with positive changes in your life and in your future.

I offer you best wishes for your academic success here at John Tyler Community College.

Sincerely,

Dr. Marshall W. Smith
President, John Tyler Community College
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The information, procedures, regulations, rules and policies listed in this catalog are subject to change by the College, the College Board, the Virginia Community College System or the State Board for Community Colleges. This catalog is for informational purposes only. It is not intended to establish contractual agreements between students and the College.

Nondiscrimination Policy
John Tyler Community College does not discriminate on the basis of race, color, national origin, gender, sexual orientation or disability in its programs or activities. Inquiries related to the College’s nondiscrimination policy should be directed to Chris Pfautz, dean of student services, who can be reached by mail at 13101 Jefferson Davis Highway, Chester, VA 23831, by e-mail at cpfautz@jtcc.edu or by phone at 804-706-5208/804-594-1566.

Photography and Video
Photographs and videos taken at John Tyler Community College and at College-sponsored events may be used in the College’s print, television/video and web-based advertising, promotions and publications.

Doing Our Part: This publication is printed on 30% recycled fiber and with chlorine-free pulp using timber from managed forests. Certified by the Forest Stewardship Council.
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John Tyler Community College is a two-year public institution of higher education established as part of a statewide system of community colleges. John Tyler Community College serves primarily the residents of the cities of Colonial Heights, Hopewell and Petersburg, as well as the counties of Amelia, Charles City, Chesterfield, Dinwiddie, Prince George, Surry and Sussex.

John Tyler Community College operates under policies established by the State Board for Community Colleges and the College Board. It is financed primarily by state funds, supplemented by contributions from the 10 localities in its service region and by student tuition.

HISTORY OF THE COLLEGE
John Tyler Community College opened the doors of its Chester Campus on October 2, 1967, as a result of the 1964 passage of the legislation establishing two-year technical colleges across the Commonwealth of Virginia.

The Appomattox Basin Industrial Development Corporation, providing the regional leadership for the establishment of John Tyler Community College, submitted an application to the State Board of Technical Education on January 27, 1965, requesting assistance in the establishment of a technical college in the region. In the absence of an official name, this new institution was designated the Chesterfield Region Technical College until December 2, 1965, when the board voted unanimously to name it the John Tyler Technical College. An action of the 1966 Virginia General Assembly expanded the curricula to include — in addition to technical education — adult education, as well as freshman and sophomore courses for transfer to four-year colleges and universities. The name of the College officially became John Tyler Community College on June 29, 1966, to correspond with the expanded curricula.

The Chester Campus is currently comprised of six buildings: an administrative building, a student and community center, three academic buildings and a physical plant facility. The library and learning resources center are located in Moyar Hall, the largest of the academic buildings.

To meet the increasing needs of the service area, an outreach center was opened in the Midlothian area of Chesterfield County in 1981. This undertaking was expanded in 1984 when the institution opened a facility known as the Watkins Annex. During the summer of 1989, the College moved its Midlothian operation from the Watkins Annex to the Featherstone Professional Center.

The Midlothian Campus opened in May 2000. This campus currently includes four buildings: an administrative building, two academic buildings and a warehouse/physical plant facility. The library is located in the Science Building.

The Featherstone Professional Center continues to be the site of John Tyler Community College workforce development training. Nursing instruction is housed in the JTCC Nursing Education Center on the Johnston-Willis Campus of CJW Medical Center.

During the 2008–2009 academic year, John Tyler Community College served more than 12,600 credit students in more than 55 programs and specializations.

INSTITUTIONAL PURPOSE

College Mission
John Tyler Community College provides quality educational opportunities that inspire student success and community vitality.

College Vision
A success story for every student.

College Goals
1. To enhance and promote excellence in teaching and learning.
2. To provide access to educational opportunities for persons from all segments of society.
3. To provide a comprehensive program of student development services.
4. To develop and foster mutually beneficial relationships with external constituencies to meet the educational and economic needs of the region.
5. To provide excellent administrative services, fostering accountability and efficiency.
6. To administer integrated and transformative institutional assessment and planning processes.
7. To maximize external funding to support the mission of the College.
8. To strengthen a positive image of the College and effectively promote services and programs to the community.
9. To encourage a positive organization, which attracts and retains a diverse and highly competent workforce.

Code of Ethics
• We are committed to learning environments that foster academic integrity.
• We will be good stewards of our resources and make effective and efficient use of them, thereby ensuring accountability to the Commonwealth of Virginia and to the communities we serve.
• We will maintain the confidentiality and security of information entrusted to us and share information only when authorized or required by law to do so.
• We will not accept any gift, favor, loan, service, business or professional opportunity from anyone knowing (or when it should be known) that it is offered in order to improperly influence the performance of our public duties. We will avoid even the appearance of a conflict of interest.
• We will offer good faith and fair dealings to all those we serve and to each other. Our communications will be civil and professional.
• We will offer employment opportunities in accordance with state, federal and system policies supporting the rights and recognizing the needs of all citizens regardless of gender, race, color, religion, national origin, disability, veteran status, sexual orientation or political affiliation.
• We encourage and expect all members of the community to act in good faith and bring to the attention of the appropriate official any violation or potential violation of these principles.

The Purpose of the Virginia Community College System
The basic purposes of the comprehensive community college, as prescribed by the General Assembly of Virginia in the Community College Act of 1966, are to prepare students for employment, for advanced collegiate education and for
improved citizenship. In accordance with this purpose, the College offers the following:
1. Freshman and sophomore courses for transfer to baccalaureate degree programs—the Associate of Arts and Associate of Science degrees;
2. Occupational and technical programs leading to the Associate of Applied Science and the Associate of Applied Arts degrees;
3. Vocational education leading directly to employment—Certificates and Career Studies Certificates; and
4. Courses in general and continuing education in all fields.

ACCREDITATIONS
John Tyler Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097; 404-679-4500) to award associate degrees, certificates and career studies certificates. The associate degrees also have been approved by the State Council of Higher Education for Virginia. The Commission on Colleges should be contacted for accreditation-related issues only. All other inquiries should be directed to the dean of student services (13101 Jefferson Davis Highway, Chester, VA 23831-5316 or 804-706-5208 or 804-594-1566).

The funeral services program at John Tyler Community College is accredited by the American Board of Funeral Service Education (ABFSE), 3414 Ashland Avenue, Ste. G., Ste. Joseph, MO, 64506, 816-233-3747, Web: www.abfse.org. It is also approved by the State Board of Funeral Directors and Embalmers.

The nursing program is approved by the Virginia State Board of Nursing and accredited by the National League for Nursing Accrediting Commission (3343 Peachtree Road NE, Suite 500, Atlanta, Georgia 30033-4097; 404-679-5000).

The emergency medical services programs are approved by the Virginia Office of Emergency Medical Services.

EDUCATIONAL PROGRAMS AND OUTCOMES
Programs That Lead to a Degree or Certificate
Complete descriptions of the associate degrees, certificates and career studies certificates offered by John Tyler Community College are found on pages 29 – 105 of this catalog. The following sections summarize the College’s various programs:

University Parallel/College Transfer Program
The university parallel/college transfer program includes college freshman and sophomore courses in general studies, liberal arts, business administration, engineering and other disciplines, meeting standards acceptable for transfer to baccalaureate degree programs at four-year colleges and universities. Students who complete these programs are awarded the Associate of Arts (A.A.) or the and Associate of Science (A.S.) degree. These degrees include a core of at least fifteen semester hours of general education courses.

Occupational and Technical Programs
The occupational and technical educational programs are designed to meet the increasing demand for technicians, semi-professional workers and skilled workers for employment in industry, business, the professions and government. The curricula are planned primarily to provide workers for the region being served by John Tyler Community College. Some degrees do provide transfer opportunities to selected four-year colleges and universities.

Associate of Applied Arts Degree
The Associate of Applied Arts (A.A.A.) degree is awarded to students majoring in one of the occupational-technical curricula whose primary goal usually is to obtain full-time employment immediately upon graduation from the College, although a substantial number of students in certain A.A.A. degree programs transfer to four-year colleges and universities. All of the A.A.A. degrees include a core of at least 15 semester hours of general education courses.

Certificate
The certificate (C) is awarded to students who complete an approved, non-degree curriculum of at least 30 credits but less than 65 credits.

Career Studies Certificate
The career studies certificate (C.S.C.) is awarded to students who complete an approved, non-degree curriculum of at least nine credits but less than 30. Note for C.S.C. programs only: Financial aid is available for C.S.C.s that have at least 16 total credit hours.

General Education Outcomes
John Tyler Community College is committed to providing its students a broad and integrated educational experience that will enable them to acquire the knowledge, skills, attitudes and values associated with a productive and fulfilling life. Graduates of John Tyler Community College’s associate degree programs should have developed capabilities in the following 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
• 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
• 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
• 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. (Adapted from the American Library Association definition.) 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
• 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
• 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
• 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
• Recognize methods of inquiry that lead to scientific knowledge

Developmental Education
Developmental courses are offered to prepare individuals for admission to John Tyler Community College curricula. These courses are designed to assist the individual with the development of the basic skills and knowledge necessary to succeed in academic programs.

TRANSFERRING TO OTHER INSTITUTIONS
Coursework in the A.A. and A.S. degree programs at John Tyler Community College will transfer to most four-year colleges and universities. Some four-year schools will accept certain A.A.S. degree programs in transfer, but this policy will vary by institution. Normally, courses in which students have earned grades below a “C” are not accepted at other institutions. The counseling staff is available to help students planning to transfer with gathering information and reviewing alternatives. Each student, however, is responsible for becoming acquainted with the course requirements for an intended major at a transfer institution and for planning a program of study at John Tyler that meets the four-year institution’s transfer requirements.

Guaranteed Articulation Agreements
Guaranteed articulation agreements allow John Tyler students who graduate with an associate degree and who meet specific criteria to seamlessly transfer to more than 25 four-year colleges. Information about these transfer agreements may be found at www.jtcc.edu/transfer. Students who have questions about the transferability of certain courses also may find the State Council of Higher Education for Virginia (SCHEV) Transfer Tool to be helpful. This tool provides information on the transferability of more than 60 commonly offered courses from the VCCS. A link to this tool may be found at www.jtcc.edu/transfer.
INTERNATIONAL EDUCATION PROGRAM

John Tyler Community College is committed to internationalizing its curriculum through a broad range of opportunities for faculty, staff and students in order to develop a community of global learners. Accordingly, the College provides a variety of instruction and substantive learning to prepare students for possible international employment, for international study and for personal enrichment. The associate of arts liberal arts, international studies specialization offers a transfer curriculum designed for students interested in pursuing bachelor’s degrees in international relations, foreign affairs, comparative politics, foreign languages and other majors with global perspectives.

The College has a multifaceted international education program aimed at developing global awareness. The basic approaches include international travel presentations at the College; teacher-exchange programs; college-partnership exchanges, which focus on combined student, faculty and administrator site visits; study-abroad activities; and international-travel groups comprised of all constituents of the College community.

DEPARTMENT OF EXTENDED LEARNING

The Department of Extended Learning provides high quality learning experiences for high school students, community members and those employed in area businesses. The department offers credit classes that fall outside of the regular curricular programs of the College.

Computer Short Courses – One-credit short courses for individuals wishing to update their computer skills, learn a new program, or familiarize themselves with current computer technology.

Contract Classes – Courses that are customized to the needs of area businesses and government agencies and delivered at a time and place that is most convenient for the employee. The department can design multiple courses as part of a larger employee development program or a single course that focuses on the development of a specific skill.

Dual Enrollment – College courses taught at area high schools for eligible students that enable the students to get both high school and college credit at the same time. Classes are offered in traditional academic areas, as well as in career and technical areas.

Professional Development – Classes of general interest to the community, designed to give individuals an opportunity to explore new interests, develop their abilities or enhance their career potential. Professional development courses may be used for teacher recertification, skill enhancement, professional growth, license preparation and more.

WORKFORCE DEVELOPMENT

John Tyler Community College and the VCCS believe that a competent workforce is the main ingredient in ensuring a competitive economic future for the Commonwealth. A skilled workforce is the competitive edge in the high performance, global economy faced by the state and the nation. Workforce development programs and services provided by the College must be at the heart of Virginia’s job strategy for the 21st century. The College is committed to the development and delivery of programs and services that prepare the emerging workforce and retool the existing workforce.

Workforce development at John Tyler Community College is integral to all programs as its credit and noncredit students learn and demonstrate the skills for the present and future workplace. Business and industry representatives serve on advisory councils to John Tyler Community College in many areas of workforce development and program requirements. The College has implemented and continuously expands the array of business and industry training programs, partnerships and services to be flexible and responsive to industry demands.

These specialized and tailored programs and services are supported through the Community College Workforce Alliance (CCWA) and the Department of Extended Learning. The CCWA offers classes at five convenient locations throughout the region. The Department of Extended Learning has two locations (Chester and Midlothian).

COMMUNITY COLLEGE WORKFORCE ALLIANCE

A comprehensive workforce development entity, the CCWA was created in 2002 as a partnership between John Tyler Community College and J. Sargeant Reynolds Community College. It merged the workforce development operations of both institutions into one unit, providing the Richmond metropolitan, Tri-Cities and Gateway Virginia region with a single point of contact for workforce services. The CCWA optimizes the training programs, consulting services and instructional talents of both institutions, thus providing its clients with the best workforce development in the area.

The CCWA has a combined workforce development service area that includes four cities (Colonial Heights, Hopewell, Petersburg and Richmond) and 12 counties (Amelia, Charles City, Chesterfield, Dinwiddie, Goochland, Hanover, Henrico, Louisa, Powhatan, Prince George, Surry and Sussex). Annually, CCWA serves over 1,000 employers and provides skills training to over 20,000 individuals. For more information, please visit the CCWA web site (www.ccwa.vccs.edu).

ECONOMIC DEVELOPMENT

The College and the CCWA work closely with state, regional and local economic development organizations to advise and assist new or expanding companies and respond to their start-up and long-term training requirements. The College will provide a Rapid Workforce Response Team to meet the demand and urgency of the region’s industry. Both John Tyler Community College and the CCWA will honor and respect a company’s request for nondisclosure and the safeguarding of proprietary information.

Ongoing Business and Industry Seminars

The CCWA schedules open-enrollment seminars for business and industry in many areas such as computer software applications, networking, engineering design software, engineering manufacturing processes, quality improvement, ISO 9000, QS 9000, ISO 14000, finance, communication skills, employee development, management and supervision, and safety and OSHA. The CCWA trains more than 10,000 employees annually in one- or two-day seminars and provides privately tailored training contracts.
Tailored Training Programs
The CCWA provides tailored noncredit programs unique to specific industry requirements on campus or at the workplace. Tailored credit programs are available through John Tyler Community College’s Department of Extended Learning. An industry or government agency requesting assistance from the College can select the best combination of programs and services, credit or noncredit, to meet its specific needs.

Job Fairs
In cooperation with a given company and/or the Virginia Employment Commission, the CCWA coordinates and conducts job fairs for new or expanding companies.

Work Keys
John Tyler Community College is a certified Work Keys assessment center and can provide Work Keys job profiling and basic skill-level assessment in eight areas (applied mathematics, applied technology, observation, listening and/or writing, locating information, reading for information and teamwork). Many companies have added Work Keys as a highly effective tool in their hiring and training programs.

Assessment Testing
In addition to Work Keys, the College will test applicants using standardized tests or specialized tests prescribed by the hiring company.

Pre-Employment Training
Working closely with the Virginia Department of Business Assistance, John Tyler Community College develops and conducts pre-employment training programs for new or expanding companies.

Apprenticeship and Student Apprenticeship Training
The College and the CCWA offer both adult and student apprenticeship training programs. The College designed and implemented the model student apprenticeship program for the Commonwealth and effectively implemented it on campus and in area secondary school systems. The CCWA works closely with companies and school systems to design full or student apprenticeship programs to meet company and student needs.

Consulting Support to Industry
The College and the CCWA work with area industries to understand their ongoing training and consulting requirements. The CCWA uses industry trainers, experienced managers, consultants and technicians to provide up-to-date concepts, assistance and training development support and advice to the region’s industry.

Customer Service Academy
The CCWA offers training in customer service skills through a modularized program called the Customer Service Academy. Companies can choose to focus on a single area of concern or schedule employees to participate in the entire curriculum as a way of addressing this most critical workforce skill area. Modules include communications, managing job stress, exceeding customer expectations, and more.

Information Technology
The CCWA offers an array of Information Technology (IT) career tracks in areas such as Oracle DBA, Cisco CCNA, A+ and more, as well as the entire array of Microsoft Office programs.

Tractor Trailer Driving School
The CCWA, through a partnership with U.S. Truck Driving, offers at the Chester Campus a commercial tractor trailer driving school for full-time and part-time students who want to earn their CDL (Commercial Drivers License).

PARTNERSHIP TO ENSURE EDUCATIONAL REFORM (PEER) TECH PREP CONSORTIUM
The John Tyler Community College Partnership to Ensure Educational Reform (PEER) Consortium is one of 23 tech prep consortia in Virginia formed to expand partnerships between school divisions, community colleges, universities, business partners, government and the community at large for the purpose of preparing the region’s emerging workforce for higher education and entry into high-wage, high-demand, or high-skill career fields.

Tech Prep in Virginia develops career pathways or programs of study that begin in high school and continue through an associate or baccalaureate degree, a journeyworker’s license, a postsecondary-level industry certification, or a state licensure. Additional features of Tech Prep programs in Virginia include:

- College credits through dual-enrollment or validated course credits
- Early college placement testing
- Certifications and licensures
- Business-based learning, including internships, cooperative education, and project-based learning
- Career coaching and more

The PEER Consortium coordinates ongoing cooperation, collaboration, and communication between John Tyler Community College and its partners, including: Charles City County Public Schools, Chesterfield County Public Schools, Colonial Heights Public Schools, Dinwiddie County Public Schools, Hopewell Public Schools, Petersburg Public Schools, Prince George County Public Schools, Surry County Public Schools, Sussex County Public Schools, Colonial Heights Chamber of Commerce, Dominion Resources, Old Dominion University, Rowanty Technical Center, Virginia Commonwealth University, and the Virginia Department of Professional and Occupational Regulation.

The consortium serves as a resource to support the reform process in the following ways by:

1. Providing leadership to curriculum-restructuring initiatives at the secondary and collegiate levels.
2. Developing articulated educational paths and dual enrollment programs between secondary and postsecondary educational institutions.
3. Facilitating regional alliances between education and business aimed at enhanced communication and ongoing review and definition of the educational needs of the next generation workforce.
4. Providing professional development opportunities for teachers, counselors, and administrators responsible for implementing reform.
5. Promoting the broad goals and accomplishments of the consortium throughout the service region and by assisting school divisions with the development of their own public relations and marketing initiatives designed to increase awareness of educational reform with their local communities.

The PEER Consortium Office is located on the Chester Campus. For more information, call 804-706-5163, or refer to the College’s web site (www.jtcc.edu/peer).

ADMISSION INFORMATION

Eligibility
Any person who has a high school diploma or the equivalent certificate (GED), or who is at least 18 years of age and able to benefit from instruction at John Tyler Community College, may be admitted to the College. John Tyler Community 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 a potential danger to the College community or if such refusal is considered to be in the best interest of the College. (High school students and home-schooled students interested in admission at the institution should refer to the subsequent sections addressing the enrollment of these populations.)

APPLICATION AND ADMISSION TO THE COLLEGE

New Students
All students planning to take courses at John Tyler Community College must apply for admission. Whenever possible, individuals are encouraged to apply online at www.jtcc.edu. The College does not charge an application fee. Please direct all inquiries concerning applications to the Admissions and Records office at either the Chester Campus or the Midlothian Campus, or e-mail admissionsandrecords@jtcc.edu.

Returning Students
Returning students who have not been enrolled in credit courses at the College during the past three years must reapply by resubmitting an application for admission prior to registration. Please direct all inquiries concerning applications to the Admissions and Records office at either campus. Students who applied but never attended are required to reapply after three semesters.

Curriculum Placement

(Degree and Certificate Students)
General admission to the College does not constitute admission to degree and certificate programs. Curriculum placement is required in order to graduate from John Tyler Community College and to receive financial aid. To be admitted into an academic program, students must:
1. Satisfy placement testing requirements, either by scheduling and taking placement tests at the College or by submitting satisfactory SAT or ACT test scores.
2. Provide the College with official copies of transcripts from high school and all colleges and universities previously attended only if any of the following are applicable:
   a. Student is applying for an allied health, funeral services, nursing or surgical technology program;
   b. Student has been suspended or dismissed from another college or university; and/or
   c. Student is requesting a transcript review for transfer credits.
3. Meet with a counselor to be placed in an academic program.

Admission to Individual Courses

(Non-curricular Students)
Students may enroll in courses when the prerequisites (including placement tests for the courses) have been met. Prerequisites are part of the course information in the Schedule of Classes. Not all courses have prerequisites.

Admission Priorities
When enrollment must be limited for any curriculum, first priority must be given to all qualified students who are residents of the political subdivisions supporting John Tyler Community College, provided such students apply for admission to the program in a reasonable length of time prior to registration. The priority list is as follows:
1. Residents of the political subdivisions supporting the College;
2. Other Virginia residents; and

SPECIAL ADMISSION PROCEDURES

Transfer Students
Transfer students should submit an Application for Admission and have transcripts from all previous institutions attended sent to the Admissions and Records office if they plan to request transfer credit or if required by their program of study. Some programs do not require transcript submission. Usually a transfer student who is eligible to re-enroll at the last college of attendance will be eligible for admission to John Tyler Community College. If a transfer student is academically ineligible to return to the previous college, the student must appeal for admission to John Tyler Community College by submitting a letter to the dean of student services at least four weeks prior to the desired semester of admission.

An official evaluation of transfer courses will be completed by the John Tyler Community College registrar/assistant registrar if the student is curriculum placed and completes a Transfer Credit Request Form. Generally, credit will be given for courses in which a grade of “C” or better was received and which are equivalent to courses in the curriculum at the College. Courses in the areas of natural sciences, mathematics, accounting, administrative support technology, advertising and marketing that were completed more than ten years ago are not awarded transfer credit. Courses in the areas of information technology and computer science that were completed more than five years ago are not awarded transfer credit. Division deans who are responsible for students’ curricula may make exceptions to these restrictions. Generally, transfer credits are awarded only if the credits have been earned at an institution which is accredited by one of the six nationally recognized regional accrediting agencies in the United States. John Tyler Community College also normally awards transfer credits for courses completed...
at accredited foreign institutions. Students transferring from foreign institutions should contact the Admissions and Records office at either the Chester Campus or the Midlothian Campus for additional information.

**Dual Enrollment of High School Students**

Dual enrollment courses allow a student to be enrolled in, and get credit for, a college course and a high school course simultaneously. The courses are taught at the college level by instructors who meet the academic requirements to teach a college course and are offered at the high school following the high school schedule. The tuition and book costs are generally paid by the school system.

Dual enrollment is restricted to high school juniors and seniors, and all students must meet College admissions criteria. Exceptional cases require the approval of the college president. All individuals admitted as dual enrollment students must demonstrate readiness for college by achieving satisfactory scores on college placement tests or by meeting other entrance standards as set by the College. Satisfactory placement scores meet or exceed the federal Ability-to-Benefit standards.

Dual enrollment courses are offered at many high schools in John Tyler Community College’s service area and provide an excellent opportunity for high school students to get a head start on college. For additional information about dual enrollment, contact the Department of Extended Learning.

**Enrollment of Students under the Age of 18 - Concurrent Enrollment**

Individuals 18 years of age and younger who have not completed high school may seek to enroll at John Tyler Community College. They must satisfy the admission requirements expected of all students, including the completion of placement tests, as well as provide the institution with letters of permission to enroll from their principals or designees, as well as letters from their parents or guardians. Students under the age of 17 and their parents are required to meet with the dean of student services (or the dean’s designee) prior to submitting applications of admission.

Concurrent enrollment is restricted to high school juniors and seniors. Exceptional cases require the approval of the college president. All students admitted under concurrent enrollment must demonstrate readiness for college by achieving satisfactory scores on college placement tests and address all other college admission criteria. Satisfactory placement scores meet or exceed the federal Ability-to-Benefit standards.

**Home-schooled Students**

Home-schooled students may seek to enroll at John Tyler Community College. These students must satisfy the admission requirements expected of all students, including the completion of placement tests, as well as provide the institution with documentation indicating authorization from the responsible jurisdiction permitting the student to engage in home schooling. The parents of home-schooled students also must provide the institution with written permission to enroll their children. Home-schooled students and their parents must meet with the dean of student services (or the dean’s designee) prior to submitting applications for admission.

Enrollment is restricted to home school students studying at the high school junior or senior levels. Exceptional cases require the approval of the college president. All students admitted must demonstrate readiness for college by achieving satisfactory scores on college placement tests and address all other college admission criteria. Satisfactory placement scores meet or exceed the federal Ability-to-Benefit standards.

An individual who has completed home schooling and certifies that he or she has the equivalent of a high school diploma may apply and enroll at the institution in the same manner as a high school graduate or recipient of a GED.

**International Students**

John Tyler Community College does not admit international students possessing F-1 (student) visas. Other visa-holders will be considered for admission in accordance with institutional policies and procedures and the guidelines of the U.S. Immigration and Naturalization Service (INS).

All visa-holders seeking admission must present copies of their I-94, applications of admission and other required information to the Admissions and Records office at least 45 days prior to the beginning of the semester in which they wish to enroll. International students whose native language is other than English must submit the results of the Test of English as a Foreign Language (TOEFL) to the College. Minimum scores of 500 on the written form or 178 on the computer form are required for admission.

**Senior Citizens – Citizens 60 Years of Age or Older**

Senior citizens are encouraged to take advantage of free tuition provided for by the Senior Citizens Higher Education Act of 1974. Senior citizens, who are Virginia residents and who had a taxable individual income not exceeding $15,000 for Virginia income tax purposes for the year preceding enrollment, may register for credit courses on a tuition-free basis. All senior citizens, regardless of income, may audit credit courses and take some non-credit courses free of charge. Senior citizens waiving tuition will register on the first day of classes. Additional information about special enrollment opportunities for senior citizens may be obtained from the Admissions and Records office.

Senior citizens who wish to confirm space in any credit or noncredit class can register and pay as regular students; however, no refund will be given. Nonpaying senior citizens can enroll on the first day of their selected class and be admitted at no charge only if there is space available.

**Admission of Suspended and Dismissed Students**

Students who have been academically suspended from John Tyler Community College may re-enroll as “restricted students” after serving a one-semester suspension. Students who have been academically suspended from any other institution of higher education may enroll as “restricted students” after submitting their college transcripts and copies of their letters of suspension. Students who have been academically dismissed from any institution, including John Tyler Community College, are normally not admitted to the institution. Dismissed students may petition the Academic Status Committee requesting exceptions to this policy. All petitions must be submitted in writing at least
Admission of Convicted Sexual Offenders
Section 23-2:2:1 of the Code of Virginia requires the VCCS send enrollment information to the Virginia State Police concerning applicants to institutions of higher education. This information is transmitted electronically and compared against the Virginia Criminal Information Network and National Crime Information Center Convicted Sexual Offender Registry. Language on the web application informs applicants that their information is being transmitted to the State Police.

In the event that the State Police determine an applicant to John Tyler Community College is listed on the Sex Offender Registry, the State Police will notify John Tyler Community College. When the College receives such notification, the applicant will be denied admission to John Tyler in accordance with its admission policy. If the applicant registers for classes and becomes a student before the College receives notification from the State Police, the student will be immediately informed that he/she is being administratively withdrawn from classes and will receive a refund. An applicant may invoke his/her rights to an appeal process. For additional information on the appeals process, please visit www.jtcc.edu/admissions and click on “admission of convicted sex offenders.”

Placement Testing
Placement tests are required for all entering students seeking admission to degree and certificate programs, as well as some career studies certificate programs (see the program listings in this catalog for specific placement testing requirements). John Tyler Community College administers the ACT COMPASS placement tests in reading, writing, pre-algebra, algebra and college algebra. Students who fail to demonstrate required competencies or specific prerequisite skills on placement tests will be required to take the appropriate developmental classes prior to enrolling in college-level courses. Students should submit applications of admission prior to scheduling placement tests. John Tyler Community College placement tests are administered by Testing Services. E-mail testing@jtcc.edu or call 804-594-1555.

ACADEMIC ADVISING AND CLASS REGISTRATION

Advising
The John Tyler Community College advising system is a collaborative and ongoing developmental process between the student and advising personnel to enhance success in the college experience. Students are (1) assisted in developing educational plans consistent with their life goals and objectives; (2) provided accurate information about institutional policies, procedures, resources, and programs; (3) assisted in considering their life goals by relating their interests, skills, abilities, and values to careers, the world of work, and the nature and purpose of higher education; and (4) assisted in evaluating or re-evaluating their progress toward established goals and educational plans. Students who are admitted to degree and certificate programs are assigned faculty advisors. Advising services also are available in the Student Success Centers. Members of counseling services advise non-curricular students.

Registration
Registration, the last step in the enrollment process, involves reserving a space in the class(es) selected and paying tuition. Information on the dates and location of registration is listed in the schedule of classes and online at www.jtcc.edu. Allowance is made for late registration, but normally a student may not enter a new class after the first week of a semester. Students who have outstanding financial obligations from previous semesters with the John Tyler Community College Business Office, bookstore or library or have outstanding financial obligations for parking violations are not permitted to register for classes until their accounts have been paid in full.

CHANGE IN REGISTRATION

Adding or Dropping a Course
Schedule changes may be made during the add/drop period of the semester in session. A student may not enter a new class after the add/drop period without approval from the appropriate academic dean and vice president of academic and student services.

Withdrawing from a Course
Withdrawal from a course without academic penalty may be made within the first 60 percent of the course. The student will receive a grade of “W” for withdrawal. After that time, the student will receive a grade of “F” from the instructor. (In the case of mitigating circumstances documented by the instructor, a grade of “W” may be awarded.) Administrative withdrawals may be initiated by an instructor in the event of excessive absences on the part of the student. In addition, an instructor may recommend withdrawal if it is believed a student is experiencing undue academic difficulty.

Academic Load
The minimum full-time course load is 12 credits per semester; the maximum full-time load is 18 credits and 13 credits in the summer. Students wishing to carry an academic load of more than the maximum load ordinarily must have a minimum grade point average of 3.5 and the approval of the vice president of academic and student services.

Repeating a Course
Normally, a student is limited to two enrollments in the same credit course. Requests to enroll in the same credit course more than twice must be submitted to the vice president of academic and student services or his/her designee. A student, who enrolls more than twice without prior approval by the vice president, will be deleted from the class roll. This policy does not apply to repeat enrollments in seminars and topics courses.

ACADEMIC INFORMATION AND POLICIES

Assessment Activities
John Tyler Community College engages in continuous study of its internal and external environment through a number of assessment activities. Students are required to participate in these activities for the purposes of program evaluation and
improvement. All candidates for graduation are required to participate in the institution’s assessment of its academic programs prior to graduation. Failure to complete required assessment activities may result in transcripts and/or diplomas being withheld until this requirement is fulfilled.

Auditing a Course
A student desiring to attend a class without receiving credit for the course may do so by registering to audit that class. A student who is auditing a course is subject to all of the attendance and academic requirements of the class. The instructor of such a course is similarly required to provide a student auditing the course with the same level of instructional services as students who are enrolled for credit. Only by the mutual consent of both the student and the instructor may the attendance and academic requirements of the class be modified for the auditing student.

Permission of the appropriate academic dean is required to audit a course. After receiving the dean’s written permission, a student desiring to audit a class must register in person and pay the applicable tuition. Audited courses carry no credit and do not count as part of a student’s course load. A student desiring to change status in a class from audit to credit must do so within the add/drop period for the course. A change from credit to audit must be made by the official last day for a student to withdraw from the class without penalty. Financial aid students should consult with the Financial Aid office before changing their status from credit to audit.

Credits
Each semester hour of credit given for a course is based on approximately one academic hour (50 minutes) weekly for 16 weeks of formalized, structured instructional time (lectures, out-of-class study, laboratory and shop study, or combinations thereof).

Alternative Forms of Credit and Advanced Standing
Students may seek advancement by (1) transferring credits earned at other accredited colleges or universities; (2) receiving credit for courses and training completed in the military, criminal justice academies, technology certification programs and health services certification programs; (3) taking and achieving acceptable scores on standardized tests and examinations, including the ETS Advanced Placement Examinations, CLEP, DANTES and the International Baccalaureate; (4) submitting documentation for life experiences deemed equivalent to college courses; and (5) passing locally designed and administered tests (credit-by-examination). To be eligible to apply for advanced credit, a student must be admitted to the College and officially placed in a curriculum.

Students who wish to request credit for life experiences must register for SDV 198 (Portfolio Development). Students who are interested in credit-by-examination should contact the appropriate academic division dean. The credit-by-examination fee is $25.00 per credit hour.

Students who believe that their previous educational studies, training programs or work experiences may be equivalent to the content of college courses should contact their faculty advisors, Counseling Services or the Student Success Center.

Grading System
The quality of performance in any academic course is reported by a letter grade, the assignment of which is the responsibility of the instructor. The following grade options are applicable only in the case of college credit courses:

- A Excellent. 4 quality points per credit.
- B Good. 3 quality points per credit.
- C Average. 2 quality points per credit.
- D Poor. 1 quality point per credit.
- F Failure. 0 quality points per credit.
- I Incomplete. No credit. An incomplete grade may be given when a student has been unable to complete a course because of an emergency situation. The time and condition of removal of the grade is a matter of contract between the student and the instructor. Generally, a grade of “I” will not be awarded unless a majority of the coursework has been satisfactorily completed and the remainder of the work can be completed within the following semester.
- P No grade point credit/noncredit courses. This is used in orientation and specialized courses and seminars at the discretion of John Tyler Community College.
- W Grade assigned when a withdrawal form is received in the Admissions and Records office during the first 60 percent of the course. (After this period of time, a “W” may be assigned by an instructor if there are mitigating circumstances; documentation must be placed in the student’s academic file.)
- X Audit. No credit.

The following grade options are applicable only in the case of developmental courses:

- R Re-enroll. The student made satisfactory progress but did not complete all of the course objectives. The student must re-enroll to meet the course objectives.
- S No grade point credit. This is used only for satisfactory computation of the Developmental Studies Courses (numbered 01–09).
- U Unsatisfactory. The student did not make satisfactory progress in the course. The grades of “I” and “W,” as described above, also apply.

Waiver of Course Requirements
Students may petition their academic advisor and division dean for the waiver of required courses in the curriculum. If required courses are waived, other courses must be substituted in the official program to meet the specified credit-hour requirement. No credit is granted for the waived courses. Veterans may be approved to waive the physical education courses upon presentation of the DD214 discharge form.

Attendance
While individual instructor’s policies may vary somewhat, punctual and regular attendance is expected. Check your course syllabus for your instructor’s attendance policy. When absence from a class becomes necessary, it is the responsibility of the student to inform the instructor prior to the absence whenever possible. The student is responsible for the subsequent completion of all study missed during an absence. Frequent
absences may result in administrative withdrawal from a class and the termination or reduction of veterans’ benefits and other programs of financial assistance.

**Grade Reports**
Reports of final grades are available to students online at the end of each semester. The grade point average (GPA) for the semester is determined by dividing the total number of credits attempted for the semester into the total number of quality points earned for the semester. The cumulative grade point average is determined by dividing the total number of credits attempted at the College into the total number of quality points earned at John Tyler Community College. Courses for which “R,” “P,” “S” and “U” grades are awarded (courses numbered 01–09) are not totaled as credits attempted and are not computed in the grade point averages. If there is reason to believe that a grade is incorrect, the instructor should be contacted as soon as possible.

**Student Records and Academic Transcripts**
The Admissions and Records office is the repository of all student academic records. Records are retained in accordance with VCCS policy. An academic transcript is the official and permanent record of a student’s academic history. John Tyler Community College permanently retains each student’s academic transcript.

Students may request the forwarding of official copies of their transcripts to other institutions by contacting the Admissions and Records office. Requests for official and unofficial student copies of transcripts will be handled within five days of the receipt of the request at a charge of $3.00 per copy to the student. Unofficial transcripts are not available online to students who have not attended John Tyler within the past three years. Students who have outstanding financial obligations from previous semesters with the John Tyler Community College Business office, bookstore or library or have outstanding financial obligations for parking violations are not permitted to register for classes until their accounts have been paid in full.

**Credit for Repeated Courses**
In computing GPA, only the most recent grade is used if the course has been repeated. All previous attempts are denoted with the message “Repeated Course” on the student’s transcripts and are removed from the GPA calculation that is reflected in the current cumulative GPA.

**Academic Renewal**
Students returning to John Tyler Community College after an absence of a minimum of five years may wish to take advantage of academic renewal in order to improve their cumulative GPAs. To be eligible, a student must be currently enrolled at the College, have a period of at least five years (60 months) between enrollments, and have earned a minimum GPA of 2.5 in the first 12 credits (or more) after returning to John Tyler. If approved, all grades of “D” or “F” earned prior to returning to the College will not be factored into the cumulative GPA calculation. For additional information about academic renewal, please contact the Admissions and Records office.

**Correction of Education Records**
Students have the right to have records corrected that they believe are inaccurate, misleading or in violation of their privacy rights. Contact the Admissions and Records office for information on the procedures for correction of records.

**Directory Information**
All student records are protected under the 1974 Family Educational Rights and Privacy Act (FERPA), as amended. FERPA does allow institutions to release, without prior consent from the student, information which is considered “directory” information. The Virginia Community College System has defined student directory information as a student’s name, electronic mail address, address, telephone numbers, semesters of attendance, full- or part-time status, date of admission, date of expected or actual graduation, major, freshman or sophomore classification, and any degrees, honors, and awards received. It is the student’s responsibility to notify the Admissions and Records office in writing if this information is not to be released. Currently enrolled students will be required to sign a waiver if they plan to participate in College activities. Questions regarding FERPA should be directed to the director/assistant director of Admissions and Records.

**ACADEMIC HONORS**

**Honors List**
A student who has completed 24 credit hours at John Tyler Community College and has achieved a cumulative grade point average of 3.5 will be placed on the honors list.

**Dean’s List**
A full-time student who achieves a semester grade point average of 3.2 or higher will be placed on the dean’s list.

**Graduation Honors**
Students who have earned a minimum of 30 credit hours or 50 percent of the degree/certificate requirement at John Tyler Community College are eligible for graduation honors as follows, given the GPAs provided:

- 3.8 Summa Cum Laude
- 3.5 Magna Cum Laude
- 3.2 Cum Laude

**ACADEMIC STANDING**

**Good Standing**
A student is considered to be “in good standing” if he/she maintains a minimum GPA of 2.0 each semester, is eligible to re-enroll at John Tyler Community College, and is not on academic suspension or dismissal status. A student on academic warning or academic probation, who is eligible to re-enroll, may be considered eligible to receive financial aid assistance or other benefits requiring a “good” academic standing status.

**Academic Warning**
A student who fails to attain a minimum GPA of 2.0 for any semester will receive an academic warning, which will be printed on his/her grade report.
**Academic Prohibition**
A student who has attempted at least 12 semester credit hours and who fails to maintain a cumulative GPA of 1.5 will be on academic probation until such time as the cumulative GPA is 1.5 or better. A student on academic probation will not be eligible for elective office in student organizations and may be required to carry less than a normal course load during the following semester. A student on academic probation is required to consult with a counselor.

**Academic Suspension**
A student on academic probation who has attempted at least 24 semester credit hours and who fails to attain a grade point average of 1.5 in a subsequent semester will be subject to academic suspension. The statement “Academic Suspension” will be placed on the student’s permanent record. Academic suspension is for one semester. After serving this suspension, a student may re-enroll. A suspended student who wishes to seek readmission without serving a one-semester suspension must petition in writing the Academic Status Committee, requesting an exception and noting why such an exception should be made. Normally, such requests are not granted except in highly unusual circumstances and then only if the student is seeking admission in a different academic program.

**Academic Dismissal**
A student who has been placed on academic suspension must achieve a 2.0 GPA for the semester following readmission and must maintain at least a 1.5 GPA in each subsequent semester of attendance. Failure to do so will result in academic dismissal. The statement “Academic Dismissal” will be placed on the student’s permanent record. A student who has been suspended and who has attained the requirement for continued enrollment will be placed on academic probation until the cumulative GPA is raised to a minimum of 1.5. Academic dismissal normally is permanent unless, with good cause, a student reapplies and is accepted under special consideration for readmission by the Academic Status Committee. A student who has been dismissed and who seeks readmission must petition in writing the Academic Status Committee at least four weeks prior to the semester in which readmission is sought.

**TUITION AND FEES**
**Tuition Rates and Fees**
Tuition rates are established by the State Board for Community Colleges and are subject to change. Current tuition rates can be obtained at www.jtcc.edu/tuition.

The e-Rate is applicable to designated distance-learning courses delivered entirely over the Internet. Tuition rates include a $5.50 per credit hour technology fee. Virginia residents are exempt from the $10.00 per credit hour capital fee. The contract rate is for students who do not qualify for in-state tuition rates and are enrolled in classes provided in a contract between their employers and John Tyler Community College where the employer agrees to pay the students’ tuition directly to the College. In addition to tuition, students or employers must pay a mandatory comprehensive fee of $25.00 per semester. Student fees are approved by the John Tyler Community College Board and are subject to change.

During general registration, all tuition and fees are due by 5:00 p.m. on the Friday of the week in which a student registers. Tuition and fees may be paid by cash, money order, personal check, MasterCard or Visa. If a student’s check is returned to the College for any reason, the student will be charged a $35.00 returned check fee in addition to the amount of the returned check. The student has ten days from the date of notice in which to redeem the check and pay both the amount of the check and the returned check fee. After that, the returned check fee will increase to $50.00 and the student will be withdrawn from his/her classes. This obligation must be paid with cash, cashier’s check, debit card or credit card (MasterCard or Visa). Failure to fulfill this financial obligation within the specified time shall result in the student being withdrawn from John Tyler Community College and being referred to a collection agency and to the Commonwealth of Virginia’s Debt-Setoff Program.

**Eligibility and Application Procedure for In-State Tuition**
Generally, to be eligible for in-state tuition rates, the student must have been legally domiciled in Virginia for a period of at least one full year prior to the planned semester of enrollment. Domicile is a technical legal term that means more than simple “residency” in Virginia. An individual seeking eligibility for in-state tuition must demonstrate the intention of remaining in Virginia indefinitely. Demonstration of intent is usually accomplished through objective evidence such as a driver’s license, automobile registration, voter registration, payment of Virginia income taxes and ownership of real property.

**Residency**
A student under the age of 24 generally assumes the domiciliary status of the parent(s) unless one of the following criteria is met.

The student:
• Is age 24 before the first day of classes;
• Is a veteran of the U.S. armed forces;
• Holds a bachelor’s degree or higher;
• Is married;
• Is orphaned;
• Is a ward of the court;
• Has legal dependents other than a spouse; or
• Can present clear and convincing evidence that he or she is self-sufficient.

The Admissions and Records office is responsible for making an initial determination of eligibility for in-state tuition rates based on information provided by the student on the application form. Eligibility is determined by using State Council of Higher Education guidelines pertaining to Section 23.7-4 of the Code of Virginia.

Applicants who are denied in-state tuition have the right of appeal according to the following procedures:
• Intermediate Level Review: Appeals must be submitted in writing to the Office of the Dean of Student Services at least two weeks prior to the date of the requested entitlement (the first day of classes of the semester in question). The dean of student services will review such appeals and issue decisions within five days or prior to the first day of classes.
Appeals received less than two weeks prior to the date of requested entitlement will not be considered until after the subsequent add/drop period. Students may elect to register and pay out-of-state tuition charges pending the resolution of their appeals.

Final Administrative Review: Appeals of the intermediate level review must be submitted in writing to the Office of the President of the College. Such appeals must be submitted no later than five business days after the receipt of intermediate level decisions. The Appeals Committee (president, vice president of finance and administration, and vice president of academic and student services) will review such appeals and forward its decisions to students within ten business days of the receipt in accordance with Part VII, Section 8 V AC 40-120-270, Chapter 120, Guidelines for Determining Domicile and Eligibility for In-State Tuition Rates.

Changing Tuition Eligibility Status from Out-of-State to In-State
If a student enters John Tyler Community College as an out-of-state student and believes that he or she has subsequently become eligible for in-state rates, an application for Virginia In-State Tuition Rates in the Admissions and Records office should be completed. If the student is correct, the student will become eligible for in-state tuition rates for the next semester in which he or she enrolls.

Books and Materials
Students are expected to obtain their own books and supplies.

