



# COLLEGE CATALOG

**2013 - 2014** • For the most up-to-date information, go to [www.jtcc.edu](http://www.jtcc.edu).

# Academic Calendar 2013-2014

## FALL 2013

General Registration.....July 8 - August 20

### 16-Week Session

Classes begin..... August 21  
Last day to add a class..... August 27  
Labor Day (College closed)..... September 2  
Last day to drop with a refund..... September 9  
Founder's Day (no classes)..... October 1  
Last day to withdraw without academic penalty (no refund) ...October 30  
Thanksgiving Break.....November 27 (no classes);  
November 28-December 1 (College closed)  
Classes end .....December 10  
Final exams ..... December 11-17  
Grades due..... December 19, Noon

### 1<sup>ST</sup> 8-Week Session

Classes begin..... August 21  
Last day to add a class..... August 23  
Last day to drop with a refund..... August 28  
Labor Day (College closed).....September 2  
Last day to withdraw without academic penalty (no refund) ...September 23  
Founder's Day (no classes)..... October 1  
Classes end .....October 15  
Final exams ..... Last day of scheduled class  
Grades due..... December 19, Noon

### 12-Week Session

Classes begin.....September 3  
Last day to add a class.....September 5  
Last day to drop with a refund..... September 16  
Founder's Day (no classes)..... October 1  
Last day to withdraw without academic penalty (no refund) ...October 23  
Classes end ..... November 26  
Final exams ..... Last day of scheduled class  
Grades due..... December 19, Noon

### 2<sup>ND</sup> 8-Week Session

Classes begin..... October 16  
Last day to add a class..... October 18  
Last day to drop with a refund..... October 24  
Last day to withdraw without academic penalty (no refund) ...November 22  
Thanksgiving Break.....November 27 (no classes);  
November 28-December 1 (College closed)  
Classes end .....December 17  
Final exams ..... Last day of scheduled class  
Grades due..... December 19, Noon

## SPRING 2014

General Registration..... November 11-January 10

### 16-Week Session

Classes begin.....January 13  
Last day to add .....January 17  
Martin Luther King Holiday (College closed) .....January 20  
Last day to drop with a refund.....January 30  
Spring Break (no classes)..... March 10-16  
Last day to withdraw without academic penalty (no refund) ...March 26  
Assessment Day (no classes) ..... April 8  
Classes end ..... May 6  
Final exams ..... May 7-13  
Grades due..... May 15, Noon  
Commencement..... May 16

### 1<sup>ST</sup> 8-Week Session

Classes begin.....January 13  
Last day to add .....January 15  
Last day to drop with a refund.....January 22  
Martin Luther King Holiday (College closed) .....January 20  
Last day to withdraw without academic penalty (no refund) ...February 19  
Spring Break (no classes)..... March 10-16  
Classes end ..... March 17  
Final exams ..... Last day of scheduled class

Grades due..... May 15, Noon  
Commencement..... May 16

### 12-Week Session

Classes begin.....January 21  
Last day to add a class.....January 24  
Last day to drop with a refund..... February 3  
Spring Break (no classes)..... March 10-16  
Last day to withdraw without academic penalty (no refund) ...March 17  
Assessment Day (no classes) ..... April 8  
Classes end ..... April 22  
Final exams ..... Last day of scheduled class  
Grades due..... May 15, Noon  
Commencement..... May 16

### 2<sup>ND</sup> 8-Week Session

Classes begin..... March 18  
Last day to add ..... March 20  
Last day to drop with a refund..... March 26  
Assessment Day (no classes) ..... April 8  
Last day to withdraw without academic penalty (no refund) ..April 21  
Classes end ..... May 13  
Final exams ..... Last day of scheduled class  
Grades due..... May 15, Noon  
Commencement..... May 16

## SUMMER 2014

General Registration.....April 7-May 26

### 10-Week Session

Memorial Day (College closed) ..... May 26  
Classes begin..... May 27  
Last day to add ..... May 30  
Last day to drop with a refund ..... June 6  
Independence Day (College closed) ..... July 4  
Last day to withdraw without academic penalty (no refund) ..... July 7  
Classes end ..... August 4  
Final exams ..... Last day of scheduled class  
Grades due..... August 6, Noon

### 1<sup>ST</sup> 5-Week Session

Classes begin..... May 27  
Last day to add ..... May 28  
Last day to drop with a refund ..... June 2  
Last day to withdraw without academic penalty (no refund) ..... June 16  
Classes end ..... June 30  
Final exams ..... Last day of scheduled class  
Grades due..... August 6, Noon