Refund Policy
A full refund of tuition is authorized for credit hours of course(s) dropped during the first 15 percent of the session. (Specific dates are printed in the schedule of classes.) If a student registers for a course that is cancelled by the College and does not elect to enter an alternate course, the student is eligible for a refund. Students can print their receipts online if needed. Students who drop classes after the published date will not receive a refund.

FINANCIAL ASSISTANCE
John Tyler Community College attempts to ensure that qualified students are not denied an education because of a lack of money. Any student who would like to apply for financial assistance may do so by submitting the Free Application for Federal Student Aid (FAFSA) online at www.fafsa.ed.gov. Students are urged to submit their financial aid applications well in advance of their anticipated registration dates. The dates for applying for financial aid for the fall semester are May 15 (Priority) and July 9 (Guaranteed). The dates for applying for financial aid for the spring semester are September 15 (Priority) and November 1 (Guaranteed). The priority date for the summer semester is March 15. Students can apply after these dates but must be prepared to pay out-of-pocket for their tuition and fees and be reimbursed if they are eligible for aid approximately a month-and-a-half after the semester has begun.

All financial aid-related notifications will be communicated to you through your John Tyler Community College (JTCC) e-mail. It is important that you monitor your JTCC e-mail and myTyler accounts on a regular basis for the most up-to-date financial aid notifications.

Eligibility for Financial Aid
To qualify for financial aid and to maintain their eligibility, students must:

1. Complete the Free Application for Federal Student Aid (FAFSA) by the July 9 or November 1 dates (see the previous paragraph);
2. Be accepted for admission to John Tyler Community College as a degree- or certificate-seeking student;
3. Be enrolled in good standing and maintain satisfactory progress;
4. Be citizens, eligible non-citizens or permanent residents of the United States or its trust territories;
5. Not be in default on a Federal Stafford Loan, PLUS, SLS or a Perkins Loan;
6. Not owe an overpayment on financial aid received at any institution of higher learning; and
7. Have a high school diploma, a GED or the ability to benefit.

Students receiving financial aid are responsible for notifying the Admissions and Records office regarding any change in name, address, telephone number or marital status.

STUDENT FINANCIAL AID PROGRAMS AVAILABLE
Federal Pell Grant
The Federal Pell Grant is an award for undergraduates only with no prior bachelor’s or professional degree. Eligibility is primarily based on the Expected Family Contribution (EFC), but is also affected by enrollment status. The EFC must be 4617 or less. The maximum award for the 2010-2011 academic year is $5,500, with a minimum of $1,176. A minimum of 12 credit hours each semester is required to receive full eligibility, with pro-rated awards going to students with less than 12 hours.

FSEOG (Federal Supplemental Educational Opportunity Grant)
FSEOG is for undergraduate Federal Pell Grant recipients with exceptional financial need (i.e., students with the lowest EFCs). Students may receive up to $2,000 a year depending on eligibility and funding level. Priority is given to out-of-state students whose tuition charges are significantly higher.

ACG (Academic Competitiveness Grant)
The Academic Competitiveness Grant is a federal program that began with the 2006-2007 aid year. In order to be eligible, a student must be Pell eligible, have completed a rigorous high school program of study after January 1 of this year if a first-year student or have completed a rigorous high school program of study after January 1 of the prior year if a second-year student, and register for at least a part-time course load (6 or more credits) in a degree- or certificate-seeking program. If a first-year undergraduate student, the student must not have been previously enrolled in a program of undergraduate education. A first-year student may receive up to $750 per academic year. A second-year student may receive up to $1,300 per academic year.
year. Second-year students must also have attained at least a 3.0 cumulative grade point average in their first year of undergraduate education.

**FWS (Federal Work-Study)**
Federal Work-Study is a program that provides part-time employment opportunities to eligible students to help meet the costs of post-secondary education. Based on the results of the Free Application for Federal Student Aid (FAFSA), eligible students are awarded an allotment which may be earned through part-time employment in FWS-approved positions either on or off campus. The program is designed to provide students with an opportunity for employment arranged around class schedules.

**CSAP (College Scholarship Assistance Program)**
CSAP is a state-funded grant that provides assistance to undergraduate Virginia residents to a maximum of $1,000 an academic year. A minimum of 6 credit hours is required each semester in order to receive CSAP.

**COMA (Commonwealth Grant)**
COMA is a state-funded grant that provides assistance to undergraduate Virginia residents to a maximum of tuition and fees per academic year. A minimum of 6 credit hours is required each semester in order to receive COMA.

**VGAP (Virginia Guaranteed Assistance Program)**
VGAP awards range from $500 up to tuition, fees and books and are available to undergraduate Virginia residents who graduated from high school with at least a 2.5 grade point average. Students must be enrolled full-time with at least a 2.0 cumulative grade point average to maintain eligibility for this grant.

**PTAP (Part-time Tuition Assistance Program)**
PTAP is a state-funded grant that provides assistance to undergraduate Virginia residents to a maximum of tuition and fees per academic year. A minimum of 1 credit hour and a maximum of 6 credit hours are required each semester in order to receive PTAP.

**HETAP (Higher Education Teacher Assistance Program)**
HETAP is a federally funded grant that provides assistance to undergraduate Virginia residents enrolled full-time in an eligible K-12 teacher preparation program to a maximum of $1,000 an academic year.

**VCCS (Virginia Community College System)**
**Tuition Grant**
VCCS is a state-funded grant that provides assistance to undergraduate Virginia residents that demonstrate financial need. Award amounts vary according to funding levels; however, awards will not exceed charges for tuition, fees and books.

**Federal Stafford and PLUS Loan Program**
The Federal Stafford and PLUS Loan Program enables students and/or parents to borrow directly from the Federal Department of Education. The loan is guaranteed by the federal government. You may apply online at www.jtcc.edu/loans.

**Virginia War Orphans/Dependents of Firefighters and Police Officers Education Benefits**
Sections SB-529 and SB-626 of the Code of Virginia provide for free tuition to attend state-supported institutions of higher education for children of persons killed in the line of duty to the Commonwealth of Virginia or deceased, disabled, imprisoned, or missing in action as a result of any armed conflict after December 6, 1941, involving the U.S. armed forces. Individuals entitled to this benefit may utilize it to pursue any vocational, technical, undergraduate or graduate program of instruction. Generally, programs listed in the academic catalogs of state-supported institutions are acceptable provided they have a clearly defined educational objective. Applications should be submitted at least four months before the expected date of matriculation.

**Satisfactory Academic Progress**
To receive any federal or state aid, a student must maintain satisfactory academic progress. The Financial Aid office will evaluate a student’s progress at the time of application and at the end of each semester. Changes of curricula do not necessarily constitute extended time limits for eligibility. Per federal regulation, all enrollments at John Tyler Community College and all applicable transfer credits will be considered, whether or not aid was awarded or received. The College’s criteria for satisfactory academic progress are:

- Students must earn at least 67% of the credit hours they attempt. All courses attempted at John Tyler Community College will be counted.
- Students must earn the minimum cumulative grade point average, as shown below, once they have attempted a specified number of credit hours.

<table>
<thead>
<tr>
<th>Credit Hours Attempted</th>
<th>Minimum Required GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-23 credit hours</td>
<td>1.50</td>
</tr>
<tr>
<td>24-29 credit hours</td>
<td>1.75</td>
</tr>
<tr>
<td>30 or more credit hours</td>
<td>2.00</td>
</tr>
</tbody>
</table>

- Please note that only courses with grades of “A,” “B,” “C,” “D,” and “F” are included in the GPA evaluation.
- Students who have attempted a number of credits that total 150% or more of their program requirements have not made satisfactory academic progress. All enrollment periods and acceptable transfer credits are counted, even semesters when aid was not received. Developmental courses are not included in this calculation.

Students may appeal the loss of their aid, in writing, to the Financial Aid office prior to the beginning of each term. Only appeals which document mitigating circumstances will be considered.

**Veterans Affairs and Benefits**
The Veteran Affairs Office assists eligible veterans and dependents of veterans with their applications and reporting requirements necessary for establishing and maintaining Veterans Administration (VA) educational entitlements. Most curricula and programs of education offered at John Tyler Community College are approved by the Virginia Department of Education for VA entitlements. Veterans and their dependents
are reminded that only those courses that apply to their approved programs of education may be certified for VA educational entitlements. Eligible veteran students are encouraged to consider using the VA Work-Study and the VA Tutorial Assistance programs while attending school as they are valuable resources.

SCHOLARSHIPS
The John Tyler Community College Foundation relies on the generosity of the community to continue its work in securing the future of the College, its students, its faculty and its staff. Since most of the College’s graduates live and work in the area, gifts to the Foundation are an investment in the future of the community. Through donations, grants and endowments, the Foundation is able to provide scholarships for students, to fund academic programs and capital projects, to renovate and modernize classrooms and labs, and to encourage the professional development of John Tyler Community College’s faculty and staff. Contributions ensure the College continues its pledge of providing academic excellence while expanding the services it offers to fulfill escalating workforce requirements.

The Foundation offers scholarships to help students pay for John Tyler Community College tuition, books and fees. To qualify:

• Submit a completed scholarship application package prior to the appropriate deadline.
• Possess a 2.5 minimum cumulative grade point average (GPA).
• Be enrolled or plan to enroll in a certificate and/or degree program at John Tyler.
• Have in-state tuition status.
• Have a completed, current Free Application for Federal Student Aid (FAFSA) on file at JTCC on or before the scholarship deadline.

All scholarship recipients are required to attend the Scholarship Celebration event in August.

A complete scholarship list, application form, and eligibility criteria are available at www.jtcc.edu/scholarships. The application deadline for the John Tyler Community College International Studies Scholarship for summer study abroad is April 1. The application deadline for all other scholarships is May 1.

GRADUATION PROCEDURES

Graduation Requirements
To be awarded an associate degree, certificate or career studies certificate, a student must:

1. Fulfill all course and credit hour requirements specified in the John Tyler Community College Catalog at the time of his or her official placement in the curriculum. Subsequent program changes may necessitate course substitutions, but these can only be made with the recommendation of the student’s academic advisor and the approval of the appropriate division dean.
2. Earn a minimum of 25 percent of the total semester credits required for the degree, certificate, or career studies certificate at John Tyler Community College. Note: Credits earned via experiential learning are not considered residency credits and do not constitute courses earned at John Tyler Community College. In addition, experiential learning credits may be used to satisfy no more than 25 percent of the requirements for a degree, certificate, or career studies certificate.
3. Have a grade point average of at least 2.0 in all courses that are applicable toward graduation in the curriculum.
4. Demonstrate computer literacy either by passing ITE 115, the CLEP test for ITE 115, or a comparable course approved by the student’s faculty advisor. (This requirement does not apply to certificate and career studies certificate candidates.)
5. Resolve any financial obligations to the College, and return all library books and other materials.
6. Participate in the institution’s assessments of its academic programs prior to graduation. Information will be sent to students outlining specific information about the process. Failure to complete required assessment activities may result in transcripts and/or diplomas being withheld until this requirement is fulfilled.

Applying for Graduation
To be considered for graduation, a student must:

1. Obtain an Application for Graduation from the student’s academic advisor, counselor or Student Success Center advisor.
2. Be officially in the curriculum (career plan) for which he or she is seeking graduation. A student may only be in one curriculum (career plan at a time).
3. Request his or her advisor, counselor or Student Success Center advisor to attach an advising transcript to the application for graduation.
4. Complete all designated sections of the application for graduation.
5. Submit the completed application for graduation to the Admissions and Records office by the appropriate deadline:
   - For summer semester candidates: February 15
   - For fall semester candidates: June 15
   - For spring semester candidates: September 15*

   *Note: Applications for graduation for spring semester candidates will be accepted until February 1, but no official graduation audits advising candidates of outstanding course requirements will be forwarded to students who submit graduation applications after September 15.

6. Ensure that all course waiver and substitution forms are submitted by his or her advisor and dean to the Admissions and Records office by the appropriate deadline:
   - For summer semester candidates: June 15
   - For fall semester candidates: November 1
   - For spring semester candidates: March 1*

   *Note: Course waiver and substitution forms submitted after this date will be processed for summer semester. Students will not be processed for spring semester graduation and will not be permitted to participate in Commencement until the following year.
Participating in Commencement
• John Tyler Community College’s annual Commencement Ceremony is held each May. Students who graduate in the preceding summer, fall, and spring semesters may participate.
• Students who wish to participate in the annual Commencement Ceremony must indicate on their graduation applications that they intend to participate in the ceremony, and submit a R.S.V.P. via e-mail. There are no exceptions to this requirement.
• Information about the Commencement Ceremony and the purchase of caps, gowns and announcements is mailed to all participants in the spring semester.

Diplomas
• The Admissions and Records office will notify graduates when their diplomas are ready for distribution. Candidates should make certain that their mailing addresses are accurate at the institution. Students who require official verification of their graduation should request official transcripts three to four weeks after their graduation date.
• All graduation honors reflect all coursework attempted at John Tyler Community College. This includes courses that may not be used in satisfying specific graduation requirements.
• To be eligible for academic honors (summa cum laude; magna cum laude; cum laude), students must complete at least 50 percent of the courses used to satisfy the requirements of their degrees and/or certificates at John Tyler Community College.

Multiple Awards
• Students seeking to graduate with two degrees and/or certificates must submit graduation applications for both awards.
• Current State Council of Higher Education for Virginia (SHEV) procedures limit the number of awards (degrees and certificates) that can be officially reported by VCCS institutions for a student within an academic year (summer, fall, spring) to no more than two.
• Students may only graduate with one specialization within a single degree.
• All subsequent awards (degrees, certificates, career studies certificates) must differ from prior awards by at least 25 percent.

STUDENT SERVICES
The Division of Student Services is comprised of the departments and offices of Admissions and Records, Counseling Services, Student Activities, and Student Success Centers. Other services provided by personnel in this division include tutoring, placement testing, career assessment and development, and veterans affairs. Division personnel are committed to providing students with the academic, administrative and personal support services necessary for the successful pursuit of their educational and career goals. The Office of the Dean of Student Services is located in room M107e in Moyar Hall on the Chester Campus and in room B213 in the Administration Building on the Midlothian Campus. For additional information on the services provided by the division, please refer to the appropriate sections of this catalog and the John Tyler Community College web site, www.jtcc.edu.

Counseling Centers
Professional counselors and student services specialists are available at both campuses to assist students with personal concerns, career and life planning, educational decisions, resolving conflicts and other concerns. Interviews with counselors are confidential. If students require assistance beyond the scope of the services of counselors, referrals to other qualified professionals or agencies will be offered. Counseling is committed to help students and prospective students learn how to develop career and life plans and to deal effectively with career and life transitions. Since there is no single correct way for everyone to deal with such decisions, a variety of developmental services and programs are offered, including assistance with personal development, academic development and career development. Counseling also offers a variety of information sessions as part of student orientation. These programs are designed to help students learn how to make better career and life planning decisions, refine study skills necessary for college success, assist with college transfer, and build leadership skills.

Career Development Services
Students seeking assistance with career development should contact Counseling Services at the Chester and Midlothian campuses. With the assistance of counselors, students can take a number of assessment instruments, access career and college search systems, explore current job listings and refine their job-seeking skills. Counseling personnel also present special programs in interviewing and resume writing, as well as coordinate the on-campus recruitment initiatives of area businesses and industries.

Student Success Centers
Students can receive free tutoring services in many of the courses offered by the institution in the Student Success Centers located in room M208 on the Chester Campus and room A208 on the Midlothian Campus. General academic advising services also are available for program-placed students. In addition, Student Success Center personnel offer students assistance with test-taking skills, managing test anxiety, study skills, transferring to senior institutions, and stress management. Computer workstations are available where students may use tutorial software or work on writing assignments. Rooms are available for study groups.

Student Activities
The Student Activities Office provides a variety of educational, cultural, and social experiences for students, faculty, staff and members of the community. Student activities and organizations are open to all interested students. Students may seek leadership opportunities through participation in the John Tyler Community College Student Council. The College also has two chapters of Phi Theta Kappa, the international honor society for two-year colleges. The Student Activities Office also coordinates student ID cards, voter registration, community service projects, student newsletters, the student emergency fund, clubs and intramural athletics. Students who are interested in participating in any aspect of the student activities program, or who wish additional information on events and organizations, should e-mail studentactivities@jtcc.edu.
Students with Disabilities
John Tyler Community College is committed to the goal of providing each qualified student equal opportunity to pursue a college education. To that end, the Division of Student Services has designated a professional counselor as a disabilities support services specialist at each campus. Timely requests for special services enable the College to better serve students. Students with documented disabilities who require assistance should contact the Counseling Centers at either the Midlothian Campus or the Chester Campus at least 30 days prior to the start of classes. Professional counselors will assist students with their special needs, including accommodations on placement testing, instructional accommodation plans, consultation services with faculty and staff, assistance with registration, personal and career counseling, study skills, note taking, mobility assistance and other services depending on individual needs and the availability of resources.

Student Rights, Responsibilities and Conduct
The submission of an application for admission to John Tyler Community College represents a voluntary decision to participate in the programs and courses offered by the institution according to the policies, rules and regulations of the College and the State Board for Community Colleges. The College’s approval of the application represents the extension of a privilege to join the John Tyler Community College community and to remain a part of it so long as the student meets required academic and behavioral standards. Each student is guaranteed the privilege of exercising his or her rights without fear of prejudice. Conduct by any student that adversely affects John Tyler Community College’s pursuit of its educational objectives or represents a threat to its students, faculty or staff will result in disciplinary action.

Additional information about student rights and responsibilities, as well as the Student Code of Conduct, can be found in the current Student Handbook available online at www.jtcc.edu. The dean of student services and the assistant coordinator of student affairs are responsible for the administration of all student disciplinary procedures.

LEARNING RESOURCES
The Department of Learning Resources is composed of the Chester Library, Midlothian Library, Instructional Technology, and Testing Services.

College Libraries
The College Libraries welcome John Tyler students both in person and virtually. Staff are committed to creating an academic, accessible and friendly atmosphere that encourages students to ask questions and seek assistance. Libraries on both campuses are open convenient hours to help students find and use information and to assist with technology needs. The collection of over 50,000 books and media can be searched online, and students may access thousands of periodical articles both on campus and remotely. A 24/7 virtual chat reference service extends access to library information after hours.

Through individual assistance and class instruction, the library seeks to promote independent information seeking behavior, to guide students in choosing and evaluating sources, and to help students develop critical thinking skills. All of these are essential qualities students will need as individuals, workers, and citizens in the digital age.

Computing Services
The College Libraries provide a variety of computer services and electronic resources for students and faculty. Computerized tutorials and software packages supporting specific disciplines are offered. Staff can give basic assistance with word processing, spreadsheet, database and presentation software tasks.

Testing Services
The Testing Services Office operates the test centers on both the Chester and Midlothian campuses. At the centers, students are able to take various types of tests, including placement, proctored and College Level Examination Program (CLEP) tests. COMPASS Placement Tests are usually taken by students entering the College for the first time and by some high school students wanting to enroll in Dual Enrollment coursework. A select number of distance education tests are proctored in the College’s test centers for students taking distance education courses at John Tyler, as well as other community colleges in Virginia. John Tyler students are also eligible to schedule CLEP tests with the test centers.

Instructional Technology
The Instructional Technology Office collaborates with faculty members in the design, development, utilization, management and evaluation of processes and resources for teaching and learning. The most widely used tool is Blackboard, an online course management system that provides web space for course documents, PowerPoint slides, and other electronic materials specifically related to individual courses. Students may receive assistance with Blackboard or their student e-mail accounts by filling out this help request form: http://www.jtcc.edu/customapps/helpform2/.
Programs of Study
Programs of Study

TRANSFER DEGREE PROGRAMS

Associate of Science Degrees
- Business Administration
- Engineering
- General Studies
  - Psychology Specialization
  - Science Specialization*
  - Teacher Education Specialization
- Information Systems*

Associate of Arts Degree
- Liberal Arts
  - International Studies Specialization*
  - Theatre Arts Specialization

ASSOCIATE OF APPLIED ARTS DEGREE
- Visual Arts
  - Photography and Film Specialization
  - Visual Communications Specialization

ASSOCIATE OF APPLIED SCIENCE DEGREES
- Accounting
- Architectural Engineering Technology
- Business Management
- Early Childhood Development
  - Teacher Assistant Specialization
- Funeral Services
- Human Services
  - Criminology Specialization
  - Disabilities Specialization
  - Gerontology Specialization
  - Social Work Specialization
- Information Technology
  - Cisco Network Track
  - Computer Applications Track
  - Network Support Track
  - Program Development Track
- Mechanical Engineering Technology
  - Mechatronics Technician Specialization
- Nursing
- Police Science

• Technical Studies
  - Heating, Ventilation and Air Conditioning Track
  - Industrial Electricity Track
  - Mechanical Maintenance Track
  - Precision Machining Technology Track
  - Residential Electricity Track
  - Welding Track

CERTIFICATES
- Building Construction
- Child Care
- Fine Arts
- General Education
- Homeland Security
- Precision Machining Technology
- Welding

CAREER STUDIES CERTIFICATES
- Accounting
- Administration of Justice
- Adult Home Administration
- Allied Health Preparation, Pre-Funeral Services
- Allied Health Preparation, Pre-Nursing
- Allied Health, Surgical Technology Preparatory
- Applied Technology
- Athletic Coaching*
- Basic Precision Machining Technology
- Bereavement and Grief Counseling
- Business Information Management
- Child Care Management
- Cisco Network
- Civil Engineering Computer-Aided Drafting
- Computer-Aided Drafting
- Computer Applications
- Computer Numerical Control
- Early Childhood
- Electricity
- Emergency Medical Services – Basic
- Emergency Medical Services – Intermediate
- Heating and Air Conditioning
- Human Services Administration and Supervision
- Industrial Electricity
- Mechanical Maintenance
- Network Support
- Paralegal Studies
- Phlebotomy*
- Program Development
- Residential Electricity
- Small Business Management
- Substance Abuse Assistant
- Supervision
- Surveying
- Web Design
- Welding

* Beginning Fall 2010
Transfer Degrees

This section provides a listing of John Tyler Community College’s transfer degree programs. The College’s programs are subject to change. For an updated list, please visit the College’s website at www.jtcc.edu/academics.
Business Administration
Associate of Science Degree (A.S.)

Purpose
The associate of science curriculum in business administration is designed for students who plan to transfer to four-year colleges or universities and seek bachelor’s degrees in fields such as accounting, business management, international business, economics, marketing, finance or related fields.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

1st Semester | Credits | Standard Course Options
--- | --- | ---
ENG 111 College Composition I | 3 | 
ITE 115 Introduction to Computer Applications and Concepts | 3 | See Note 4.
MTH 163 Precalculus I | 3 | 
SDV 100 College Success Skills | 1 | 
Laboratory Science Elective | 4 | See Note 5.
Psychology or Sociology Elective | 3 | 
Total Credits | 17 | 

2nd Semester | Credits | Standard Course Options
--- | --- | ---
ENG 112 College Composition II | 3 | 
MTH 270 Applied Calculus | 3 | 
History or Political Science Elective | 3 | 
Laboratory Science Elective | 4 | See Note 5.
Physical Education/Health Elective | 1 | 
Total Credits | 14 | 

3rd Semester | Credits | Standard Course Options
--- | --- | ---
ACC 211 Principles of Accounting I | 3 | 
ECO 201 Principles of Macroeconomics | 3 | 
Humanities or Fine Arts Elective | 3 | See Note 2.
Literature Elective | 3 | See Note 3.
Social/Behavioral Science Elective | 3 | See Note 1.
Total Credits | 15 | 

4th Semester | Credits | Standard Course Options
--- | --- | ---
ACC 212 Principles of Accounting II | 3 | 
BUS 100 Introduction to Business | 3 | 
CST 100 Principles of Public Speaking | 3 | 
ECO 202 Principles of Microeconomics | 3 | 
General Elective | 3 | 
Total Credits | 15 | 

Notes and Additional Curriculum Options
1. The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, PLS, HIS, PSY and SOC.
2. The humanities/fine arts elective can be satisfied by completing a literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech courses addressing performing arts or the history of theatre (CST), or religion (REL) course. ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities elective requirements.
3. The literature requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.
4. Students with good computer skills may seek to satisfy this requirement by CLEP.
5. The laboratory science requirement can be satisfied by the following courses: BIO 101, BIO 102, BIO 110, BIO 120, CHM 101, CHM 102, CHM 111, CHM 112, GOL 105, NAS 125, NAS 130, PHY 101, PHY 102, PHY 201, PHY 202, PHY 241, PHY 242.
6. The history/political science elective requirement can be satisfied by the following courses: PLS 135, PLS 211, PLS 212, PLS 241, HIS 101, HIS 102, HIS 111, HIS 112, HIS 121, HIS 122, or any other HIS course approved by the student’s advisor.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Engineering
Associate of Science (A.S.)

Purpose
The associate of science curriculum in engineering is designed for students who plan to transfer to four-year colleges or universities to complete baccalaureate degree programs in engineering.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial and prerequisite courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 111   College Chemistry I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>EGR 120   Introduction to Engineering</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ENG 111   College Composition I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MTH 173   Calculus with Analytical Geometry I</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>SDV 100   College Success Skills</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 112   College Chemistry II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>EGR 126   Computer Programming for Engineers</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EGR 140   Engineering Mechanics--Statics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG 112   College Composition II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MTH 174   Calculus with Analytical Geometry II</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3rd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGR 245   Engineering Mechanics--Dynamics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EGR 248   Thermodynamics for Engineers</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HLT/PED  Health or Physical Education</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MTH 277   Vector Calculus</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PHY 241   General University Physics I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4th Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGR 246   Mechanics of Materials</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MTH 279   Ordinary Differential Equations</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PHY 242   General University Physics II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>17</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits For Program** 71

Notes and Additional Curriculum Options
1. The social sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, PLS, HIS, PSY and SOC.
2. The humanities elective requirement can be satisfied by courses with the following prefixes: ARA, ART, ENG (literature courses only), FRE, GER, HUM, MUS, PHI, REL, SPA and CST (with the exception of CST 100, CST 105 and CST 115).
3. Students are encouraged to consult their faculty advisors or transfer colleges for advice regarding the selection of electives and other requirements specific to the engineering programs at the institutions where they plan to transfer.
4. Transfer Articulation Agreement with the School of Engineering and Applied Sciences at the University of Virginia. Graduates of this program with 3.4 GPAs will meet the transfer requirements to U.Va. and may pursue their bachelor degrees in engineering by taking on-site and distance education courses from U.Va. offered at John Tyler’s campuses or attending classes in Charlottesville. JTCC graduates with GPAs of less than 3.4 may seek admission to the U.Va. portion of the program in the same manner as all other students wishing to enter U.Va. degree programs.

For additional information on this program, please contact the Division of Engineering, Business and Public Services at 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
# General Studies

## Associate of Science (A.S.)

### Purpose

This program is intended to provide students with a general course of study that parallels the freshman and sophomore years at most colleges and universities. The courses in this program are specifically selected for ease of transfer to most four-year colleges and universities. Following the prescribed coursework in this program will result in graduation with the associate of science degree (AS). Students should consult with their advisors to ensure that they select general electives that best prepare them for the specific requirements of their intended transfer college or university programs of study.

### Admission Requirements and Special Conditions

A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

### Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
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<tr>
<td>ENG 111 College Composition I</td>
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<td>ITE 115 Introduction to Computer Applications and Concepts</td>
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</tr>
<tr>
<td>MTH 163 Precalculus I</td>
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<td>MTH 170, MTH 173</td>
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<td>History Elective</td>
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<tr>
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**Total Credits For Program**  61

### Notes and Additional Curriculum Options

1. Students may elect to take only 3 credits in mathematics and 6 credits in literature or 6 credits in mathematics and 3 credits in literature. Students should consult with their advisors as to which, if either, of these options is appropriate given their transfer plans.

2. The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, PLS, HIS, PSY and SOC.

3. The humanities elective requirements can be satisfied by completing literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech courses addressing performing arts or the history of theatre (CST), or religion (REL) courses. ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities electives requirements.

4. The literature requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.

5. The laboratory science requirement can be satisfied by the following courses: BIO 101, BIO 102, BIO 110, BIO 120, CHM 101, CHM 102, CHM 111, CHM 112, GOL 105, NAS 125, NAS 130, PHY 101, PHY 102, PHY 201, PHY 202, PHY 241, PHY 242.

6. Students with good computer skills may seek to satisfy this requirement by CLEP.

7. The history elective requirements can be satisfied by the following courses: HIS 101, HIS 102, HIS 111, HIS 112, HIS 121, HIS 122 or any other HIS course approved by the student’s advisor.

For additional information on this program, please contact the Division of Mathematics, Natural and Behavioral Sciences: 804-706-5086 (Chester) or 804-594-1509 (Midlothian).
General Studies, Psychology Specialization
Associate of Science (A.S.)

**Purpose**
This program is intended to provide students with a general course of study that parallels the freshman and sophomore years at most colleges and universities for degrees in psychology and related disciplines. The courses in this program are specifically selected for ease of transfer to most four-year colleges and universities. Students holding the AS degree will have junior standing and will be considered to have met all lower-division general education requirements at most four-year colleges and universities.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

**Program Curriculum**

<table>
<thead>
<tr>
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<td>MTH 163</td>
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<td>HIS 102, HIS 112</td>
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<td>HIS 122</td>
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<td>MTH 164, MTH 174</td>
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<td>MTH 240</td>
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<td>SOC 200</td>
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<tbody>
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<td>BIO 101</td>
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<td>BIO 110, CHM 111, PHY 101, PHY 201</td>
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<td>PSY 213</td>
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<td>SOC 210</td>
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<table>
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<tr>
<th>4th Semester</th>
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<tr>
<td>BIO 102</td>
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<td>BIO 120, CHM 112, PHY 102, PHY 202</td>
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<td>See Note 1.</td>
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<td>Literature Elective</td>
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<td>See Note 2.</td>
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<td>Physical Education/Health Elective</td>
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</table>

**Total Credits For Program** 62

**Notes and Additional Curriculum Options**
1. The humanities elective requirements can be satisfied by completing a literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech courses addressing performing arts or the history of theatre (CST), or religion (REL) courses. ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities electives requirements.
2. The literature requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.
3. Students with good computer skills may seek to satisfy this requirement by CLEP.
4. Students should consult with their advisors regarding appropriate psychology (PSY) electives.

For additional information on this program, please contact the Division of Mathematics, Natural and Behavioral Sciences: 804-706-5086 (Chester) or 804-594-1509 (Midlothian).
General Studies, Science Specialization

Associate of Science (A.S.)

**Purpose**
This program is specifically designed for transfer into a science major at most four year colleges. Following the prescribed coursework in this program will result in graduation with the Associate in Science Degree (AS) in General Studies with a Specialization in Science. Students should consult with their advisors to ensure that they select courses that best prepare them for the specific requirements of their intended transfer college or university for majors in biology, chemistry or physics.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

**Program Curriculum**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
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<tr>
<td>BIO 101 General Biology I</td>
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<tr>
<td>ENG 111 College Composition I</td>
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<tr>
<td>MTH 173 Calculus with Analytical Geometry I</td>
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<td>SDV 100 College Success Skills</td>
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<td>History Elective</td>
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<td>See Note 2.</td>
</tr>
<tr>
<td>Physical Education/Health Elective</td>
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</tr>
<tr>
<td><strong>Total Credits</strong></td>
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</table>

| 2nd Semester | | |
| BIO 102 General Biology II | 4 | See Note 1. |
| ENG 112 College Composition II | 3 | |
| MTH 240 Statistics | 3 | See Note 3. |
| History Elective | 3 | See Note 2. |
| Social/Behavioral Science Elective | 3 | See Note 4. |
| **Total Credits** | | **16** |

| 3rd Semester | | |
| CHM 111 College Chemistry I | 4 | |
| PHY 201 General College Physics I | 4 | PHY 241 |
| General Elective | 3 | |
| Literature Elective | 3 | See Note 6. |
| **Total Credits** | | **14** |

| 4th Semester | | |
| CHM 112 College Chemistry II | 4 | |
| PHY 202 General College Physics II | 4 | PHY 242 |
| General Elective | 3 | |
| Humanities Elective | 3 | See Note 5. |
| **Total Credits** | | **14** |

**Total Credits For Program** | **61** |

**Notes and Additional Curriculum Options**
1. Biology majors need BIO 110 and BIO 120 instead of BIO 101 and BIO 102.
2. The history elective requirements can be satisfied by the following courses: HIS 101, HIS 102, HIS 111, HIS 112, HIS 121, HIS 122 or any other HIS course approved by the student’s advisor.
3. Students who are required to take MTH 163 and/or MTH 164 as prerequisites for MTH 173 may use these course as general electives. MTH 173 and MTH 240 are recommended for biology majors. MTH 173 and MTH 174 are recommended for chemistry and physics majors.
4. The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: PSY, SOC, ECO, GEO, PLS and HIS.
5. The humanities elective requirement can be satisfied by completing a literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech course addressing performing arts or the history of theatre (CST), or religion course (REL). ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities electives requirements.
6. The literature requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.
7. The laboratory science courses not specified for application to the degree, such as BIO 141, BIO 142, GOL 105, NAS 125, NAS 130, may be taken as preparation for future coursework and will count for college credit.

For additional information on this program, please contact the Division of Mathematics, Natural and Behavioral Sciences: 804-706-5086 (Chester) or 804-594-1509 (Midlothian).
General Studies, Teacher Education Specialization

Associate of Science (A.S.)

Purpose
This program is intended to provide the student with a general course of study that parallels the freshman and sophomore years at most colleges and universities and prepares the student for a baccalaureate degree program in K-6. Students who wish to complete this program will be required to pass the PRAXIS I test prior to transferring to the four-year institution. Students holding the AS degree will have junior standing and will be considered to have met all lower-division general education requirements at most four-year colleges and universities. Note that special education, physical education, health, art and music education majors must follow a different curriculum as determined by each transfer institution. Specific elementary teacher education requirements vary at senior institutions, however, and students should consult with senior institutions for additional guidance regarding pre-teach preparation.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum. Students who register in this program need to know which four-year college/university they plan to attend so they can select the most appropriate courses in areas where there are choices.

Program Curriculum

1st Semester
- ENG 111 College Composition 3
- HIS 121 United States History I 3
- ITE 115 Introduction to Computer Applications and Concepts 3
- MTH 163 Precalculus I 3
- SDV 101 Orientation to Future Teachers 1
- Health/Physical Education Elective 2
Total Credits 15

2nd Semester
- ART 101 History and Appreciation of Art 3
- ENG 112 College Composition II 3
- HIS 122 United States History II 3
- MTH 240 Statistics 3
- PLS 135 American National Politics 3
Total Credits 15

3rd Semester
- CST 100 Introduction to Public Speaking 3
- ECO 201 Principles of Macroeconomics 3
- EDU 200 Introduction to Teaching as a Profession 3
- HIS 112 History of World Civilization II 3
- PHY 101 Introduction to Physics I 4
Total Credits 16

4th Semester
- BIO 101 General Biology I 4
- ENG 241 Survey of American Literature I 3
- GEO 210 People and the Land: Cultural Geography 3
- General Elective 3
- Humanities Elective 3
Total Credits 16

Notes and Additional Curriculum Options
1. The computer literacy requirement also can be satisfied by other information technology courses and CLEP examinations.
2. It is recommended that the HIS requirement include American history and world history.
3. ECO 120 may be used as a standard course option for some colleges and universities. Please consult with your transfer institution.
4. Two different science disciplines are recommended and are even required at some transfer institutions.
5. Some transfer institutions require foreign language, some do not.
6. The humanities elective requirement can be satisfied by courses with the following prefixes: ARA, ART, CST (with the exception of CST 100, CST 105 and CST 115), ENG (literature courses only), FRE, GER, HUM, MUS, PHI, REL and SPA.
7. Part-time students should consult their faculty advisor regarding appropriate course sequences.
8. Students should consult with their faculty advisor or transfer college for advice regarding selection of electives.

For additional information on this program, please contact the Division of Engineering, Business and Public Services at 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Information Systems

Associate of Science (A.S.)

Purpose
This program is intended to provide the student with a general course of study that parallels the freshman and sophomore years at most colleges and universities and prepares the student for a baccalaureate degree program in information systems, management information systems, information technology, or business.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum. Keyboarding skills are recommended.

Program Curriculum

1st Semester
ACC 211 Principles of Accounting I 3
ENG 111 College Composition I 3
ITE 115 Introduction to Computer Applications and Concepts 3
MTH 163 Precalculus I 3
SDV 100 College Success Skills 1
Health/Physical Education Elective 1
Total Credits 14

2nd Semester
ACC 212 Principles of Accounting II 3
ENG 112 College Composition II 3
ITN 101 Introduction to Network Concepts 3
ITP 100 Software Design 3
MTH 164 Precalculus II 3
MTH 270
Total Credits 15

3rd Semester
BIO 101 General Biology I 4
CHM 111, PHY 201
ITD 130 Database Fundamentals 3
ITP 251 Systems Analysis and Design 3
PSY 126 Psychology for Business and Industry 3
Social Science Elective 3
See note 3.
Total Credits 16

4th Semester
BIO 102 General Biology II 4
CHM 112, PHY 202
BUS 100 Introduction to Business 3
CST 110 Introduction to Communication 3
Humanities/Fine Arts Elective 3
See note 4.
Social Science Elective 3
See note 3.
Total Credits 16

Total Credits For Program 61

Notes and Additional Curriculum Options
1. All information technology courses must be completed within five years of a student’s intended graduation date.
2. Students should consult their faculty advisors regarding appropriate course sequences.
3. The social sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY or SOC.
4. The humanities elective requirement can be satisfied by completing a literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech course addressing performing arts and the history of theatre (CST), or religion (REL) courses. ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities elective requirements.
5. There may be other possible course options in mathematics and natural sciences. Students should consult their faculty advisors.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
### Purpose
The associate of arts curriculum in liberal arts is designed for students who plan to transfer to four-year colleges or universities and seek bachelor’s degrees in fields such as English, history, philosophy, political science, archaeology, art history, foreign languages, religious studies and other majors that require foreign language as part of their general education requirements.

### Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial and prerequisite courses to prepare students for the curriculum.

### Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
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<tr>
<td>ENG 111 College Composition I</td>
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<td>ITE 115 Introduction to Computer Applications and Concepts</td>
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<td>See Note 7.</td>
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<tr>
<td>MTH 163 Precalculus I</td>
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<td>MTH 170, MTH 173</td>
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<tr>
<td>2nd Semester</td>
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<td>Visual &amp; Performing Art Elective</td>
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<td><strong>Total Credits For Program</strong></td>
<td><strong>63</strong></td>
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### Notes and Additional Curriculum Options
1. The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, PLS, HIS, PSY and SOC.
2. The philosophy/religion elective requirement can be satisfied by courses with the following prefixes: PHI and REL.
3. The visual and performing arts elective can be satisfied by any ART or MUS course or any CST acting or theatre course to include CST 130, CST 131, CST 132, CST 136, CST 195, CST 231 and CST 232.
4. The history elective requirements can be satisfied by the following courses: HIS 101, HIS 102, HIS 111, HIS 112, HIS 121, HIS 122 or any other HIS course approved by the student’s advisor.
5. Students must demonstrate competency in a foreign language through the 202 level by completing appropriate courses and/or examinations. Placement in foreign language is by SAT II Subject Test score or departmental recommendation. Students who are not required to take introductory-level courses must substitute other approved general electives.
6. The literature elective requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.
7. Students with good computer skills may seek to satisfy this requirement by CLEP.
8. The laboratory science requirement can be satisfied by the following courses: BIO 101, BIO 102, BIO 110, BIO 120, CHM 101, CHM 102, CHM 111, CHM 112, GOL 105, NAS 125, NAS 130, PHY 101, PHY 102, PHY 201, PHY 202, PHY 241, PHY 242.

For additional information on this program, please contact the Division of Arts, Humanities and Social Sciences: 804-706-5086 (Chester) or 804-594-1509 (Midlothian).
Liberal Arts, International Studies Specialization

Associate of Arts (A.A.)

Purpose
The associate of arts curriculum in liberal arts with a specialization in international studies is designed for students who plan to transfer to four-year colleges or universities and seek bachelor’s degrees in international relations, foreign affairs, comparative politics, foreign languages and other majors with global perspectives.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial and prerequisite courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<tr>
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<td>MTH 163 Precalculus I</td>
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<td>MTH 170, MTH 173</td>
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<td>SDV 100 College Success Skills</td>
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<td>Foreign Language</td>
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<td>ENG 112 College Composition II</td>
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<tr>
<td>MTH 240 Statistics</td>
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<td>MTH 164, MTH 270, MTH 174</td>
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<td>PLS 241 International Relations I</td>
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<td>ECO 210, GEO 210, SOC 210</td>
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</table>

Notes and Additional Curriculum Options
1. The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, PLS, HIS, PSY, SOC or a social science course offered as part of a study abroad program.
2. The humanities elective requirement can be satisfied by completing literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech courses addressing performing arts or the history of theatre (CST), or religion (REL) courses. ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities electives requirements. Students must take one of the following: ART 101, ART 102, ART 104, HUM 201, HUM 202, REL 230, REL 233, REL 237 or other humanities course with a global perspective or one offered as part of a study abroad program.
3. Students must take one course from Group A and one course from Group B. Group A: HIS 121, HIS 122, HIS 141, HIS 142, HIS 269, HIS 276, HIS 277. Group B: HIS 101, HIS 102, HIS 111, HIS 112, HIS 211, HIS 203, HIS 225, HIS 226 or other history course with a global perspective or one offered as a part of a study abroad program.
4. Students must demonstrate competency in a foreign language through the 202 level by completing appropriate courses and/or examinations. Placement in foreign language is by SAT II Subject Test score or departmental recommendation. Students who are not required to take introductory-level courses must substitute other approved general electives.
5. Students with good computer skills may seek to satisfy this requirement by CLEP.
6. The laboratory science requirement can be satisfied by the following courses: BIO 101, BIO 102, BIO 110, BIO 120, CHM 101, CHM 102, CHM 111, CHM 112, GOL 105, NAS 125, NAS 130, PHY 101, PHY 102, PHY 201, PHY 202, PHY 241, PHY 242.

For additional information on this program, please contact the Division of Arts, Humanities and Social Sciences: 804-706-5086 (Chester) or 804-594-1509 (Midlothian).
Liberal Arts, Theatre Arts Specialization

Associate of Arts (A.A.)

Program Curriculum

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<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<tbody>
<tr>
<td>1st Semester: CST 131 Acting I 3</td>
<td>MTH 170, MTH 173</td>
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<tr>
<td>1st Semester: ENG 111 College Composition I 3</td>
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<td>1st Semester: MTH 163 Precalculus I 3</td>
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<td>1st Semester: SDV 100 College Success Skills 1</td>
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<td>1st Semester: Foreign Language 4</td>
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<td>1st Semester: History Elective 3</td>
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<td>2nd Semester: CST 132 Acting II 3</td>
<td>MTH 164, MTH 270, MTH 174</td>
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<td>2nd Semester: ENG 112 College Composition II 3</td>
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<td>2nd Semester: MTH 240 Statistics 3</td>
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<td>3rd Semester: CST 130 Introduction to the Theatre 3</td>
<td>CST 195, CST 231, CST 232</td>
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<td>3rd Semester: ITE 115 Introduction to Computer Applications and Concepts 3</td>
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<td>4th Semester: CST 136 Theatre Workshop 3</td>
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<td><strong>Total Credits For Program</strong></td>
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</table>

Notes and Additional Curriculum Options

1. Students interested in pursuing a degree in theatre education should take SDV 101-Orientation to Theatre Arts.
2. The history elective requirements can be satisfied by the following courses: HIS 101, HIS 102, HIS 111, HIS 112, HIS 121, HIS 122 or any other HIS course approved by the student’s advisor.
3. Students must demonstrate competency in a foreign language through the 202 level by completing appropriate courses and/or examinations. Placement in foreign language is by SAT II Subject Test score or departmental recommendation. Students who are not required to take introductory level courses must substitute other approved general electives.
4. The literature elective requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.
5. Students with good computer skills may seek to satisfy this requirement by CLEP.
6. The laboratory science requirement can be satisfied by the following courses: BIO 101, BIO 102, BIO 110, BIO 120, CHM 101, CHM 102, CHM 111, CHM 112, GOL 105, NAS 125, NAS 130, PHY 101, PHY 102, PHY 201, PHY 202, PHY 241, PHY 242.
7. The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, PLS, HIS, PSY and SOC. Students interested in pursuing a degree in theatre education should take PSY 230.

For additional information on this program, please contact the Division of Arts, Humanities and Social Sciences: 804-706-5086 (Chester) or 804-594-1509 (Midlothian).
This section provides a listing of John Tyler Community College's applied arts degree programs. The College's programs are subject to change. For an updated list, please visit the College's web site at www.jtcc.edu/academics.
# Visual Arts

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

### Purpose

In addition to developing their creative abilities, students gain experiences with the tools and processes associated with various visual arts media and learn about the exhibition and marketing of artwork.

### Admission Requirements and Special Conditions

A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

### Program Curriculum

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<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<td><strong>1st Semester</strong></td>
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<td>ART 101 History and Appreciation of Art I</td>
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<td>ART 111 Introduction to the Arts I</td>
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<td>ART 112</td>
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<td>ART 121 Drawing I</td>
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<td>ART 131 Fundamentals of Design I</td>
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<td>ENG 111 College Composition I</td>
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<td>ART 102 History and Appreciation of Art II</td>
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<td>ART 132 Fundamentals of Design II</td>
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<td>ART 133 Visual Arts Foundation</td>
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<td>ENG 112 College Composition II</td>
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**Total Credits For Program**: 67

### Notes and Additional Curriculum Options

1. The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY, and SOC.
2. The mathematics/science elective requirement can be satisfied by courses with the following prefixes: BIO, CHM, GOL, MTH, NAS, and PHY.
3. Students with good computer skills may seek to satisfy this requirement by CLEP.
4. Acceptable art electives include the following: ART 138, ART 153, ART 154, ART 217, ART 218, ART 231, ART 232, ART 241, ART 242, ART 243, ART 244, ART 245, ART 246, ART 248, ART 249, ART 259, ART 287, ART 298. Students should consult with their academic advisor about other options.
5. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Arts, Humanities and Social Sciences: 804-706-5086 (Chester) or 804-594-1509 (Midlothian).
Visual Arts, Photography and Film Specialization
Associate of Applied Arts (A.A.A.)

Purpose
For students who intend to pursue careers in photography and/or film production. Program coursework provides a foundation for the fine and applied arts and allows students to learn techniques specific to darkroom photography, digital photography and digital filmmaking. Students are required to prepare portfolios of their work.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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</thead>
<tbody>
<tr>
<td>1st Semester</td>
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<tr>
<td>ART 101 History and Appreciation of Art I</td>
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<td>ART 111 Introduction to the Arts I</td>
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<td>ART 112, PHT 193 “Elements of the Moving Image” for film majors</td>
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<td>ART 121 Drawing I</td>
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<td>ART 131 Fundamentals of Design I</td>
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<td>ENG 111 College Composition I</td>
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<td>CST 100 Introduction to Public Speaking</td>
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<td>PHT 264 Digital Photography</td>
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<td>ART 287 Portfolio and Resume Preparation</td>
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<td>PHT 110 History of Photography</td>
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<tr>
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<td><strong>65</strong></td>
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</table>

Notes and Additional Curriculum Options
NOTES AND ADDITIONAL CURRICULUM OPTIONS
1. CST 131, CST 136 or other theatre classes suggested for film majors in lieu of CST 100.
2. The social/behavioral science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY and SOC.
3. The mathematic/science elective requirement can be satisfied by courses with the following prefixes: BIO, CHM, GOL, MTH, NAS and PHY.
4. Students with good computer skills may seek to satisfy this requirement by CLEP.
5. Photography elective can include courses in film and filmmaking.
6. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Arts, Humanities and Social Sciences: 804-706-5086 (Chester) or 804-594-1509 (Midlothian).
Visual Arts, Visual Communications Specialization
Associate of Applied Arts (A.A.A.)

Purpose
For students who intend to pursue careers in graphic design. Program coursework allows students to learn techniques specific to computer-generated design and imagery and explore all stages of publication, from creative inception to pre-press. Students are required to prepare portfolios of their work.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

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<tr>
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<tbody>
<tr>
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<td>ART 112</td>
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<td>ENG 111 College Composition I</td>
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<tr>
<td>ART 102 History and Appreciation of Art II</td>
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<td>ART 122 Drawing II</td>
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<td>ART 132 Fundamentals of Design II</td>
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<td>ART 133 Visual Arts Foundation</td>
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<td>ITE 115 Introduction to Computer Applications and Concepts</td>
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<tr>
<td>Health or Physical Education Elective</td>
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<tr>
<td>ART 217 Electronic Graphic Design I</td>
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<td>ART 250 History of Design</td>
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<td>ART 291 Computerized Graphic Design I</td>
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<td>ENG 112 College Composition II</td>
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<td>Photography Elective</td>
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<td>ART 218 Electronic Graphic Design II</td>
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<td>ART 292 Computerized Graphic Design II</td>
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<td>CST 100 Introduction to Public Speaking</td>
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<td>Mathematics/Science Elective</td>
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<tr>
<td>Social/Behavioral Science Elective</td>
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**Total Credits For Program** | **68** |

Notes and Additional Curriculum Options
1. The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY and SOC.
2. The mathematics/science elective requirement can be satisfied by courses with the following prefixes: BIO, CHM, GOL, MTH, NAS and PHY.
3. Student with good computer skills may seek to satisfy this requirement by CLEP.
4. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Arts, Humanities and Social Sciences: 804-706-5086 (Chester) or 804-594-1509 (Midlothian).
This section provides a listing of John Tyler Community College’s applied science degree programs. The College’s programs are subject to change. For an updated list, please visit the College’s web site at www.jtcc.edu/academics.
Accounting

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

**Purpose**
This program is designed both for students seeking first-time employment in the accounting field and for those already working in accounting, to provide opportunities to develop and improve skills necessary for advancement. Included in the program are activities that enhance analytical, technical, communication, leadership and human-relations skills. Graduates will be able to: (1) use all the steps of the accounting cycle for various business entities, including sole proprietorships, partnerships and corporations; (2) analyze and interpret financial statements; (3) use accounting computer software to maintain accounting records and to prepare financial statements; (4) prepare the Federal Tax Form 1040 and supporting schedules to include Schedule C for sole proprietorships and Schedule SE for self-employment tax and to research basic tax questions; and (5) apply theory in the practice of job-order and standard cost-accounting systems.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

**Program Curriculum**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<tbody>
<tr>
<td><strong>1st Semester</strong></td>
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<tr>
<td>ACC 211 Principles of Accounting I</td>
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<tr>
<td>BUS 100 Introduction to Business</td>
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<tr>
<td>ENG 111 College Composition I</td>
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<tr>
<td>MTH 120 Introduction to Mathematics</td>
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<td>MTH 163, MTH 170</td>
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<td>PSY 126 Psychology for Business and Industry</td>
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<td>PSY 200/PSY 203</td>
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<tr>
<td>ACC 212 Principles of Accounting II</td>
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<tr>
<td>BUS 125 Applied Business Mathematics</td>
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<tr>
<td>BUS 200 Principles of Management</td>
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<td>ECO 120 Survey of Economics</td>
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<tr>
<td>ACC 221 Intermediate Accounting I</td>
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<td>ACC 231 Cost Accounting I</td>
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<td>BUS 220 Introduction to Business Statistics</td>
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<td>BUS 241 Business Law I</td>
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<td>ITE 115 Introduction to Computer Applications and Concepts</td>
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<td>ACC 215 Computerized Accounting</td>
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<td>ACC 222 Intermediate Accounting II</td>
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<td>ACC 261 Principles of Federal Taxation I</td>
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<td>AST 205 Business Communications</td>
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<td>CST 100 Principles of Public Speaking</td>
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<tr>
<td><strong>Total Credits For Program</strong></td>
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**Notes and Additional Curriculum Options**

1. The philosophy or religion elective requirement can be satisfied by courses with a PHI or REL prefix.
2. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Architectural Engineering Technology
Associate in Applied Science (A.A.S.)

Purpose
Building design and land development require a large number of professionals with a wide range of skills. This program prepares students for many of these careers, including architectural drafter, engineering drafter, computer-aided drafter, civil or surveying drafter, architectural engineering technologist, design assistant, specifications assistant and field inspector / contract administrator. Graduates will be able to: (1) using computer-aided drafting, produce a representative set of accurate working drawings for a house and a small commercial building; (2) apply principles of mechanical and electrical systems to the design of a building; (3) apply principles of mechanics to the design of building elements; (4) perform tests on materials such as concrete, metals and wood; (5) perform basic surveying operations; (6) write technical computer programs; (7) evaluate a building design using building codes and zoning regulations; and (8) use communication skills effectively in the work environment.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on College placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
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<tbody>
<tr>
<td>ARC 121 Architectural Drafting I</td>
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<td>ARC 221 Architectural CAD Applications Software I</td>
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<tr>
<td>ARC 258 Building Codes, Contract Documents and Professional Office Practices</td>
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<tr>
<td>ENG 111 College Composition I</td>
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<tr>
<td>MTH 163 Precalculus I</td>
<td>3</td>
<td>MTH 273</td>
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<tr>
<td>SDV 100 College Success Skills</td>
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<td>ARC 243 Environmental Systems</td>
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<td>CST 100 Principles of Public Speaking</td>
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<td>MEC 270 Computations for Engineering Technology</td>
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<td>MTH 164 Precalculus II</td>
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<th>3rd Semester</th>
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<td>ARC 231 Advanced Architectural Drafting I</td>
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<td>ARC 246 Materials and Methods of Construction</td>
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<td>CIV 171 Surveying I</td>
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<td>DRF 195 (GIS)</td>
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<td>MEC 131 Mechanics I – Statics for Engineering Technology</td>
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<td>Physical Sciences Elective</td>
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<td>Humanities Elective</td>
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**Total Credits For Program** | **65** |

Notes and Additional Curriculum Options
1. Transfer to Four-Year Colleges and Universities - Students should consult their academic advisors and their intended transfer institutions for specific direction in course selection. Required courses for any major at four-year institutions may vary.
2. The humanities elective requirement can be satisfied by courses with the following prefixes: ARA, ART, ENG (literature courses only), FRE, GER, HUM, MUS, PHI, REL, SPA and CST (with the exception of CST 100, CST 105 and CST 228).
3. The physical science elective requirement can be satisfied by courses with the following prefixes: CHM and PHY.
4. The social science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY SOC.
5. The general elective requirement can be satisfied by one of the following courses: ARC 222, MEC 132 or MUS 121.
6. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Business Management
Associate of Applied Science (A.A.S.)

Purpose
All organizations require individuals who possess good managerial skills. This program provides students with opportunities to develop and improve skills necessary for success as a supervisor or manager. Included in the program are activities that enhance analytical, technical, communication, leadership and human relations skills. Graduates will be able to: (1) communicate effectively in business environments, using common terminology; (2) analyze and resolve problems common to entry-level business positions; (3) utilize basic management principles in first-line supervisory situations; (4) analyze a managerial situation to determine fact from opinion; (5) analyze a business situation financially, organizationally and behaviorally; (6) utilize good human-relations skills in a managerial role; and (7) apply computer skills to the solution of management-related problems.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
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<tbody>
<tr>
<td>1st Semester</td>
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<tr>
<td>ACC 211 Principles of Accounting I</td>
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<td>BUS 100 Introduction to Business</td>
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<td>ENG 111 College Composition I</td>
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<td>ITE 115 Introduction to Computer Applications and Concepts</td>
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<td>MTH 120 Introduction to Mathematics</td>
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<td>MTH 163, MTH 170</td>
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<td>ACC 212 Principles of Accounting II</td>
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<td>BUS 125 Applied Business Mathematics</td>
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<td>BUS 200 Principles of Management</td>
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<tr>
<td>ECO 120 Survey of Economics</td>
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<td>3rd Semester</td>
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<tr>
<td>BUS 220 Introduction to Business Statistics</td>
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<td>BUS 241 Business Law I</td>
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<td>CST 100 Principles of Public Speaking</td>
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<td>FIN 215 Financial Management</td>
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<td>PSY 126 Psychology for Business and Industry</td>
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<td>4th Semester</td>
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<td>AST 205 Business Communications</td>
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<td>BUS 205 Human Resource Management</td>
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<td>BUS 266 Production and Operations Management</td>
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<td>BUS 298 Seminar and Project</td>
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<td>MKT 100 Principles of Marketing</td>
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<td>Information Technology Restricted Elective</td>
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<td>Total Credits For Program</td>
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</table>

Notes and Additional Curriculum Options
1. The business elective requirement may be satisfied by taking a total of three credits in courses with any of the following prefixes: ACC, AST, BUS, IT, FIN, MKT or REA.
2. The philosophy or religion elective requirement can be satisfied by courses with a PHI or REL prefix.
3. The ITE restricted elective requirement can be satisfied by ITE 130, ITE 140, ITE 150 or ITE 215.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Early Childhood Development
Associate of Applied Science (A.A.S.)

**Purpose**
This program provides students with opportunities to develop and improve skills necessary to work with children from birth to age 12 in a variety of early childhood settings, including public schools, child-care centers, Head Start, home-visitor and preschool programs, and as family childcare providers and nannies. The curriculum has been established to provide competence in areas documented by Virginia’s Competencies for Early Childhood Professionals: health, safety and nutrition, understanding child growth and development, appropriate child observation and assessment, partnering with families and community, learning environment, effective interactions, program management, teacher qualifications and professional development. Graduates will be able to: (1) use professional terminology for effective communication; (2) plan and implement instruction; (3) analyze and resolve problems; (4) use good human relations skills; (5) apply basic child/classroom observation skills; (6) locate, compile and analyze appropriate resources, activities and materials; (7) determine and use appropriate actions according to regulations; and (8) apply appropriate computer skills.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum. Students are expected to demonstrate or acquire basic computer literacy. Students entering the public or private sectors of Early Childhood may be subject to criminal background and sex offender registry checks and a TB screening as a condition of their placement in a training practicum site. Students will be expected to cover any and all costs incurred for these procedures. This may also be required as a condition of employment.

**Program Curriculum**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<tbody>
<tr>
<td><strong>1st Semester</strong></td>
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<tr>
<td>CHD 119 Introduction to Reading Methods</td>
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<td>CHD 120 Introduction to Early Childhood Education</td>
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<tr>
<td>CHD 145 Methods and Materials for Teaching Art, Music and Movement to Children</td>
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<td>ENG 111 College Composition I</td>
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<td>HLT 106 First Aid and Safety</td>
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<td>SDV 100 College Success Skills</td>
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<tr>
<td><strong>2nd Semester</strong></td>
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<tr>
<td>CHD 118 Methods and Materials in the Language Arts for Children</td>
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<td>CHD 146 Methods and Materials for Teaching Math, Science and Social Studies to Children</td>
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<td>CHD 205 Guiding the Behavior of Children</td>
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<td>CHD 215 Models of Early Childhood Education Programs</td>
<td>3</td>
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<td>CHD 216 Early Childhood Programs, School, and Social Change</td>
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<td>ENG 112 College Composition II</td>
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<tr>
<td>CHD 165 Observation and Participation in Early Childhood/Primary Settings</td>
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<td>CHD 210 Introduction to Exceptional Children</td>
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<td>CHD 270 Administration of Childcare Programs</td>
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<td>EDU 235 Health, Safety, and Nutrition Education</td>
<td>3</td>
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<tr>
<td>MTH 120 Introduction to Mathematics</td>
<td>3</td>
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<td>PSY 235 Child Psychology</td>
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<tr>
<td><strong>4th Semester</strong></td>
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<tr>
<td>CHD 166 Infant and Toddler Programs</td>
<td>3</td>
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<tr>
<td>CHD 190 Coordinated Practice I</td>
<td>3</td>
<td>CHD 290</td>
</tr>
<tr>
<td>CHD 265 Advanced Observation and Participation in Early Childhood/Primary Settings</td>
<td>3</td>
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<td>CHD 298 Seminar Portfolio Development</td>
<td>1</td>
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<tr>
<td>CST 110 Introduction to Communication</td>
<td>3</td>
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<tr>
<td>SOC 215 Sociology of the Family</td>
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</table>

**Total Credits For Program**: 67

**Notes and Additional Curriculum Options**
1. CHD 165 and CHD 265 are observation and participation classes that require students to observe children in settings approved by the program head.
2. CHD 165 must be taken before CHD 265 and CHD 298 because materials developed in CHD 165 are used in CHD 265 and CHD 298.
3. CHD 298 must be taken in conjunction with CHD 265.

continued
4. Students who have current certifications in First Aid and Safety and CPR (child or adult) can use these to fulfill the two-credit HLT 106 requirement. The original cards must be presented to the Admissions and Records office. No online First Aid/CPR cards will be accepted for credit at JTCC.

5. Students entering the public or private sectors of early childhood education will be subjected to criminal background and sex offender registry checks, as well as TB screening as a condition of their placement in a training/practicum site. Students will be expected to cover any costs incurred for these procedures. These tests will be required as a condition of employment.

6. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
# Early Childhood Development, Teacher Assistant Specialization

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

## Purpose
Most schools have a variety of teacher assistant positions available. One of the ways to meet the requirements of the No Child Left Behind legislation is for the teacher assistants to have an associate degree, and this specialization will meet that requirement. Graduates will be able to:
1. Use professional terminology for effective communication;
2. Instruct small groups and individual students in a classroom while supervised by a certified teacher;
3. Help students with remedial skills in the classroom;
4. Implement planned lessons;
5. Use good human relations skills;
6. Apply appropriate computer skills;
7. Analyze and resolve problems;
8. Apply basic child/classroom observation skills;
9. Locate, compile and analyze appropriate resources, activities and materials.

## Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

## Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
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<tbody>
<tr>
<td>CHD 120 Introduction to Early Childhood Education</td>
<td>3</td>
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<tr>
<td>CHD 145 Methods and Materials for Teaching Art, Music and Movement to Children</td>
<td>3</td>
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<td>CHD 190 Coordinated Practice I</td>
<td>3</td>
<td>CHD 290</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
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<td>HLT 106 First Aid and Safety</td>
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<td>SDV 101 Orientation to Education</td>
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<tr>
<td>CHD 146 Methods and Materials for Teaching Math, Science and Social Studies</td>
<td>3</td>
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<td>CHD 205 Guiding the Behavior of Children</td>
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<tr>
<td>CHD 210 Introduction to Exceptional Children</td>
<td>3</td>
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<tr>
<td>CHD 216 Early Childhood Programs, School, and Social Change</td>
<td>3</td>
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<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
<td>ITE 115</td>
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<td>ITE 295 Computers for Educators</td>
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<tr>
<td>CHD 119 Introduction to Reading Methods</td>
<td>3</td>
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<td>CHD 165 Observation and Participation in Early Childhood/Primary Settings</td>
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<tr>
<td>EDU 200 Introduction to Teaching as a Profession</td>
<td>3</td>
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<tr>
<td>MTH 170 Fundamentals Contemporary Math</td>
<td>3</td>
<td>MTH 163</td>
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<tr>
<td>MUS 121 Music Appreciation I</td>
<td>3</td>
<td>ART 101, ART 102, HUM 201, HUM 202, PHI 101, PHI 102, PHI 111, REL 230, REL 231, REL 232</td>
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<td>PSY 235 Child Psychology</td>
<td>3</td>
<td>PSY 230</td>
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<td>CHD 265 Advanced Observation and Participation In Early Childhood/Primary Settings</td>
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<td>CHD 298 Seminar and Portfolio Development</td>
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<tr>
<td>CST 100 Principles of Public Speaking</td>
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<td>CST 110</td>
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<td>EDU 235 Health, Safety and Nutrition Education</td>
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<td>SOC 215 Sociology of the Family</td>
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<td>PSY 200, SOC 200</td>
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</table>

**Total Credits For Program** | **66** |  |

continued
Notes and Additional Curriculum Options

1. Coordinated Practice I and Introduction to Teaching as a Profession are courses that require placement in approved activities by the program head.
2. Part-time students should consult their faculty advisors regarding appropriate course sequences.
3. CHD 298 must be taken in conjunction with CHD 265.
4. Students who have current certifications in First Aid and Safety and CPR (Child or Adult) can use these to fulfill the two-credit HLT 106 requirement. The original cards must be presented to the Admissions and Records office.

No online First Aid/CPR cards will be accepted for credit at JTCC.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Funeral Services
Associate of Applied Science (A.A.S.)

Program Aims and Objectives
The funeral services program is designed to provide the necessary technical skills, academic background, hands-on experience, and professional attitudes that will help the student become a fully-licensed funeral director and embalmer. The funeral services program aims to help graduates recognize their importance as members of the funeral services profession. Students will recognize their importance and responsibilities as health care professionals and as community members and be compliant with federal, state and local regulations as they pertain to the practice of funeral services. Students will also understand the importance of trust and ethical behavior in their relationships with bereaved families and members of the funeral service profession who they are called upon to serve. A degree from John Tyler Community College fulfills the educational requirements of the Commonwealth of Virginia and most states to receive a funeral service license, funeral director’s license or embalmer’s license.

Graduates of the funeral services program will be able to:
1. Perform technical skills such as embalming with minimum supervision.
2. Implement and direct all aspects of funeral arrangements with minimum supervision.
3. Demonstrate an understanding of how to write a pre-need contract.
4. Set-up and maintain an OSHA approved preparation room.
5. Follow all regulations pertaining to funeral services including Regulations of the Commonwealth of Virginia and the Federal Trade Commission.
6. Understand the impact of modern day funeral service practitioners.
7. Understand all aspects of funeral services including preparation, restorative arts, cremation, at-need arrangements, pre-need arrangements and providing funeral services.
8. Understand the importance of the history of funeral services and the impact on modern society with encouragement to conduct research along with faculty.
9. Understand the high standards of ethical conduct as set forth by the funeral services industry.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<tbody>
<tr>
<td>CHM 110 Survey of Chemistry</td>
<td>3</td>
<td>CHM 101, CHM 111</td>
</tr>
<tr>
<td>CST 100 Principles of Public Speaking</td>
<td>3</td>
<td>CST 110, 115</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
<td></td>
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<tr>
<td>FNS 121 Anatomy for Funeral Services I</td>
<td>3</td>
<td>BIO 141, BIO 142, NAS 161, NAS 162</td>
</tr>
<tr>
<td>HLT 141 Introduction to Medical Terminology</td>
<td>2</td>
<td></td>
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<tr>
<td>PSY 116 Psychology of Death and Dying</td>
<td>3</td>
<td></td>
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<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
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<tbody>
<tr>
<td>ACC 211 Principles of Accounting I</td>
<td>3</td>
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<tr>
<td>BUS 241 Business Law I</td>
<td>3</td>
<td></td>
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<td>FNS 110 Introduction to Funeral Service</td>
<td>3</td>
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<tr>
<td>REL 230 Religions of the World</td>
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<td>SOC 200 Principles of Sociology</td>
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<td>Information Systems Technology Elective</td>
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<th>3rd Semester</th>
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<tr>
<td>FNS 111 Theory of Embalming I</td>
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<td>FNS 113 Theory of Embalming Laboratory I</td>
<td>1</td>
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<tr>
<td>FNS 125 Microbiology for Funeral Service</td>
<td>3</td>
<td>BIO 150, BIO 205</td>
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<td>FNS 126 Pathology for Funeral Service</td>
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<tr>
<td>FNS 213 Restorative Art</td>
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<tr>
<td>FNS 231 Principles of Funeral Management I</td>
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<tr>
<td>FNS 114 Theory of Embalming Laboratory II</td>
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<tr>
<td>FNS 214 Restorative Art Technical Applications</td>
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<tr>
<td>FNS 232 Principles of Funeral Management II</td>
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<td>FNS 236 Funeral Service Law</td>
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<td>FNS 245 Ethics</td>
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<td>FNS 270 Funeral Service Review</td>
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</table>

**Total Credits For Program** | **68**

NOTES AND ADDITIONAL CURRICULUM OPTIONS
1. The funeral services program at John Tyler Community College is accredited by the American Board of Funeral Service Education (ABFSE), 3414 Ashland Avenue, Suite G, St. Joseph, MO, 64506, 816-233-3747; Web: www.abfse.org and is approved by the State Board of Funeral Directors and Embalmers. The program also is a member of the National Association of Colleges of Mortuary Science.
2. In order to receive the Funeral Service license in the Commonwealth of Virginia, an individual must: (1) complete an accredited program of mortuary science or funeral services; (2) pass the National Board Examination for funeral services as administered by the International Conference of Funeral Service Examiners with a minimum score of 75. (Students in the funeral services program at John Tyler Community College are required to take the exam prior to graduation.); (3) complete a 3000-hour resident traineeship with a licensed funeral services provider in the Commonwealth of Virginia as prescribed by the Regulations of the Board of Funeral Directors and
Admission Requirements and Special Conditions

1. Be 18 years of age or older.
2. Hold a high school diploma or GED (transcripts must have been received by John Tyler Community College).
3. Complete all developmental English and mathematics courses.
4. Complete the prerequisite courses ACC 211, FNS 121 and CHM 110 with a grade of “C” or better.
5. Complete CST 100, ENG 111, REL 230, SDV 100, BUS 241, SOC 200, ITE elective and HLT 141 unless prior approval is given by funeral services program head.
6. Students must apply separately for admission to the funeral services program. Application deadlines for admission: August 1 for the Fall semester, December 1 for the Spring semester, May 1 for the Summer semester.
7. All applicants must have at least 2.5 cumulative GPA in order to be eligible for admission.
8. All official transcripts from any other colleges attended must be received by the registrar prior to admission.
9. Students must maintain a minimum cumulative grade point average of 2.0 to remain eligible for continued enrollment in the funeral services program.
10. Students who fail to receive a minimum grade of “C” in any 2 FNS prefix classes will automatically be removed from the funeral services program.
11. Students may apply for readmission to the program.
12. All funeral services classes taken previously at John Tyler Community College or any other accredited college of funeral services must have been completed within 5 years of application to the funeral services program.
13. Students must complete the funeral services program within 8 semesters (including summer semesters) of initial admission into the funeral services program.
14. All students must provide documentation of completion of the Hepatitis-B vaccination series (or be in process of completing it) prior to beginning FNS 113, FNS 114 or FNS 214. Students who do not wish to receive the Hepatitis-B vaccination must sign a declination statement.
15. All developmental courses must be completed prior to a student being placed into the funeral services program.

For additional information on this program, you may log on to our web site at www.jtcc.edu/funeralservices or contact Richard R. Sikon, program head, at 804-706-5113 or Rhonda K. Pleasants, associate professor, at 804-706-5118 or the Division of Health Sciences at 804-768-6611 (Chester).
Human Services
Associate of Applied Science (A.A.S.)

Purpose
Human services is a rapidly growing career area with a broad range of applications. Graduates will be able to work in the fields of social services, substance abuse, mental retardation, physical disabilities and gerontology. Students will be able to function effectively in therapeutic, remedial and rehabilitative activities.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English is required. If students have deficiencies in English, JTCC offers remedial courses to prepare students for the curriculum.

Persons entering the public or private sectors of human will be subjected to criminal background and sex offender registry checks, as well as a TB screening as a condition of their placement in a training/practicum site. Students will be expected to cover any costs incurred for these procedures. This test will be required as a condition of employment.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<tbody>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
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<tr>
<td>HMS 100 Introduction to Human Services</td>
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<td>HMS 236 Gerontology</td>
<td>3</td>
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<td>PSY 200/PSY 203 Principles of Psychology</td>
<td>4</td>
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<td>SDV 100 College Success Skills</td>
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<td>SOC 200 Principles of Sociology</td>
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<tr>
<td>ENG 112 College Composition II</td>
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<tr>
<td>MEN 101 Mental Health Skill Training I</td>
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<td>MTH 163 Precalculus I</td>
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<td>Humanities Elective</td>
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<td>Social Science Elective</td>
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<tr>
<td>HMS 251 Substance Abuse I</td>
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<td>MEN 102 Mental Health Skill Training II</td>
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<td>MEN 121 Mental Retardation I</td>
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<tr>
<td>SOC 210 Survey of Physical and Cultural Anthropology</td>
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<td>Health/Physical Education Elective</td>
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<tr>
<td>Information Technology Elective</td>
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<td>MEN 290 Coordinated Practice</td>
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<td>MEN 296 On-Site Training</td>
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<td>PSY 215 Abnormal Psychology</td>
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</table>

**Total Credits for Program** **67**

Notes and Additional Curriculum Options
1. Students must obtain a grade of “C” or better in the human services sequence courses (HMS 100, MEN 101 and MEN 102) in order to remain in the program.
2. Students must complete all remedial coursework before enrolling in HMS 100.
3. Students must complete HMS 100 prior to enrolling in MEN 101.
4. Students must complete MEN 101 prior to enrolling in MEN 102.
5. MEN 102 must be taken prior to enrolling in MEN 290 and MEN 296. MEN 290 and MEN 296 are corequisites and must be taken in the same semester. In these courses, students will complete 100 hours of practical hands-on training. All coordinated-practice placements must be pre-approved by the program head.
6. The humanities elective requirement can be satisfied by courses with the following prefixes: ARA, ART, CST (with the exception of CST 100, CST 105 and CST 228), ENG (literature courses only), FRE, GER, HUM, MUS, PHI, PHT, REL and SPA.
7. The social science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY, SOC.
8. Students who have current certifications in First Aid and Safety and CPR (Child or Adult) can use these to fulfill the two-credit HLT/PE elective requirement. The original cards must be presented to the Admissions and Record office.
9. Students planning to transfer to four-year programs should choose options and substitutions with the assistance of the program head.

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10. Part-time students should consult their faculty advisors regarding appropriate course sequences. Cover any costs incurred for these procedures. This may also be required as a condition of employment.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
### Purpose

The field of human services is a dynamic, challenging profession. The modern criminal justice/human services system needs people with ability, sensitivity and professional training. This specialized program provides training for career opportunities in criminology, corrections, forensic mental health and facilities management, as well as the fields of probation, parole and juvenile justice. In addition, it offers a broad liberal arts education for those students who wish to transfer to four-year academic institutions.

### Admission Requirements and Special Conditions

A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Persons entering the public or private sectors of human services will be subjected to criminal background and sex offender registry checks, as well as TB screening as a condition of their placement in a training/practicum site. Students will be expected to cover any costs incurred for these procedures. These tests will be required as a condition of employment.

In addition, persons entering the public or private sectors of criminal justice employment will be subjected to criminal background and sex offender registry checks, as well as TB screening as a condition of their placement in a training/practicum site. Students will be expected to cover any costs incurred for these procedures. These tests will be required as a condition of employment.

### Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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</table>
| 1st Semester | 16 Credits | ADJ 100 Survey of Criminal Justice 3  
ENG 111 College Composition I 3  
HMS 100 Introduction to Human Services 3  
MTH 120 Introduction to Mathematics 3  
PSY 100 Principles of Applied Psychology 3  
SDV 100 College Success Skills 1  |
| 2nd Semester | 17 | ADJ 105 The Juvenile Justice System 3  
ADJ 107 Survey of Criminology 3  
MEN 101 Mental Health skill Training I 3  
Health/Physical Education Elective 2  
Humanities Elective 3  
Information Technology Elective 3  |
| 3rd Semester | 18 | ADJ 211 Criminal Law, Evidence and Procedures I 3  
HMS 251 Substance Abuse I 3  
MEN 102 Mental Health Skill Training II 3  
SOC 200 Principles of Sociology 3  
SOC 268 Social Problems 3  
Administration of Justice, Mental Health, or Human Services Elective 3  |
| 4th Semester | 14 | ADJ 212 Criminal Law, Evidence and Procedures II 3  
MEN 290 Coordinated Practice 3  
MEN 296 On-Site Training 3  
General Elective 5  |

### Total Credits For Program

65 Credits

### Notes and Additional Curriculum Options

1. Students must obtain a grade of “C” or better in the human services sequence courses (HMS 100, MEN 101 and MEN 102) in order to remain in the program.
2. Students must complete all remedial coursework before enrolling in HMS 100.
3. Students must complete HMS 100 prior to enrolling in MEN 101.
4. Students must complete MEN 101 prior to enrolling in MEN 102.
5. Students must complete HMS 100, MEN 101, ADJ 100, ADJ 105, ADJ 107 and ADJ 211 prior to enrolling in MEN 290 and MEN 296, the practicum courses. MEN 290 and MEN 296 are corequisites and must be taken in the same semester. The coordinated-practice, students will complete 100 hours of practical hands-on training in the human services areas of their choice. All coordinated-practice placements must be pre-approved by the program head before students can register for the MEN 290 and MEN 296 courses.
6. The humanities elective requirement can be satisfied by completing a literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech course addressing performing arts and the history of theatre (CST), or religion (REL) course. ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities elective requirements.
7. Students who have current certifications in First Aid and Safety and CPR (Child or Adult) can use these to fulfill the two-credit HLT/PE elective requirement. The original cards must be presented to the Admissions and Records.
Human Services, Criminology Specialization
continued

office. No online First Aid/CPR cards will be accepted for credit at JTCC.
8. Students planning to transfer to four-year programs should choose options and substitutions with the assistance of
the program head.
9. Part-time students should consult with their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public
Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
# Human Services, Disabilities Specialization

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

## Purpose
Graduates with the disabilities specialization will be able to:
1. Undertake employment in the fields of social services, substance abuse, mental retardation, physical disabilities and gerontology; and
2. Function effectively as members of any human services team by rendering direct care in therapeutic, remedial and rehabilitative activities.

## Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Persons entering the public or private sectors of human services will be subjected to criminal background and sex offender registry checks, as well as a TB screening as a condition of their placement in a training/practicum site. Students will be expected to cover any costs incurred for these procedures. These tests will be required as a condition of employment.

## Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HMS 100 Introduction to Human Services</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HMS 251 Substance Abuse I</td>
<td>3</td>
<td>ADJ 228, HMS 252, HMS 258</td>
</tr>
<tr>
<td>MEN 121 Mental Retardation I</td>
<td>3</td>
<td>MEN 110</td>
</tr>
<tr>
<td>PSY 100 Principles of Applied Psychology</td>
<td>3</td>
<td>PSY 200, PSY 201, PSY 202</td>
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<td>SDV 100 College Success Skills</td>
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<td><strong>Total Credits</strong></td>
<td>16</td>
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</table>

| **2nd Semester** | | |
| MEN 101 Mental Health Skill Training I | 3 | HMS 121, MEN 198 |
| MEN 122 Mental Retardation II | 3 | MEN 110 |
| Human Services Elective | 3 | |
| Humanities Elective | 3 | |
| Information Technology Elective | 3 | |
| SOC 200 Principles of Sociology | 3 | SOC 201, SOC 202 |
| **Total Credits** | 18 | |

| **3rd Semester** | | |
| MEN 102 Mental Health Skill Training II | 3 | HMS 227, MEN 198 |
| MTH 120 Introduction to Mathematics | 3 | BIO 101, MTH 163, MTH 170 |
| SOC 268 Social Problems | 3 | MEN 110, PSY 215 |
| General Elective | 3 | |
| Health/Physical Education Elective | 2 | HLT 106 |
| **Total Credits** | 14 | |

| **4th Semester** | | |
| HMS 106 Working with Death and Dying | 3 | |
| MEN 290 Coordinated Practice | 3 | |
| MEN 296 On-Site Training | 3 | |
| General Elective | 6 | |
| Social Science Elective | 3 | |
| **Total Credits** | 18 | |

**Total Credits For Program** 66

## Notes and Additional Curriculum Options

**NOTES AND ADDITIONAL CURRICULUM OPTIONS**

1. Students must obtain a grade of “C” or better in the human services sequence courses (HMS 100, MEN 101 and MEN 102) in order to remain in the program.
2. Students must complete all remedial coursework before enrolling in HMS 100.
3. Students must complete HMS 100 prior to enrolling in MEN 101.
4. Students must complete MEN 101 prior to enrolling in MEN 102.
5. Students must complete HMS 100 and MEN 101 prior to enrolling in MEN 290 and MEN 296, the practicum courses. MEN 290 and MEN 296 are corequisites and must be taken together in the same semester. In the coordinate practice, students engage in 100 hours of practical hands-on training in the human services areas of their choice. All coordinate-practice placements must be pre-approved by the program head before students can register for the MEN 290 and MEN 296 courses.
6. The humanities elective requirement can be satisfied by courses with the following prefixes: ARA, ART, CST (with the exception of CST 100, CST 105 and CST 228), ENG (literature courses only), FRE, GER, HUM, MUS, PHI, PHT, REL and SPA.
7. The social science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY, SOC.

...continued
8. Students who have current certifications in First Aid and Safety and CPR (Child or Adult) can use these to fulfill the two-credit HLT/PE elective requirement. The original cards must be presented to the Admissions and Records office.

9. Students planning to transfer to four-year programs should choose options and substitutions with the assistance of the program head.

10. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Human Services, Gerontology Specialization

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

**Purpose**
This specialized program develops the knowledge, skills and training specific to working with the aging population. The curriculum provides a strong foundation in understanding the emotional, psychological and social issues inherent in working with the older adult. Graduates with the gerontology specialization will be prepared for employment in adult home care facilities, assisted living agencies and adult daycare centers.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Persons entering the public or private sectors of human services will be subjected to criminal background and sex offender registry checks, as well as a TB screening as a condition of their placement in a training/practicum site. Students will be expected to cover any costs incurred for these procedures. These tests will be required as a condition of employment.

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**Program Curriculum**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Options</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
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<td><strong>Standard Course Options</strong></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
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<tr>
<td>HMS 100 Introduction to Human Services</td>
<td>3</td>
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</tr>
<tr>
<td>HMS 251 Substance Abuse I</td>
<td>3</td>
<td>ADJ 228, HMS 258</td>
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<tr>
<td>MEN 121 Mental Retardation I</td>
<td>3</td>
<td>MEN 110, PSY 215</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
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<tr>
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<tr>
<td><strong>2nd Semester</strong></td>
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<td><strong>Standard Course Options</strong></td>
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<td>MEN 101 Mental Health Skill Training I</td>
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<td>HMS 121, MEN 198</td>
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<td>MTH 120 Introduction to Mathematics</td>
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<td>BIO 101, MTH 163, MTH 170</td>
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<td>PSY 100 Principles of Applied Psychology</td>
<td>3</td>
<td>PSY 200/PSY 203</td>
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<td>SOC 200 Principles of Sociology</td>
<td>3</td>
<td></td>
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<td>Health/Physical Education Elective</td>
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<td>HLT 106</td>
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<tr>
<td>Humanities Elective</td>
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<tr>
<td><strong>3rd Semester</strong></td>
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<td><strong>Standard Course Options</strong></td>
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<tr>
<td>HMS 106 Working with Death and Dying</td>
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<tr>
<td>HMS 236 Gerontology</td>
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<td>MEN 102 Mental Health Skill Training II</td>
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<tr>
<td>Administration of Justice, Human Services or Mental Health Elective</td>
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<tr>
<td>General Elective</td>
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<td><strong>4th Semester</strong></td>
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<td>MEN 290 Coordinated Practice</td>
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<td>MEN 296 On-Site Training</td>
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<tr>
<td>SOC 246 Death and Society</td>
<td>3</td>
<td>PSY 116</td>
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<td>SOC 268 Social Problems</td>
<td>3</td>
<td>HLT 106</td>
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<td>General Elective</td>
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<td>MEN 110, PSY 215</td>
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<td><strong>Total Credits For Program</strong></td>
<td>65</td>
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</tbody>
</table>

**Notes and Additional Curriculum Options**

1. Students must obtain a grade of “C” or better in the human services sequence courses (HMS 100, MEN 101 and MEN 102) in order to remain in the program.
2. Students must complete all remedial coursework before enrolling in HMS 100.
3. Students must complete HMS 100 prior to enrolling in MEN 101.
4. Students must complete MEN 101 prior to enrolling in MEN 102.
5. Students must take MEN 101, MEN 102 and HMS 236 prior to enrolling in MEN 290 and MEN 296. MEN 290 and MEN 296 are corequisites and must be taken in the same semester. In these courses, students will complete 100 hours of practical hands-on training. All coordinated-practice placements must be pre-approved by the program head before students can register for the MEN 290 and MEN 296 courses.
6. The humanities elective requirement can be satisfied by completing a literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech course addressing performing arts and the history of theatre (CST), or religion (REL) course. ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities elective requirements.
7. Students who have current certifications in First Aid and Safety and CPR (Child or Adult) can use these to fulfill the two-credit HLT/PE elective requirement. The original cards must be presented to the Admissions and Records Office.  

continued
8. Students planning to transfer to four-year programs should choose options and substitutions with the assistance of the program head.

9. Part-time students should consult with their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Human Services, Social Work Specialization

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

Purpose
Graduates with the social work specialization will be able to:
(1) undertake employment in the fields of social services, substance abuse, mental retardation, physical disabilities and gerontology; and
(2) function effectively as members of any human services team by rendering direct care in therapeutic, remedial and rehabilitative activities. Students take two practicum training courses instead of two behavioral sciences.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Persons entering the public or private sectors of human services will be subjected to criminal background and sex offender registry checks, as well as a TB screening as a condition of their placement in a training/practicum site. Students will be expected to cover any costs incurred for these procedures. These tests will be required as a condition of employment.

Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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</thead>
<tbody>
<tr>
<td>1st Semester</td>
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<tr>
<td>BIO 101 General Biology I</td>
<td>4</td>
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<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
<td></td>
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<tr>
<td>HMS 100 Introduction to Human Services</td>
<td>3</td>
<td></td>
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<tr>
<td>HMS 251 Substance Abuse I</td>
<td>3</td>
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<tr>
<td>PSY 200/PSY 203 Principles of Psychology with Lab</td>
<td>4</td>
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<tr>
<td>SDV 100 College Success Skills</td>
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2nd Semester

<table>
<thead>
<tr>
<th>Credits</th>
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<tr>
<td>16</td>
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<tr>
<td>BIO 102 General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
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<tr>
<td>MEN 101 Mental Health Skill Training I</td>
<td>3</td>
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<tr>
<td>PHI 220 Ethics</td>
<td>3</td>
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<tr>
<td>Human Services, Mental Health, or Social Science Elective</td>
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3rd Semester

<table>
<thead>
<tr>
<th>Credits</th>
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<tr>
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<td>MEN 102 Mental Health Skill Training II</td>
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</tr>
<tr>
<td>MEN 190 Coordinated Practice</td>
<td>3</td>
</tr>
<tr>
<td>MEN 196 On-Site Training</td>
<td>3</td>
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<tr>
<td>MTH 163 Precalculus I</td>
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<td>SOC 200 Principles of Sociology</td>
<td>3</td>
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<td>HLT/PE Elective</td>
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4th Semester

<table>
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<tr>
<td>MEN 290 Coordinated Practice</td>
<td>3</td>
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<tr>
<td>MEN 296 On-Site Training</td>
<td>3</td>
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<tr>
<td>SOC 210 Survey of Physical and Cultural Anthropology</td>
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<td>General Elective</td>
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<tr>
<td>Information Technology Elective</td>
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</table>

Total Credits For Program

| 66 |

Notes and Additional Curriculum Options
1. Students must obtain a grade of “C” or better in the human services sequence courses (HMS 100, MEN 101 and MEN 102) in order to remain in the program.
2. Students must complete all remedial coursework before enrolling in HMS 100.
3. Students must complete HMS 100 prior to enrolling in MEN 101.
4. Students must complete MEN 101 prior to enrolling in MEN 102.
5. Students must complete HMS 100 and MEN 101 prior to enrolling in MEN 190 and MEN 196 or in MEN 290 and MEN 296 (corequisite requirements). MEN 190, MEN 196, MEN 290 and MEN 296 are practicum courses and require placement for two consecutive semesters in approved agencies by the program head. Each course requires 100 hours of practical hands-on training.
6. The social science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY, SOC.
7. Students who have current certifications in First Aid and Safety and CPR (Child or Adult) can use these to fulfill the two-credit HLT/PE elective requirement. The original cards must be presented to the Admissions and Records office.
8. Students planning to transfer to four-year programs should choose options and substitutions with the assistance of
9. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
### Information Technology

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

#### Purpose
The information technology (IT) degree is designed to meet the rapidly changing workforce needs of business and industry. The curriculum has been designed to prepare students for employment in the business information and computer technology fields. The curriculum allows students to gain an overall understanding of the IT field in addition to pursuing a particular track, which represents an area of interest or specialization. The four tracks are: Cisco network, computer applications, network support and program development.

#### Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum. Keyboarding skills are recommended.