### 8-Week Session

Classes begin..... June 10  
Last day to add ..... June 12  
Last day to drop with a refund ..... June 17  
Independence Day (College closed) ..... July 4  
Last day to withdraw without academic penalty (no refund) ...July 14  
Classes end ..... August 4  
Final exams ..... Last day of scheduled class  
Grades due..... August 6, Noon

### 2<sup>ND</sup> 5-Week Session

Classes begin..... July 1  
Last day to add ..... July 2  
Independence Day (College closed) ..... July 4  
Last day to drop with a refund ..... July 7  
Last day to withdraw without academic penalty (no refund) ...July 21  
Classes end ..... August 4  
Final exams ..... Last day of scheduled class  
Grades due..... August 6, Noon



## 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,

A handwritten signature in black ink that reads "Marshall W. Smith". The signature is written in a cursive, flowing style.

Dr. Marshall W. Smith  
President, John Tyler Community College

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John Tyler Community College does not discriminate on the basis of race, color, national origin, age, gender, sexual orientation or disability in its programs or activities. Inquiries related to the College's nondiscrimination policy should be directed to Ms. Sandra Kirkland, interim dean of students, who can be reached by mail at 13101 Jefferson Davis Highway, Chester, VA 23831, by e-mail at [skirkland@jtcc.edu](mailto:skirkland@jtcc.edu) or by phone at 804-706-5208/804-594-1566.

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# General Information

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 Hamel Hall.

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 2011–2012 academic year, John Tyler Community College served more than 14,895 credit students in more than 60 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, age, race, color, religion, national origin, disability, veteran status, 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 Southern Association of Colleges and Schools Commission on Colleges to award degrees, certificates, and career studies certificates. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of John Tyler Community College.

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., St. Joseph, MO, 64506, 816-233-3747, Web: [www.abfse.org](http://www.abfse.org). It is also approved by the State Board of Funeral Directors and Embalmers.

The Nursing Program is approved by the Virginia Board of Nursing and accredited by the National League for Nursing Accrediting Commission (3343 Peachtree Road NE, Suite 850, Atlanta, Georgia 30326; 404-975-5000).

The Emergency Medical Services Program is approved by the Virginia Office of Emergency Medical Services.

The Precision Machining Technology Program is accredited by the National Institute for Metalworking Skills (NIMS).

## 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 29-110 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 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.

### Associate of Applied Science Degree

The Associate of Applied Science (A.A.S.) 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.S. degree programs transfer to four-year colleges and universities. All of the A.A.S. 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 59 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 may be 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 in reading, writing and mathematics 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](http://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](http://www.jtcc.edu/transfer).

## ACADEMIC AFFAIRS

Academic Affairs oversees the programs and curriculums offered to the students at John Tyler Community College. The College's four academic divisions – Division of Arts, Humanities and Social Sciences; Division of Engineering, Business and Public Services; Division of Health Sciences; and Division of Mathematics, Natural and Behavioral Sciences – are part of Academic Affairs as is the Instructional Technology office. The Office of the Vice President of Academic Affairs is located in room M109 of Moyer Hall on the Chester Campus and in room B206f in the Administration Building on the Midlothian Campus.

## Instructional Technology

The Instructional Technology Office collaborates with faculty members in the design, development, delivery, evaluation and revision of instruction. The responsibilities of the office include:

- Promoting the use of technology and best practices in enhancing teaching and learning
- Designing and facilitating professional development and training opportunities to support teaching and learning with technology
- Conducting one-on-one consultation services addressing the design and development of courses and technology integration planning
- Researching new methods, strategies and technologies that enhance achievement of student learning outcomes
- Providing technical support to faculty, staff and students using Blackboard, VCCS Gmail accounts and a variety of educational technologies

## Distance Learning

Courses taught in non-traditional modes enable and support innovative learning options in a variety of settings including your home, office or anywhere you have internet access. These options are designed to increase educational access for students for whom work schedules, family responsibilities or other life demands restrict attendance at traditional on-campus classes.

John Tyler Community College offers the following types of distance learning courses:

- **Online Courses:** All coursework and interactions with the instructor and classmates are completed online, either synchronously (at the same time) or asynchronously (on your own time). There is a requirement of two proctored activities. Proctored events can be completed at JTCC Testing Centers, testing sites at other VCCS colleges or any approved site outside of the state of Virginia.
- **Hybrid:** The instructional time is split between online and

on-campus requirements. The number of on-campus sessions varies depending on the class requirements (labs, presentations, clinicals, internships, etc.). Online coursework may include synchronous (at the same time) and asynchronous (on your own time) activities and assignments.