### Program Curriculum

#### 1st Semester

<table>
<thead>
<tr>
<th>Course Options</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CST 110 Introduction to Communication</td>
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</tr>
<tr>
<td>ENG 115 Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>ITE 115 Introduction to Computer Applications and Concepts</td>
<td>3</td>
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<tr>
<td>ITE 130 Introduction to Internet Services</td>
<td>3</td>
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<tr>
<td>MTH 170 Foundations of Contemporary Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Health/Physical Education Elective</td>
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</table>

**Total Credits: 18**

#### 2nd Semester

<table>
<thead>
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<th>Course Options</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BUS 100 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ITE 215 Advanced Computer Applications &amp; Integration</td>
<td>3</td>
</tr>
<tr>
<td>ITN 101 Introduction to Network Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ITP 100 Software Design</td>
<td>3</td>
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<tr>
<td>IT Track Courses</td>
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**Total Credits: 18**

#### 3rd Semester

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<thead>
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<tr>
<td>ACC 211 Principles of Accounting I</td>
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</tr>
<tr>
<td>ECO 120 Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ITP 251 Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>PSY 126 Psychology for Business and Industry</td>
<td>3</td>
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<td>IT Track Courses</td>
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**Total Credits: 15**

#### 4th Semester

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<tr>
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<td>BUS 220 Introduction to Business Statistics</td>
<td>3</td>
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<tr>
<td>ITE 221 PC Hardware and OS Architecture</td>
<td>3</td>
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<td>ITE 290 Coordinated Internship</td>
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<tr>
<td>IT Track Courses</td>
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**Total Credits: 16**

**Total Credits For Program: 67**

### Notes and Additional Curriculum Options
1. ITE 290 represents a one-credit internship that will focus on student’s particular track.
2. All information technology courses must be completed within five years of student’s intended graduation date.
3. Students should consult their faculty advisors regarding appropriate course sequences.
4. Prerequisite requirement(s) must be met for all classes.
5. IT required track courses:

#### Computer Applications

<table>
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<th>Course Options</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ITD 110 Web Page Design I</td>
<td>3</td>
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<tr>
<td>ITD 130 Database Fundamentals</td>
<td>3</td>
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<td>ITD 132 Structured Query Language</td>
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<td>ITE Elective Track Course (ITE 140 OR ITE 150)</td>
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**Total: 15**

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*continued*
### Cisco Network

- ITN 154 Networking Fundamentals - Cisco: 3
- ITN 155 Introductory Routing - Cisco: 3
- ITN 156 Basic Switching and Routing - Cisco: 3
- ITN 157 WAN Technologies - Cisco: 3
- ITP Elective Track Course (ITP 110, ITP 120, OR ITP 160): 3

**Total**: 15

### Network Support

- ITN 171 Unix I: 3
- ITN 116 Win 2003 Network Infrastructure, Implementation, Management, and Maintenance: 3
- ITN 295 Network Servicing: 3
- ITN 260 Network Security Basics: 3
- ITP Elective Track Course
  - (ITP 110, ITP 120, OR ITP 160): 3

**Total**: 15

### Program Development

- ITP 110 Visual Basic Programming I: 3
- ITP 120 Java Programming I: 3
- ITP 210 Visual Basic Programming II OR ITP 220 Java Programming II: 3
- ITP 160 Introduction to Game Design and Development: 3
- ITN Elective Track Course
  - (ITN 171, ITN 116, OR ITN 154): 3

**Total**: 15

For additional information on this program, please contact the Division of Engineering, Business and Public Service: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Mechanical Engineering Technology

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

**Purpose**

This program prepares students to work as technicians in the field of mechanical-electrical manufacturing. Graduates will be able to specify maintenance processes, solve problems in fabrication, and troubleshoot mechanical processes.

**Admission Requirements and Special Conditions**

A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

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**Program Curriculum**

**1st Semester**

<table>
<thead>
<tr>
<th>Course Options</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRF 151 Engineering Drawing Fundamentals I</td>
<td>3</td>
</tr>
<tr>
<td>ELE 150 A.C. and D.C. Circuit Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>ITE 115 Introduction to Computer Applications and Concepts</td>
<td>3</td>
</tr>
<tr>
<td>MEC 113 Materials and Processes of Industry</td>
<td>3</td>
</tr>
<tr>
<td>MTH 103 Applied Technical Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
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<tr>
<td><strong>Total Credits</strong></td>
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**2nd Semester**

<table>
<thead>
<tr>
<th>Course Options</th>
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<tbody>
<tr>
<td>DRF 152 Engineering Drawing Fundamentals II</td>
<td>3</td>
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<tr>
<td>ELE 159 Electrical Motors</td>
<td>3</td>
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<tr>
<td>MEC 101 Introduction to Engineering Technology I</td>
<td>2</td>
</tr>
<tr>
<td>MEC 102 Introduction to Engineering Technology II</td>
<td>2</td>
</tr>
<tr>
<td>MTH 104 Applied Technical Mathematics II</td>
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<tr>
<td>Humanities Elective</td>
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**3rd Semester**

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<thead>
<tr>
<th>Course Options</th>
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<tbody>
<tr>
<td>DRF 241 Parametric Solid Modeling I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MEC 131 Mechanics I – Statics for Engineering Technology</td>
<td>3</td>
</tr>
<tr>
<td>MEC 211 Machine Design I</td>
<td>4</td>
</tr>
<tr>
<td>Health/Physical Education Elective</td>
<td>2</td>
</tr>
<tr>
<td>Physical Science Elective</td>
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</table>

**4th Semester**

<table>
<thead>
<tr>
<th>Course Options</th>
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<tbody>
<tr>
<td>MEC 270 Computations for Engineering Technology</td>
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<tr>
<td>MEC 132 Mechanics II – Strength of Materials for Engineering Technology</td>
<td>3</td>
</tr>
<tr>
<td>MEC 212 Machine Design II</td>
<td>4</td>
</tr>
<tr>
<td>MEC 266 Applications of Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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</tbody>
</table>

**Total Credits For Program** | **67**

**Notes and Additional Curriculum Options**

1. The social science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY, SOC.
2. The humanities elective requirement can be satisfied by completing a literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech course addressing performing arts and the history of theatre (CST), or religion (REL) course. ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities elective requirements.

For additional information on specific program objectives, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Mechanical Engineering Technology, Mechatronics Technician Specialization

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

Purpose
This program prepares students to work as technicians in the field of mechanical-electrical manufacturing. Graduates will be able to specify maintenance processes, solve problems in fabrication, and troubleshoot mechanical processes.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRF 151 Engineering Drawing Fundamentals I</td>
<td>3</td>
<td>DRF 201</td>
</tr>
<tr>
<td>ELE 150 A.C. and D.C. Circuit Fundamentals</td>
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<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
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<tr>
<td>MEC 113 Materials and Processes of Industry</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MTH 103 Applied Technical Mathematics I</td>
<td>3</td>
<td>MTH 163</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
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<tr>
<th>2nd Semester</th>
<th>Credits</th>
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<tr>
<td>DRF 152 Engineering Drawing Fundamentals II</td>
<td>3</td>
<td>DRF 202</td>
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<tr>
<td>ELE 159 Electrical Motors</td>
<td>3</td>
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<tr>
<td>ITE 115 Introduction to Computer Applications and Concepts</td>
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<tr>
<td>MEC 101 Introduction to Engineering Technology I</td>
<td>2</td>
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<td>MEC 102 Introduction to Engineering Technology II</td>
<td>2</td>
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<tr>
<td>MTH 104 Applied Technical Mathematics II</td>
<td>3</td>
<td>MTH 164</td>
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<tr>
<td>Health/Physical Education Elective</td>
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<thead>
<tr>
<th>3rd Semester</th>
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<tbody>
<tr>
<td>DRF 241 Parametric Solid Modeling I</td>
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<td></td>
</tr>
<tr>
<td>ELE 239 Programmable Controllers</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>INS 210 Principles of Instrumentation</td>
<td>3</td>
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<tr>
<td>MEC 211 Machine Design I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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<table>
<thead>
<tr>
<th>4th Semester</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ELE 240 Advanced Programmable Logic Controllers</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MEC 212 Machine Design II</td>
<td>4</td>
<td></td>
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<tr>
<td>MEC 266 Applications of Fluid Mechanics</td>
<td>3</td>
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<td>MEC 270 Computations for Engineering Technology</td>
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<td></td>
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<tr>
<td>Humanities Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>16</strong></td>
<td></td>
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</tbody>
</table>

**Total Credits For Program**  **67**

Notes and Additional Curriculum Options

1. The social science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY, SOC.
2. The humanities elective requirement can be satisfied by completing a literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech course addressing performing arts and the history of theatre (CST), or religion (REL) course. ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities elective requirements.

For additional information on specific program objectives, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Purpose
The JTCC nursing program prepares individuals to enter the registered nursing profession and teaches students to deliver quality patient care. At the conclusion of the program, the student will:
1. Demonstrate the use of nursing process.
2. Apply nursing skills to patients’ needs.
3. Communicate therapeutically.
4. Synthesize and communicate relevant data.
5. Integrate teaching in the care of patients regardless of setting.
6. Apply ethical values and legal practices in nursing.
7. Utilize management skills to coordinate cost-effective care.
8. Assume the role of associate degree nurse at an entry level in the profession.
9. Assume accountability and responsibility for own actions as a contributing member of the health-care team.

Admission Requirements and Special Conditions
1. High school diploma or equivalent must be documented.
2. Satisfactory scores on college placement tests in English and mathematics.

Tracks Available
1. Traditional Track: Typical classroom sessions Monday through Friday during the day. Clinicals may be evening, weekend or days.
2. Transitional Track: Open only to LPNs and licensed paramedics. Classes are typically on weekends with additional sessions on weekday evenings and clinicals on weekday evenings and weekends.
3. Hybrid Distance Education Track (HDET): Classes are provided in a web-based online format and clinicals are held locally in evenings, days or weekends.

General Requirements
1. Detailed current information for interested applicants is located at www.jtcc.edu/nursing.
2. Students must be able to fulfill all essential functions as outlined in the program materials located on the web site.
3. All applicants must take a nursing entrance test and pass the test at the required percentile for that test. Specific details regarding acceptable entrance tests are located on the program web site at www.jtcc.edu/nursing. Please note, however, the tests are not interchangeable. Each test has a specific score that is acceptable to the program and associated details with which the applicant must comply in order for the admission application to be deemed acceptable. Test results must be no older than 3 years at the time of application.
4. All applicants must take and pass the COMPASS algebra test within five years of application. This is considered Math 3. If an applicant does not pass this test with a score of 44 or above, Math 3 must be completed within five years of application.
5. Math, science and ITE courses have specific time constraints.
6. All accepted students must have current CPR certification through the American Heart Association: BLS Healthcare Provider. Internet courses are not acceptable unless there is a supervised demonstration component.
7. All accepted students must submit to a criminal background check, drug screening, physical examination and dental examination. Evidence of hepatitis-B vaccination or statement that the student declines the vaccination must be provided.
8. Applicants must have a curricular GPA of at least 2.5 to be considered for admission. However, this is a competitive admissions process.
9. All transcripts must be on file in the Admissions and Records office in order for a student to be considered for admission.
10. Students must earn a minimum of a 2.0 GPA to be eligible to continue in the nursing program and may not have more than two attempts at any course. See the student handbook located at www.jtcc.edu/nursing for all program policies and procedures.
11. Students are responsible for additional expenses mandated by the program and these include but are not limited to: course materials, uniforms, lab kits, nursing equipment, current computer and internet. Expenses associated with the acceptance process including, but not limited to, the criminal background check, drug screening, physical examination, etc. are the burden of the student.
12. Students may wish to consider the purchase of accident insurance and personal health insurance due to the inherent risk of exposure to disease. The College does not assume responsibility for accidents/incidents which occur in the clinical setting; nor does it provide any student health services. The student assumes financial responsibility for accidents/incidents requiring medical attention.
13. It is the student’s responsibility to review all program materials, including the nursing program web site at www.jtcc.edu/nursing, and to stay current with the program requirements, policies and procedures.
14. Students have nursing program advisors assigned after they have been curriculum placed by the counseling office.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 141 Human Anatomy and Physiology I</td>
<td>4</td>
<td>NAS 161</td>
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<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
<td></td>
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<tr>
<td>MTH 120 Introduction to Mathematics</td>
<td>3</td>
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<tr>
<td>NUR 135 Drug Dosage Calculations (taken after acceptance)</td>
<td>1</td>
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<tr>
<td>PSY 230 Developmental Psychology</td>
<td>3</td>
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</tbody>
</table>

continued
SPECIAL ACCREDITATION STATUS
The nursing program is approved by the Virginia State Board of Nursing and is accredited by the National League for Nursing Accreditation Commission.

Calculation of Credit Hours: The nursing program follows VCCS and JTCC guidelines for calculating credit hours. Lecture: one clock hour equals one credit hour. Clinical laboratory: three clock hours equal one credit hour. Lecture and laboratory hours assigned to them are shown with course descriptions.

SDV 100 College Success Skills 1
Total Credits 15

2nd Semester
BIO 142 Human Anatomy and Physiology II 4
NUR 111 Nursing I (Traditional Track)
or NUR 115 LPN Transition (Transitional Track) 8/7
NUR 226 Health Assessment 3
Total Credits 15/14

3rd Semester
NUR 221 Second-Level Nursing Principles and Concepts I 9
SOC 200 Principles of Sociology 3
Total Credits 12

4th Semester
NUR 245 Maternal/Child Nursing 3
NUR 246 Parent/Child Nursing 3
NUR 247 Psychiatric Mental Health Nursing 3
Health/Physical Education Elective 2
Humanities Elective 3
Information Technology Elective 1
Total Credits 15

5th Semester
NUR 223 Second-Level Nursing Principles and Concepts III 9
NUR 254 Dimensions of Professional Nursing (Traditional Track) or NUR 255 Nursing Organization and Management (Transitional Track) 2/3
Total Credits 11/12

Total Credits For Program 68

NOTES AND ADDITIONAL CURRICULUM OPTIONS
1. The humanities elective requirement can be satisfied by completing a literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech course addressing performing arts and the history of theatre (CST), or religion (REL) course. ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities elective requirements.
2. To satisfy the information technology elective requirement, students should plan to take one credit in an ITE computer course offered at the College. (ITE credits cannot be more than five years old.)
3. A student must have completed BIO 141 and BIO 142 within 10 years prior to acceptance to the nursing program.
4. NUR 111 is the required course for students enrolled in the Traditional RN Track. Students enrolled in the Transitional Track should take NUR 115.
5. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information, contact the Division of Health Sciences: 804-622-8700 (Nursing Education Center).
Police Science
Associate of Applied Science (A.A.S.)

Purpose
This program provides students with opportunities to develop and improve skills necessary for success as local, state or federal law enforcement officers; commercial and industrial security officers; police officers; and private or government investigators.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum. An interview with the program head is required. Persons entering the public or private sectors of criminal justice employment will be subjected to intensive physical agility tests, background investigations, psychological testing, personal interviews, physical examinations and polygraph examinations.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJ 100 Survey of Criminal Justice</td>
<td>3</td>
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<tr>
<td>ENG 111 College Composition I</td>
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</tr>
<tr>
<td>ITE 115 Introduction to Computer Applications and Concepts</td>
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<tr>
<td>MTH 120 Introduction to Mathematics</td>
<td>3</td>
<td>MTH 163, MTH 170</td>
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<tr>
<td>SOC 200 Principles of Sociology</td>
<td>3</td>
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<td>SDV 100 College Success Skills</td>
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<th>2nd Semester</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ADJ 105 The Juvenile Justice System</td>
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<tr>
<td>ADJ 107 Survey of Criminology</td>
<td>3</td>
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<tr>
<td>ADJ 229 Law Enforcement and the Community</td>
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<tr>
<td>PSY 100 Principles of Applied Psychology</td>
<td>3</td>
<td>PSY 200/PSY 203</td>
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<tr>
<td>Philosophy or Religion Elective</td>
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<td><strong>Total Credits</strong></td>
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<tr>
<th>3rd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<tbody>
<tr>
<td>ADJ 111 Law Enforcement Organization and Administration I</td>
<td>3</td>
<td></td>
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<tr>
<td>ADJ 117 Police Communications and Records</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ADJ 211 Criminal Law, Evidence and Procedures I</td>
<td>3</td>
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<tr>
<td>ADJ 228 Narcotics and Dangerous Drugs</td>
<td>3</td>
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<tr>
<td>ADJ 236 Principles of Criminal Investigation</td>
<td>3</td>
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<tr>
<td>ADJ 247 Criminal Behavior</td>
<td>3</td>
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<tr>
<th>4th Semester</th>
<th>Credits</th>
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<tr>
<td>ADJ 112 Law Enforcement Organization and Administration II</td>
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<tr>
<td>ADJ 212 Criminal Law, Evidence and Procedures II</td>
<td>3</td>
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<tr>
<td>ADJ 227 Constitutional Law for Justice Personnel</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CST 100 Principles of Public Speaking</td>
<td>3</td>
<td></td>
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<tr>
<td>Administration of Justice Elective</td>
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<tr>
<td>Health/Physical Education Elective</td>
<td>2</td>
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<td><strong>Total Credits</strong></td>
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</tbody>
</table>

**Total Credits For Program** | **66** |

Notes and Additional Curriculum Options
1. The philosophy or religion elective requirement can be satisfied by courses with a PHI or REL prefix.
2. Students planning to transfer to a four-year program should choose options and substitutions with the assistance of the program head.
3. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 8040-706-5121 (Chester) or 804-594-1480 (Midlothian).
Technical Studies

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

Purpose
The technical studies degree is designed to meet the rapidly changing workforce needs of business and industry. Focused on meeting short term educational needs, the degree can be used as a general or individualized studies degree to enhance the education and training of current employees or to ensure basic technical and general work-based skills for new employees. The curriculum allows employers and employees to develop specific plans of study negotiated with, and approved by, appropriate college faculty and administrators.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum. Work-based learning is a required component of the program. Students without current or recent related work experience are responsible for securing their own internships, assisted by JTCC faculty. Students with current or recent work experience are responsible for working with the faculty advisor to secure appropriate documentation.

Program Curriculum

1st Semester
- ENG 111 College Composition I 3
- IND 116 Applied Technology 3
- ITE 115 Introduction to Computer Applications and Concepts 3
- MTH 103 Applied Technical Mathematics I 3
- SDV 100 College Success Skills 1
- Technical Elective 3
Total Credits 16

2nd Semester
- ENG 115 Technical Writing 3
- PSY 126 Psychology for Business and Industry 3
- Health or Physical Education Elective 2
- Microcomputer/Programming/Software Elective 3
- Technical Elective 6
Total Credits 17

3rd Semester
- IND 101 Quality Assurance Technology I 3
- IND 197 Cooperative Education 3
- Humanities Elective 3
- Technical Elective 7
Total Credits 16

4th Semester
- IND 137 Team Concepts and Problem Solving 3
- IND 297 Cooperative Education 3
- Social Science Elective 3
- Technical Electives 7
Total Credits 16

Total Credits For Program 65

SUGGESTED TECHNICAL COURSES FOR FIELDS OF INTEREST:

Heating, Ventilation and Air Conditioning
- AIR 121 Air Conditioning and Refrigeration I 3
- AIR 122 Air Conditioning and Refrigeration II 3
- AIR 126 Electrical and Control Systems 3
- AIR 154 Heating Systems I 3
- ELE 131 National Electrical Code I 3
- ELE 150 A.C. and D.C. Circuit Fundamentals Technical Elective 4
Total 23

Industrial Electricity
- DRF 160 Machine Blueprint Reading 3
- ELE 137 National Electric Code – Industrial 3
- ELE 150 A.C. and D.C. Circuit Fundamentals 4
- ELE 156 Electrical Control Systems 3
- ELE 159 Electrical Motors 3
- ELE 239 Programmable Logic Controllers 3
- ELE 240 Advanced Programmable Controllers 3

continued
Technical Elective 1
Total 23

Mechanical Maintenance
- DRF 160 Machine Blueprint Reading 3
- ELE 150 A.C. and D.C. Circuit Fundamentals 4
- ELE 159 Electrical Motors 3
- IND 116 Applied Technology 3
- MAC 131 Machine Lab I 2
- MEC 154 Mechanical Maintenance I 3
- MEC 254 Mechanical Maintenance II 3
- Welding Technology Elective 2
Total 23

Precision Machining Technology
- DRF 160 Machine Blueprint Reading 3
- MAC 121 Computer Numerical Control I 2
- MAC 122 Computer Numerical Control II 2
- MAC 161 Machine Shop Practices I 3
- MAC 162 Machine Shop Practices II 3
- MAC 163 Machine Shop Practices III 3
- MAC 164 Machine Shop Practices IV 3
- MAC 209 Standards, Measurements and Calculations 3
- Machine Technology Elective 1
Total 23

Residential Electricity
- ELE 118 Practical Electricity 2
- ELE 127 Residential Wiring Methods 3
- ELE 131 National Electrical Code I 3
- ELE 150 A.C. and D.C. Circuit Fundamentals 4
- ELE 151 Electrical Troubleshooting 3
- Technical Electives 8
Total 23

Welding
- DRF 160 Machine Blueprint Reading 3
- MAC 131 Machine Lab I 2
- WEL 117 Oxyfuel Welding and Cutting 4
- WEL 123 Shielded Metal Arc Welding (Basic) or 4
- WEL 124 Shielded Metal Arc Welding (Advanced) or
- WEL 126 Pipe Welding I
- WEL 130 Inert Gas Welding 4
- WEL 160 Gas Metal Arc Welding 4
- Technical Electives 2
Total 23

NOTES AND ADDITIONAL CURRICULUM OPTIONS
1. The information systems technology elective requirement can be satisfied by appropriate computer-related courses with the following prefixes: ARC, DRF, EGR, ITD, ITE, ITN, ITP or MAC. Selection must be approved in advance by the advisor.
2. The humanities elective requirement can be satisfied by courses with the following prefixes: ARA, ART, ENG (literature courses only), FRE, GER, HUM, MUS, PHI, REL, SPA and CST (with the exception of CST 100, CST 105 and CST 115).
3. The technical elective requirement can be satisfied by courses with the following prefixes: AIR, ARC, DRF, EGR, ELE, ETR, IND, INS, MAC, MEC, SAF or WEL. Selection must be approved in advance by the faculty advisor.
4. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121(Chester) or 804-594-1480 (Midlothian).
This section provides a listing of John Tyler Community College's certificate programs. The College's programs are subject to change. For an updated list, please visit the College's web site at www.jtcc.edu/academics.
# Building Construction

Certificate (C)

## Purpose
Graduates with certificates in building construction will be able to: (1) evaluate a building design using building codes and zoning regulations; (2) perform basic surveying operations; (3) perform tests on materials such as concrete, metals and wood; and (4) produce a representative set of working drawings for a small building using computer-aided drafting software.

## Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

## Program Curriculum

### 1st Semester

<table>
<thead>
<tr>
<th>Course Options</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 121 Architectural Drafting I</td>
<td>3</td>
</tr>
<tr>
<td>ARC 221 Architectural CAD Applications Software I</td>
<td>3</td>
</tr>
<tr>
<td>CIV 171 Surveying I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 103 Applied Technical Mathematics I</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### 2nd Semester

<table>
<thead>
<tr>
<th>Course Options</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 122 Architectural Drafting II</td>
<td>3</td>
</tr>
<tr>
<td>ARC 246 Materials and Methods of Construction</td>
<td>4</td>
</tr>
<tr>
<td>ARC 258 Building Codes, Contract Documents and Professional Office Practices</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
</tr>
<tr>
<td>Health/Physical Education Elective</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

**Total Credits For Program**

| **31** |

## Notes and Additional Curriculum Options
1. The technical elective requirement can be satisfied by courses with the following prefixes: AIR, ARC, DRF, ELE, EGR, ETR, IND, MAC, MEC or WEL.
2. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Purpose
This program provides students with opportunities to develop and improve skills necessary to work with children from birth to age 12 in a variety of child-care settings. Graduates with certificates in child care will be able to: (1) use professional terminology for effective communication; (2) implement instruction for children; (3) analyze and resolve problems; (4) use good human relations skills; (5) analyze specific early childhood scenarios, and plan specific action; (6) apply appropriate computer skills; (7) apply appropriate basic child/classroom observational skills; and (8) locate, compile and analyze appropriate resources, activities and materials.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD 120 Introduction to Early Childhood Education</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHD 145 Methods and Materials for Teaching Art, Music and Movement to Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHD 190 Coordinated Practice I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HLT 106 First Aid and Safety</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ITE 295 Computers for Educators</td>
<td>3</td>
<td>ITE 115</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD 118 Methods and Materials in the Language Arts for Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHD 146 Methods and Materials for Teaching Math, Science and Social Studies to Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHD 205 Guiding the Behavior of Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHD 216 Early Childhood Programs, School, and Social Change</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHD 270 Administration of Early Childhood Programs</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHD 290 Coordinated Practice II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits For Program** 36

Notes and Additional Curriculum Options
1. Coordinated Practice I and II are practicum courses and require placement in approved activities by the program head.
2. Part-time students should consult their faculty advisors regarding appropriate course sequences.
3. Students who have current certifications in First Aid and Safety and CPR (Child or Adult) can use these to fulfill the two credit HLT 106 requirement. The original cards must be presented to the Admissions and Records office. No online First Aid/CPR cards will be accepted for credit at JTCC.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
## Fine Arts

Certificate (C)

### Purpose
This program provides a coherent set of university parallel courses corresponding to the first year of art foundation study. It is intended for students who plan to transfer into a baccalaureate degree program in the visual arts. The program may be applied toward majors in art education, art history, crafts, fashion design, filmmaking, graphic design, illustration, interior design, museum studies, painting, photography, printmaking, sculpture and other art-related fields. It also helps students develop the fundamental knowledge and skills necessary for careers in art and design.

### Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

### Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 101 History and Appreciation of Art I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ART 111 Introduction to the Arts I</td>
<td>3</td>
<td>ART 112</td>
</tr>
<tr>
<td>ART 121 Drawing I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ART 131 Fundamentals of Design I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 102 History &amp; Appreciation of Art II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ART 122 Drawing II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ART 132 Fundamentals of Design II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ART 133 Visual Arts Foundation</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>16</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits For Program**: 31

### Notes and Additional Curriculum Options
1. Part-time students should consult their faculty advisors regarding appropriate course sequences.
2. Students who plan to transfer into a Bachelor’s of Fine Arts (BFA) program may need to develop a transfer portfolio during their last semester of study.

For additional information on this program, please contact the Division of Arts, Humanities and Social Sciences: 804-706-5086 (Chester Campus) or 804-594-1509 (Midlothian Campus).
General Education

Certificate (C)

Purpose
This program provides students with a coherent set of university parallel courses corresponding to the first year of study at a four-year college or university. It is intended for students who plan to transfer into a baccalaureate program after completing the equivalent of one year of full-time study at the community college. The program addresses many of the general education requirements at senior institutions and is most appropriate for individuals who anticipate majoring in fields in the humanities, sciences, and mathematics.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalents) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
<td>HIS 101, HIS 111</td>
</tr>
<tr>
<td>HIS 121 United States History I</td>
<td>3</td>
<td>MTH 170, MTH 173</td>
</tr>
<tr>
<td>MTH 163 Precalculus I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Laboratory Science Elective</td>
<td>4</td>
<td>See Note 3.</td>
</tr>
<tr>
<td>Social/Behavioral Science Elective</td>
<td>3</td>
<td>See Note 1.</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>16</strong></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112 College Composition II</td>
<td>3</td>
<td>HIS 102, HIS 112</td>
</tr>
<tr>
<td>HIS 122 United States History II</td>
<td>3</td>
<td>See Note 2.</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
<td>See Note 2.</td>
</tr>
<tr>
<td>Laboratory Science Elective</td>
<td>4</td>
<td>See Note 3.</td>
</tr>
<tr>
<td>Social/Behavioral Science or Humanities Elective</td>
<td>3</td>
<td>See Notes 1 and 2.</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>16</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits For Program** 32

Notes and Additional Curriculum Options
1. The social/behavioral sciences elective requirements can be satisfied by courses with the following prefixes: ECO, GEO, PLS, HIS, PSY and SOC.
2. The humanities/fine arts elective requirement can be satisfied by completing a literature (ENG), foreign language, humanities (HUM), philosophy (PHI), art (ART), music (MUS), speech course addressing performing arts or the history of theatre (CST), or religion (REL) course. ENG 112, CST 100, CST 105, and CST 115 may not be used to satisfy humanities elective requirements.
3. The laboratory science requirement can be satisfied by the following courses: BIO 101,BIO 102, BIO 110, BIO 120, CHM 101, CHM 102, CHM 111, CHM 112, GOL 105, NAS 125, NAS 130, PHY 101, PHY 102, PHY 201, PHY 202, PHY 241, PHY 242.
4. Students should consult their faculty advisors or transfer college for advice regarding the selection of the most appropriate electives.

For additional information on this program, please contact the Division of Arts, Humanities and Social Sciences: 804-706-5086 (Chester) or 804-594-1509 (Midlothian).
Homeland Security
Certificate (C)

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJ 160 Police Response to Critical Incidents</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ADJ 163 Crime Analysis and Intelligence</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ADJ 227 Constitutional Law for Justice Personnel</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HLT 106 First Aid and Safety</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJ 234 Terrorism and Counter Terrorism</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ADJ 236 Principles of Criminal Investigation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ADJ 244 Terrorism Response Planning</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ADJ 247 Criminal Behavior</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ITE 115 Introduction to Computer Applications and Concepts</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits For Program**  **30**

Notes and Additional Curriculum Options
For additional information on specific program objectives, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).

Purpose
The certificate in homeland security is designed to provide students with the knowledge and skills needed to conduct a homeland security evaluation and to assess, investigate and respond to terrorism incidents. It also provides criminal justice practitioners with an opportunity for academic growth and the development of specialized skills in homeland security.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.
Precision Machining Technology

Certificate (C)

Purpose
This program provides skills for entry-level work in production or maintenance machining. It is the recommended curriculum for machinist apprentices. The curriculum is based on the standards of the National Institute for Metalworking Skills, Inc. (NIMS).

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

1st Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRF 160 Machine Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>MAC 161 Machine Shop Practices I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 103 Applied Technical Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAC 121 Computer Numerical Control I</td>
<td>2</td>
</tr>
<tr>
<td>MAC 150 Introduction to Computer-Aided Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>MAC 162 Machine Shop Practices II</td>
<td>3</td>
</tr>
<tr>
<td>Precision Machining Technology Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

3rd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 115 Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>MAC 122 Computer Numerical Control II</td>
<td>2</td>
</tr>
<tr>
<td>MAC 163 Machine Shop Practices III</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

4th Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAC 164 Machine Shop Practices IV</td>
<td>3</td>
</tr>
<tr>
<td>MAC 209 Standards, Measurements &amp; Calculations</td>
<td>3</td>
</tr>
<tr>
<td>PSY 126 Psychology for Business and Industry</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

**Total Credits For Program** 38

Notes and Additional Curriculum Options
1. Part-time students should consult their faculty advisors regarding course sequences.
2. Students should consult their faculty advisors regarding appropriate precision machining technology electives.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Welding
Certificate (C)

Purpose
The certificate in welding prepares students for work as an apprentice welder.

Admission Requirements and Special Conditions
This program has a limited enrollment. Students must provide their own personal protection safety equipment. A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

1st Semester
- DRF 160 Machine Blueprint Reading 3
- MTH 103 Applied Technical Mathematics I 3
- SDV 100 College Success Skills 1
- WEL 117 Oxyfuel Welding and Cutting 4
Total Credits 11

2nd Semester
- MAC 131 Machine Lab I 2
- WEL 123 Shielded Metal Arc Welding (Basic) 4
- WEL 160 Gas Metal Arc Welding 4
Total Credits 10

3rd Semester
- ENG 100 Basic Occupational Communication 3
- WEL 130 Inert Gas Welding 4
- Social Science Elective 3
Total Credits 10

4th Semester
- WEL 124 Shielded Metal Arc Welding (Advanced) 4
- WEL 126 Pipe Welding I 4
Total Credits 8

Total Credits For Program 39

Notes and Additional Curriculum Options
1. The social science elective requirement can be satisfied by courses with the following prefixes: ECO, HIS, PLS, PSY or SOC.
2. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Career Study Certificates

This section provides a listing of John Tyler Community College's career studies certificate programs. The College's programs are subject to change. For an updated list, please visit the College's web site at www.jtcc.edu/academics.
Accounting
Career Studies Certificate (C.S.C.)

**Purpose**
Provides skills for entry-level work and advancement with accounting departments.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in mathematics are required. If students have deficiencies in mathematics, JTCC offers remedial courses to prepare students for the curriculum.

---

**Program Curriculum**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>ACC 211 Principles of Accounting I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ACC 261 Principles of Federal Taxation I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2nd Semester</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>ACC 212 Principles of Accounting II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Accounting Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BUS 241</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd Semester</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>ACC 221 Intermediate Accounting I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ACC 231 Cost Accounting I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4th Semester</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>ACC 215 Computerized Accounting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ACC 222 Intermediate Accounting II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits For Program</strong></td>
<td><strong>26</strong></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).

---

Administration of Justice
Career Studies Certificate (C.S.C.)

**Purpose**
Upgrade skills for work and advancement within the administration of justice field.

**Admission Requirements and Special Conditions**
Students should meet with the program head prior to beginning the certificate. A high school diploma (or equivalent) and satisfactory scores on the college placement test (or equivalent) in reading are required. If students have deficiencies in reading, JTCC offers remedial courses to prepare students for the curriculum.

---

**Program Curriculum**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>ADJ 100 Survey of Criminal Justice</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ADJ 105 The Juvenile Justice System</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ADJ 111 Law Enforcement Organization and Administration I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ADJ 211 Criminal Law, Evidence and Procedures I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2nd Semester</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>ADJ 227 Constitutional Law for Justice Personnel</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ADJ 228 Narcotics and Dangerous Drugs</td>
<td>3</td>
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</tr>
<tr>
<td>ADJ 229 Law Enforcement and the Community</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ADJ 236 Principles of Criminal Investigation</td>
<td>3</td>
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<td><strong>Total Credits For Program</strong></td>
<td><strong>24</strong></td>
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</tbody>
</table>

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Adult Home Administration
Career Studies Certificate (C.S.C.)

**Purpose**
For students who are currently working in or wish to pursue employment in adult home facilities. This program fulfills some of Virginia’s requirements for certification in Adult Home Administration.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English are required. If students have deficiencies in English, JTCC offers remedial courses to prepare students for the curriculum.

Persons entering the public or private sectors of human services will be subjected to criminal background and sex offender registry checks, as well as a TB screening as a condition of their placement in a training/practicum site. Students will be expected to cover any costs incurred for these procedures. These tests will be required as a condition of employment.

**Program Curriculum**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HMS 100 Introduction to Human Services</td>
<td>3</td>
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</tr>
<tr>
<td>HMS 106 Working with Death and Dying</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HMS 236 Gerontology</td>
<td>3</td>
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<tr>
<td><strong>2nd Semester</strong></td>
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<td></td>
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<tr>
<td>HMS 225 Functional Family Intervention</td>
<td>3</td>
<td>HMS 250, SOC 215, SOC 268</td>
</tr>
<tr>
<td>MEN 101 Mental Health Skill Training I</td>
<td>3</td>
<td>HMS 121, MEN 198</td>
</tr>
<tr>
<td>MKT 100 Principles of Marketing</td>
<td>3</td>
<td>BUS 111, BUS 165, BUS 200</td>
</tr>
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<td><strong>9</strong></td>
<td></td>
</tr>
<tr>
<td><strong>3rd Semester</strong></td>
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<td></td>
</tr>
<tr>
<td>MEN 102 Mental Health Skill Training II</td>
<td>3</td>
<td>HMS 227, MEN 198</td>
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<td>MEN 190 Coordinated Practice</td>
<td>3</td>
<td>MEN 290</td>
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<td>MEN 196 On-Site Training</td>
<td>3</td>
<td>MEN 296</td>
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<tr>
<td><strong>Total Credits For Program</strong></td>
<td><strong>27</strong></td>
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</table>

**Notes and Additional Curriculum Options**
1. Students must obtain a grade of “C” or better in the human services sequence courses (HMS 100, MEN 101 and MEN 102) in order to remain in the program.
2. This program is in compliance with State of Virginia requirements for certification in Adult Home Administration.
3. MEN 190 and MEN 196 are corequisites and must be taken in the same semester.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Allied Health Preparation, Pre-Funeral Services

Career Studies Certificate (C.S.C.)

**Purpose**
Provides basic general education and prerequisite courses for students seeking to enroll in the A.A.S. degree program in funeral services. Completion of the career studies certificate does not guarantee admission into the JTCC funeral services program. Students should refer to the admission requirements for the A.A.S. degree in funeral services listed in the programs of study section.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

**Program Curriculum**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<tbody>
<tr>
<td><strong>1st Semester</strong></td>
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<tr>
<td>CHM 110 Survey of Chemistry</td>
<td>3</td>
<td>CHM 101, CHM 111</td>
</tr>
<tr>
<td>CST 100 Principles of Public Speaking</td>
<td>3</td>
<td>CST 115, CST 110</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
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<td></td>
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<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ITE Elective</td>
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<tr>
<td><strong>2nd Semester</strong></td>
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</tr>
<tr>
<td>ACC 211 Principles of Accounting</td>
<td>3</td>
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</tr>
<tr>
<td>FNS 121 Anatomy for Funeral Service I</td>
<td>3</td>
<td>BIO 141, BIO 142, NAS 161, NAS 162</td>
</tr>
<tr>
<td>HLT 141 Introduction to Medical Terminology</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PSY 116 Psychology of Death and Dying</td>
<td>3</td>
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<td><strong>Total Credits</strong></td>
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<tr>
<td><strong>3rd Semester</strong></td>
<td>6</td>
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<tr>
<td>REL 230 Religions of the World</td>
<td>3</td>
<td></td>
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<tr>
<td>SOC 200 Principles of Sociology</td>
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<td><strong>Total Credits</strong></td>
<td>6</td>
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</tbody>
</table>

**Notes and Additional Curriculum Options**
Students may seek admission to the funeral services A.A.S. degree program when they have successfully completed all required developmental courses and ACC 211, CHM 110, FNS 121 and SDV 100 with grades of “C” or better.

For additional information on this program, please contact the Division of Health Sciences: 804-768-6611 (Chester).
Purpose
Provides the basic general education and prerequisite courses for students seeking to apply to nursing programs at most institutions. Completion of the career studies certificate does not guarantee admission into the JTCC nursing program. Students should refer to the nursing program admission requirements listed in the programs of study section.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
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</tr>
<tr>
<td>BIO 141 Human Anatomy and Physiology I</td>
<td>4</td>
<td>NAS 161</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
<td></td>
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<tr>
<td>MTH 120 Introduction to Mathematics</td>
<td>3</td>
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<tr>
<td>PSY 230 Developmental Psychology</td>
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<td>SDV 100 College Success Skills</td>
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<td><strong>Total Credits</strong></td>
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<tr>
<td>2nd Semester</td>
<td></td>
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</tr>
<tr>
<td>BIO 142 Human Anatomy and Physiology II</td>
<td>4</td>
<td>NAS 162</td>
</tr>
<tr>
<td>SOC 200 Principles of Sociology</td>
<td>3</td>
<td></td>
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<tr>
<td>Health/Physical Education Elective</td>
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<tr>
<td>Humanities Elective</td>
<td>3</td>
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<tr>
<td>Information Technology Elective</td>
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<tr>
<td><strong>Total Credits For Program</strong></td>
<td><strong>27</strong></td>
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</tr>
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</table>

Notes and Additional Curriculum Options
1. Students must complete BIO 141 prior to taking BIO 142.
2. The humanities elective requirement can be satisfied by completing a literature (ENG), foreign language, humanities (HUM) philosophy (PHI), art (ART), music (MUS), speech course addressing performing arts and the history of theatre (CST), or religion course (REL). ENG 112, CST 100, CST 105 and CST 115 may not be used to satisfy humanities elective requirements.
3. Students planning to apply for admission to the JTCC nursing program must complete BIO 141, ENG 111, PSY 230, MTH 120 and SDV 100 with a minimum grade of "C" in each course. Students must also take the MTH 03 COMPASS test. If unsuccessful, the student must pass MTH 03.

For additional information on this program, please contact the Division of Health Sciences: 804-622-8700 (Nursing Education Center).
Allied Health, Surgical Technology Preparatory
Career Studies Certificate (C.S.C.)

Purpose
Provides prerequisite and introductory courses for students seeking to enter the surgical technology program. Students should contact Counseling for admission requirements to the surgical technology program provided by John Tyler Community College in conjunction with Piedmont Virginia Community College (PVCC).

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare student for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 141 Anatomy and Physiology I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BIO 150 Introductory Microbiology</td>
<td>4</td>
<td>BIO 205</td>
</tr>
<tr>
<td>SDV 100 College Success Skills</td>
<td>1</td>
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<tr>
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<tr>
<th>2nd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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</thead>
<tbody>
<tr>
<td>BIO 142 Anatomy and Physiology II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HLT 141 Introduction to Medical Terminology</td>
<td>2</td>
<td>HLT 143</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>9</strong></td>
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</table>

**Total Credits For Program** 18

Notes and Additional Curriculum Options
1. Students must complete BIO 141 prior to taking BIO 142.
2. BIO 141, BIO 142 and BIO 150 must be completed within 8 years of admission to the PVCC surgical technology program.

For additional information on this program, please contact the Division of Health Sciences: 804-768-6611 (Chester).

For information on applying to the PVCC surgical technology program, visit PVCC’s program site at www.pcvv.edu/programs_study/certificate/cert_surgical_technology.php.
### Purpose
The applied technology career studies certificate program is designed to meet the rapidly changing workforce needs of the manufacturing industry by providing the basic general and technical education needed for new employees who wish to prepare for employment in the skilled trades or for current employees who wish to enhance their education and training.

The program also provides the opportunity for individuals to acquire the skills needed to earn Virginia’s Gold Level Career Readiness Certification. It is the ideal next step for students who have earned Virginia’s Silver Level Career Readiness Certification through the JTCC’s Quick Connect program and wish to further develop their skills and advance to the next level.

### Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and/or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

### Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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</thead>
<tbody>
<tr>
<td>ENG 115 Technical Writing</td>
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<tr>
<td>IND 116 Applied Technology</td>
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<tr>
<td>MTH 103 Applied Technical Mathematics I</td>
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<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRF 160 Machine Blueprint Reading</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IND 137 Team Concepts &amp; Problem Solving</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MEC 113 Materials and Processes of Industry</td>
<td>3</td>
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</tr>
<tr>
<td>SAF 126 Principles of Industrial Safety</td>
<td>3</td>
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<tr>
<td><strong>Total Credits</strong></td>
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</table>

**Total Credits For Program** 21

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Athletic Coaching
Career Studies Certificate (C.S.C.)

**Purpose**
The program is designed to provide students with the knowledge and skills to coach and assist athletes in a variety of settings and levels of competition, both in scholastic and community settings.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English or mathematics, JTCC offers remedial courses to prepare students for the curriculum. Prior to the clinical portion of the program, students must provide criminal background checks, drug test screenings, and records of physical health from a physician.

**Program Curriculum**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 141 Anatomy and Physiology</td>
<td>4</td>
<td>See Note 1.</td>
</tr>
<tr>
<td>ENG 111 College Composition</td>
<td>3</td>
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<tr>
<td>HLT 106 First Aid and CPR</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PED 101 Foundations of Physical Activity</td>
<td>2</td>
<td></td>
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<tr>
<td>SDV 100 Student Success Skills</td>
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<tbody>
<tr>
<td>HLT 206 Exercise Science</td>
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<td>PSY 230 Developmental Psychology</td>
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<tr>
<td>RPK 180 Youth Sports Administration</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>RPK 210 Principles and Psychology of Coaching</td>
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<tr>
<th>3rd Semester</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HLT 138 Principles of Nutrition</td>
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<td>See Note 2.</td>
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<td>RPK 296 On-Site Training</td>
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<td><strong>Total Credits</strong></td>
<td><strong>3</strong></td>
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</table>

**Total Credits For Program**

- **27**

**Notes and Additional Curriculum Options**
1. Satisfactory completion of HLT 106 is a Virginia Coaching Certification requirement.
2. Students will complete five hours per week of on-site training at selected athletic coaching sites approved by JTCC.

For additional information on the program, please contact the Division of Health Sciences: 804-768-6611 (Chester).

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Basic Precision Machining Technology
Career Studies Certificate (C.S.C.)

**Purpose**
To prepare students for basic precision machining positions.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent).

**Program Curriculum**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MAC 161 Machine Shop Practices I</td>
<td>3</td>
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<th>2nd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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</thead>
<tbody>
<tr>
<td>MAC 162 Machine Shop Practices II</td>
<td>3</td>
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<tbody>
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<td>MAC 163 Machine Shop Practices III</td>
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<th>4th Semester</th>
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<td>MAC 164 Machine Shop Practices IV</td>
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<td><strong>Total Credits</strong></td>
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</table>

**Total Credits For Program**

- **12**

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 840-594-1480 (Midlothian).
## Purpose
Bereavement and grief counseling is one of the fastest growing areas in the human services field. This career studies certificate provides advanced training to those currently working in the human services field and to students who are interested in working in hospice care, AIDS treatment, terminal illness, funeral services, hospitals and long-term care facilities. Students earning a certificate in bereavement and grief counseling will be able to employ the professional techniques of bereavement counseling and grief work, as well as develop an understanding of the emotional, psychological, physical and social aspects of death, dying, loss and grief.

## Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in reading are required. If students have deficiencies in reading, JTCC offers remedial courses to prepare students for the curriculum.

Persons entering the public or private sectors of human services will be subjected to criminal background and sex offender registry checks, as well as a TB screening as a condition of their placement in a training/practicum site. Students will be expected to cover any costs incurred for these procedures. These tests will be required as a condition of employment.

## Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HMS 100</td>
<td>3</td>
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<tr>
<td>HMS 106</td>
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<td>MEN 101</td>
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<td>SOC 246</td>
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<td>PSY 116</td>
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<td><strong>2nd Semester</strong></td>
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<tr>
<td>MEN 102</td>
<td>3</td>
<td>HMS 227, MEN 198</td>
</tr>
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<td>MEN 190</td>
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<td>MEN 196</td>
<td>3</td>
<td>MEN 296</td>
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<tr>
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</table>

**Total Credits For Program** 21

## Notes and Additional Curriculum Options
1. Students must obtain a grade of "C" or better in the human services sequence courses (HMS 100, MEN 101 and MEN 102) in order to remain in the program.
2. Students must take HMS 100, HMS 106 and MEN 101 prior to enrolling in the coordinated practice courses MEN 190 and MEN 196.
3. MEN 190 and MEN 196 are corequisites and must be taken in the same semester.
4. Part-time students should consult their faculty advisors regarding appropriate course sequences.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Business Information Management
Career Studies Certificate (C.S.C.)

Purpose
A cross-discipline curriculum designed to provide a foundation in business management and information technology. This career studies certificate program recognizes the blend between information technology skills and business management knowledge and practice. Most managers find technology an integral part of their work, while IT professionals find that information technology specialists require an understanding of the management of both data and people. This is a first-level program for a person who intends to pursue a certificate and/or associate degree in either business or information technology.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory score on college placement tests (or equivalent) in English are required. If students have deficiencies in English, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 100 Introduction to Business</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ITE 115 Introduction to Computer Applications</td>
<td>3</td>
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<tr>
<td>and Concepts</td>
<td></td>
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<tr>
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<tr>
<td>Business Elective</td>
<td>3</td>
<td>AST 205, BUS 200, BUS 205</td>
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<td>Information Technology Elective</td>
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<td>ITE 140, ITE 150, ITE 215</td>
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</tbody>
</table>

**Total Credits For Program**                      **18**

Notes and Additional Curriculum Options
1. The business/information technology elective requirement can be satisfied by courses with the following prefixes: BUS, ITD, ITE, ITN or ITP. Selection must be approved by the faculty advisor. When selecting electives, the student must consider the prerequisite courses that apply to some BUS and IT courses.
2. The courses in this career studies certificate program provide foundations in basic business practices and information technology that can be applied to other certificate and degree programs.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Child Care Management
Career Studies Certificate (C.S.C.)

Purpose
To prepare experienced child-care providers for positions in child-care management.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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</thead>
<tbody>
<tr>
<td>1st Semester</td>
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</tr>
<tr>
<td>ACC 211 Principles of Accounting I</td>
<td>3</td>
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<tr>
<td>CHD 215 Models of Early Childhood Education Programs</td>
<td>3</td>
<td></td>
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<tr>
<td>EDU 235 Health, Safety and Nutrition Education</td>
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<tr>
<td>BUS 200 Principles of Management</td>
<td>3</td>
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<tr>
<td>CHD 270 Administration of Early Childhood Programs</td>
<td>3</td>
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<td>CHD 290 Coordinated Practice III</td>
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<td><strong>Total Credits For Program</strong></td>
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Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).

Cisco Network
Career Studies Certificate (C.S.C.)

Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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</thead>
<tbody>
<tr>
<td>1st Semester</td>
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</tr>
<tr>
<td>ITN 101 Introduction to Network Concepts</td>
<td>3</td>
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<tr>
<td>ITN 154 Networking Fundamentals-Cisco</td>
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<tr>
<td>2nd Semester</td>
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<tr>
<td>ITN 155 Introductory Routing-Cisco</td>
<td>3</td>
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<tr>
<td>3rd Semester</td>
<td></td>
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<tr>
<td>ITN 156 Basic Switching and Routing-Cisco</td>
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<td><strong>Total Credits</strong></td>
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<tr>
<td>4th Semester</td>
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<tr>
<td>ITN 157 WAN Technologies-Cisco</td>
<td>3</td>
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<tr>
<td>ITE 290 Coordinated Internship</td>
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<td><strong>Total Credits</strong></td>
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</table>

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
## Civil Engineering Computer-Aided Drafting

### Career Studies Certificate (C.S.C.)

**Purpose**
To provide experienced surveying personnel with related computer-aided drafting skills.

**Admission Requirements and Special Conditions**
A high school diploma or equivalent.

### Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
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<tr>
<td>DRF 260 Computer Applications for Surveyors and Technicians</td>
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<td><strong>Total Credits</strong></td>
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</tr>
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<td><strong>2nd Semester</strong></td>
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<tr>
<td>DRF 262 Computer-Aided Civil Design and Hydrology</td>
<td>3</td>
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<tr>
<td>DRF Elective</td>
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</tbody>
</table>

**Total Credits for Program**: 9

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).

## Computer-Aided Drafting

### Career Studies Certificate (C.S.C.)

**Purpose**
Introduces students to operations and applications of a typical computer-aided drafting system (CAD).

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent).

### Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
<td></td>
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<tr>
<td>DRF 201 Computer-Aided Drafting and Design I</td>
<td>3</td>
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<tr>
<td>DRF 231 Computer-Aided Drafting I</td>
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<tr>
<td><strong>2nd Semester</strong></td>
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<tr>
<td>DRF 202 Computer-Aided Drafting and Design II</td>
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<tr>
<td>Drafting Elective</td>
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</table>

**Total Credits for Program**: 12

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Computer Applications
Career Studies Certificate (C.S.C.)

Purpose
Prepares students for entry-level positions in Web and database microcomputer applications.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests in mathematics (or equivalent) are required. If students have deficiencies in mathematics, JTCC offers remedial courses to prepare student for the curriculum.

Program Curriculum
1st Semester
- ITD 110 Web Page Design I 3
- ITE 130 Introduction to Internet Services 3
- ITE 140 Spreadsheet Software I OR ITE 150 Desktop Database Software 3
- ITE 215 Advanced Computer Applications and Integration 3
Total Credits 12

2nd Semester
- ITD 130 Database Fundamentals 3
- ITD 132 Structured Query Design 3
- ITD 210 Web Page Design II 3
- ITD 290 Coordinated Internship 1
Total Credits 10

Total Credits For Program 22

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Engineering, Business and Public Service: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).

Computer Numerical Control
Career Studies Certificate (C.S.C.)

Purpose
To provide students with numerical control techniques in metal forming and machine processes.

Admission Requirements and Special Conditions
A high school diploma (or equivalent).

Program Curriculum
1st Semester
- MAC 121 Computer Numerical Control I 2
- MAC 150 Introduction to Computer-Aided Manufacturing 3
Total Credits 5

2nd Semester
- MAC 122 Computer Numerical Control II 2
- MAC 209 Standards, Measurements and Calculations 3
Total Credits 5

Total Credits For Program 10

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Early Childhood
Career Studies Certificate (C.S.C.)

**Purpose**
Prepares students for entry-level positions in early childhood development.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and mathematics, JTCC offers remedial courses to prepare students for the curriculum.

**Program Curriculum**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<tr>
<td>CHD 120 Introduction to Early Childhood Education</td>
<td>3</td>
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<tr>
<td>CHD 145 Methods and Materials for Teaching Art, Music and Movement to Children</td>
<td>3</td>
<td></td>
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<tr>
<td>EDU 235 Health, Safety and Nutrition Education</td>
<td>3</td>
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<tr>
<td>CHD 205 Guiding the Behavior of Children</td>
<td>3</td>
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<tr>
<td>CHD 216 Early Childhood Programs, School, and Social Change</td>
<td>3</td>
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</table>

**Total Credits For Program**

15

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).

Electricity
Career Studies Certificate (C.S.C.)

**Purpose**
Introduction to the fundamentals of electrical wiring. Provides the classroom training required by the state to sit for the electrician licensing exam. Provides review of the National Electrical Code.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in mathematics are required. If students have deficiencies in mathematics, JTCC offers remedial courses to prepare students for the curriculum.

**Program Curriculum**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ELE 131 National Electrical Code 1</td>
<td>3</td>
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<tr>
<td>ELE 150 A.C. and D.C. Circuit Fundamentals</td>
<td>4</td>
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<tr>
<td>ELE 138 National Electrical Code Review</td>
<td>3</td>
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<tr>
<td>ELE 151 Electrical Troubleshooting</td>
<td>3</td>
<td>ELE 156</td>
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**Total Credits For Program**

13

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Emergency Medical Services - Basic

Career Studies Certificate (C.S.C.)

Purpose
The purpose of this curriculum is to produce competent entry-level Emergency Medical Technician-Basics (EMT-B) who can service the community with basic life support care via the Emergency Medical Services (EMS) infrastructure. Upon completion of the program, students will be eligible for National Registry testing and certification in the Commonwealth of Virginia. Employment opportunities for EMT-Basics are available with ambulance, fire and rescue services; hospitals; local, state and federal government agencies; and humanitarian relief organizations.

Admission Requirements and Special Conditions
To be eligible for placement in the program students are required to:
1. Submit a college admission application.
2. Take the COMPASS or ASSET placement test (or submit SAT or ACT scores).*
3. Have transcripts of previous high school and college courses sent to John Tyler Community College.
4. Submit required health certificate.
5. Have current CPR certification at the Health Care Provider level.

* A reading score of 81 on the COMPASS or comparable score on the ASSET, SAT, or ACT is required.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<tbody>
<tr>
<td>EMS 110 Emergency Vehicle Operators (EVOC)</td>
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<tr>
<td>EMS 111 Emergency Medical Technician - Basic</td>
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<td>EMS 112, EMS 113</td>
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<tr>
<td>EMS 120 Emergency Medical Technician - Basic</td>
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<tr>
<td>EMS 132 Vehicle Rescue</td>
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<tr>
<td>EMS 145 EMS Responses to Specialized Incidents</td>
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</table>

Total Credits 12

Total Credits for Program 12

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Health Sciences: 804-768-6611 (Chester).
Purpose
The purpose of this curriculum is to produce competent entry-level Emergency Medical Technician-Intermediates (EMT-I/99) who can service the community with advanced life support care via the Emergency Medical Services (EMS) infrastructure. Upon completion of the program, students will be eligible for National Registry testing and certification in the Commonwealth of Virginia. Employment opportunities for EMT-Intermediates are available with ambulance, fire and rescue services; hospitals; local, state and federal government agencies; and humanitarian relief organizations.

Admission Requirements and Special Conditions
To be eligible for placement in the program students are required to:
1. Submit a college admission application.
2. Take the COMPASS or ASSET placement test (or submit SAT or ACT scores).*
3. Have transcripts of previous high school and college courses sent to John Tyler Community College.
4. Submit required health certificate.
5. Have current CPR certification at the Health Care Provider level.

* A reading score of 81 on the COMPASS or comparable score on the ASSET, SAT, or ACT is required.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EMS 111  Emergency Medical Technician - Basic</td>
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<td>EMS 112, EMS 113</td>
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<th>2nd Semester</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EMS 151  Introduction to Advanced Life Support</td>
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<tr>
<td>EMS 153  Basic ECG Recognition</td>
<td>2</td>
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<td>EMS 157  ALS Trauma Care</td>
<td>3</td>
<td></td>
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<tr>
<td>EMS 170  ALS Internship I</td>
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<tbody>
<tr>
<td>EMS 155  ALS Medical Care</td>
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<tr>
<td>EMS 159  ALS Special Populations</td>
<td>2</td>
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</tr>
<tr>
<td>EMS 172  ALS Clinical Internship II</td>
<td>1</td>
<td></td>
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<tr>
<td>EMS 173  ALS Field Internship II</td>
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</table>

**Total Credits For Program** 25

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Health Sciences: 804-768-6611 (Chester).
Heating and Air Conditioning
Career Studies Certificate (C.S.C.)

**Purpose**
To prepare students for entry-level positions in heating, air conditioning and refrigeration repair and servicing.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests in mathematics (or equivalent) are required. If students have deficiencies in mathematics, JTCC offers remedial courses to prepare students for the curriculum.

**Program Curriculum**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Options</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>AIR 121 Air Conditioning and Refrigeration I</td>
<td>3</td>
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<tr>
<td></td>
<td>ELE 150 A.C. and D.C. Circuit Fundamentals</td>
<td>4</td>
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<tr>
<td></td>
<td>MTH 103 Applied Technical Mathematics I</td>
<td>3</td>
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<tr>
<td>2nd Semester</td>
<td>AIR 122 Air Conditioning and Refrigeration II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>AIR 126 Electrical and Control Systems</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ELE 131 National Electrical Code I</td>
<td>3</td>
</tr>
<tr>
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<td><strong>Total Credits</strong></td>
<td><strong>8</strong></td>
</tr>
<tr>
<td>3rd Semester</td>
<td>AIR 154 Heating Systems I</td>
<td>3</td>
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<td><strong>Total Credits For Program</strong></td>
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</table>

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Human Services Administration and Supervision

Career Studies Certificate (C.S.C.)

Purpose
This certificate provides students with the fundamentals necessary to make a successful transition from human services professions into a management- and/or supervisory-level position in the human services field.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English and mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Persons entering the public or private sectors of human services will be subjected to criminal background and sex offender registry checks, as well as a TB screening as a condition of their placement in a training/practicum site. Students will be expected to cover any costs incurred for these procedures. These tests will be required as a condition of employment.

Program Curriculum

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 111 Principles of Supervision I</td>
<td>3</td>
<td></td>
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<tr>
<td>MEN 102 Mental Health Skill Training II</td>
<td>3</td>
<td>HMS 227</td>
</tr>
<tr>
<td>PSY 126 Psychology for Business and Industry</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 200 Principles of Management</td>
<td>3</td>
<td></td>
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<tr>
<td>MEN 190 Coordinated Practice</td>
<td>3</td>
<td>MEN 290</td>
</tr>
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<td>MEN 196 On-Site Training</td>
<td>3</td>
<td>MEN 296</td>
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</table>

Total Credits For Program 18

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Industrial Electricity

Career Studies Certificate (C.S.C.)

**Purpose**
Provides electrical maintenance basics.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in mathematics are required. If students have deficiencies in mathematics, JTCC offers remedial courses to prepare students for the curriculum.

### Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
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</tr>
<tr>
<td>ELE 150 A.C. and D.C. Circuit Fundamentals</td>
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<tr>
<td>MTH 103 Applied Technical Mathematics I</td>
<td>3</td>
<td>MTH 104</td>
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<td></td>
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<tr>
<td>ELE 118 Practical Electricity</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ELE 159 Electrical Motors</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>5</strong></td>
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</tr>
<tr>
<td>3rd Semester</td>
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<tr>
<td>ELE 156 Electrical Control Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ELE 239 Programmable Controllers</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>6</strong></td>
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</tr>
<tr>
<td>4th Semester</td>
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</tr>
<tr>
<td>ELE 137 National Electric Code – Industrial</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ELE 240 Advanced Programmable Logic Controllers</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>6</strong></td>
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</tr>
<tr>
<td><strong>Total Credits For Program</strong></td>
<td><strong>24</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Additional Curriculum Options**
1. Before taking ELE 239, the student must complete ELE 150 or equivalent or have the instructor’s permission.
2. Before taking ELE 240, the student must complete ELE 239 or have the instructor’s permission.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).

Mechanical Maintenance

Career Studies Certificate (C.S.C.)

**Purpose**
Provides mechanical maintenance basics, and prepares students for company-specific training.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in mathematics are required. If students have deficiencies in mathematics, JTCC offers remedial courses to prepare students for the curriculum.

### Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELE 150 A.C. and D.C. Circuit Fundamentals</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>IND 116 Applied Technology</td>
<td>3</td>
<td>MEC 113</td>
</tr>
<tr>
<td>MAC 131 Machine Lab I</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>MEC 154 Mechanical Maintenance I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MTH 103 Applied Technical Mathematics I</td>
<td>3</td>
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<td><strong>Total Credits</strong></td>
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<tr>
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<tr>
<td>DRF 160 Machine Blueprint Reading</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ELE 159 Electrical Motors</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MEC 254 Mechanical Maintenance II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>WEL 123 Shielded Metal Arc Welding (Basic)</td>
<td>4</td>
<td>WEL 130</td>
</tr>
<tr>
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<td><strong>13</strong></td>
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</tr>
<tr>
<td><strong>Total Credits For Program</strong></td>
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</tr>
</tbody>
</table>

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Network Support
Career Studies Certificate (C.S.C.)

**Program Curriculum**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>3</td>
<td>ITE 215 Advanced Computer Applications and Integration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ITN 101 Introduction to Network Concepts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ITN 116 Windows 2003 Network Infrastructure, Implementation, Management, and Maintenance</td>
</tr>
<tr>
<td></td>
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<td>ITN 171 UNIX I</td>
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<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
<td>ITE 221 PC Hardware and OS Architecture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ITE 290 Coordinated Internship</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ITN 260 Network Security Basics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ITN 295 Network Servicing</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
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</tr>
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<td></td>
<td><strong>Total Credits For Program</strong></td>
<td><strong>22</strong></td>
</tr>
</tbody>
</table>

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Service: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).

Paralegal Studies
Career Studies Certificate (C.S.C.)

**Program Curriculum**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>3</td>
<td>ITE 115 Introduction to Computer Applications and Concepts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LGL 110 Introduction to Law and the Legal Assistant</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
<td>ENG 111 College Composition I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LGL 125 Legal Research</td>
</tr>
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<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>3rd Semester</td>
<td></td>
<td>LGL 126 Legal Writing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elective (any LGL course)</td>
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<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits For Program</strong></td>
<td><strong>18</strong></td>
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</tbody>
</table>

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Phlebotomy

Career Studies Certificate (C.S.C.)

Purpose
The program prepares students for positions as phlebotomists in hospitals, physician offices and commercial laboratories where blood and other laboratory specimens are collected from patients for analysis. The curriculum includes classroom lecture, laboratory practice and clinical practice.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English and mathematics are required. If students have deficiencies in English or mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

1st Semester
- ENG 111 College Composition 3
- HLT 100 First Aid/CPR (American Heart Association Standards) 2
- MDL105 Phlebotomy 3

Total Credits 8

2nd Semester
- BIO 150 Introductory Microbiology 4
- HLT 141 Introduction to Medical Terminology 2
- MDL 196 On-site Training in Phlebotomy 3

Total Credits 9

Total Credits For Program 17

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Health Sciences: 804-768-6611 (Chester).

Program Development

Career Studies Certificate (C.S.C.)

Purpose
Prepares students for entry-level positions in computer programming.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests in mathematics (or equivalent) are required. If students have deficiencies in mathematics, JTCC offers remedial courses to prepare student for the curriculum.

Program Curriculum

1st Semester
- ITE 215 Advanced Computer Applications and Integration 3
- ITP 100 Software Design 3
- ITP 110 Visual Basic Programming I 3
- ITP 120 Java Programming I 3

Total Credits 12

2nd Semester
- ITE 290 Coordinated Internship 1
- ITP 160 Introduction to Game Design and Development 3
- ITP 210 Visual Basic Programming II OR ITP 220 Java Programming II 3
- ITP 251 Systems Analysis and Design 3

Total Credits 10

Total Credits For Program 22

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Engineering, Business and Public Service: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Residential Electricity
Career Studies Certificate (C.S.C.)

Purpose
Provides an introduction to the fundamentals of residential wiring.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in mathematics are required. If students have deficiencies in mathematics, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td></td>
<td></td>
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<tr>
<td>ELE 110 Home Electric Power</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ELE 118 Practical Electricity</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>MTH 103 Applied Technical Mathematics I</td>
<td>3</td>
<td>MTH 104</td>
</tr>
<tr>
<td>Total Credits</td>
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<td></td>
</tr>
<tr>
<td>2nd Semester</td>
<td></td>
<td></td>
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<tr>
<td>ELE 127 Residential Wiring Methods</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ELE 151 Electrical Troubleshooting</td>
<td>3</td>
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<tr>
<td>Total Credits</td>
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<tr>
<td>3rd Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELE 131 National Electrical Code I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ELE 150 A.C. and D.C. Circuit Fundamentals</td>
<td>4</td>
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<tr>
<td>Total Credits</td>
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<td></td>
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<tr>
<td>Total Credits For Program</td>
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</table>

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).

Small Business Management
Career Studies Certificate (C.S.C.)

Purpose
Provides management skills specific to small businesses.

Admission Requirements and Special Conditions
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English are required. If students have deficiencies in English, JTCC offers remedial courses to prepare students for the curriculum.

Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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<tr>
<td>1st Semester</td>
<td></td>
<td></td>
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<tr>
<td>ACC 211 Principles of Accounting I</td>
<td>3</td>
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<tr>
<td>ENG 111 College Composition I</td>
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<td></td>
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<tr>
<td>Total Credits</td>
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<td></td>
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<tr>
<td>2nd Semester</td>
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<td></td>
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<tr>
<td>ACC 261 Principles of Federal Taxation I</td>
<td>3</td>
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<tr>
<td>AST 205 Business Communications</td>
<td>3</td>
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<td>Total Credits</td>
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</tr>
<tr>
<td>3rd Semester</td>
<td></td>
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</tr>
<tr>
<td>BUS 165 Small Business Management</td>
<td>3</td>
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<tr>
<td>ITE 115 Introduction to Computer Applications and Concepts</td>
<td>3</td>
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<tr>
<td>MKT 100 Principles of Marketing</td>
<td>3</td>
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<td>Total Credits For Program</td>
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</table>

Notes and Additional Curriculum Options
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Substance Abuse Assistant

Career Studies Certificate (C.S.C.)

**Purpose**
Provides a strong educational component and hands-on training to students who are interested in working in substance abuse. It fulfills some of the requirements needed for certification in Virginia as a substance abuse assistant.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English is required. If students have deficiencies in English, JTCC offers remedial courses to prepare students for the curriculum.

### Program Curriculum

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Options</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>1st Semester</td>
<td>HMS 100 Introduction to Human Services</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HMS 251 Substance Abuse I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MEN 101 Mental Health Skill Training I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td>2nd Semester</td>
<td>HMS 252 Substance Abuse II</td>
<td>3</td>
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<tr>
<td></td>
<td>HMS 258 Case Management and Substance Abuse</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MEN 102 Mental Health Skill Training II</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td>3rd Semester</td>
<td>MEN 190 Coordinated Practice</td>
<td>3</td>
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<tr>
<td></td>
<td>MEN 196 On-Site Training</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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<td><strong>6</strong></td>
</tr>
<tr>
<td><strong>Total Credits For Program</strong></td>
<td></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

**Notes and Additional Curriculum Options**

1. Students must obtain a grade of “C” or better in the human services sequence courses (HMS 100, MEN 101 and MEN 102) in order to remain in the program.
2. Students must complete HMS 100 and MEN 101 prior to enrolling in MEN 102.
3. MEN 101 and HMS 251 must be completed prior to enrolling in MEN 190 and MEN 196. Students must meet with their advisor prior to enrolling in MEN 190 and MEN 196.
4. MEN 190 and MEN 196 are corequisites and must be taken in the same semester.
5. This program is in compliance with Commonwealth of Virginia requirements for certification as a substance abuse assistant.
6. Students entering the public or private sectors of human services may be subjected to criminal background and sex offender registry checks and a TB screening as a condition of their placement in a training/practicum site. Students will be expected to cover any costs incurred for these procedures. This may also be required as a condition of employment.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Supervision
Career Studies Certificate (C.S.C.)

**Purpose**
Upgrade skills needed for supervisory positions within business.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent) and satisfactory scores on college placement tests (or equivalent) in English are required. If students have deficiencies in English, JTCC offers remedial courses to prepare students for the curriculum.

<table>
<thead>
<tr>
<th>Program Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
</tr>
<tr>
<td>BUS 111 Principles of Supervision I</td>
</tr>
<tr>
<td>ENG 111 College Composition I</td>
</tr>
<tr>
<td>ITE 115 Introduction to Computer Applications and Concepts</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
</tr>
<tr>
<td>AST 205 Business Communications</td>
</tr>
<tr>
<td>BUS 200 Principles of Management</td>
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<td>Business Elective</td>
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<tr>
<td><strong>Total Credits</strong></td>
</tr>
<tr>
<td><strong>3rd Semester</strong></td>
</tr>
<tr>
<td>BUS 201 Organizational Behavior</td>
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<tr>
<td>Business Elective</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
<tr>
<td><strong>Total Credits For Program</strong></td>
</tr>
</tbody>
</table>

**Notes and Additional Curriculum Options**
The business elective requirement can be satisfied by any 100 or 200 level course in the following areas: ACC, AST, BUS, ITE, MKT or REA.

For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).

Surveying
Career Studies Certificate (C.S.C.)

**Purpose**
Provides skills for employment and advancement in surveying.

**Admission Requirements and Special Conditions**
A high school diploma (or equivalent).

<table>
<thead>
<tr>
<th>Program Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Semester</strong></td>
</tr>
<tr>
<td>CIV 171 Surveying I</td>
</tr>
<tr>
<td>DRF 201 Computer-Aided Drafting and Design I</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
<tr>
<td><strong>2nd Semester</strong></td>
</tr>
<tr>
<td>CIV 172 Surveying II</td>
</tr>
<tr>
<td>DRF 260 Computer Applications for Surveyors and Technicians</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
<tr>
<td><strong>Total Credits For Program</strong></td>
</tr>
</tbody>
</table>

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
Web Design
Career Studies Certificate (C.S.C.)

**Purpose**
Provides students with integrated skills in the areas of design and programming required for a career in web design.

**Program Curriculum**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 131 Fundamentals of Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ART 217 Electronic Graphic Design I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ITD 110 Web Page Design I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ITE 130 Introduction to Internet Services</td>
<td>3</td>
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<tr>
<td><strong>Total Credits</strong></td>
<td><strong>13</strong></td>
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<tr>
<th>2nd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
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</thead>
<tbody>
<tr>
<td>ART 218 Electronic Graphic Design II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ART 250 History of Design</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ART 298 Seminar and Project</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ITD 210 Web Page Design II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>13</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits For Program** 26

**Notes and Additional Curriculum Options**
ART 298 is a capstone project intended to incorporate internships and other forms of on-the-job experience.

For additional information on this program, please contact the Division of Arts, Humanities and Social Sciences: 804-706-5086 (Chester) or 804-1509 (Midlothian).

Welding
Career Studies Certificate (C.S.C.)

**Purpose**
Provide skills for employment and advancement in welding.

**Program Curriculum**

<table>
<thead>
<tr>
<th>1st Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL 117 Oxyfuel Welding and Cutting</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>WEL 123 Shielded Metal Arc Welding (Basic)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>8</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL 130 Inert Gas Welding</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>WEL 160 Gas Metal Arc Welding</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>8</strong></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>3rd Semester</th>
<th>Credits</th>
<th>Standard Course Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL 124 Shielded Metal Arc Welding (Advanced)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>WEL 126 Pipe Welding I</td>
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<tr>
<td><strong>Total Credits</strong></td>
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**Total Credits For Program** 24

**Notes and Additional Curriculum Options**
For additional information on this program, please contact the Division of Engineering, Business and Public Services: 804-706-5121 (Chester) or 804-594-1480 (Midlothian).
COURSE NUMBERS
Course numbers appear before the course titles. Courses numbered 01 – 09 are developmental courses. The credits earned in these courses cannot be applied toward a degree, certificate or diploma. Courses numbered 10 – 99 are first level courses for certificate programs. The credits earned cannot be applied toward an associate degree program. Courses numbered 100 – 299 can be applied to an appropriate associate degree program, and they may also be used in certificate programs.

COURSE CREDITS
Course credits are provided after the course titles. One credit is equivalent to one collegiate semester hour credit.

COURSE HOURS
The number of lecture and laboratory hours is shown at the end of each course description. The total number of lecture and laboratory hours is referred to as “contact” hours since it reflects the time spent each week under the supervision of a faculty member.

PREREQUISITES
Prerequisites are identified in the course description and must normally be met prior to enrollment. If a corequisite is identified, it means the two courses should be taken at the same time.

GENERAL USAGE COURSES
The General Usage Courses apply to multiple programs of study and all course prefixes.
General Usage Courses

90 – 190 – 290
Coordinated Practice
(1 – 5 credits)
Includes supervised practice in selected health agencies and supervised on-the-job training coordinated by the College in selected business, industrial or service firms. Credit/practice ratio maximum 1:5 hours. May be repeated for credit. Variable hours.

95 – 195 – 295
Topics
(1 – 5 credits)
Provides an opportunity to explore topical areas of interest to or needed by students. May be used also for special honors courses. May be repeated for credit. Variable hours.

96 – 196 – 296
On-Site Training
(1 – 5 credits)
Specializes in career orientation and training program (without pay) supervised and coordinated by the College in selected local businesses and industries. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

97 – 197 – 297
Cooperative Education
(1 – 5 credits)
Supervised on-the-job training for pay coordinated by the Cooperative Education Office in approved business, industrial and service firms. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

98 – 198 – 298
Seminar and Project
(1 – 5 credits)
Requires completion of a project or research report related to the student’s occupational objective and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

99 – 199 – 299
Supervised Study
(1 – 5 credits)
Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Variable hours.

Accounting

ACC 211
Principles of Accounting I
(3 credits)
Presents accounting principles and their application to various businesses. Covers the accounting cycle, income determination and financial reporting. Studies services, merchandising and includes internal controls. Lecture: 3 hours per week.

ACC 212
Principles of Accounting II
(3 credits)
Emphasizes partnerships, corporations and the study of financial analysis. Includes and introduces cost/managerial accounting concepts. Prerequisite: ACC 211. Lecture: 3 hours per week.

ACC 215
Computerized Accounting
(3 credits)
Introduces the computer in solving accounting problems. Focuses on operation of computers. Presents the accounting cycle and financial statement preparation in a computerized system and other applications for financial and managerial accounting. Prerequisite: ACC 212 or equivalent. Lecture: 3 hours per week.

ACC 221
Intermediate Accounting I
(4 credits)
Covers accounting principles and theory, including a review of the accounting cycle and accounting for current assets, current liabilities and investments. Introduces various accounting approaches and demonstrates the effect of these approaches on the financial statement users. Prerequisite: ACC 212 or equivalent. Lecture: 4 hours per week.

ACC 222
Intermediate Accounting II
(4 credits)
Continues accounting principles and theory with emphasis on accounting for fixed assets, intangibles, corporate capital structure, long-term liabilities and investments. Prerequisite: ACC 221 or equivalent. Lecture: 4 hours per week.

ACC 231
Cost Accounting I
(3 credits)
Studies cost accounting methods and reporting as applied to job order, process and standard cost accounting systems. Includes cost control and other topics. Prerequisite: ACC 212 or equivalent. Lecture: 3 hours per week.
ACC 261  
Principles of Federal Taxation I  
(3 credits)  
 Presents the study of federal taxation as it relates to individuals and other tax entities. Includes tax planning, compliance and reporting. Lecture: 3 hours per week.

Administration of Justice

ADJ 100  
Survey of Criminal Justice  
(3 credits)  
 Presents an overview of the United States criminal justice system; introduces the major system components—law enforcement, judiciary and corrections. Lecture: 3 hours per week.

ADJ 105  
The Juvenile Justice System  
(3 credits)  
 Presents the evolution, philosophy, structures and processes of the American juvenile delinquency system; surveys the rights of juveniles, dispositional alternatives, rehabilitation methods and current trends. Lecture: 3 hours per week.

ADJ 107  
Survey of Criminology  
(3 credits)  
 Surveys the volume and scope of crime; considers a variety of theories developed to explain the causation of crime and criminality. Lecture: 3 hours per week.

ADJ 111 – 112  
Law Enforcement Organization and Administration I – II  
(3 credits each)  
 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. ADJ 111 is a prerequisite for ADJ 112. Lecture: 3 hours per week.

ADJ 117  
Police Communications and Records  
(3 credits)  
 Introduces the principles for the organization and administration of law enforcement communications and records. Examines relationships of custody, central services and agency logistics to the communications and records operation. Lecture: 3 hours per week.

ADJ 160  
Police Response to Critical Incidents  
(3 credits)  
 Provides a basic introduction to incident command and emerging trends. Addresses bomb threats; hostage/barricade situations; attacks on institutions such as schools and hospitals; criminal hazmat; terrorist, militia/paramilitary, and extended crime scene evidence collection scenarios; and other long term or large scale events. Lecture: 3 hours per week.

ADJ 163  
Crime Analysis and Intelligence  
(3 credits)  
 Provides a basic introduction to crime analysis and criminal intelligence. Covers the need, structure and function within the law enforcement agency, relevant law, and future trends. Lecture: 3 hours per week.

ADJ 211 – 212  
Criminal Law, Evidence and Procedures I – II  
(3 credits each)  
 Teaches the elements of proof for major and common crimes and the legal classification of offenses. Studies the kinds, degrees and admissibility of evidence and its presentation in criminal proceedings with emphasis on legal guidelines for methods and techniques of evidence acquisition. Surveys the procedural requirements from arrest to final disposition in the various American court systems with focus on the Virginia jurisdiction. Lecture: 3 hours per week.

ADJ 227  
Constitutional Law for Justice Personnel  
(3 credits)  
 Surveys the basic guarantees of liberty described in the U.S. Constitution and the historical development of these restrictions on government power, primarily through U.S. Supreme Court decisions. Reviews rights of free speech, press, assembly, as well as criminal procedure guarantees (to counsel, jury trial, habeas corpus, etc.) as they apply to the activities of those in the criminal justice system. Lecture: 3 hours per week.

ADJ 228  
Narcotics and Dangerous Drugs  
(3 credits)  
 Surveys the historical and current usage of narcotics and dangerous drugs. Teaches the identification and classification of such drugs and emphasizes the symptoms and effects on their users. Examines investigative methods and procedures utilized in law enforcement efforts against illicit drug usage. Lecture: 3 hours per week.

ADJ 229  
Law Enforcement and the Community  
(3 credits)  
 Considers current efforts by law enforcement personnel to achieve an effective working relationship with the community. Surveys and analyzes various interactive approaches of law enforcement agencies and the citizenry they serve. Lecture: 3 hours per week.
ADJ 234  
**Terrorism and Counter Terrorism**  
(3 credits)  
Surveys the historical and current practices of terrorism that are national, transnational, or domestic in origin. Includes biological, chemical, nuclear, and cyber-terrorism. Teaches the identification and classification of terrorist organizations, violent political groups and issue-oriented militant movements. Examines investigative methods and procedures utilized in counter terrorist efforts domestically and internationally. Lecture: 3 hours per week.

ADJ 236  
**Principles of Criminal Investigation**  
(3 credits)  
Surveys the fundamentals of criminal investigation procedures and techniques. Examines crime scene search, collecting, handling and preserving of evidence. Lecture: 3 hours per week.

ADJ 244  
**Terrorism Response Planning**  
(3 credits)  
Builds an understanding of terrorism, and the past, present, and future national and international responses to terrorism and the defense against it. Teaches the knowledge and skills necessary to assist State and local emergency managers in planning for and managing a response to a terrorist incident. Lecture: 3 hours per week.

ADJ 247  
**Criminal Behavior**  
(3 credits)  
Introduces and evaluates the concepts of normal and abnormal behavior. Focuses on the psychological and sociological aspects of criminal and other deviant behavior patterns. Lecture: 3 hours per week.

# Administrative Support Technology

AST 117  
**Keyboarding for Computer Usage**  
(1 credit)  
Teaches the alphabetic keyboard and 10-key pad. Develops correct keying techniques. Lecture: 1 hour per week.

AST 130  
**Office Procedures**  
(3 credits)  
Introduces general functions and duties performed in the office. Prerequisite: AST 101. Lecture: 3 hours per week.

AST 205  
**Business Communications**  
(3 credits)  
Teaches techniques of oral and written communications. Emphasizes writing and presenting business-related materials. Prerequisite: ENG 111. Lecture: 3 hours per week.

# Air Conditioning

AIR 121 – 122  
**Air Conditioning and Refrigeration I – II**  
(3 credits each)  
Studies refrigeration theory; characteristics of refrigerants, temperature and pressure; tools and equipment; soldering; brazing; refrigeration systems; system components; compressors; evaporators; and metering devices. Presents charging and evaluation of systems and leak detection. Explores servicing the basic system. Explains use and care of oils and additives and troubleshooting of small commercial systems. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week. AIR 122 prerequisite: AIR 121 or by permission of the instructor.

# Arabic

ARA 101 – 102  
**Beginning Arabic I – II**  
(4 – 5 credits each)  
Introduces understanding, speaking, reading, and writing skills and emphasizes basic Arabic sentence structure. Discusses the diversity of cultures in the Arab world. Lecture: 4 – 5 hours per week.

# Architecture

ARC 121 – 122  
**Architectural Drafting I – II**  
(3 credits each)  
Introduces techniques of architectural drafting, including lettering, dimensioning and symbols. Requires production of plans, sections and elevations of a simple building. Studies use of common reference material and the organization of architectural working drawings. Requires development of a limited set of working drawings, including a site plan, related details and pictorial drawings. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week. ARC 121 corequisite: ARC 221 or the equivalent. ARC 122 prerequisite: ARC 121 or by permission of the instructor.
ARC 221
Architectural CAD Applications Software I
(3 credits)
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. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

ARC 231
Advanced Architectural Drafting I
(4 credits)
Provides fundamental knowledge of the 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 approval of the instructor. Lecture: 2 hours. Laboratory: 6 hours. Total: 8 hours per week.

ARC 232
Advanced Architectural Drafting II
(4 credits)
Requires development of complete set of working drawings and details according to principles and techniques of architectural drawings and procedures used in professional firms. Prerequisite: ARC 231 or approval of the instructor. Lecture: 2 hours. Laboratory: 6 hours. Total: 8 hours per week.

ARC 243
Environmental Systems
(4 credits)
Studies energy sources and strategies for use in buildings; heat loss and heat gain; heating and cooling equipment and system; water supply, distribution and waste systems and equipment; principles of electricity, electrical systems and equipment. Lecture: 4 hours per week.

ARC 246
Materials and Methods of Construction
(4 credits)
Introduces the characteristics of building materials and the methods of construction in which these materials are used in the erection of structures. Introduces the physical properties of steel, concrete, timber, glass and related materials as well as methods used in testing materials. All sixteen CSI divisions are discussed. Lecture: 3 hours. Laboratory: 3 hours. Total: 6 hours per week.

ARC 258
Building Codes, Contract Documents and Professional Office Practices
(3 credits)
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 applications to working drawings. Analyzes contract documents for client-architect-contractor responsibilities and duties. Lecture: 3 hours per week.

ART

ART 101 – 102
History and Appreciation of Art I – II
(3 credits each)
Presents the history and interpretation of architecture, sculpture and painting. Begins with prehistoric art and follows the development of western civilization to the present. Lecture: 3 hours per week.

ART 111 – 112
Introduction to the Arts I – II
(3 credits each)
Parallels studio classes and provides a general survey of the arts. Emphasizes perception, using major monuments of painting, sculpture and architecture as examples. Lecture: 3 hours per week.

ART 121 – 122
Drawing I – II
(3 – 4 credits each)
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. Lecture: 1 – 2 hours. Studio instruction: 4 hours. Total: 5 – 6 hours per week.

ART 125
Introduction to Painting
(3 credits)
Introduces study of color, composition and painting techniques. Places emphasis on experimentation and enjoyment of oil and/or acrylic paints and the fundamentals of tools and materials. Lecture: 2 hours. Studio instruction: 3 hours. Total: 5 hours per week.

ART 131 – 132
Fundamentals of Design I – II
(3 – 4 credits each)
Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Lecture: 1 – 2 hours. Studio instruction: 4 hours. Total: 5 – 6 hours per week.

ART 133
Visual Arts Foundation
(4 credits)
Covers tools and techniques, design concepts and principles, color theory and an introduction to the computer for graphic use. Applies to all fields of Visual Art. Lecture: 2 hours. Laboratory: 4 hours. Total: 6 hours per week.
ART 138  
**Figure Drawing**  
(3 – 4 credits)  
Develops drawing skills for the beginning and experienced students. Explores a broad range of drawing problems dealing with the human figure in costume using various media and techniques. Prerequisite: ART 120 or divisional approval. Lecture: 2 hours. Studio instruction: 2 – 4 hours. Total: 4 – 6 hours per week.

ART 150  
**History of Film and Animation**  
(3 credits)  
Exposes the student to the rich history of temporal imagery from the invention of the zoetrope and kinetoscope through the rise of the moving picture industry and the development of the first animated films to present day television. Chronicles the impact of the moving image in the 20th century. Discusses the design and concept of influential works as well as the relationship between these earlier forms of moving graphics and today’s innovative video technology. Lecture: 3 hours per week.

ART 151  
**Theory and Practice of Ceramics I**  
(3 credits)  
Teaches basic hand processes of pottery as applicable to tableware, decorative, functional and non-functional form. Includes throwing, coiling, slab building, and press molding. Generates a fundamental understanding of the craft through physical manipulation of materials, consideration of design techniques and historical example. Provides opportunity to work on original design from the clay to firing or glazing. Part I of II. Lecture: 1 hour. Studio instruction: 4 hours. Total: 5 hours per week.

ART 153 – 154  
**Ceramics I – II**  
(3 – 4 credits each)  
Presents problems in the design and production of functional and non-functional ceramic works. Includes hand-building the potter’s wheel and clays and glazes. Lecture: 0 – 2 hours. Studio instruction 4 – 6 hours. Total: 5 – 8 hours per week.

ART 217 – 218  
**Electronic Graphic Design I – II**  
(4 credits each)  
Focuses on creative concepts of graphic design problem solving using electronic technology; includes techniques specific to computer-generated publication design and imagery. Electronic Graphic Design II includes use of electronic color models and principles of prepress production. Required for students pursuing careers in graphic design with emphasis on use of the computer. Lecture: 2 hours. Studio instruction: 4 hours. Total: 6 hours per week.

ART 231 – 232  
**Sculpture I – II**  
(3 credits each)  
Introduces sculptural concepts and methods of production in traditional and contemporary media. Includes clay, plaster, wood, stone, metal, plastics and terra cotta. May include field trips. Prerequisite: ART 131. Lecture: 3 hours. Studio: 2 hours. Total: 5 hours per week.

ART 241 – 242  
**Painting I – II**  
(3 credits each)  
Introduces abstract and representational painting in acrylic and/or oil with emphasis on color composition and value. Prerequisites ART 122 or divisional approval. Lecture: 3 hours. Studio: 2 hours. Total: 5 hours per week.

ART 243 – 244  
**Watercolor I – II**  
(3 – 4 credits each)  
Presents abstract and representational painting in watercolor with emphasis on design, color, composition, technique and value. Prerequisite: ART 131 or divisional approval. Lecture: 1 – 2 hours. Studio instruction: 2 – 4 hours. Total: 4 – 6 hours per week.

ART 245  
**Portrait Painting**  
(3 credits)  
Explores portrait painting as representational and abstract art. Emphasizes analytical study of the head using a variety of mediums. Prerequisites: ART 141 and ART 121. Lecture: 2 hours. Studio instruction: 3 hours. Total: 5 hours per week.

ART 246  
**Figure Painting**  
(3 credits)  
Concentrates on the human figure as subject matter for painting. Emphasizes composition as it relates to figure study. Explores formal and informal approaches to include representation and abstraction using various painting media. Prerequisites: ART 141 and ART 121. Lecture: 2 hours. Studio instruction: 3 hours. Total: 5 hours per week.

ART 248 – 249  
**Painting III – IV**  
(3 – 4 credits each)  
Introduces advanced concepts and techniques of representational and abstract painting as applied to the head/figure, still-life, landscape and other subject matter including non-objective painting. Gives additional instruction in color, composition, modeling, space and perspective. Encourages individual approaches to painting. Prerequisite: ART 242 to ART 248. Lecture: 2 – 3 hours. Laboratory: 2 – 3 hours. Total 4 – 6 hours per week.
ART 250  
**History of Design**  
(3 credits)  
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 259  
**Landscape Painting**  
(3 credits)  
Provides a comprehensive study of the techniques and approaches to the subject of landscape painting from the historic and current prospective. Prerequisite: ART 122. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

ART 271  
**Printmaking I**  
(3 – 4 credits)  
Introduces the student to the full range of printmaking techniques. Includes woodcut, silkscreen, etching, and lithography. Provides historical perspective on printmaking. Part I of II. Lecture: 2 hours. Studio instruction: 3 – 4 hours. Total: 5 – 6 hours per week.

ART 287  
**Portfolio and Resume Preparation**  
(1 – 4 credits)  
Focuses on portfolio preparation, resume writing and job interviewing for students. Recommended for final semester program students. Requires instructor’s approval. Lecture: 1 – 2 hours. Studio instruction: 0 – 4 hours. Total: 1 – 6 hours per week.

ART 291 – 292  
**Computerized Graphic Design I – II**  
(4 credits each)  
Introduces students to using the computer as a publishing system. Examines stages of a publication from typesetting, laying out, creating and digitizing of illustrations and photographs, to the final printing. Requires students to write, design, illustrate and print pamphlets on the computer, including one full-color publication. Lecture: 2 hours. Studio instruction: 4 hours. Total: 6 hours per week.

BIO 101 – 102  
**General Biology I – II**  
(4 credits each)  
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 110  
**General Botany**  
(4 credits)  
Emphasizes plant life cycles, anatomy, morphology, taxonomy and evolution. Considers the principles of genetics, ecology and physiology. Lecture: 3 hours. Recitation and laboratory: 3 hours. Total: 6 hours per week.

BIO 120  
**General Zoology**  
(4 credits)  
Presents basic biological principles and emphasizes structure, physiology and evolutionary relationships of invertebrates and vertebrates. Lecture: 3 hours. Recitation and laboratory: 3 hours. Total: 6 hours per week.

BIO 141 – 142  
**Human Anatomy and Physiology I – II**  
(4 credits each)  
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: 2 – 3 hours. Total: 5 – 6 hours per week.

BIO 150  
**Introductory Microbiology**  
(4 credits)  
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 205  
**General Microbiology**  
(4 credits)  
Examines morphology, genetics, physiology, ecology, and control of microorganisms. Emphasizes application of microbiological techniques to selected fields. Prerequisites: one year of college biology and one year of college chemistry or divisional approval. Lecture: 3 hours. Recitation and laboratory: 3 hours. Total: 6 hours per week.
**BIO 256  
General Genetics  
(4 credits)**
Explores the principles of genetics ranging from classical Mendelian inheritance to the most recent advances in the biochemical nature and function of the gene. Includes experimental design and statistical analysis. Prerequisite: BIO 101-102 or equivalent. Lecture: 3 hours. Recitation and Laboratory: 3 hours. Total: 6 hours per week.

**BUS 100  
Introduction to Business  
(3 credits)**
Presents a broad introduction to the functioning of business enterprise within the U.S. economic framework. Introduces economic systems, essential elements of business organization, production, human resource management, marketing, finance and risk management. Develops business vocabulary. Lecture: 3 hours per week.

**BUS 111  
Principles of Supervision I  
(3 credits)**
Teaches the fundamentals of supervision, including the primary responsibilities of the supervisor. Introduces factors relating to the work of supervisor and subordinates. Covers aspects of leadership, job management, work improvement, training and orientation, performance evaluation and effective employee/supervisor relationships. Lecture: 3 hours per week.

**BUS 116  
Entrepreneurship  
(3 credits)**
Presents the various steps considered necessary when going into business. Includes areas such as product-service analysis, market research evaluation, setting up books, ways to finance startup, operations of the business, development of business plans, buyouts versus starting from scratch and franchising. Uses problems and cases to demonstrate implementation of these techniques. Lecture: 3 hours per week.

**BUS 125  
Applied Business Mathematics  
(3 credits)**
Applies mathematical operations to business process and problems such as wages and payroll, sales and property taxes, checkbook records and bank reconciliation, depreciation, overhead, distribution of profit and loss in partnerships, distribution of corporate dividends, commercial discounts, markup, markdown, simple interest, present values, bank discount notes, multiple payment plans, compound interest annuities, sinking funds and amortization. Lecture: 3 hours per week.

**BUS 165  
Small Business Management  
(3 credits)**
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.

**BUS 200  
Principles of Management  
(3 credits)**
Teaches management and the management functions of planning, organizing, leading and controlling. Focuses on application of management principles to realistic situations managers encounter as they attempt to achieve organizational objectives. Lecture: 3 hours per week.

**BUS 201  
Organizational Behavior  
(3 credits)**
Presents a behaviorally oriented course combining the functions of management with the psychology of leading and managing people. Focuses on the effective use of human resources through understanding human motivation and behavior patterns, conflict management and resolution, group functioning and process, the psychology of decision-making and the importance of recognizing and managing change. Lecture: 3 hours per week.

**BUS 205  
Human Resource Management  
(3 credits)**
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.

**BUS 209  
Continuous Quality Improvement  
(3 credits)**
Presents the different philosophies in quality control. Introduces students to process improvement, team development, consensus building, and problem-solving strategies. Identifies methods for process improvement in manufacturing and service organizations, which includes statistical process control when used in the quality control function of business and industry. Lecture: 3 hours per week.

**BUS 220  
Introduction to Business Statistics  
(3 credits)**
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 number and time series analysis. Prerequisite: MTH 120. Lecture: 3 hours per week.
BUS 241
Business Law I  
(3 credits)
Develops a basic understanding of the US business legal environment. Introduces property and contract law, agency and partnership liability and government regulatory law. Students will be able to apply these legal principles to landlord/tenant disputes, consumer rights issues, employment relationships and other business transactions. Lecture: 3 hours per week.

BUS 242
Business Law II  
(3 credits)
Focuses on business organization and dissolution, bankruptcy and Uniform Commercial Code. Introduces international law and the emerging fields of E-Commerce and Internet Law. Lecture: 3 hours per week.

BUS 266
Production and Operations Management  
(3 credits)
Examines the process by which both goods and services-producing businesses, many not-for-profit institutions and governmental agencies transform resources into an end product to meet the demands of customers or clients. Includes a survey of some of the quantitative methods involved in the process. Prerequisite: MTH 120. Lecture: 3 hours per week.

BUS 280
Introduction to International Business  
(3 credits)
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.

Chemistry

CHM 101 – 102
General Chemistry I – II  
(4 credits each)
Emphasizes experimental and theoretical aspects of inorganic, organic and biological chemistry. Discusses general chemistry concepts as they apply to issues within society and the environment. Designed for the non-science major. Lecture: 3 hours. Laboratory: 3 hours. Total: 6 hours per week.

CHM 110
Survey of Chemistry  
(3 credits each)
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
College Chemistry I – II  
(4 credits each)
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 241 – 242
Organic Chemistry I – II  
(3 credits each)
Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses and typical reactions. Emphasizes reaction mechanisms. Corequisite: CHM 243 – 244 or CHM 245 – 246. Lecture: 3 hours per week.

CHM 243 – 244
Organic Chemistry Laboratory I – II  
(1 credit each)
Shall be taken concurrently with CHM 241 and CHM 242. Laboratory: 3 hours per week.

CHM 245 – 246
Organic Chemistry Laboratory I – II  
(2 credits each)
Includes qualitative organic analysis. Shall be taken concurrently with CHM 241 and CHM 242. Laboratory: 6 hours per week.

Childhood Development

CHD 118
Methods and Materials in the Language Arts for Children  
(3 credits)
Presents techniques and methods for encouraging the development of language and perceptual skills in young children. Stresses improvement of vocabulary, speech and methods to stimulate discussion. Surveys children’s literature, examines elements of quality story telling and story reading and stresses the use of audiovisual materials. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

CHD 119
Introduction to Reading Methods  
(3 credits)
Focuses on promoting language and literacy skills as the foundation for emergent reading. Emphasizes phonetic awareness and alphabetic principles, print awareness and concepts, comprehension and early reading and writing. Addresses strategies for intervention and support for exceptional children and English Language Learners. NOTE: This course replaces CHD 117. Prerequisite: ENG 111. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.
CHD 120
Introduction to Early Childhood Education
(3 credits)
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 145
Methods and Materials for Teaching Art, Music and Movement to Children
(3 credits)
Provides experiences in developing the content, methods and materials for directing children in art, music and movement activities. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

CHD 146
Methods and Materials for Teaching Math, Science and Social Studies to Children
(3 credits)
Provides experiences in developing the content, methods and materials for directing children in math, science and social studies activities. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

CHD 165
Observation and Participation in Early Childhood/Primary Settings
(3 credits)
Observes and participates in early childhood settings such as child care centers, preschools, Montessori schools or public school settings (Kindergarten through third grade). Students spend one hour each week in seminar session in addition to 60 clock hours in the field. May be taken again for credit. Lecture: 1 hour. Laboratory: 6 hours. Total: 7 hours per week.

CHD 166
Infant and Toddler Programs
(3 credits)
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.

CHD 190
Coordinated Practice
(3 credits)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

CHD 205
Guiding the Behavior of Children
(3 credits)
Explores positive ways to build self-esteem in children and help them develop self-control. Presents practical ideas for encouraging pro-social behavior in children and emphasizes basic skills and techniques in classroom management. Lecture: 3 hours per week.

CHD 210
Introduction to Exceptional Children
(3 credits)
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.

CHD 215
Models of Early Childhood Education Programs
(3 credits)
Studies and discusses the various models and theories of early childhood education programs including current trends and issues. Presents state licensing and staff requirements. Lecture: 3 hours per week.

CHD 216
Early Childhood Programs, School, and Social Change
(3 credits)
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.

CHD 265
Advanced Observation and Participation in Early Childhood/Primary Settings
(3 credits)
Observes and participates in early childhood settings such as child care centers, preschool, 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. Prerequisite: CHD 165. Lecture: 1 hour per week. Laboratory: 6 hours. Total: 7 hours per week.

CHD 270
Administration of Early Childhood Programs
(3 credits)
Examines the skills needed for establishing and managing early childhood programs. Emphasizes professionalism and interpersonal skills, program planning, staff selection and development, creating policies, budgeting and developing forms for recordkeeping. Lecture: 3 hours per week.
CHD 290
**Coordinated Practice**  
(3 credits)  
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

CHD 298
**Seminar Portfolio Development**  
(1 credit)  
Requires completion of a project or research report related to the student’s occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field.

**Civil Engineering**

CIV 171
**Surveying I**  
(3 credits)  
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: Engineering Technical Mathematics or divisional approval. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

CIV 172
**Surveying II**  
(3 credits)  
Introduces surveys for transportation systems including the preparation and analysis of topographic maps, horizontal and vertical curves, earthwork and other topics related to transportation construction. Prerequisite: CIV 171 or by permission of instructor. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

**Communication Studies and Theatre**

CST 100
**Principles of Public Speaking**  
(3 credits)  
Applies theory and principles of public address with emphasis on preparation and delivery. Lecture: 3 hours per week.

CST 110
**Introduction to Communication**  
(2 – 3 credits)  
Examines the elements affecting speech communication at the individual, small group, and public communication levels with emphasis on practice of communication at each level. Lecture: 2 – 3 hours per week.

CST 111
**Voice and Diction I**  
(3 credits)  
Enables students to improve pronunciation, articulation, and voice quality. Includes applied phonetics. Lecture: 3 hours per week.

CST 115
**Small Group Communication**  
(3 credits)  
Emphasizes the development of presentational ability in a group, decision-making, group maintenance, and leadership and participant skills. Incorporates a preliminary study of group dynamics. Lecture: 3 hours per week.

CST 130
**Introduction to the Theatre**  
(3 credits)  
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
**Acting I – II**  
(3 credits each)  
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
**Theatre Workshop**  
(1 – 6 credits)  
Enables students to work in various activities of play production. The student participates in performance, set design, stage carpentry, sound, costuming, lighting, stage managing, props, promotion or stage crew. May be repeated for credit. Variable hours per week.

CST 137
**Oral Interpretation**  
(3 credits)  
Studies the theory and practice of performing various types of literature: prose, poetry, and drama. Emphasizes the relationship among the oral interpreter, the literary work, and the audience. Lecture: 3 hours per week.

CST 231 – 232
**History of Theatre I – II**  
(3 credits each)  
Analyzes and studies theatre history to include architecture, performers and performance, playwrights, stage, production methods and audience from the Greeks through modern drama. Lecture: 3 hours per week.
CST 252
Costume and Make-up for the Theatre
(3 credits)
Provides students with a basic understanding of the principle of costuming and make-up for the theatre. Instructs in the fundamentals of costumes such as: function, research techniques, design, materials and construction. Instructs in the fundamentals of make-up such as: basic make-up techniques, supplies, and the design of straight, character, and special effect applications. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

CST 267
Creative Drama
(3 credits)
Explores uses of drama through story dramatization, role-playing, and sensory exercises. Lecture: 3 hours per week.

Drafting

DRF 151 – 152
Engineering Drawing Fundamentals I – II
(3 credits each)
Introduces technical drafting from the fundamentals through advanced drafting practices. Includes lettering, geometric construction, technical sketching, orthographic projection, sections, intersections, development, fasteners. Teaches theory and application of dimensioning and tolerances, pictorial drawing and preparation of drawings. Lecture: 1 hour. Laboratory: 4 – 6 hours. Total: 5 – 7 hours per week. DRF 152 prerequisite: DRF 151 or by permission of instructor.

DRF 160
Machine Blueprint Reading
(3 credits)
Introduces interpreting of various blueprints and working drawings. Applies basic principles and techniques such as visualization of an object, orthogonal projection, technical sketching and drafting terminology. Requires outside preparation. Lecture: 3 hours per week.

DRF 201
Computer-Aided Drafting and Design I
(3 credits)
Teaches computer-aided drafting concepts and equipment designed to develop a general understanding of components of a typical CAD system and its operation. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

DRF 202
Computer-Aided Drafting and Design II
(3 credits)
Teaches working drawings and advanced operations in computer-aided drafting. Prerequisite: DRF 201 or by permission of instructor. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

DRF 231
Computer-Aided Drafting I
(3 credits)
Teaches computer-aided drafting concepts and equipment designed to develop a general understanding of components and operate a typical CAD system. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

DRF 241
Parametric Solid Modeling I
(3 credits)
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.

DRF 260
Computer Applications for Surveyors and Technicians
(3 credits)
Studies and evaluates numerous COGO software and their associated drafting packages. Includes calculations and drafting of traverse adjustment, subdivision and curves. Prerequisite: AutoCAD experience or approval of the instructor. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

DRF 262
Computer-Aided Civil Design and Hydrology
(3 credits)
Introduces computer-aided design for civil/surveying as applied to highway design, site layout, advanced design, highway design, hydrology tools, watershed analysis and pipe sizing. Prerequisite: DRF 261 or approval of the instructor. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

Economics

ECO 120
Survey of Economics
(3 credits)
Presents a broad overview of economic theory, history, development and application. Introduces terms, definitions, policies and philosophies of market economies. Provides some comparison with other economic systems. Includes some degree of exposure to microeconomic and macroeconomic concepts. Lecture: 3 hours per week.
ECO 201
Principles of Macroeconomics
(3 credits)
Introduces macroeconomics, including the Keynesian, classical, monetarist principles and theories, the study of national economic growth, inflation, recession, unemployment, financial markets, money and banking and the role of government spending and taxation, along with international trade and investments. Lecture: 3 hours per week.

ECO 202
Principles of Microeconomics
(3 credits)
Introduces the basic concepts of microeconomics. Explores the free market concepts with coverage of economic models and graphs, scarcity and choices, supply and demand, elasticities, marginal benefits and costs, profits and production and distribution. Lecture: 3 hours per week.

Education

EDU 114
Driver Task Analysis
(3 credits)
Introduces the “driver task” as related to the highway transportation system and factors that influences performance ability. Prepares students so they may be eligible to take certification exams for driving school instructors in both public and private schools. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

EDU 200
Introduction to Teaching as a Profession
(3 credits)
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 214
Instructional Principles of Driver Education
(3 credits)
Analyzes rules and regulations that govern the conduct of Driver Education programs with special emphasis on organization and administration. Includes uses in the classroom, driving range and on the street. Prepares students so they may be eligible to take the state certification exam in driver education. Prerequisite: EDU 114. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

EDU 235
Health, Safety and Nutrition Education
(3 credits)
Focuses on the physical needs of children and explores strategies to meet these needs. Emphasizes positive health routines, hygiene, nutrition, feeding and clothing habits, childhood diseases and safety. Places emphasis on the development of food habits and concerns in food and nutrition. Describes symptoms and reporting procedures for child abuse. Lecture: 3 hours per week.

Electrical Technology

ELE 110
Home Electric Power
(3 credits)
Covers the fundamentals of residential power distribution, circuits, panels, fuse boxes, breakers, transformers. Includes study of the national electrical code, purpose and interpretation. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

ELE 118
Practical Electricity
(2 credits)
Teaches fundamentals of electricity, terminology and symbols, diagrams, the principles essential to the understanding of general practices, safety and the practical aspects of residential and non-residential wiring, electrical installation. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 hours per week.

ELE 127
Residential Wiring Methods
(2 – 3 credits)
Studies wiring methods and standards used for residential dwellings. Provides practical experience in design, layout, construction, and testing of residential wiring systems by use of scaled mock-ups. Lecture: 1 – 2 hours. Laboratory: 2 – 3 hours. Total: 4 – 5 hours per week.

ELE 131
National Electrical Code I
(3 credits)
Provides comprehensive study of the purpose and interpretations of the National Electric Code as well as familiarization and implementation of various charts, code rulings and wiring methods including state and local regulations. Lecture: 3 hours per week.

ELE 135
National Electrical Code - Residential
(3 – 4 credits)
Studies purposes and interpretations of the national electrical code that deals with single and multi-family dwellings, including state and local regulations. Lecture: 2 – 3 hours. Laboratory: 2 – 4 hours. Total: 4 – 5 hours per week.
ELE 137
National Electrical Code – Industrial
(3 credits)
Provides comprehensive study of the purposes and interpretations of the National Electrical Code that deal primarily with industrial wiring methods, including state and local regulations. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

ELE 138
National Electrical Code Review I
(3 credits)
Covers purpose and interpretation of the National Electrical Code as well as various charts, code rulings and wiring methods. Prepares the student to take the journeyman-level exam. Lecture: 3 hours per week.

ELE 150
A.C. and D.C. Circuit Fundamentals
(3 – 4 credits)
Provides an intensive study of the fundamentals of direct and alternating current, resistance, magnetism, inductance and capacitance, with emphasis on practical applications. Focuses on electrical/machines applications. Lecture: 2 – 3 hours. Laboratory: 2 hours. Total: 4 – 5 hours per week.

ELE 151
Electrical Troubleshooting
(3 credits)
Teaches troubleshooting as applied to residential wiring and/or electrical appliances. Lecture: 2 hours. Laboratory: 3 hours. Total 5: hours per week.

ELE 156
Electrical Control Systems
(3 credits)
Includes troubleshooting and servicing electrical controls, electric motors, motor controls, motor starters, relays, overloads, instruments and control circuits. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

ELE 159
Electrical Motors
(3 credits)
Teaches practical applications and fundamentals of A.C. and D.C. machines. Includes the concepts of magnetism and generators used in electrical motor applications. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

ELE 239
Programmable Controllers
(3 credits)
Deals with installation, programming, interfacing and concepts of troubleshooting programmable controllers. Prerequisite: ELE 122 or by permission of instructor. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

ELE 240
Advanced Programmable Logic Controllers
(3 – 4 credits)
Advances further study of Programmable Logic Controllers that was initiated in ELE 239. Students will learn to use more advanced program instructions, including data manipulation, sequences and program control, and advanced PLC features, including timers, counters. Covers connectivity and use of a variety of real world I/O devices. Prerequisite: ELE 239. Lecture: 2 – 3 hours. Laboratory: 0 – 3 hours. Total: 3 – 6 hours per week.

Emergency Medical Services

EMS 100
CPR for Healthcare Providers
(1 credit)
Provides instruction in Cardiopulmonary Resuscitation that meets current Emergency Cardiac Care (ECC) guidelines for Cardiopulmonary Resuscitation education for Healthcare Providers. Equivalent to HLT 105. Lecture: 1 hour per week.

EMS 110
Emergency Vehicle Operator’s Course (EVOC)
(1 credit)
Prepares the student for certification in the operation of various emergency vehicles. Teaches proper operating procedures in both emergency and non-emergency situations. Lecture: 1 hour per week.

EMS 111
Emergency Medical Technician – Basic
(6 credits)
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. Corequisite: EMS 120. Lecture 4 hours. Laboratory 4 hours. Total 8 hours per week.

EMS 120
Emergency Medical Technician - Basic Clinical
(1 credit)
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 corequisite to both EMS 111 and EMS 113. Lecture: 1 hour per week.
**EMS 132**  
**Vehicle Rescue**  
(1 – 2 credits)  
Educates Fire and EMS personnel in basic vehicle rescue. Teaches safe and proficient techniques for using air, manual and hydraulic tools. Lecture: 1 – 2 hours per week.

**EMS 145**  
**EMS Responses to Specialized Incidents**  
(3 credits)  
Presents the EMS response and mitigation of specialized incidents such as hazardous materials, Weapons of Mass Destruction, natural disasters, and other specialized multi-casualty incidents. Lecture: 3 hours per week.

**EMS 151**  
**Introduction to Advanced Life Support**  
(4 credits)  
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. Corequisite: EMS 170. Lecture: 3 hours. Laboratory: 2 hours. Total: 5 hours per week.

**EMS 153**  
**Basic ECG Recognition**  
(2 credits)  
Focuses on the interpretation of basic electrocardiograms (ECG) and their significance. Includes an overview of anatomy and physiology of the cardiovascular system including structure, function and electrical conduction in the heart. Covers advanced concepts that build on the knowledge and skills of basic dysrhythmia determination and introduction to 12 lead ECG. Lecture: 2 hours per week.

**EMS 155**  
**ALS – Medical Care**  
(4 credits)  
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 are not limited to conditions relating to cardiac, diabetic, neurological, non-traumatic abdominal pain, environmental, behavioral, gynecology, and toxicological disease conditions. Prerequisites: Current EMT-B certification, EMS 151 and EMS 153. Lecture: 3 hours. Laboratory: 2 hours. Total: 5 hours per week.

**EMS 157**  
**ALS – Trauma Care**  
(3 credits)  
Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Utilizes techniques which will allow the student to utilize the assessment findings to formulate a field impression and implement the treatment plan for the trauma patient. Prerequisites: Current EMT-B certification and EMS 151. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**EMS 159**  
**ALS – Special Populations**  
(2 credits)  
Continues the Virginia Office of Emergency Medical Services Intermediate and/or Paramedic curricula. Focuses on the assessment and management of speciality patients including obstetrical, neonates, pediatric, and geriatrics. Prerequisites: EMS 151 and EMS 153. Prerequisite or corequisite: EMS 155. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 hours per week.

**EMS 170**  
**ALS Internship I**  
(1 credit)  
Begins the first in a series of clinical experiences providing supervised direct patient contact in appropriate patient care facilities in and out of hospitals. Includes but not limited to patient care units such as the emergency department, critical care units, pediatric, labor and delivery, operating room, trauma centers and various advanced life support units. Laboratory: 3 – 6 hours per week.

**EMS 172**  
**ALS Clinical Internship II**  
(1 credit)  
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. Corequisite: EMS 151. Laboratory: 3 – 6 hours per week.

**EMS 173**  
**ALS Field Internship II**  
(1 credit)  
Continues with the second in a series of field experiences providing supervised direct patient care in out-of-hospital advanced life support units. Laboratory: 3 hours per week.
**Engineering**

**EGR 120**  
**Introduction to Engineering**  
(1 credit)  
Introduces the engineering profession, professional concepts, ethics, and responsibility. Reviews hand calculators, number systems, and unit conversions. Introduces the personal computer and operating systems. Includes engineering problem-solving techniques using computer software. Lecture: 1 hour.

**EGR 126**  
**Computer Programming for Engineers**  
(3 credits)  
Introduces computers, their architecture and software. Teaches program development using flowcharts. Solves engineering problems involving programming in languages such as FORTRAN, PASCAL, or C++. Lecture: 3 hours.

**EGR 140**  
**Engineering Mechanics: Statics**  
(3 credits)  
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. Prerequisite: MTH 116 or MTH 164 or by permission of the instructor. Lecture: 3 hours per week.

**EGR 216**  
**Computer Methods in Engineering and Technology**  
(3 credits)  
Provides advanced level experience in using a computer as a tool for solving technical problems and performing office functions. Includes computer hardware and operating system usage, structured programming in a selected high level language, use of word processing software, computer graphics and spreadsheets. Focuses on the analysis and solution of problems in engineering and technology. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**EGR 245**  
**Engineering Mechanics – Dynamics**  
(3 credits)  
Presents approach to kinematics of particles in linear and curvilinear motion. Includes kinematics of rigid bodies in plane motion. Teaches Newton’s second law, work-energy and power, impulse and momentum, and problem solving using computers. Lecture: 3 hours per week.

**EGR 246**  
**Mechanics of Materials**  
(3 credits)  
Teaches concepts of stress, strain, deformation, internal equilibrium, and basic properties of engineering materials. Analyzes axial loads, torsion, bending, shear and combined loading. Studies stress transformation and principle stresses, column analysis and energy principles. Lecture: 3 hours per week.

**EGR 248**  
**Thermodynamics for Engineering**  
(3 credits)  
Studies formulation of the first and second law of thermodynamics. Presents energy conversion, concepts of energy, temperature, entropy, and enthalpy, equations of state of fluids. Covers reversibility and irreversibility in processes, closed and open systems, cyclical processes and problem solving using computers. Lecture: 3 hours per week.

**English**

**ENG 1**  
**Preparing for College Writing I**  
(1 – 6 credits)  
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. Variable hours per week.

**ENG 3**  
**Preparing for College Writing II**  
(1 – 6 credits)  
Emphasizes strategies within the writing process to help students with specific writing situations. Develops techniques to improve clarity of writing and raise proficiency to the level necessary for entrance into particular curricula. Variable hours per week.

**ENG 5**  
**Preparing for College Reading II**  
(1 – 6 credits)  
Prepares students to be successful in college-level reading assignments. Emphasizes strategies within the reading process to help students read critically and increase appreciation of reading. Guides the student in making inferences, drawing conclusions, detecting relationships between generalizations and supporting details. Includes interpreting graphic aids and library skills. Lecture: 1 – 6 hours per week.

**ENG 6**  
**Reading in the Content Areas**  
(1 – 6 credits)  
Presents reading methods and study skills appropriate for specific courses to increase students’ reading and studying efficiency. Must be taken with a content area course. Course content may be planned jointly by faculty in English and related discipline. Variable hours per week.
ENG 111  
**College Composition I**  
(3 credits)  
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.

ENG 112  
**College Composition II**  
(3 credits)  
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.

ENG 115  
**Technical Writing**  
(3 credits)  
Develops ability in technical writing through extensive practice in composing technical reports and other documents. Guides students in achieving voice, tone, style and content in formatting, editing and graphics. Introduces students to technical discourse through selected reading. Lecture: 3 hours per week.

ENG 211 – 212  
**Creative Writing I – II**  
(3 credits each)  
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 217  
**Creative Writing - Poetry I**  
(3 credits)  
Introduces the fundamentals and techniques of writing poetry. Part I of II. Lecture: 3 hours per week.

ENG 241 – 242  
**Survey of American Literature I – II**  
(3 credits each)  
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  
**Survey of English Literature I – II**  
(3 credits each)  
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  
**Major American Writers**  
(3 credits)  
Examines major writers of American literary history. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture: 3 hours per week.

ENG 247  
**Survey of Popular Culture**  
(3 credits)  
Analyzes familiar aspects of American culture, as seen through popular literature, with additional emphasis on television, film and popular art. Prerequisite: ENG 112 or divisional approval. Lecture: 3 hours per week.

ENG 251 – 252  
**Survey of World Literature I – II**  
(3 credits each)  
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  
**Survey of African – American Literature I – II**  
(3 credits each)  
Examines selected works by Black 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 256  
**Literature of Science Fiction**  
(3 credits)  
Examines the literary and social aspects of science fiction, emphasizing development of ideas and techniques through the history of the genre. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture: 3 hours per week.

ENG 257  
**Mythology**  
(3 credits)  
Studies selected mythologies of the world, emphasizing their common origins and subsequent influence on human thought and expression. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture: 3 hours per week.
ENG 268
The Modern Drama
(3 credits)
Studies the modern drama. Emphasizes the understanding and enjoyment of dramatic literature. Requires critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture: 3 hours per week.

ENG 271 – 272
The Works of Shakespeare I – II
(3 credits each)
Examines selected works of Shakespeare. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture: 3 hours per week.

ENG 273 – 274
Women in Literature I – II
(3 credits each)
Examines literature by and about women. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture: 3 hours per week.

ENG 276
Southern Literature
(3 credits)
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
Film and Literature
(3 credits)
Examines the translation of literature into film viewing and writing. Prerequisite: ENG 112 or divisional approval. Lecture: 3 hours per week.

Environmental Science

ENV 40
Basic Certification Preparation: Wastewater
(1 credit)
Reviews materials which normally are associated with the wastewater treatment plant operator’s Class IV or Class III level certification examinations. Utilizes lecture, audiovisual and workshop sessions to review required materials and to prepare the trainee to complete the wastewater operator examination. Prerequisite: divisional approval. Laboratory: 2 hours per week.

ENV 136
Survey of Environmental Concerns
(3 credits)
Studies the relationship of man to his physical environment, ecological principles and public health. Topics of current importance include air pollution, potable water, waste disposal, communicable disease, poisoning and toxicity and radiation with particular emphasis on community action programs.

ENV 146
Advanced Certification Preparation: Wastewater
(1 credit)
Reviews the materials associated with the wastewater treatment plant operator’s Class II or Class I level certification examinations. Consists of lecture, audiovisual and workshop sessions to review the required material and to prepare the trainee to complete the wastewater operator’s examination. Prerequisite: divisional approval. Laboratory: 2 hours per week.

ENV 220
Environmental Problems
(3 credits)
Studies the relationship of man to his environment; ecological principles, population dynamics, topics of current importance including air, water and noise pollution; poisoning and toxicity, radiation, conservation and management of natural resources. Lecture: 3 hours per week.

Financial Services

FIN 107
Personal Finance
(3 credits)
Presents a framework of personal money management concepts, including establishing values and goals, determining sources of income, managing income, preparing a budget, developing consumer buying ability, using credit, understanding savings and insurance, providing for adequate retirement, and estate planning. Lecture: 3 hours per week.

FIN 215
Financial Management
(3 credits)
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 211. Lecture: 3 hours per week.

French

FRE 101 – 102
Beginning French I – II
(4 credits)
Introduces understanding, speaking, reading and writing skills and emphasizes basic French sentence structure. Lecture: 4 – 5 hours per week. May include one additional hour of oral practice per week.
FRE 201 – 202  
Intermediate French I – II  
(3 – 4 credits each)  
Continues to develop understanding, speaking, reading and writing skills. French is used in the classroom. Prerequisite: FRE 102 or equivalent. Lecture: 3 – 4 hours per week. May include one additional hour of oral practice per week.

Funeral Services

FNS 110  
Introduction to Funeral Service  
(3 credits)  
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. Lecture: 3 hours per week.

FNS 111  
Theory of Embalming I  
(3 credits)  
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. Corequisite: FNS 113. Lecture: 3 hours per week.

FNS 112  
Theory of Embalming II  
(3 credits)  
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. Prerequisites: FNS 111, FNS 113. Corequisite: FNS 114. Lecture: 3 hours per week.

FNS 113  
Theory of Embalming Laboratory I  
(1 credit)  
Teaches the basic procedures of embalming. Presents instruments, equipment, and the types of preservatives and disinfectant chemicals used in embalming. Corequisite: FNS 111. Laboratory: 3 hours per week.

FNS 114  
Theory of Embalming Laboratory II  
(1 credit)  
Teaches through practice and demonstration of various embalming techniques. May include clinical experiences in area funeral homes. Prerequisites: FNS 111, FNS 113. Corequisite: FNS 112. Laboratory: 3 hours per week.

FNS 121  
Anatomy for Funeral Service I  
(3 credits)  
Introduces anatomy and physiology and basic terminology. Presents information about cells, tissues and organs systems. Discusses all systems with emphasis placed on muscular, skeletal and circulatory. Lecture: 3 hours per week.

FNS 125  
Microbiology for Funeral Service  
(3 credits)  
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. Lecture: 3 hours per week.

FNS 126  
Pathology for Funeral Service  
(3 credits)  
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. Lecture: 3 hours per week.

FNS 211  
Restorative Art I  
(3 credits)  
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: Sophomore standing. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

FNS 213  
Restorative Art  
(3 credits)  
Presents surface contour, the influence of the bone structure on facial form and the effect of facial muscles on the wrinkles, grooves and folds of the face. Studies color principles and their applications. Teaches wax and nonwax treatments for restorations. Studies lip-waxing techniques and the modeling of various forms of the mouth and eyes. Focuses on problem cases which require illusory corrections, matching wax color to skin and masking of discolorations. Lecture: 3 hours per week.
FNS 214
Restorative Art Techniques and Lab
(1 credit)
The technical application of restorative art theory with special attention to minor and major restorative techniques, wax treatments, cosmetic applications, and the presentation of remains. Laboratory: 3 hours per week.

FNS 231
Principles of Funeral Management I
(4 credits)
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: sophomore standing. Lecture: 4 hours per week.

FNS 232
Principles of Funeral Management II
(4 credits)
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
Funeral Service Law
(2-3 credits)
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. Lecture: 2-3 hours per week.

FNS 245
Ethics
(3 credits)
Provides a review of the Funeral Service curriculum by administering a series of exams on required content that the student must successfully pass. Allows students to choose and develop an expanded outline of one specific topic in Funeral Services which will be included in the final grade. Includes a required section on ethics in the field of Funeral Services and prepares the student to sit for the national and state licensing examinations. Lecture: 3 hours per week.

FNS 270
Funeral Service Review
(3 credits)
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. Prerequisite: sophomore standing. Lecture: 3 hours per week.

Geography

GEO 200
Introduction to Physical Geography
(3 credits)
Studies major elements of the natural environment including earth sun relationship, land forms, weather and climate, natural vegetation and soils. Introduces the student to types and uses of maps. Lecture: 3 hours per week.

GEO 210
People and the Land: An Introduction to Cultural Geography
(3 credits)
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 221 – 222
Regions of the World
(3 credits each)
Presents an overview of the 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, 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.

Geology

GOL 105
Physical Geology
(4 credits)
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.
Health

HLT 100
**First Aid and Cardiopulmonary Resuscitation**
(2 credits)
Focuses on the principles and techniques of safety, first aid and cardiopulmonary resuscitation. Lecture: 2 – 3 hours per week.

HLT 106
**First Aid and Safety**
(2 credits)
Focuses on the principles and techniques of safety and first aid. Lecture: 2 hours per week.

HLT 110
**Concepts of Personal and Community Health**
(2 credits)
Studies the concepts related to the maintenance of health, safety, and the prevention of illness at the personal and community level. Lecture: 2 hours per week.

HLT 116
**Personal Wellness**
(2 credits)
Familiarizes students with the components of wellness, including nutrition, weight control, stress management and physical conditioning. Includes a personal wellness plan. Lecture: 3 hours per week.

HLT 135
**Child Health and Nutrition**
(3 credits)
Focuses on the physical needs of the preschool child and the methods by which these are met. Emphasizes health routines, hygiene, nutrition, feeding and clothing habits, childhood diseases, and safety as related to health growth and development. Lecture: 3 hours per week.

HLT 138
**Principles of Nutrition**
(2 credits)
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.

HLT 141
**Introduction to Medical Terminology**
(2 credits)
Focuses on medical terminology for students preparing for careers in the health professions. Virtual course for surgical technology students. Lecture: 2 hours per week.

HLT 143
**Medical Terminology I**
(3 credits)
Provides an understanding of medical abbreviations and terms. Includes the study of prefixes, suffixes, word stems and technical terms with emphasis on proper spelling, pronunciation and usage. Emphasizes more complex skills and techniques in understanding medical terminology. Lecture: 3 hours per week.

HLT 160
**Personal Health and Fitness**
(3 credits)
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.

HLT 200
**Human Sexuality**
(3 credits)
Provides a basic understanding of human sexuality. Includes anatomy, physiology, pregnancy, family planning, venereal diseases, and sexual variations. Lecture: 3 hours per week.

HLT 204
**Women’s Health**
(3 credits)
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.

HLT 205
**Sex Roles in Contemporary America**
(3 credits)
Explores the changing roles of the sexes that have occurred from 1900 to the present. Includes sexual and social mores, inhibitions towards sexuality, and the influence of society and religion. Discusses psychological and emotional implications regarding sexuality for males and females and how to deal with them. Lecture: 3 hours per week.

HLT 206
**Exercise Science**
(3 credits)
Surveys scientific principles, methodologies, and research as applied to exercise and physical fitness. Emphasizes physiological responses and adaptations to exercise. Addresses basic elements of kinesiology, biomechanics, and motor learning. Presents an introduction to the physical fitness industry. Lecture: 3 hours per week.
HLT 215  
**Personal Stress and Stress Management**  
(2 – 3 credits)  
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: 2 – 3 hours per week.

**HLT 226  
AIDS Awareness**  
(2 credits)  
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.

**HLT 230  
Principles of Nutrition and Human Development**  
(3 credits)  
Teaches the relationship between nutrition and human development. Emphasizes nutrients, balanced diet, weight control and the nutritional needs of an individual. Lecture: 3 hours per week.

**HLT 240  
Consumer Health Education**  
(3 credits)  
Focuses on health fads, myths, misunderstandings, quackeries, deceptions, and fraudulent health practices. Includes selecting and purchasing health products, services, consumer protections, and in the planning and financing of medical care. Lecture: 3 hours per week.

**HLT 250  
General Pharmacology**  
(2 – 3 credits)  
Emphasizes general pharmacology for the health related professions covering general principles of drug actions/reactions, major drug classes, specific agent within each class, and routine mathematical calculations needed to determine desired dosages. Lecture: 2 – 3 hours per week.

**History**

**HIS 101 – 102  
History of Western Civilization I – II**  
(3 credits each)  
Examines the development of western civilization from ancient times to the present. The first semester ends with the seventeenth century; the second semester continues through modern times. Lecture: 3 hours per week.

**HIS 111 – 112  
History of World Civilization I – II**  
(3 credits each)  
Surveys Asian, African, Latin American and European civilizations from the ancient period to the present. Lecture: 3 hours per week.

**HIS 121 – 122  
United States History I – II**  
(3 credits each)  
Surveys United States history from its beginning to the present. Lecture: 3 hours per week.

**HIS 141 – 142  
African-American History I – II**  
(3 credits each)  
Surveys the history of black Americans from their African origins to the present. Lecture: 3 hours per week.

**HIS 211  
History of England**  
(3 credits)  
Surveys the history of the British Isles from pre-Celtic times to the present. Lecture: 3 hours per week.

**HIS 203  
History of African Civilization**  
(3 credits)  
Examines major social, economic, political and religious developments from earliest times to the present. Lecture: 3 hours per week.

**HIS 225 – 226  
Topics in European History I – II**  
(3 credits each)  
Examines selected topics in the history of Europe from ancient times to the present. Lecture: 3 hours per week.

**HIS 243 – 244  
History of the Ancient World I – II**  
(3 credits each)  
Studies the history of the ancient world from the dawn of civilization in the Near East to the fall of Rome. Lecture: 3 hours per week.

**HIS 269  
Civil War and Reconstruction**  
(3 credits)  
Studies factors that led to the division between the states. Examines the war, the home fronts and the era of Reconstruction. Lecture: 3 hours per week.
HIS 276  
United States History since World War II  
(3 credits)
Investigates United States history from 1945 to the present, studying both domestic developments and American involvement in international affairs. Lecture: 3 hours per week.

HIS 277  
The American Experience in Vietnam  
(3 credits)
Analyzes American involvement in Vietnam from World War II with emphasis on the presidencies of Johnson, Nixon and Ford. Lecture: 3 hours per week.

HIS 281 – 282  
History of Virginia I – II  
(3 credits each)
Examines the cultural, political, and economic history of the Commonwealth from its beginning to the present. Lecture: 3 hours per week.

Human Services

HMS 100  
Introduction to Human Services  
(3 credits)
Introduces human service agencies, roles and careers. Presents a historical perspective of the field as it relates to human services today. Additional topics include values clarification and needs of target populations. Lecture: 3 hours per week.

HMS 106  
Working with Death and Dying  
(3 credits)
Studies the hospice concept emphasizing the management of providing services associated with terminal illness, while providing human services for the family as well as the patient. Explores the unique role of each member of the hospice care team as to how each assists the patient and family in coping with the effects of the illness. Emphasizes understanding grief and loss. Focuses on the dying person and emphasizes the social and moral aspects of death and dying. Lecture: 3 hours per week.

HMS 121  
Basic Counseling Skills I  
(3 credits)
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. Prerequisite: HMS 100. Lecture: 3 hours per week.

HMS 225  
Functional Family Intervention  
(3 credits)
Provides an understanding of functions and dysfunctions within the family. Emphasizes the development of effective skills through an interpersonal/interactional approach to family intervention. Lecture: 3 hours per week.

HMS 226  
Helping Across Cultures  
(3 credits)
Provides an historical overview of selected cultural and racial groups. Promotes understanding of group differences and the impact on counseling services. Lecture: 3 hours per week.

HMS 227  
The Helper as a Change Agent  
(3 credits)
Teaches the following skills for implementing alternative models of change and influence: action research, problem-solving, consultation, workshop development and outreach and advocacy for diverse client populations. Prerequisite: HMS 100. Lecture: 3 hours per week.

HMS 236  
Gerontology  
(3 credits)
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. Prerequisite: HMS 100. Lecture: 3 hours per week.

HMS 251  
Substance Abuse I  
(3 credits)
Provides knowledge, skills and insight for working in drug and alcohol abuse programs. Emphasizes personal growth and client growth measures in helping relationships. Stress various methods of individual and group techniques for helping the substance abuser. Lecture: 3 hours per week.

HMS 252  
Substance Abuse II  
(3 credits)
Expands knowledge and skill in working with the substance abuser. Focuses on assisting substance abusers in individual and group settings and explores client treatment modalities. May provide opportunities for field experience in treatment centers. Prerequisite: HMS 251. Lecture: 3 hours per week.

HMS 258  
Case Management and Substance Abuse  
(3 credits)
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.
Humanities

HUM 201
Survey of Western Culture I
(3 credits)
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
Survey of Western Culture II
(3 credits)
Studies thought, values and arts of Western culture, integrating major developments in art, architecture, literature, music and philosophy. Covers the following periods: Renaissance, Baroque, enlightenment, romantic and modern. Lecture: 3 hours per week.

HUM 210
Introduction to Women’s Studies
(3 credits)
Introduces interdisciplinary and cross-cultural theories that explore gender, race, and class issues relating to women’s lives, past and present. Prerequisite: ENG 112. Lecture: 3 hours per week.

HUM 231 – 232
Survey of Asian Culture I – II
(3 credits each)
Studies thought, values and arts of Asian culture, integrating art, architecture, literature, music and philosophy of various cultures, including two or more of the following: India, China, Japan and Southeast Asia. Lecture: 3 hours per week.

HUM 241 – 242
Interdisciplinary Principles of the Humanities I – II
(3 credits each)
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.

Industrial Engineering Technology

IND 101
Quality Assurance Technology I
(3 credits)
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. Prerequisite: MTH 103 or equivalent. Lecture: 3 hours per week.

IND 116
Applied Technology
(3 credits)
Introduces basic information and problem-solving techniques in liquids, gases, solids, metrics, mechanics, forces, simple machines, heat, light, sound and nuclear energy as applied in industrial engineering technologies. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

IND 125
Installation and Preventive Maintenance
(3 credits)
Studies practices in the installation of machinery, including mounting, grouting, leveling, and alignment. Examines methods of preventive maintenance including inspection, scheduled maintenance, controls, record keeping, repair parts stocking, and safety considerations. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

IND 137
Team Concepts and Problem Solving
(3 credits)
Studies team concepts and problem-solving techniques to assist project teams in improving quality and productivity. Provides knowledge of how to work as a team, plan and conduct good meetings, manage logistics and details, gather useful data, communicate the results and implement changes. Lecture: 3 hours per week.
Information Technology

Database Processing

ITD 110
Web Page Design I
(3 credits)
Stresses a working knowledge of web site designs, construction, and management using HTML or XHTML. Includes headings, lists, links, images, image maps, tables, forms, and frames. Prerequisite: ITE 130. Lecture: 3 hours per week.

ITD 130
Database Fundamentals
(3 credits)
Introduces the student to relational database and relational database theory. Includes planning, defining and using a database; table design, linking, and normalization; types of databases, database description and definition. Prerequisite: ITE 215. Lecture: 3 hours per week.

ITD 132
Structured Query Language
(3 credits)
Incorporates a working introduction to commands, functions and operators used in SQL for extracting data from standard databases. Prerequisite: ITE 215. Lecture: 3 hours per week.

ITD 210
Web Page Design II
(3 credits)
Incorporates advanced techniques in web site planning, design, usability, accessibility, advanced site management, and maintenance utilizing web editor software(s). Prerequisite: ITD 110. Lecture: 3 hours per week.

ITD 250
Database Architecture and Administration
(3 – 4 credits)
Involves in-depth instruction about the underlying architecture of databases and the handling of database administration. Lecture: 3 – 4 hours per week.

Information Technology Essentials

ITE 101
Introduction to Microcomputers
(1 credit)
Examines concepts and terminology related to microcomputers and introduces specific uses of microcomputers. Lecture: 1 hour per week.

ITE 115
Introduction to Computer Applications and Concepts
(3 credits)
Covers computer concepts and internet skills and use a software suite which includes word processing, spreadsheet, database, and presentation software to demonstrate skills required for computer literacy. Recommended prerequisite keyboarding skills. Lecture: 3 hours per week.

ITE 127
Microcomputer Software: Beginning Windows
(1 credit)
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.

ITE 130
Introduction to Internet Services
(3 credits)
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. Prerequisite: ITE 115. Lecture: 3 hours per week.

ITE 131
Survey of Internet Services
(1 credit)
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
Spreadsheet Software
(3 credits)
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. Prerequisite: ITE 115. Lecture: 3 hours per week.

ITE 141
Microcomputer Software: Spreadsheets
(1 credit)
Provides first-time users with sufficient information to make practical use of spreadsheet software using the basic of building spreadsheets. Lecture: 1 hour per week.
ITE 150
Desktop Database Software
(3 credits)
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. Prerequisite: ITE 115. Lecture: 3 hours per week.

ITE 151
Microcomputer Software: Database Management
(1 credit)
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
Technology for Teachers (TSIP)
(3 credits)
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. Lecture: 3 hours per week.

ITE 215
Advanced Computer Applications and Integration
(3 credits)
Incorporates advanced computer concepts including the integration of a software suite. Prerequisite: ITE 115. Lecture: 3 hours per week.

ITE 221
PC Hardware and OS Architecture
(3 credits)
Covers instruction about processors, internal functions, peripheral devices, computer organization, memory management, architecture, instruction format, and basic OS architecture. Prerequisite: ITE 115. Lecture: 3 hours per week.

Information Technology Networking

ITN 101
Introduction to Network Concepts
(3 credits)
Provides instruction in networking media, physical and logical topologies, common networking standards and popular networking protocols. Emphasizes the TCP/IP protocol suite and related IP addressing schemes, including CIDR. Includes selected topics in network implementation, support and LAN/WAN connectivity. Prerequisite: ITE 115. Lecture: 3 hours per week.

ITN 116
WIN 2003 Network Infrastructure, Implementation, Management & Maintenance (NI-IMM)
(3 credits)
Provides instruction on how to implement, manage, and maintain a Microsoft Windows Server 2003 network infrastructure. Prerequisite: ITN 101. Lecture: 3 hours per week.

ITN 154
Networking Fundamentals – Cisco
(3 - 4 credits)
Provides introduction to networking using the OSI reference model. Includes data encapsulation, TCP/IP suite, routing, IP addressing, and structured cabling design and implementation. Prerequisite: ITE 115. Lecture: 3 - 4 hours per week.

ITN 154L
Networking Fundamentals - CISCO Laboratory
(1 credit)
Provides problem solving experience to supplement instruction in Networking Fundamentals - Cisco. Corequisite: ITN 154. Laboratory: 2 hours per week.

ITN 155
Introductory Routing – Cisco
(3 - 4 credits)
Features an introduction to basic router configuration using Cisco IOS software. Includes system components, interface configuration, IP network design, troubleshooting techniques, configuration and verification of IP addresses, and router protocols. Lecture: 3 - 4 hours per week.

ITN 155L
Introductory Routing - Cisco Laboratory
(1 credit)
Provides problem solving experience to supplement instruction in Introductory Routing - Cisco. Corequisite: ITN 155. Laboratory: 2 hours per week.
ITN 156
Basic Switching and Routing – Cisco
(3 credits)
Centers instruction in LAN segmentation using bridges, routers, and switches. Includes fast Ethernet, access lists, routing protocols, spanning tree protocol, virtual LANS and network management. Lecture: 3 hours per week.

ITN 157
WAN Technologies – Cisco
(3 credits)
Concentrates on an introduction to Wide Area Networking (WANs). Includes WAN design, LAPB, Frame Relay, ISDN, HDLC, and PPP. Lecture: 3 hours per week.

ITN 171
Unix 1
(3 credits)
Provides an introduction to UNIX operating systems. Teaches login procedures, file creation, UNIX file structure, input/output control, and the UNIX shell. Prerequisite: ITE 115. Lecture: 3 hours per week.

ITN 260
Network Security Basics
(3 credits)
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. Lecture: 3 hours per week.

Information Technology Programming

ITP 100
Software Design
(3 credits)
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. Prerequisite: ITE 115. Lecture: 3 hours per week.

ITP 110
Visual Basic Programming I
(3 credits)
Involves instruction in fundamentals of event-driven programming using Visual Basic. Emphasizes program construction, algorithm development, coding, debugging, and documentation of graphical user interface applications. Prerequisite: ITP 100. Lecture: 3 hours per week.

ITP 120
Java Programming I
(3 credits)
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. Lecture: 3 hours per week.

ITP 140
Client Side Scripting
(3 – 4 credits)
Provides instruction in fundamentals of Internet application design, development, and deployment using client side scripting language(s). Lecture: 3 – 4 hours per week.

ITP 160
Introduction to Game Design & Development
(3 credits)
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. Integrate 2D animations, 3D models, sound effects, and background music as well as graphic backgrounds. Lecture: 3 hours per week.

ITP 210
Visual Basic Programming II
(3 credits)
Encompasses instruction in the application of advanced event-driven techniques to application development. Emphasizes database connectivity and advanced controls using Visual Basic. Lecture: 3 hours per week.

ITP 220
Java Programming II
(3 credits)
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: 3 hours per week.

ITP 251
Systems Analysis and Design
(3 credits)
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 are included in course content. Software applications may be used to enhance student skills. Prerequisites: ITE 115 and ITP 100. Lecture: 3 hours per week.
## Instrumentation

**INS 210**  
**Principles of Instrumentation**  
*(4 credits)*

Introduces the basic concepts and terminology of process control systems. Presents types of control systems, applicable component elements, basic control analysis and documentation requirements for measuring instruments and signal conditioning. Prerequisite: ETR 203. Lecture: 3 hours. Laboratory: 3 hours. Total: 6 hours per week.

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## Legal Administration

**LGL 110**  
**Introduction to Law and the Legal Assistant**  
*(3 credits)*

Introduces various areas of law in which a legal assistant may be employed. Includes study of the court system (Virginia and federal) as well as a brief overview of criminal law, torts, domestic relations, evidence, ethics, the role of the legal assistant, and other areas of interest. Lecture: 3 hours per week.

**LGL 115**  
**Real Estate Law for Legal Assistants**  
*(3 credits)*

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 these various instruments and studies the system of recording and search of public documents. Lecture: 3 hours per week.

**LGL 117**  
**Family Law**  
*(3 credits)*

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. Lecture: 3 hours per week.

**LGL 126**  
**Legal Writing**  
*(3 credits)*

Studies proper preparation of various legal documents, including legal memoranda, letters, and pleadings. Involves practical applications. May include case and appellate briefs. Prerequisite: ENG 111 or permission of instructor. Lecture: 3 hours per week.

**LGL 130**  
**Law Office Administration and Management**  
*(3 credits)*

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. Lecture: 3 hours per week.

**LGL 215**  
**Torts**  
*(3 credits)*

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. Lecture: 3 hours per week.

**LGL 238**  
**Bankruptcy**  
*(3 credits)*

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. Lecture: 3 hours per week.

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## Machine Technology

**MAC 121 – 122**  
**Computer Numerical Control I – II**  
*(2 credits each)*

Focuses on numerical control techniques in metal forming and machine processes. Includes theory and practice in lathe and milling machine computer numerical control program writing, setup and operation. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 hours per week.

**MAC 131**  
**Machine Lab I**  
*(2 credits)*

Teaches fundamental machine shop operations, bench work, layout, measuring tools, and safety. Lecture: 1 hour. Laboratory: 3 hours. Total: 4 hours per week.
**MAC 150**  
Introduction to Computer-Aided Manufacturing  
(2 – 3 credits)  
Introduces computer-aided manufacturing (CAM) with emphasis on programming of numerical control machinery. Teaches program writing procedures using proper language and logic and a CAM programming system to produce numerical control code for machines. Teaches basic computer usage, 2 1/2D and 3D CAD-CAM integration and code-to-machine transfer. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**MAC 161 – 162**  
Machine Shop Practices I – II  
(3 credits each)  
Introduces safety procedures, bench work, hand tools, precision measuring instruments, drill presses, cut-off saws, engine lathes, manual surface grinders and milling machines. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

**MAC 163 – 164**  
Machine Shop Practices III – IV  
(3 credits each)  
Offers practice in the operation of the drill press, engine lathe, vertical milling machine, horizontal milling machine and the surface grinder. Introduces practical heat treatment of directly hardenable steels commonly used in machine shops. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

**MAC 171 – 172**  
Machine Tool Operations I – II  
(3 credits each)  
Uses basic fractional and decimal measuring tools and hand tools. Covers linear, angular and radial layout and precision measuring. Includes setup and operations of hand saws, drill presses, the engine lathe and the vertical and horizontal milling machines. Requires solutions of related problems and preparation of weekly laboratory reports. Laboratory: 6 hours per week.

**MAC 209**  
Standards, Measurements and Calculations  
(3 credits)  
Presents typical mathematical and mechanical problems requiring the use of reference standards such as the Machinery’s Handbook for solution. Presents use of the Coordinate Measuring Machine for solution. Lecture: 2 – 3 hours per week.

**Marketing**

**MKT 100**  
Principles of Marketing  
(3 credits)  
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 220**  
Principles of Advertising  
(3 credits)  
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.

**Mathematics**

**MTH 2**  
Arithmetic  
(1 – 5 credits)  
Covers arithmetical 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 earned are not applicable toward graduation. Variable hours per week.

**MTH 3**  
Algebra I  
(1 – 5 credits)  
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 earned are not applicable toward graduation. Prerequisites: a placement recommendation for MTH 03 and Arithmetic or equivalent. Variable hours per week.

**MTH 4**  
Algebra II  
(1 – 5 credits)  
Expands upon 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 earned are not applicable toward graduation. Prerequisites: a placement recommendation for MTH 04 and Algebra I or equivalent. Variable hours per week.
MTH 103 – 104
Applied Technical Mathematics I – II
(3 credits each)
Presents a review of arithmetical elements of algebra, geometry and trigonometry. Directs applications to specialized areas. Prerequisites: a placement recommendation for MTH 103 and one unit of high school mathematics or equivalent. Lecture: 3 hours per week.

MTH 115 – 116
Technical Mathematics I – II
(3 credits each)
Presents algebra through exponential and logarithmic functions, trigonometry, vectors, analytic geometry and complex numbers. Prerequisites: a placement recommendation for MTH 115 and Algebra I and Geometry, or Algebra I and Algebra II, or equivalent. Lecture: 3 hours per week.

MTH 120
Introduction to Mathematics
(3 credits)
Introduces number systems, logic, basic algebra and descriptive statistics (intended for occupational/technical programs). Prerequisites: a placement recommendation for MTH 120 and one unit of high school mathematics or equivalent. Lecture: 3 hours per week.

MTH 163
Precalculus I
(3 credits)
Presents college algebra; matrices; and algebraic, exponential and logarithmic functions. Prerequisite: a placement recommendation for MTH 163 and Algebra I and Geometry, or Algebra I and Algebra II, or equivalent. (Credit will not be awarded for both MTH 163 and MTH 166.) Lecture: 3 hours per week.

MTH 164
Precalculus II
(3 credits)
Presents trigonometry, analytic geometry and sequences in series. Prerequisite: MTH 163 or equivalent. (Credit will not be awarded for both MTH 164 and MTH 168.) Lecture: 3 hours per week.

MTH 170
Foundations in Contemporary Mathematics
(3 credits)
Covers topics in the mathematics of social choice, management sciences, statistics and growth. Uses physical demonstrations and modeling techniques to teach the power and utility of mathematics. Algebra I – II and Geometry or equivalent. Lecture: 3 hours per week.

MTH 173
Calculus with Analytic Geometry I
(4 – 5 credits)
Presents analytic geometry and the calculus of algebraic and transcendental functions including the study of limits, derivatives, differentials, and introduction to integration along with their applications. Designed for mathematical, physical and engineering science programs. Prerequisites: a placement recommendation for MTH 173 and four units of high school mathematics including Algebra I, Algebra II, Geometry and Trigonometry or equivalent. (Credit will not be awarded for more than one of MTH 173, MTH 175, or MTH 273.) Lecture: 4 – 5 hours per week.

MTH 174
Calculus with Analytic Geometry II
(4 – 5 credits)
Continues the study of analytic geometry and the calculus of algebraic and transcendental functions including rectangular, polar, and parametric graphing, indefinite and definite integrals, methods of integration, and power series along with applications. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 173 or equivalent. (Credit will not be awarded for more than one of MTH 174, MTH 176 or MTH 274.) Lecture: 4 – 5 hours per week.

MTH 177
Introduction Linear Algebra
(2 credits)
Covers matrices, vector spaces, determinants, solutions of systems of linear equations, and eigen values. Designed for mathematical, physical, and engineering science programs. Corequisite: MTH 175. Lecture: 2 hours per week.

MTH 240
Statistics
(3 credits)
Presents an overview of statistics, including descriptive statistics, elementary probability, probability distributions, estimation, hypothesis testing, and correlation and regression. Prerequisites: a placement recommendation for MTH 240 and MTH 163 or MTH 166 or equivalent. (Credit will not be awarded for both MTH 240 and MTH 241.) Lecture: 3 hours per week.

MTH 270
Applied Calculus
(3 credits)
Introduces limits, continuity, differentiation and integration of algebraic and transcendental functions, techniques of integration, and partial differentiation. Prerequisite: MTH 163 or MTH 166 or equivalent. (Credit will not be awarded for both MTH 270 and MTH 271.) Lecture: 3 hours per week.
MTH 273  
Calculus I  
(4 credits)  
Presents topics in differential calculus of one variable, including the theory of limits, derivatives, differentials, definite and indefinite integrals and applications to algebraic and transcendental functions. Designed for mathematical, physical and engineering science programs. Prerequisites: a placement recommendation for MTH 273 and four units of high school mathematics, including Algebra I, Algebra II, Geometry and Trigonometry, or equivalent. (Credit will not be awarded for more than one of the following courses: MTH 173, MTH 175 or MTH 273.) Lecture: 4 hours per week.

MTH 274  
Calculus II  
(4 credits)  
Covers vectors in three dimensions, definite integrals, methods of integration, indeterminate forms, partial differentiation, and multiple integrals. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 273 or equivalent. (Credit will not be awarded for more than one of MTH 174, MTH 176 or MTH 274.) Lecture: 4 hours per week.

MTH 277  
Vector Calculus  
(4 credits)  
Presents vector valued functions, partial derivatives, multiple integrals, and topics from the calculus vectors. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 174 or equivalent. Lecture: 4 hours per week.

MTH 279  
Ordinary Differential Equations  
(4 credits)  
Introduces ordinary differential equations. Includes first order differential equations, second and higher order ordinary differential equations with application. Designed for mathematical, physical, and engineering science programs. Prerequisite: MTH 174 or equivalent. Lecture: 4 hours per week.

MTH 285  
Linear Algebra  
(3 credits)  
Covers matrices, vector spaces, determinants, solutions of systems of linear equations, basis and dimension, eigen values, and eigen vectors. Designed for mathematical, physical and engineering science programs. Prerequisite: MTH 174 or equivalent. Lecture: 3 hours per week.

Mechanical Engineering Technology

MEC 101 – 102  
Introduction to Engineering Technology I – II  
(2 credits each)  
Introduces engineering technology. Provides historical background. Covers such topics as professional ethics; problem-solving techniques involving forces, structures, materials, fluids, energy, and electricity and U.S. Customary and S.I. units, and unit conversions. Lecture: 2 hours per week.

MEC 113  
Materials and Processes of Industry  
(3 credits)  
Studies engineering materials and accompanying industrial manufacturing processes. Investigates nature of materials structure and properties from a design standpoint. Analyzes both the effects of various processes on materials and the processes themselves. Includes machining, casting, forming, molding, hot/cold working, machining and welding. Addresses quality assurance and inspection procedures. Lecture: 3 hours per week.

MEC 131  
Mechanics I – Statics for Engineering Technology  
(3 credits)  
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. Lecture: 3 hours per week.

MEC 132  
Mechanics II – Strength of Mat. for Eng. Tech  
(3 credits)  
Teaches the concepts of stress and strain. Provides an analysis of stresses and deformations in loaded members, connectors, shafts, beams, columns, and combined stress. Lecture: 3 hours per week.

MEC 154  
Mechanical Maintenance I  
(3 credits)  
Provides an overview of basic maintenance techniques and processes for industrial mechanics and technicians who are installing and maintaining industrial mechanical and power transmission components. Lecture: 2 – 3 hours. Laboratory: 0 – 2 hours. Total: 3 – 4 hours per week.

MEC 211 – 212  
Machine Design I – II  
(4 credits each)  
Introduces analytical design of bearings, clutches, coupling, brakes, springs, gearing systems and power shafting. Emphasizes methods of construction, machine parts and specifications of materials, and manufacturing processes. MEC 212 prerequisite: MEC 211. Lecture: 3 hours. Laboratory: 2 hours. Total: 5 hours per week.
MEC 254
**Mechanical Maintenance II**
(3 credits)
Covers advanced maintenance techniques and processes for industrial mechanics and technicians who are installing and maintaining industrial mechanical and power transmission components. Lecture: 2 – 3 hours. Laboratory: 0 – 2 hours. Total 3 – 4 hours per week.

MEC 266
**Applications of Fluid Mechanics**
(3 credits)
Teaches theory of hydraulic and pneumatic circuits including motors, controls, actuators, valves, plumbing, accumulators, reservoirs, pumps, compressors, and filters. Lecture: 3 hours per week.

Medical Laboratory

MDL 105
**Phlebotomy**
(3 credits)
Introduces basic medical terminology, anatomy, physiology, components of health care delivery and clinical laboratory structure. Teaches techniques of specimen collection, specimen handling, and patient interactions. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

MDL 196
**On-Site Training**
(3 credits)
Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the college. Laboratory: 9 hours per week.

Mental Health

MEN 101
**Mental Health Skill Training I**
(3 credits)
Develops skills necessary to function as a mental health worker, with emphasis on guided practice in counseling skills as well as improved self-awareness. Includes training in problem-solving, goal-setting, and implementation of appropriate strategies and evaluation techniques relating to interaction involving a variety of client needs. Lecture: 3 hours per week.

MEN 102
**Mental Health Skill Training II**
(3 credits)
Develops skills necessary to function as a mental health worker, with emphasis on guided practice in counseling skills as well as improved self-awareness. Includes training in problem-solving, goal-setting, and implementation of appropriate strategies and evaluation techniques relating to interaction involving a variety of client needs. Lecture: 3 hours per week.

MEN 110
**Introduction to Abnormal Psychology**
(3 credits)
Studies symptoms, causes and treatment of mental deficiency, neurosis, psychosis and character disorders, with specific relationship to work of the mental health technologists. Lecture: 3 hours per week.

MEN 121 – 122
**Mental Retardation I – II**
(3 credits each)
Explores current problems and social, cultural and legal issues involved in therapeutic interventions for understanding and programs relating to the mentally retarded. Prerequisite: HMS 100. Lecture: 3 hours per week.

MEN 190
**Coordinated Practice**
(3 credits)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college.

MEN 196
**On-Site Training**
(3 credits)
Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the college.

MEN 198
**Seminar and Project**
(1 – 5 credits)
Requires completion of a project or research report related to the student’s occupational objectives and a study of approaches to the selection and pursuit of career opportunities in the field. May be repeated for credit. Variable hours.

MEN 290
**Coordinated Practice**
(3 credits)
Supervises on-the-job training in selected business, industrial or service firms coordinated by the college.

MEN 296
**On-Site Training**
(3 credits)
Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the college.

Music

MUS 101 – 102
**Basic Musicianship I – II**
(3 credits)
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
Music Theory I – II
(4 credits each)
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
Music Appreciation I – II
(3 credits each)
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 125
American Music
(3 credits)
Presents the development of music in America from early colonists to the present, in light of philosophical, political, geographical and sociological developments. Lecture: 3 hours per week.

MUS 131 – 132
Class Voice I – II
(2 credits each)
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 225
The History of Jazz
(3 credits)
Studies the underlying elements of jazz, concentrating on its cultural and historical development from earliest stages to the present. No previous knowledge of music is required. Lecture: 3 hours per week.

Natural Science

NAS 125
Meteorology
(4 credits)
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 per week. Recitation and laboratory: 2 hours per week. Total: 5 hours per week.

NAS 130
Elements of Astronomy
(4 credits)
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 per week. Recitation and laboratory 3 hours. Total: 6 hours per week.

Nursing

NUR 111
Nursing I
(7 – 8 credits)
Introduces nursing principles including concepts of health and wellness and the nursing process. Develops nursing skills to meet the biopsychosocial needs of individuals across the lifespan. Includes math computational skills, basic computer instruction related to the delivery of nursing care, communication skills, introduction to nursing, health, the health care system, legal aspects of nursing care, diagnostic testing, assessment, teaching and learning, asepsis, body mechanics and safety, personal care, activity/rest, wound care, nutrition, elimination, oxygenation, fluid and electrolytes, pain control, medication administration, aging populations and pre/post operative care. Provides supervised learning experiences. Lecture: 1 – 7 hours. Laboratory: 2 – 21 hours. Total: 9 – 22 hours per week.

NUR 112
Nursing II
(7 – 8 credits)
Focuses on the nursing care of adults experiencing changes along the health/illness continuum that are common, well-defined, and have predictable outcomes. Includes math computational skills, basic computer instruction related to the delivery of nursing care; acid-base balance, gastrointestinal, genitourinary, musculoskeletal, immunology, oncology, sensorineural, infectious diseases, endocrine, respiratory and blood disorders and care of the dying client. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture: 1 – 7 hours. Laboratory: 3 – 21 hours. Total: 9 – 22 hours per week.

NUR 115
LPN Transition
(2 – 7 credits)
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. (This course has been approved by the vice chancellor as an exception to the variable credit policy.) Lecture: 1 – 7 hours. Laboratory: 0 – 18 hours. Total: 2 – 19 hours per week.
**NUR 135**  
**Drug Dosage Calculations**  
(1 – 2 credits)  
Focuses on apothecary, metric, household conversion in medication dosage calculation for adult and pediatric clients. Provides a practical approach to learning to calculate and prepare medications and solutions. Includes calculating intravenous flow rates. Lecture: 1 – 2 hours per week.

**NUR 202**  
**Medical/Surgical Nursing I**  
(3 – 4 credits)  
Focuses on the care of individuals/families requiring complex or surgical 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; cardiac, neurological, renal, burn disorders and clients experiencing shock. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture: 1 – 3 hours. Laboratory: 2 – 9 hours. Total: 5 – 10 hours per week.

**NUR 208**  
**Acute Medical-Surgical Nursing**  
(5 – 6 credits)  
Focuses on the use of nursing process to provide care to individuals/families with acute medical or surgical problems or to prevent such problems. Includes math computational skills and basic computer instruction related to the delivery of nursing care. Provides supervised learning experiences in cooperating agencies. Lecture: 1 – 5 hours. Laboratory: 2 – 15 hours. Total: 7 – 16 hours per week.

**NUR 221**  
**Second Level Nursing Principles and Concepts**  
(9 – 10 credits)  
Focuses on nursing care of individuals, families, and/or groups with multidimensional needs in a variety of settings. Uses all components of the nursing process with increasing degrees of skill. Includes math computational skills, basic computer instruction related to the delivery of nursing care and nursing care related to infectious, immunological, oncological, hematological, gastrointestinal, vascular, sensory, genitourinary musculoskeletal, regulatory, endocrine, and women’s health disorders and pre/intra/post operative care. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture: 1 – 9 hours. Laboratory: 2 – 27 hours. Total: 11 – 28 hours per week.

**NUR 223**  
**Second Level Nursing Principles and Concepts III**  
(9 – 10 credits)  
Focuses on nursing care of individuals, families, and/or groups with multidimensional needs related to medical/surgical disorders in a variety of settings. Uses all components of the nursing process with increasing degrees of skill. Includes math computational skills, basic computer instruction related to the delivery of nursing care; nursing care related to organ procurement; emergency care; and, cardiac, respiratory, endocrine vascular, burn, immunological, neurological, hematological disorders. Provides supervised learning experiences in college nursing laboratories and/or cooperating agencies. Lecture: 1 – 9 hours. Laboratory: 3 – 27 hours. Total: 11 – 28 hours per week.

**NUR 226**  
**Health Assessment**  
(2 – 3 credits)  
Introduces the systematic approach to obtaining a health history and performing a physical assessment. Lecture: 0 – 2 hours. Laboratory: 2 – 9 hours. Total: 3 – 9 hours per week.

**NUR 245**  
**Maternal/Newborn Nursing**  
(3 – 4 credits)  
Develops nursing skills in caring for families in the antepartum-, intrapartum-, and post-partum periods. Lecture: 1 – 3 hours. Laboratory: 0 – 9 hours. Total: 3 – 9 hours per week.

**NUR 246**  
**Parent/Child Nursing**  
(3 – 4 credits)  
Develops nursing skills in caring for both well and ill children in a variety of settings. Emphasizes theories of growth and development and the family as a unit. Lecture: 1 – 3 hours. Laboratory: 0 – 9 hours. Total: 3 – 9 hours per week.

**NUR 247**  
**Psychiatric/Mental Health Nursing**  
(3 – 4 credits)  
Develops nursing skills in caring for individuals, families, and/or groups with mental health needs. Explores various treatment models, diagnostic categories, and rehabilitative measures. Lecture: 1 – 3 hours. Laboratory: 0 – 9 hours. Total: 3 – 9 hours per week.

**NUR 254**  
**Dimensions of Professional Nursing**  
(1 – 2 credits)  
Explores the role of the professional nurse. Emphasizes nursing organizations, legal and ethical implications, and addresses trends in management and organizational skills. Explores group dynamics, relationships, conflicts, and leadership styles. Lecture: 1 – 2 hours per week.
NUR 255
Nursing Organization and Management
(3 credits)
Addresses management and organizational skills as they relate to nursing. Emphasizes group dynamics, resolution of conflicts, and leadership styles. Virtual course for nursing students in LPN/Paramedic to RN program. Lecture: 2 – 3 hours per week.

PHI 226
Social Ethics
(3 credits)
Provides a critical examination of moral problems and studies the application of ethical concepts and principles to decision making. Topics may include abortion, capital punishment, euthanasia, man and the state, sexuality, war and peace, and selected issues of personal concern. Lecture: 3 hours per week.

PHI 227
Bio-Medical Ethics
(3 credits)
Examines the ethical implications of specific biomedical issues in the context of major ethical systems. Lecture: 3 hours per week.

PHI 265
Philosophy of Religion
(3 credits)
Examines problems raised by arguments for and against the existence of God and discusses such topics as the nature of God, the nature of religious experience, the problem of evil, religious truth and language, immortality, miracles, spirituality, and the relation between philosophy and theology. Lecture: 3 hours per week.

PHI 276
Women and Western Philosophy
(3 credits)
Studies the concept, role and clue of women in the canon of Western Philosophy from Plato to contemporary philosophy. Discusses controversies in feminist social ethics, including marketing femininity, pornography, censorship, women in the work force and women’s fertility. Lecture: 3 hours per week.

Photography

PHT 101 – 102
Photography I – II
(3 credits each)
Teaches principles of photography and fundamental camera techniques. Requires outside shooting and lab work. Lecture: 1 hour. Laboratory: 4 hours. Total: 5 hours per week.

PHT 105
Basic Photography
(3 – 4 credits)
Studies fundamental techniques of the camera and its expressive possibilities. Lecture: 2 – 4 hours. Laboratory: 0 – 3 hours. Total: 3 – 7 hours per week.
PHT 130 – 131
**Video I – II**
(3 credits)
Introduces the basics of recording and editing video and sound for a variety of intents. Explores time-based media as an art form and means of communication. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

PHT 135
**Electronic Darkroom**
(3 credits)
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 that are raised in the manipulation of images. Lecture: 1 hour. Laboratory: 4 hours. Total: 5 hours per week.

PHT 221 – 222
**Studio Lighting I – II**
(3 credits each)
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 102 or equivalent. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

PHT 264
**Digital Photography**
(3 credits)
Teaches theory and practice of digital photography. Emphasizes use of digital cameras in studio and on location. Teaches advanced techniques of image editing. Provides training in digital image transmission from remote locations. Prerequisites: PHT 101 and ART 283 or PHT 135. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

**Physical Education and Recreation**

PED 101 – 102
**Fundamentals of Physical Activity I – II**
(1 – 2 credits each)
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 – 2 hours. Laboratory: 0 – 2 hours. Total: 1 – 3 hours per week.

PED 111 – 112
**Weight Training I – II**
(1 – 2 credits each)
Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight equipment. Lecture: 1 – 2 hours. Laboratory: 0 – 2 hours. Total: 1 – 3 hours per week.

PED 116
**Lifetime Fitness and Wellness**
(1 – 2 credits)
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 – 2 hours. Laboratory: 0 – 2 hours. Total: 1 – 4 hours per week.

PED 117
**Fitness Walking**
(1 credit)
Teaches content and skills needed to design, implement, and evaluate an individualized program of walking, based upon fitness level. Laboratory: 2 hours per week.

PED 123 – 124
**Tennis I – II**
(1 – 2 credits each)
Teaches tennis skills with emphasis on stroke development and strategies for individual and team play. Includes rules, scoring, terminology and etiquette. Lecture: 1 – 2 hours. Laboratory: 0 – 2 hours. Total: 1 – 3 hours per week.

PED 129
**Self Defense**
(1 credit)
Examines history, techniques and movements associated with self-defense. Introduces the skills and methods of self-defense emphasizing mental and physical discipline. Laboratory: 2 hours per week.

PED 133 – 134
**Golf I – II**
(1 – 2 credits each)
Teaches basic skills of golf, rules, etiquette, scoring, terminology, equipment selection and use and strategy. Lecture: 1 – 2 hours. Laboratory: 0 – 2 hours. Total: 1 – 3 hours per week.

PED 139
**Ice Skating**
(1 – 2 credits)
Introduces the skills of figure skating with emphasis on form. Includes equipment selection and safety. Lecture: 0 – 1 hour. Laboratory: 2 – 4 hours. Total: 2 – 4 hours per week.

PED 149
**Cardio Sculpt I**
(1 credit)
Combines strength training and cardiovascular workouts that strengthen the major muscle groups as well as developing endurance. Laboratory: 2 hours.
**PED 154**  
**Volleyball**  
(1 – 2 credits)  
Introduces skills, techniques, strategies, rules, and scoring. Lecture: 1 – 2 hours. Laboratory: 0 – 2 hours. Total: 1 – 3 hours per week.

**PED 171 – 172**  
**Ballroom Dance I – II**  
(1 credit each)  
Presents the basic step patterns, rhythmic patterns, and positions in ballroom dance. Includes techniques based upon traditional steps with basic choreographic patterns. Laboratory: 2 hours.

**PED 188**  
**Freshwater Fishing**  
(1 credit)  
Teaches freshwater fishing techniques including spinning, bait casting and fly casting. Presents selection and care of equipment, fish habits, conservation, and safety. Laboratory: 2 hours.

**PED 206**  
**Sports Appreciation**  
(2 credits)  
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.

**Physics**

**PHY 101 – 102**  
**Introduction to Physics I – II**  
(4 credits)  
Surveys general principles of physics. Includes topics such as force and motion, energy, heat, sound, light, electricity and magnetism, and modern physics. Lecture: 3 hours. Laboratory: 3 hours. Total: 6 hours per week.

**PHY 201 – 202**  
**General College Physics I – II**  
(4 credits each)  
Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity and magnetism and selected topics in modern physics. Prerequisite: MTH 165 or equivalent. Lecture: 3 hours. Laboratory: 3 hours. Total: 6 hours per week.

**PHY 241**  
**University Physics I**  
(4 credits)  
Teaches principles of classical and modern physics. Includes mechanics, wave phenomena, heat, electricity, magnetism, relativity, and nuclear physics. Prerequisite: MTH 173, MTH 273 or divisional approval. Lecture: 3 hours. Laboratory: 3 hours. Total: 6 hours per week.

**PHY 242**  
**University Physics II**  
(4 credits)  
Teaches principles of classical and modern physics. Includes mechanics, wave phenomena, heat, electricity, magnetism, relativity, and nuclear physics. Prerequisite: MTH 174, MTH 274 or divisional approval. Lecture: 3 hours. Laboratory: 3 hours. Total: 6 hours per week.

**Political Science**

**PLS 135**  
**American National Politics**  
(3 credits)  
Teaches political institutions and processes of the national government of the United States, focuses on the U.S. Congress, presidency and the courts and on their interrelationships. Gives attention to public opinion, suffrage, elections, political parties, interest groups, civil rights, domestic policy and foreign relations. Lecture: 3 hours per week.

**PLS 211 – 212**  
**U.S. Government I – II**  
(3 credits each)  
Teaches structure, operation, and process of national, state, and local governments. Includes in-depth study of the three branches of the government and of public policy. Lecture: 3 hours per week.

**PLS 241**  
**International Relations I**  
(3 credits)  
Teaches geographic, demographic, economic, ideological and other factors conditioning the policies of countries and discusses conflicts and their adjustment. Lecture: 3 hours per week.

**Psychology**

**PSY 100**  
**Principles of Applied Psychology**  
(3 credits)  
Introduces the general principles of psychology as they are applied to work, relationships, and growth. Includes perception, learning, development, motivation, emotion, therapy, communication, attitudes. Lecture: 3 hours per week.

**PSY 105**  
**Psychology of Personal Adjustment**  
(3 credits)  
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.
PSY 116
Psychology of Death and Dying
(3 credits)
Focuses on psychological aspects of death and dying. Teaches the meaning of death and ways of handling its personal and social implications. Includes psychological, sociological, cultural, and religious views of death. Lecture: 3 hours per week.

PSY 126
Psychology for Business and Industry
(3 credits)
Focuses on the application of psychology to interpersonal relations and the working environment. Includes topics such as group dynamics, motivation, employee-employer relationship and interpersonal communications. May include techniques for selection and supervision of personnel. Lecture: 3 hours per week.

PSY 165
Psychology of Human Sexuality
(3 credits)
Focuses on scientific investigation of human sexuality and psychological and social implications of such research. Considers socio-cultural influences, the physiology and psychology of sexual response patterns, sexual dysfunctions, and development of relationships. Lecture 3 hours per week.

PSY 200
Principles of Psychology
(3 credits)
Surveys the basic concepts of psychology. Covers the scientific study of behavior, behavioral research methods and analysis, and theoretical interpretations. Includes topics that cover physiological mechanisms, sensation/perception, motivation, learning, personality, psychopathology, therapy, and social psychology. Corequisite: PSY 203. Lecture: 3 hours per week.

PSY 203
Principles of Psychology Laboratory
(1 credit)
Teaches the basic principles of behavioral research methods and analysis. Presents instruments, equipment, and research techniques used in psychological experimentation and evaluation. Corequisite: PSY 200. Laboratory: 2 – 3 hours per week.

PSY 211
Research Methodology for Behavioral Sciences
(3 credits)
Introduces the principles and processes of various research procedures for applying the scientific method to understanding behavior. Includes preparation for conducting, understanding and interpreting laboratory and field studies; documenting principles through research; and applying critical assessment to generic research. Lecture: 3 hours per week.

PSY 213
Statistics for Behavioral Sciences
(3 credits)
Introduces the principles and processes of statistics within behavioral research. Emphasizes understanding and applying statistical tests to behavioral data, stresses recognition and use of process, based upon knowledge and understanding over mathematical derivation. Focuses on selection of appropriate statistics, their application, and correct decisions of interpretation within a behavioral research experience. Lecture: 3 hours per week.

PSY 215
Abnormal Psychology
(3 credits)
Explores historical views and current perspectives of abnormal behavior. Emphasizes major diagnostic categories and criteria, individual and social factors of maladaptive behavior and types of therapy. Includes methods of clinical assessment and research strategies. Prerequisite: PSY 200, PSY 201 or PSY 202. Lecture: 3 hours per week.

PSY 225
Theories of Personality
(3 credits)
Studies the major personality theories and their applications. Includes psychodynamic, behavioral, cognitive and humanistic perspectives. Prerequisite: PSY 200. Lecture: 3 hours per week.

PSY 230
Developmental Psychology
(3 credits)
Studies the development of the individual from conception to death. Follows a life-span perspective on the developmental tasks of the person’s physical, cognitive and psychosocial growth. Lecture: 3 hours per week.

PSY 235
Child Psychology
(3 credits)
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 245
Educational Psychology
(3 credits)
Explores human behavior and learning in the educational context. Investigates the nature of various mental characteristics such as intelligence, interest, and knowledge. Examines their measurement and appraisal and their significance for educational goals. Prerequisite: PSY 135 or PSY 200. Lecture: 3 hours per week.
PSY 265
Psychology of Men and Women
(3 credits)
Examines the major determinants of sex differences. Emphasizes psychosexual differentiation and gender identity from theoretical, biological, interpersonal, and sociocultural perspectives. Includes topics such as sex roles, socialization, rape, abuse, and androgyny. Prerequisite: PSY 125 or PSY 200. Lecture: 3 hours per week.

Real Estate

REA 100
Principles of Real Estate
(4 credits)
Examines practical applications of real estate principles.
Includes a study of titles, estates, land descriptions, contracts, legal instruments and concepts, real estate mathematics, financing, agency, appraisal, fair housing and management of real estate. Lecture: 4 hours per week.

REA 215
Real Estate Brokerage
(3 credits)
Considers administrative principles and practices of real estate brokerage, financial control and marketing of real property. Lecture: 3 hours per week.

REA 216
Real Estate Appraisal
(3 credits)
Explores fundamentals of real estate valuation. Introduces the Uniform Standards of Professional Appraisal Practice and the Uniform Residential Appraisal Report formulations, working problems and reviewing actual appraisals. Includes the opportunities available in the appraisal field. Lecture: 3 hours per week.

REA 217
Real Estate Finance
(3 credits)
Presents principles and practices of financing real estate. Analyzes various types of note contracts and mortgage and deed of trust instruments. Covers underwriting of conventional and government insured and guaranteed loans. Lecture: 3 hours per week.

REA 245
Real Estate Law
(3 credits)
Focuses on real estate law, including rights pertaining to property ownership and management, agency, contracts, transfers of real property ownership, fair housing and tax implications. Lecture: 3 hours per week.

Recreation and Parks

RPK 180
Youth Sports Administration
(3 credits)
Prepares coaching professionals to develop and implement emotionally and physically healthful youth sports programs. Includes an analysis of the youth sports program planning process including: philosophy development, learning styles and outcomes, managing parents and players, skills development, risk management, financial planning and strategic partnerships and sports event management. Lecture: 3 hours per week.

RPK 210
Principles and Psychology of Coaching
(3 credits)
Provides an analysis of volunteer coaching and the coaching profession planning process including: philosophy development, learning styles and outcomes, managing parents and players, skills development, risk management, financial planning, drugs and eating disorders in sport and physical training. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

RPK 296
On Site Training
(1 credit)
Specializes in career orientation and training program without pay in selected businesses and industry, supervised and coordinated by the college. Variable hours.

Religion

REL 100
Introduction to the Study of Religion
(3 Credits)
Explores various religious perspectives and ways of thinking about religious themes and religious experience. Lecture: 3 hours per week.

REL 200
Survey of the Old Testament
(3 credits)
Surveys books of the Old Testament, with emphasis on prophetic historical books. Examines the historical and geographical setting and place of the Israelites in the ancient Middle East as background to the writings. Lecture: 3 hours per week.

REL 210
Survey of the New Testament
(3 credits)
Surveys books of the New Testament, with special attention upon placing the writings within their historical and geographical setting. Lecture: 3 hours per week.
**Religion Courses**

**REL 230**  
Religions of the World  
(3 credits)  
Introduces religions of the world with attention to origin, history and doctrine. Lecture: 3 hours per week.

**REL 233**  
Introduction to Islam  
(3 credits)  
Studies Islam in its historical, religious, and political dimensions and assists in the understanding of its contemporary vitality and attraction as a faith, a culture and a way of life. Lecture: 3 hours per week.

**REL 237**  
Eastern Religions  
(3 credits)  
Studies major religious traditions of the East, including Hinduism, Buddhism, Confucianism, Taoism and Zen Buddhism. Includes an analysis of Eastern philosophy and approach to life. Lecture: 3 hours per week.

**REL 238**  
Western Religions  
(3 credits)  
Studies major traditions of the West that may include, but are not limited to, Judaism, Zoroastrianism, Christianity, Near East, Greek and Roman, African, Native American, European Pagan and New Age spirituality. Lecture: 3 hours per week.

**REL 240**  
Religions in America  
(3 credits)  
Surveys various manifestations of religion in the American experience. Emphasizes concepts, problems and issues of religious pluralism and character of American religious life. Lecture: 3 hours per week.

**Safety**

**SAF 126**  
Principles of Industrial Safety  
(3 credits)  
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.

**Sociology Courses**

**SOC 200**  
Principles to Sociology  
(3 credits)  
Introduces fundamentals of social life. Presents significant research and theory in areas such as culture, social structure, socialization, deviance, social stratification, and social institutions. Lecture: 3 hours per week.

**SOC 210**  
Survey of Physical and Cultural Anthropology  
(3 credits)  
Examines physical characteristics and lifestyles of human ancestors and present populations. Explores cultures from around the world to study diverse adaptations made by humans. Lecture: 3 hours per week.

**SOC 215**  
Sociology of the Family  
(3 credits)  
Studies topics such as marriage and family in social and cultural context. Addresses the single scene, dating and marriage styles, child-rearing, husband and wife interaction, single parent families and alternative lifestyles. Lecture: 3 hours per week.

**SOC 225**  
Gender and Sex Roles  
(3 credits)  
Analyzes influence of major social institutions and socialization in shaping and changing sex roles in contemporary society. Examines differential access to positions of public power and authority for men and women. Lecture: 3 hours per week.

**SOC 226**  
Human Sexuality  
(3 credits)  
Studies sociological research and theory on sexuality. Includes anatomy and physiology, birth control, sexually transmitted diseases and sexual behavior. Lecture: 3 hours per week.

**SOC 236**  
Criminology  
(3 credits)  
Studies research and causal theories of criminal behavior. Examines crime statistics, crime victims, and types of criminal offenses. Introduces role of police, judicial and correctional system in treatment and punishment of offenders. Lecture: 3 hours per week.

**SOC 246**  
Death and Society  
(3 credits)  
Analyzes death and its relationship to social behavior and societal 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 268  
Social Problems  
(3 credits)  
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 101 – 102  
Beginning Spanish I – II  
(4 – 5 credits each)  
Introduces understanding, speaking, reading and writing skills and emphasizes basic Spanish sentence structure. May include one additional hour of oral drill and practice per week. Lecture: 4 – 5 hours per week.

SPA 103 – 104  
Basic Spoken Spanish I – II  
(3 credits each)  
Teaches oral communication and introduces cultural mores and customs to students with no prior instruction in the language. Lecture: 3 hours per week.

SPA 150  
Spanish for Law Enforcement  
(3 credits)  
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 163 – 164  
Spanish for Health Professionals I – II  
(3 credits each)  
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.

Student Development

SDV 100  
College Success Skills  
(1 credit)  
Assists students in transition to colleges. Provides overviews of college policies, procedures, curricular offerings. Encourages contact 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  
Orientation to [Discipline]  
(1 credit)  
Introduces students to the skills which are necessary to achieve their academic goals, to services offered at the college and to the discipline in which they are enrolled. Covers topics such as services at the college including the learning resources center; counseling and advising; listening, test taking, and study skills; and topical areas which are applicable to their particular discipline. Lecture: 1 hour per week.

SDV 108  
College Survival Skills  
(1 – 3 credits)  
Provides an orientation to the college. Introduces study skills, career and life planning. Offers an opportunity to engage in activities aimed at self-discovery. Emphasizes development of “coping skills” such as listening, interpersonal relations, competence, and improved self-concept. Recommended for students enrolled in developmental courses. Lecture: 1 – 3 hours per week.

Telecommunications Management

TEL 150  
Internetworking I  
(3 – 4 credits)  
Introduces the functions of each layer of the ISO/OSI reference model, data link and network addresses, data encapsulation, different classes of IP addresses and subnetting and the functions of the TCP/IP network-layer protocols. Lecture: 2 – 3 hours. Laboratory: 2 – 3 hours. Total: 4 – 6 hours per week.
**TEL 151**  
**Internetworking II**  
(3 – 4 credits)  
Teaches features of the Cisco IOS software, including log in, context-sensitive help, command history and editing, loading software, configuring and verifying IP addresses, preparing the initial configuration of a router, and adding routing protocols to the router configuration. Prerequisite: TEL 150. Lecture: 2 – 3 hours. Laboratory: 2 – 3 hours. Total: 4 – 6 hours per week.

**TEL 250**  
**Internetworking III**  
(3 – 4 credits)  
Studies the advantages of LAN segmentation using bridges, routers, and switches, Fast Ethernet configuring access lists. Covers Spanning Tree Protocol and Virtual LANs. Prerequisite: TEL 151. Lecture: 2 – 3 hours. Laboratory: 2 – 3 hours. Total: 4 – 6 hours per week.

**TEL 251**  
**Internetworking IV**  
(3 – 4 credits)  
Focuses on the differences between the following WAN services: LAPB, Frame Relay, ISDN/LAP HDLC, PPP, and DDR. Prerequisite: TEL 250. Lecture: 2-3 hours. Laboratory: 2 – 3 hours. Total: 4 – 6 hours per week.

**Welding**

**WEL 117**  
**Oxyfuel Welding and Cutting**  
(4 credits)  
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: 6 hours. Total: 8 hours per week.

**WEL 123**  
**Shielded Metal Arc Welding (Basic)**  
(4 credits)  
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: 6 hours. Total: 8 hours per week.

**WEL 124**  
**Shielded Metal Arc Welding (Advanced)**  
(4 credits)  
Continues instruction on operation of AC and DC power sources, welding polarities, heats and electrodes for use in joining various metal alloys by the arc welding process. Deals with running beads, butt and fillet welds in all positions. Emphasizes safety procedures. Lecture: 2 hours. Laboratory: 6 hours. Total: 8 hours per week.

**WEL 126**  
**Pipe Welding I**  
(4 credits)  
Teaches arc welding processes including the welding of pressure piping in the horizontal, vertical and horizontal-fixed positions in accordance with codes and standards. Lecture: 2 hours. Laboratory: 6 hours. Total: 8 hours per week.

**WEL 130**  
**Inert Gas Welding**  
(4 credits)  
Introduces practical operations in the uses of inert-gas-shield arc welding. Discusses equipment, safety operations, welding practice in the various positions, process applications and manual and semi-automatic welding. Lecture: 2 hours. Laboratory: 6 hours. Total: 8 hours per week.

**WEL 160**  
**Gas Metal Arc Welding**  
(4 credits)  
Introduces semi-automatic welding processes with emphasis on practical application. Includes the study of filler wires, fluxes and gases. Lecture: 2 hours. Laboratory: 6 hours. Total: 8 hours per week.
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John Tyler Community College
Marshall W. Smith, President
For a continually updated list of John Tyler Community College faculty and staff, please visit the College web site at www.jtcc.edu.
Administration

**PRESIDENT**
Smith, Marshall W.
B.A., University of Alabama; M.Ed., West Georgia College; Ph.D., University of Alabama

**STAFF**
Hilliar, Mara M.
Executive Assistant to the President
B.A., University of Virginia

**PRESIDENT’S CABINET**

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B.A., Virginia Commonwealth University; M.Ed., University of Virginia; Ph.D., Virginia Commonwealth University

**Griffith, Cynthia W.**
Director, Institutional Effectiveness
B.A., Radford University; M.A., Virginia Commonwealth University; M.Ed., University of Virginia

**Horton, Joanne M.**
Director, College Relations & Special Assistant to the President
A.A.S., State University of New York – Cobleskill; B.S., Old Dominion University; M.S., Virginia Commonwealth University; Accredited Public Relations (APR)

**Dew, Beverley M.**
Interim Director, Foundation
B.S., Virginia Commonwealth University

**McGinty, Louis L.**
Vice President, Community College Workforce Alliance
B.S., United States Naval Academy; M.S., United States Naval Postgraduate School

**Taylor, William F.**
Vice President, Finance & Administration
B.S., East Carolina University; M.P.A., Virginia Commonwealth University

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College Relations

**DIRECTOR, COLLEGE RELATIONS AND SPECIAL ASSISTANT TO THE PRESIDENT**
Horton, Joanne M.
A.A.S., State University of New York – Cobleskill; B.S., Old Dominion University; M.S., Virginia Commonwealth University; Accredited Public Relations (APR)

**STAFF**
Carrington, Meredith T.
Graphic Designer
B.A., Mary Baldwin College

Kendrick, Lisa M.
Events Specialist
B.A., Mary Baldwin College

McIver, Heather C.
Web Content and Electronic Communications Manager
B.A., University of Virginia; M.A., Virginia Commonwealth University

Walker, Holly W.
Public Relations Specialist
B.S., Virginia Commonwealth University

Zador, James M.
Webmaster
B.A., Mercyhurst College

---

Institutional Effectiveness

**DIRECTOR**
Griffith, Cynthia W.
B.A., Radford University; M.A., Virginia Commonwealth University; M.Ed., University of Virginia

**STAFF**
Owens, Selma S.
Administrative Assistant
A.A.&S., John Tyler Community College

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**VICE PRESIDENT**

**Drinkwater, L. Ray**
B.A., Virginia Commonwealth University; M.Ed., University of Virginia; Ph.D., Virginia Commonwealth University

**STAFF**
Harrison, Denise S.
Senior Administrative Assistant

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Department of Extended Learning

**DIRECTOR, EXTENDED LEARNING**
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B.S., Cornell University; M.A.T., Smith College; Ph.D., Old Dominion University

**STAFF**
Iacopinelli, Janice P.
Dual Enrollment Specialist
B.S., Longwood College

Smith, Rebecca W.
Administrative Assistant

Wallin, Joanne M.
Administrative Assistant

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Division of Student Services

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Pfautz, Chris
B.S.W., M.A.Ed., East Carolina University

**STAFF**
Haas, C. Denise
Senior Administrative Assistant
Admissions and Records

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B.S., East Carolina University

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Baxter, Leigh B.
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B.M., M.M., Virginia Commonwealth University

Clarke, Angela B.
Instructional Assistant
A.A.S., A.A.&S., John Tyler Community College

Gardner, William D.
Enrollment Services Assistant
B.S., Liberty University

Goldstein, Jennifer A.
Enrollment Services Specialist
B.S., Rochester Institute of Technology; M.S., Nazareth College

Harrison, Karen M.
Enrollment Services Assistant

Harvey, Marilyn M.
Enrollment Services Assistant
A.A.&S., John Tyler Community College

Henley, Barbara D.
Enrollment Specialist

Howell, Tracey R.
Assistant Registrar
B.A., Temple University; M.Ed., Virginia Commonwealth University

LoMascolo, Vittoria
Enrollment Services Assistant
A.A.&S., John Tyler Community College

Moss, Chevelle
Enrollment Services Assistant
A.A.&S., J. Sargeant Reynolds Community College; B.S., Old Dominion University

Sorrell, Patsy A.
Enrollment Services Assistant
B.S., Radford University; M.Ed., George Mason University

Szwarc, Carolyn S.
Enrollment Services Assistant
A.A.S., John Tyler Community College

Counseling and Student Success Services – Chester

DIRECTOR, COUNSELING AND STUDENT SUCCESS CENTER – CHESTER
Tindall, Michelle D.
B.A., M.Ed., Virginia State University

STAFF

Atkinson, Heather A.
Academic Advisor
B.A., Mary Washington College; M.S., Longwood University

Cassada, Barbie
Student Services Specialist
A.A.S., Tidewater Community College; B.S., Old Dominion University

Ellis, Kristen B.
Student Services Specialist
A.A.S., John Tyler Community College

Holmes, Candice A.
Administrative Assistant
B.S., Old Dominion University

Parrott, Tom
Student Services Specialist
B.A., Bob Jones University; M.A., Calvary Baptist Theological Seminary

Taylor, Judy L.
Professional Counselor
B.S., Virginia Commonwealth University; M.S., Longwood College

Warren, Meredith
Professional Counselor
B.S., Virginia Commonwealth University

Department of Learning Resources

LIBRARY – CHESTER

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B.A., Gettysburg College; A.M.L.S., University of Michigan

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Marsh, Judith R.
Technical Services Specialist
B.A., Longwood College

McTague, Peter P.
Library Specialist
B.A., Holy Cross College

Painter, Jill A.
Instructional Assistant
B.S., University of Central Florida

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B.A., Mary Washington College; MLS, University of Maryland

STAFF
Abu-Saleh, Emad M.
Instructional Assistant
A.A.S., South Central Technical College

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Varney, Ruth A.
B.S., Auburn University; M.Ed., Ph.D., Virginia Commonwealth University

STAFF
Dees, Theresa
Academic Advisor
A.A., Austin Peay State University; B.A., Saint Leo College; M.A., Norfolk State University; Ed.D., George Washington University

Gnassi, Ellen
Student Services Specialist
A.A., Miami Dade Community College;
B.A., Florida International University;
M.S., State University of New York

Harrison, Bettyanne F.
Professional Counselor
B.S., M.S., Virginia Commonwealth University

Hubbard, Marcus
Student Services Specialist
B.S., James Madison University; M.Ed., University of Maryland

Mason, Sandra F.
Administrative Assistant

Stevens-Davis, Michelle
Student Services Specialist
B.S., Virginia Commonwealth University

Warren, Meredith
Professional Counselor
B.S., Duke University; M.Ed., James Madison University
Kush, Christine M.
Library Specialist
A.A.S., Holy Cross College; B.A., Indiana University

INSTRUCTIONAL TECHNOLOGY
COORDINATOR
Tucker, Diane
B.S., M.S., Emporia State University

STAFF
Bartos, David P.
Technical Trainer
B.A., Carlton University; M.A., Webster University

Sorrell, Heather R.
Instructional Designer
A.A.S., John Tyler Community College;
B.S., James Madison University;
M.L.I.S., University of Wisconsin - Milwaukee

TESTING SERVICES
COORDINATOR
Bennett, William A.
B.A., Columbia Bible College; B.S., Taylor University; M.Ed., College of William & Mary; Certificate of Advanced Studies, College of William & Mary

STAFF
Whitelow, L.C.
Testing Center Specialist
B.S., James Madison University

Veterans Affairs
COORDINATOR, VETERANS AFFAIRS
Doerr, Donald C.
B.A., University of Minnesota; M.Ed., University of Missouri

Division of Arts,
Humanities and Social Sciences
DEAN
Brown, Mikell W.
B.F.A., M.A., Ph.D., Virginia Commonwealth University

FACULTY
Birdsong, Susan P.
Instructor, Spanish
B.A., Denison University; M.A., University of Delaware

Brooks, Martha F.
Professor, English
B.F.A., M.F.A., Virginia Commonwealth University; Ph.D., Duke University

Burnham, Sharon J.
Instructor, History
B.S., Pennsylvania State University;
M.A., University of Richmond

Coll, Mattie J.
Assistant Professor, Reading
B.A., M.A., University of Iowa; M.Ed., University of Virginia

Ferguson, Colin F.
Professor, Art
B.F.A., Edinboro University of Pennsylvania; M.F.A., Ohio University

Fryer, Celia A.
Professor, Spanish
B.A., Mars Hill College; M.A., Ph.D., University of North Carolina

Golden, David R.
Assistant Professor, English
B.A., Mesa State College; M.A., Colorado State University

Head, David M.
Professor, History
B.A., Furman University; M.A., Ph.D., Florida State University

Kirn, John F.
Associate Professor, History
B.A., Cornell University; M.A., Ph.D., University of Virginia

Johnson, Judith I.
Associate Professor, English
B.S., Radford College; M.S.B.A., Boston University; M.A., Virginia State University

Keniston, Leonda W.
Instructor, Sociology
B.S., M.S., Virginia Commonwealth University

Landon, Jeffrey W.
Assistant Professor, English
B.A., College of William & Mary; M.A., Georgetown University

Paden, Mary Grace
Assistant Professor, English
B.A., College of William & Mary; M.A., George Mason University

Speidel, Penny L.
Associate Professor, Reading
B.A., Ohio Wesleyan University; M.S., Nazareth College

Silvent, Christopher
Assistant Professor, Art
B.A., Christopher Newport; M.F.A., Florida State University

Sullivan, Kerrigan J.
Assistant Professor, Communications Studies and Theatre
B.F.A., New York University; M.F.A., Brooklyn College

Tiller, Charlene T.
Assistant Professor, Communications Studies and Theatre
B.S., M.A.E., East Carolina University

Tompkins, Patrick M.
Associate Professor, English
B.A., Villanova University; M.A., Iowa State University; M.F.A., Virginia Commonwealth University

Via, Sandra D.
Associate Professor, English
B.A., Georgetown College; M.H., M.A., University of Richmond

Information Center
MANAGER
Wilkins, Adrienne
B.S., University of Maryland; M.A., Teachers College, Columbia University

STAFF
Watkins, Shirlwin E.
Lead Information Center Representative
B.B.A., James Madison University

Student Activities
ASSISTANT COORDINATOR
Carpenter-Horning, Amanda K.
B.S., Virginia Commonwealth University;
M.B.A., Liberty University
Wentworth, Mary Beth  
Associate Professor, English  
B.A., Emory and Henry College; M.A., College of William & Mary

Williams, James C.  
Professor, Sociology  
B.A., North Carolina Central University; M.A., Ph.D., University of Connecticut

Wong, Carmen  
Professor, English  
B.A., The King’s College; M.A., University of Chicago; D.A., George Mason University

Staff  
Arterburn, Kathy F.  
Administrative Assistant

Lyon, Stacey L.  
Administrative Assistant

Robinson, Glenton (Sally)  
Administrative Assistant  
A.A.&S., John Tyler Community College

Division of Engineering, Business and Public Services

Dean  
Moore, Melody L.  
B.S., Michigan State University; M.A., Western Michigan University; Ph.D., Virginia Commonwealth University

Faculty  
Barry, Yvonne  
Professor, Human Services  
B.S.W., M.S.W., McGill University; Ed.D., University of Massachusetts

Bell, Lester D.  
Instructor, Precision Machining Technology

Careatti, John A.  
Instructor, Mechanical Engineering  
B.S.M.E., Carnegie Mellon University

Cohen, Mark A.  
Professor, Information Technology  
B.S., Villa Julie College; J.D., University of Baltimore School of Law; Ph.D., Nova Southeastern University

Coleman, Sr., Darrell W.  
Assistant Professor, Welding  
CE/CAWI, Certificate in Welding, John Tyler Community College

Cosby, James L.  
Associate Professor, Accounting  
B.S., Richmond Professional Institute; M.S., Virginia Commonwealth University

Foster, Andrea C.  
Assistant Professor, Business Management  
M.S., M.B.A., University of Maryland

Elliott, Jeffrey S.  
Assistant Professor, Information Technology  
B.A., Averett College; M.S., Virginia Commonwealth University

Hood, Deborah D.  
Professor, Information Technology  
B.S., Clarion State University; M.A., Western Kentucky University; M.S., Nova Southeastern University

Humphrey, Johnnie F.  
Associate Professor, Education  
B.S., Virginia Commonwealth University; M.Ed., Virginia State College

Khan, Subhotash  
Associate Professor, Engineering  
B.S., Indian Institute of Technology; M.S., Duke University; Ph.D., West Virginia University

Massengill, Alan A.  
Instructor, Electricity

Miller, Brenda L.  
Associate Professor, Information Technology  
B.A., University of Massachusetts; M.S., Shenandoah University

Nunnally, Patti L.  
Associate Professor, Information Technology  
B.S., M.S., Virginia Commonwealth University; Ed.S., College of William & Mary

Olanrewaju, Larry A.  
Associate Professor, Economics  
B.B.A., College of William & Mary; M.A., Virginia State University; M.B.A., Howard University; Ph.D. George Mason University

Ranson, Julie J.  
Associate Professor, Business Management  
B.S., M.S., Ph.D., Virginia Commonwealth University

Silva-Santisteban, Patricia  
Assistant Professor, Information Technology  
B.S., National University of Engineering, Peru; M.S., State University of New York

Singleton, Huey A.  
Assistant Professor, Police Science  
A.A., B.S., M.S., Virginia Commonwealth University

Wyatt, William G.  
Professor, Drafting  
A.A.S., John Tyler Community College; B.S., M.S., Eastern Kentucky University; Ed.D., Virginia Polytechnic Institute and State University

Staff  
Bosher, Dianne J.  
Administrative Assistant  
A.A.S., John Tyler Community College

Chaffin, Penny E.  
Instructional Assistant  
A.A.S., John Tyler Community College

Colcleaser, B. Alice  
Instructional Assistant  
A.A.A., John Tyler Community College

Crew, Antonio L.  
Instructional Assistant  
A.A.A., John Tyler Community College

Davis, Sherri M.  
Engineering Technologist  
A.A.S., John Tyler Community College

Mallory, Rena M.  
Administrative Assistant  
A.A.S., John Tyler Community College

Marshall, Suzan A.  
Tech Prep Coordinator  
B.S., M.S.Ed., Old Dominion University

Miller, Melinda O.  
Coordinator of Manufacturing  
B.S., University of Virginia
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Department</th>
<th>Education/Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Srodulski, Cara A.</td>
<td>Administrative Assistant</td>
<td>A.A., Miami Dade Community College</td>
<td></td>
</tr>
<tr>
<td>Gwaltney, J. Vernon</td>
<td>Associate Professor, Mathematics</td>
<td>B.A., Carson Newman College; M.A.T., University of Florida</td>
<td></td>
</tr>
<tr>
<td>Jordan, Joseph T.</td>
<td>Associate Professor, Mathematics</td>
<td>B.S., St. Edwards University; M.Ed., Virginia Commonwealth University</td>
<td></td>
</tr>
<tr>
<td>Iannuzzi, Michael P.</td>
<td>Associate Professor, Chemistry</td>
<td>B.S., Old Dominion University; Ph.D., University of Pittsburgh</td>
<td></td>
</tr>
<tr>
<td>Kaplan, Roy I.</td>
<td>Associate Professor, Chemistry</td>
<td>B.S., University of Mississippi; M.S., Georgia Institute of Technology; Ph.D., West Virginia University</td>
<td></td>
</tr>
<tr>
<td>Koch, John C.</td>
<td>Professor, Biology</td>
<td>B.A., Kalamazoo College; M.A., Western Michigan University; Ph.D., University of Michigan</td>
<td></td>
</tr>
<tr>
<td>Mergliano, Jaime L.</td>
<td>Assistant Professor, Biology</td>
<td>B.A., Saint Mary’s College; Ph.D., Carnegie Mellon University</td>
<td></td>
</tr>
<tr>
<td>Peterson, Peter R.</td>
<td>Associate Professor, Mathematics</td>
<td>B.A., Edison State College; M.A., College of New Jersey</td>
<td></td>
</tr>
<tr>
<td>Renault, Pascal D.</td>
<td>Professor, Physics</td>
<td>B.S., Ecole Nationale Superieure des Arts et Metiers, France; M.A., Ph.D., Rice University</td>
<td></td>
</tr>
<tr>
<td>Rasouli, Firooz</td>
<td>Associate Professor Chemistry</td>
<td>B.S., University of Tehran; M.S., Ph.D., Illinois Institute of Technology</td>
<td></td>
</tr>
<tr>
<td>Singer, Katherine D.</td>
<td>Associate Professor, Psychology</td>
<td>B.S., Marywood University; M.A., Ph.D., Fordham University</td>
<td></td>
</tr>
<tr>
<td>Smetana, Kristine S.</td>
<td>Professor, Chemistry</td>
<td>B.A., Wheaton College; Ph.D., Virginia Commonwealth University</td>
<td></td>
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<tr>
<td>Williams, Kenneth E.</td>
<td>Associate Professor, Mathematics</td>
<td>B.S., M.S., Virginia Commonwealth University</td>
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<tr>
<td>Xu, Yijing</td>
<td>Professor, Mathematics</td>
<td>M.S., Beijing Normal University; Ph.D., University of Illinois</td>
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<tr>
<td>Staff</td>
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<tr>
<td>Harris, Aretha R.</td>
<td>Administrative Assistant</td>
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<td>Mathieu, Jill Y.</td>
<td>Administrative Assistant</td>
<td></td>
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<tr>
<td>Thomason, Marie W.</td>
<td>Administrative Assistant</td>
<td></td>
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<tr>
<td>Division of Mathematics, Natural and Behavioral Sciences</td>
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<td>Alexander, A. Donna</td>
<td>B.A., M.S., Ph.D., Virginia Commonwealth University</td>
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<tr>
<td>Faculty</td>
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<tr>
<td>Beyer, Joressia A.</td>
<td>Associate Professor, Biology</td>
<td>A.A.S., Dabney S. Lancaster Community College; B.S., M.S., James Madison University</td>
<td></td>
</tr>
<tr>
<td>Britt, Gena C.</td>
<td>Associate Professor, Psychology</td>
<td>B.A., Randolph-Macon Woman’s College; Ph.D., Virginia Commonwealth University</td>
<td></td>
</tr>
<tr>
<td>Carlisle, Steven J.</td>
<td>Assistant Professor, Biology</td>
<td>B.S., College of William &amp; Mary; Ph.D., University of Virginia</td>
<td></td>
</tr>
<tr>
<td>Carr, Carol E.</td>
<td>Instructor, Biology</td>
<td>B.A., M.A., Hampton University</td>
<td></td>
</tr>
<tr>
<td>Copeland, Myrna F.</td>
<td>Associate Professor, Psychology</td>
<td>B.A., Florida Atlantic University; M.A., Ohio State University; Ph.D., Atlanta University</td>
<td></td>
</tr>
<tr>
<td>Dail, Edward L.</td>
<td>Associate Professor Mathematics</td>
<td>B.S., Davidson College; B.Arch., University of Tennessee; M.A.T., Duke University; Registered Architect</td>
<td></td>
</tr>
<tr>
<td>Elias, Carol D.</td>
<td>Instructor, Mathematics</td>
<td>B.S., M.S., Virginia State University</td>
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<tr>
<td>Gibson, Michael P.</td>
<td>Assistant Professor, Mathematics</td>
<td>B.S., M.S., Ohio State University</td>
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<tr>
<td>Division of Health Sciences</td>
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<tr>
<td>Ulmer, Deborah L.</td>
<td>B.S.N., Virginia Wesleyan College; M.Ed., Ph.D., Virginia Commonwealth University</td>
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<tr>
<td>Faculty</td>
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<tr>
<td>Clinger, Terri S.</td>
<td>Assistant Professor, Nursing</td>
<td>B.S.N., M.S.N., Old Dominion University</td>
<td></td>
</tr>
<tr>
<td>Deets, Barbara A.</td>
<td>Associate Professor, Nursing</td>
<td>B.S., Boston College; M.S., University of Lowell</td>
<td></td>
</tr>
<tr>
<td>Deutsch-Atwell, Sherri L.</td>
<td>Assistant Professor, Nursing</td>
<td>A.A.S., State University of New York College at Alfred; B.S.N., State University of New York at Stoney Brook; M.S.N., Boston University</td>
<td></td>
</tr>
<tr>
<td>Freeman, M. Linda</td>
<td>Assistant Professor, Nursing</td>
<td>B.S.N., Georgia State University; M.N., Emory University</td>
<td></td>
</tr>
</tbody>
</table>
Gray, Jessica H.
Associate Professor, Nursing
B.S.N., M.S.N., Virginia Commonwealth University

Hornsby, Barbara J.
Assistant Professor, Nursing
B.S.N., M.S.N., Virginia Commonwealth University

Jones, Sandra P.
Professor, Nursing
B.S., Niagara University; M.A., Teachers’ College, Columbia University

Kennon, Theresa K.
Associate Professor, Nursing
B.S.N., M.S.N., Old Dominion University

Leahy, Nancy B.
Assistant Professor, Nursing
B.S.N., University of Virginia; M.S., Virginia Commonwealth University

Mueller, Linda A.
Associate Professor, Nursing
B.S., University of Rochester; M.S., Syracuse University

Pleasants, Rhonda K.
Assistant Professor, Funeral Services
A.A.S., John Tyler Community College; B.S., Virginia Commonwealth University; M.S., University of Richmond; Licensed in Funeral Service in Commonwealth of Virginia

Powell, Elizabeth I.
Assistant Professor, Nursing
B.S.N., SUNY; M.S., Virginia Commonwealth University

Proffitt, Tracye B.
Assistant Professor, Nursing
A.A.S., Rappahannock Community College; B.S.N., M.S.N., Virginia Commonwealth University

Robinson, Kathleen J.
Assistant Professor, Nursing
B.S.N., M.S.N., Old Dominion University

Sikon, Richard R.
Associate Professor, Funeral Services
B.S., Virginia Commonwealth University; M.L.A., University of Richmond

Smith, Charles S.
Professor, Nursing
B.A., University of North Carolina; M.S., Virginia Commonwealth University

Unison-Pace, Wendy J.
Assistant Professor, Nursing
B.S.N., Concordia University; B.S., Northern Illinois University; M.S., Virginia Commonwealth University

Williams, Yauna N.
Assistant Professor, Nursing
B.S.N., Troy University; M.S.N., Walden University

STAFF

Fears, Linda P.
Administrative Assistant
A.A., Hagerstown Business College

Silvey, Cynthia D.
Administrative Assistant

Community College Workforce Alliance

VICE PRESIDENT
McGinty, Louis L.
B.S., United States Naval Academy; M.S., United States Naval Postgraduate School

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Bennett, Mary L.
Workforce Assessment Coordinator
A.A.S., A.A.&S., John Tyler Community College; B.A., St. Leo College

Blalock, Lori
Facilities Support Technician

Burrell, L. Diane
Contract Administrative Specialist

Butler, Katherine C.
Open Enrollment Coordinator
B.S., M.Ed., Virginia Commonwealth University

Campbell, Sharon D.
Fiscal Technician

Cope, Patricia A.
Contract Administrative Specialist

Davis, Shauna
Assistant Vice President for Open Enrollment
B.A., Temple University; M.S.Ed., Virginia Polytechnic Institute and State University

Dillard, Cara
Assistant Vice President for Contract Training
B.S., University of Rhode Island; M.Ed., Virginia Commonwealth University

Etherington, Suzanne
Contract Training Coordinator
A.S., Jefferson College of Health Sciences; B.A. University of Richmond

Hasbrouck, Eileen
Administrative Assistant
B.S., Gardner Webb University

Hines, Deborah P.
Contract Administrative Specialist

Jones, Sandra D.
Open Enrollment Administrative Specialist

Lapsley, Joyce
Contract Training Coordinator
B.S., Indiana University of Pennsylvania; M.Ed. Virginia Commonwealth University

Lowery, Cynthia
Contract Administrative Specialist

Martin, Sean
Director, Driver Training

Meredith, Natalie A.
Contract Training Coordinator
A.A.S., Brigham Young University - Idaho; B.B.A., M.B.A., Averett University

Mitchell, Fran
Administrative Assistant to the Vice President CCWA

Moore, Joseph C.
Business Manager
B.S., Virginia Polytechnic Institute and State University; M.B.A., Virginia Commonwealth University

Reed, Jessica R.
Contract Administrative Specialist
A.A.S., John Tyler Community College

Scritchfield, Michael J.
Director, Manufacturing, Trades and Apprentice Programs
B.B.A., University of Oklahoma; M.S., Air Force Institute of Technology
Sims, Nina  
Director, Marketing and Sales  
B.S., Virginia Commonwealth University

Tucker-Lloyd, Julia  
Assistant Coordinator, Educate VA  
B.A., Virginia Commonwealth University; M.A.Ed., Virginia Polytechnic Institute and State University

Waters, Rebecca  
Coordinator, Educate VA  
B.S., College of Charleston; M.S., Clemson University

White, Keondra  
Open Enrollment Administrative Specialist  
B.A., George Mason University; M.B.A., Averett University

John Tyler Community College Foundation

INTERIM EXECUTIVE DIRECTOR  
Dew, Beverley M.  
B.S., Virginia Commonwealth University

STAFF  
Gibson, Anne L.  
Administrative Assistant

Hansen, Karin  
Grants Specialist  
B.A., University of Michigan; M.Ed., Marymount University

Lane, Emily H.  
Director of Development  
B.S., M.S., Radford University

Raines Sullivan, Kelly L.  
Financial Services Specialist  
B.S., Virginia Commonwealth University

Finance and Administration

VICE PRESIDENT  
Taylor, William F.  
B.S., East Carolina University; M.P.A., Virginia Commonwealth University

STAFF  
Brown, Laurie F.  
Accountant

Human Resources

DIRECTOR  
Grinnan, Susan F.  
B.S., Radford University; M.S., Virginia Polytechnic Institute and State University; Senior Professional in Human Resources (SPHR)

STAFF  
Comer, Kathy B.  
Human Resource Analyst

Flythe-Wilkins, Darlene  
Human Resource Analyst  
B.A., Averett University

Ganzert, Kimberly M.  
Payroll/Human Resource Specialist

Koval Beverly A.  
Payroll Administrator

Business Office

MANAGER  
Brown, Leon R.  
B.S., Virginia State University

STAFF  
Blasco, Jackie A.  
Procurement Specialist

Campbell, Sheila K.  
Lead Cashier  
A.A., National Business College

Colbert, Doris C.  
Procurement Specialist

Evans, Glenise  
Procurement Specialist  
A.A.S., Commonwealth College; B.S., Virginia State University

Faris, Jennie M.  
Accounting Specialist

Hayes, Lillian W.  
Accounts Payable Specialist

Heath, Carleen B.  
Head Cashier  
B.S., Virginia State University

Jimison, Nancy E.  
Procurement Manager

Money, Cynthia A.  
Accounting Specialist  
A.A.S., Paul D. Camp Community College

Rachel, Arthenia E.  
Assistant Business Manager  
B.S., Virginia Commonwealth University; M.S., Central Michigan University

Facilities Operations

DIRECTOR  
LaClair, Leigh A.  
B.S., Virginia Polytechnic Institute and State University; M.P.A., Virginia Commonwealth University

SUPERVISOR - CHESTER  
Wilhelm, John A.  
Supervisor, Facilities Operations  
A.A.S., Florida Junior College

STAFF  
Cockrell, Dawn A.  
Administrative Assistant  
A.A.S., John Tyler Community College

Freeland, Travis P.  
HVAC Technician

Graves, Robert K.  
Housekeeping

Griffin, Melvin M.  
Grounds Maintenance

Hicks, Nakisha R.  
Housekeeping  
A.A.S., John Tyler Community College

Hill, Wayne T.  
Housekeeping Supervisor

Holmes, Nicholas T.  
Postal Specialist  
B.S., Virginia State University

Mitchell, Martin  
Trades Technician

Patteson, Frederick R.  
Grounds Maintenance Supervisor

Pecht, David  
Grounds Maintenance

Ragsdale, Doretha A.  
Housekeeping
Ragsdale, Joseph M.
Courier

Robinson, Russell W.
Housekeeping Supervisor
A.A.S., John Tyler Community College

SUPERVISOR – MIDLOTHIAN
Williams, John R.

STAFF
Williams, Angela M.
Administrative Assistant
A.A.&S., Strayer University

Albright III, James E.
Grounds Maintenance

Beasley, Crevante D.
Housekeeping Supervisor

Callis, Thomas M.
HVAC Technician

Danzey, Gus F.
Housekeeping Supervisor

Elrod, Terrence L.
Grounds Maintenance

Griguts, Nicholas P.
Building Maintenance
A.A.S., Pennsylvania State University

Harper, Ronnie T.
Housekeeping

Moore, John W.
Housekeeping

White, Ralph J.
Housekeeping

York, Christopher W.
Grounds Maintenance

Information Technology
DIRECTOR
Rubes, F. Larry
A.S., W.W. Holding Technical Institute

STAFF
Blackwell, Scott W.
Microsoft Network/Exchange
Administrator
B.A., Roanoke College

Carlson, Amanda J.
Information Technology Specialist
B.S., Pennsylvania State University

Carwile, Vicky L.
Information Technology Security Officer

Creggar, Glenn R.
Programmer/Analyst
A.A.S., John Tyler Community College

Greene, Jeffrey S.
Computer Support Specialist
B.S., Winthrop University

Ramirez, Jose
Information Technology Specialist
A.A.S., John Tyler Community College

Smith, Michael M.
Network Administrator
B.S., Frostburg State University

Tookes, La Toria H.
Coordinator, PeopleSoft
B.S., Georgia Southwestern College;
M.S., Nova Southeastern University

Williams, Patricia C.
Media Services Manager
A.A.S., John Tyler Community College;
B.S., Bluefield College

Financial Aid
DIRECTOR
Jones, Tony G.
B.S., Virginia State University; M.S.,
Central Michigan University

STAFF
Brown, Sarah A.
Financial Aid Specialist, Student Loan
Program
B.S., Virginia State University

Goode, Christina I.
Administrative Assistant

Smith, Linda C.
Financial Aid Specialist
B.S., M.S., Virginia Commonwealth
University

Starks, Cenyetta D.
Administrative Assistant

Parker, Rebecca C.
Financial Aid Specialist
A.A.&S., John Tyler Community College;
B.I.S., Virginia State University

Security
MANAGER AND SECURITY
SUPERVISOR
Medaglia, Frank

STAFF
Daugherty, Bradley N.
Security Officer

Kearns, Thomas
Security Supervisor

Massaquoi, Bobbie J.
Security Officer

Ring, David L.
Security Officer
A.A.S., John Tyler Community College

EMERITUS
Nicholas Sr., Freddie W.
President Emeritus
B.S., M.S., Virginia State University;
Ph.D., University of Virginia

Royall, Carole D.
Professor Emeritus, Counseling
B.A., Westhampton College; M.S.,
Florida State University; Ph.D.,
University of Virginia

Eckman, John
Professor Emeritus, English
B.A., Central Missouri State; M.A.,
University of Tennessee; Ed.D., Ball State
University

Evans, Edgar R.
Professor Emeritus, Physical Education
A.A., Ferrum College; B.A., Lynchburg
College; M.S., University of Tennessee;
S.C.T., Murray State University

Jones, Melton
Vice President Emeritus, Academic and
Student Services
B.S., American University; M.S., Ph.D.,
Howard University

Lonon, C. Brian
Professor Emeritus, Mathematics
B.S., North Carolina State University;
M.A., Louisiana State University

Ridley, Yvette
Professor Emeritus, Psychology
B.A., Virginia Union University; M.S.,
Virginia Commonwealth University
Tucker, John C.
Professor Emeritus, Psychology
B.A., Roanoke College; M.A., University of Richmond

Tutton, Robert J.
Professor Emeritus, Counseling
B.A., Christopher Newport College; M.S., Virginia Commonwealth University; Ed.S., College of William & Mary; D.A., George Mason University
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Virginia Department of Social Services, Division of Licensing

Ms. Katie Sloan
Bermuda Hundred Pre-School

Ms. Alison Stevens
Clover Hill Child Development Centers

Student Member
Appointed Annually

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William N. Bland & Son Funeral Home

Ms. Caren Brown
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Woody Funeral Homes

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Thomasson Watson Funeral Service

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Bliley Funeral Home (Retired)

Student Member  
(Appointed Annually)

Human Services

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John Tyler Community College

Mr. Chris Bowers  
Hallmark Youth Care

Dr. Christine Diggs  
Virginia State University

Ms. Mary Douglas-Krout  
Suicide Support Group

Mr. Jeffrey Hyler  
John Randolph Hospital

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Virginia Department of Transportation

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Rehabilitation Services

Ms. Pat Williams  
Powhatan Meals on Wheels

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District 19 Community Services

Information Technology

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BandyWorks, LLC

Dr. Mark Cohen  
John Tyler Community College

Mr. Kenneth Davis  
John Tyler Community College

Ms. Sylvia Edmonds  
John Tyler Community College

Mr. Jeff Elliott  
John Tyler Community College

Mr. Tommy Gorman  
ProActive Information Management

Ms. Deborah Hood  
John Tyler Community College

Mr. B. Keith Messer  
Virginia Cardiovascular Specialists

Ms. Brenda Miller  
John Tyler Community College

Ms. Patti Nunnally  
John Tyler Community College

Mr. Steve Parker  
John Tyler Community College

Ms. Patricia Silva-Santisteban  
John Tyler Community College

Ms. Shelley Simon  
John Tyler Community College

Mr. R. Scott Steinruck  
Chesterfield Technical Center

Mr. Shawn Rivard  
Virginia State Police Department

Mr. Richard Turnbull  
Federal Reserve Bank Police Department

Precision Manufacturing Technology

Mr. Melvin Belcher  
Progressive Engineering

Mr. Lester D. Bell  
John Tyler Community College

Mr. Bryce Jewett  
Jewett Machine & Jewett Automation

Mr. John Maxey  
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Richmond Tooling, Inc.

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John Tyler Community College

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Alstom Power, Inc.

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Kosmo Machine

Ms. Sandra Wallace  
460 Machine Company

Mr. Steven Westerman  
460 Machine Company

Mechanical Engineering Technology

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Amsted Rail Brenco Inc.

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Hill-Phoenix

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Honeywell

Mr. Tony Bronza  
Inland Container

Mr. Bill Campbell  
Bear Island Paper
Mr. John Careatti  
John Tyler Community College

Mr. Randy Carraway  
Smurfit-Stone

Mr. David Christenbury  
Philip Morris, USA

Mr. Spencer Cliborne  
Amsted Rail Brenco Inc.

Mr. Mike Dance  
Dupont Teijin Films

Mr. Mike Duesberry  
Honeywell

Mr. Bryon Frye  
TXI, Chapparral Steel

Mr. William Gilbert  
DuPont Spruance

Mr. Andrew Glowatsky  
Church & Dwight Co., Inc.

Mr. James Hayes  
Smurfit-Stone

Mr. Guy Laine  
Smurfit-Stone

Mr. Jay Lasek  
Hercules Incorporated

Mr. Davis Mick  
Reynolds Can Machinery

Mr. Chip Phelps  
Reynolds American Tobacco

Mr. Andrew Pilger  
The Hon Company

Mr. Matt Radcliff  
Alston Power

Mr. Antwone Ross  
Chesterfield County

Mr. Stan Sebastian  
Boehringer Ingelheim Chemicals, Inc.

Mr. James Stewart  
Filtrona Fibertec

Mr. Kenneth Swanson  
J. W. Ferguson and Sons, LLC

Mr. Dean Swofford  
Hill-Phoenix

Mr. Bill Turner  
Smurfit Stone – North Plant

Mr. Dave Van Aken  
Dupont Teijin Films

Student Member(s)  
(Appointed Annually)

Nursing

Ms. Barbara Deets  
John Tyler Community College

Ms. Sherri Deutsch-Atwell  
John Tyler Community College

Ms. Linda Freeman  
John Tyler Community College

Ms. Jessica Gray  
John Tyler Community College

Ms. Sandra Jones  
John Tyler Community College

Ms. Theresa Kennon  
John Tyler Community College

Ms. Nancy Leahy  
John Tyler Community College

Ms. Susan Lipp  
VCU School of Nursing

Ms. Trula Minton  
CJW Medical Center

Ms. Cassy Paminiano  
John Randolph Medical Center

Ms. Elizabeth Powell  
John Tyler Community College

Ms. Marlene Pratt  
McGuire Veterans Administration

Ms. Kathleen Robinson  
John Tyler Community College

Ms. Suzanne Robinson  
CJW Medical Center

Mr. Charles Smith  
John Tyler Community College

Dr. Deborah Ulmer  
John Tyler Community College

Visual Arts

Mr. Michael Bland  
B&B Printing

Dr. Mikell Brown  
John Tyler Community College (Ex-Officio)

Mr. Colin Ferguson  
John Tyler Community College (Ex-Officio)

Ms. Lin Ferrell  
Chesterfield County Public Schools

Ms. Karen Gammon  
Independent Artist

Ms. Mary Holland  
Virginia Museum of Fine Arts

Mr. Christopher Silvent  
John Tyler Community College (Ex-Officio)

Ms. Pamela Turner  
Virginia Commonwealth University

Ms. Maruta Winebrenner  
Main Art Supply & Framing

Welding

Mr. Darrell Coleman  
John Tyler Community College

Mr. Ray Dillard  
Arcet Equipment

Mr. Steve Farnsworth  
Roberts Oxygen Co., Inc.

Mr. Frank Grier  
Cronatron Welding Systems

Mr. David Kain  
Honeywell – Hopewell Plant

Mr. Guy Laine  
Smurfit-Stone Container Corp.

Mr. John Woodrum  
Roberts Oxygen Co., Inc.
Academic Calendar 2010-2011

Fall Semester 2010
General Registration ................................................. July 12 - August 20
Labor Day Holiday (College closed) ........................... September 6
Founder's Day (no classes) ........................................... October 5
Thanksgiving Break (College closed) ...................... November 24 (noon) - 28
Grades due (all sessions) ........................................... December 20

Regular Session
Classes begin ................................................................. August 23
Last day to add classes ................................................. August 27
Last day to drop with a refund ...................................... September 9
Last day to withdraw without academic penalty .......... November 1
Classes end ................................................................. December 11
Final Examinations ..................................................... December 13 - 18

1st 8-Week Session
Classes begin ............................................................. August 23
Last day to add classes ................................................. August 25
Last day to drop with a refund ...................................... August 31
Last day to withdraw without academic penalty .... September 27
Classes end ................................................................. October 19

2nd 8-Week Session
Classes begin ............................................................. October 20
Last day to add classes ................................................ October 22
Last day to drop with a refund ...................................... October 27
Last day to withdraw without academic penalty .......... November 22
Classes end ................................................................. December 18

Spring Semester 2011
General Registration ..................................................... November 8 - January 7
Holiday Online Registration (non-person registration available) .................. December 22 - January 2
Martin Luther King Holiday (College closed) ......... January 17
Spring Break (no classes) ............................................. March 14 - 20
Assessment Day (no classes) ....................................... April 5
Grades due (all sessions) ........................................... May 13
Commencement ....................................................... May 14

Regular Session
Classes begin ............................................................... January 10
Last day to add classes ................................................ January 14
Last day to drop with a refund ...................................... January 28
Last day to withdraw without academic penalty .... March 24
Classes end ................................................................. May 3
Final examinations ..................................................... May 4 - 10

1st 8-Week Session
Classes begin ............................................................ January 10
Last day to add classes ................................................ January 12
Last day to drop with a refund ...................................... January 18
Last day to withdraw without academic penalty .... February 14
Classes end ............................................................... March 7

2nd 8-Week Session
Classes begin ........................................................... March 8
Last day to add classes ................................................. March 11
Last day to drop with a refund ...................................... March 24
Last day to withdraw without academic penalty ...... April 21
Classes end ............................................................... May 10

Summer Semester 2011
General Registration .................................................... April 4 - May 20
Memorial Day Holiday (College closed) .................... May 30
Fourth of July Holiday (College closed) ..................... July 4
Grades due (all sessions) ........................................... August 10

10-Week Session
Classes begin ............................................................. May 23
Last day to add classes ................................................ May 26
Last day to drop with a refund ...................................... June 3
Last day to withdraw without academic penalty .... July 5
Classes end ................................................................. August 1

8-Week Session
Classes begin ............................................................. May 23
Last day to add classes ................................................ May 25
Last day to drop with a refund ...................................... May 31
Last day to withdraw without academic penalty .... June 27
Classes end ................................................................. July 18

1st 5-Week Session
Classes begin ............................................................. May 23
Last day to add classes ................................................ May 24
Last day to drop with a refund ...................................... May 27
Last day to withdraw without academic penalty .... June 13
Classes end ................................................................. June 27

2nd 5-Week Session
Classes begin ........................................................... June 28
Last day to add classes ................................................ June 29
Last day to drop with a refund ...................................... July 5
Last day to withdraw without academic penalty .... July 18
Classes end ............................................................... August 1

Grades due (all sessions) ........................................... December 20
Thanksgiving Break (College closed) .................. November 24 (noon) - 28
Founder's Day (no classes) ......................................... October 5
Labor Day Holiday (College closed) ........................ September 6
Martin Luther King Holiday (College closed) ......... January 17
Fourth of July Holiday (College closed) ..................... July 4
Memorial Day Holiday (College closed) .................... May 30
Classes begin ................................................................. May 23
For more information about John Tyler Community College, including how to apply, go online to www.jtcc.edu, or call 804-796-4000.

Chester Campus
13101 Jefferson Davis Highway
Chester, Virginia 23831-5316

Midlothian Campus
800 Charter Colony Parkway
Midlothian, Virginia 23114-4383