- **Videoconferencing Courses:** Students meet at one of the JTCC campus sites, at another VCCS college site or at a connected off-campus site. Class meetings are scheduled just like traditional on-campus classes. The instructor is connected to the class by a video network. Students see and hear the instructor and students at other sites via monitors, screens and speakers in the classroom. Microphones and cameras in all locations allow everyone to interact. Additional instruction may be in Blackboard or other sources.

Students enrolling in online or hybrid courses need constant, reliable internet access and should know how to use the internet and e-mail. Online courses and the online portion of hybrid courses are accessed through Blackboard.

Blackboard is an online course management system that provides web space for course information such as announcements, syllabi, course documents, lectures, and other materials specifically related to individual courses. Students have access to Blackboard via the MyTyler single sign-on. Instructors have until the first day of class to make the Blackboard course available for students.

Students can locate tutorials on how to navigate Blackboard on the JTCC web site or by clicking on the Help and Support button in the course menu of every course. Students may also download free antivirus software and locate student computing discounts in the Blackboard system. Students may receive assistance during business hours with Blackboard or their student Gmail accounts by filling out this help request form: <http://www.jtcc.edu/bbemailhelp>.

Students should refer to the course schedule for specific information about online, hybrid, and videoconference course sections before registering. Online courses are listed in a separate section of the printed class schedule and may be searched in the online schedule by selecting "Virtual" in the "Locations" field.

## 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-teacher exchanges; 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 CAREER PATHWAYS

The Department of Career Pathways provides a variety of career planning services and educational opportunities for students. Career Pathways programs support career exploration, educational preparation, and skill upgrades linked to academic credits and credentials.

Career Pathways programs include:

### Career Coaches

Career coaches empower middle and high school students to make informed decisions about their career and educational plans and prepare students for success in postsecondary education and training. Career coaches help facilitate the development of career plans and portfolios and connect students to early college programs such as dual enrollment.

### Dual Enrollment

Dual enrollment classes are 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.

### Great Expectations Program

The Great Expectations Program helps foster youth gain access to a community college education and transition successfully from the foster care system to living independently. Individuals eligible for the program include foster youth between the ages of 17 and 24 who are or were affiliated with the Virginia Foster Care System, youth adopted after the age of 13, or special needs adoptions. The program provides assistance with the financial aid process, monitoring of academic progress and assistance with accessing college support services, and an assigned mentor who will provide one-on-one academic and career-focused support. To learn more about the Great Expectations Program, go to [www.jtcc.edu/greatexpectations](http://www.jtcc.edu/greatexpectations) or contact the Great Expectations coach at 804-706-5206.

### The On-Ramp Program

Targets displaced adult workers who are unemployed or underemployed with the goal to increase the number of adults who obtain a college credential or industry-recognized certification or licensure. Assists students with financial aid, skills assessment, and career planning.

### Partnership to Ensure Educational Reform (PEER)

The Partnership to Ensure Educational Reform (PEER) Consortium, comprising education, government, business and industry, collaborates to build career pathways or programs of study that begin in secondary school and continue through an associate or baccalaureate degree, a journey-worker's license, a postsecondary-level industry certification or state licensure. Features include college credit earned during high school through dual and concurrent enrollment, industry certifications and assessments, early college placement testing, work-based learning experience, and support services for students. The Consortium provides professional development for educators as well as markets college and career preparation.

## Workforce Services

Provides skills assessment and educational programs that prepare students for high wage, high demand jobs in the greater Richmond region. Contract courses deliver quality, customized instruction at a business site or on campus.

## 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 Career Pathways. CCWA offers classes at three convenient locations throughout the region. The Department of Career Pathways has two locations (Chester and Midlothian).

## COMMUNITY COLLEGE WORKFORCE ALLIANCE

A comprehensive workforce development entity, CCWA was created in 2003 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. 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.

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 approximately 1,200 employers and provides skills training to approximately 15,000 individuals. For more information, please visit the CCWA web site ([www.ccwa.vccs.edu](http://www.ccwa.vccs.edu)).

## ECONOMIC DEVELOPMENT

The College and 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 CCWA will honor and respect a company's request for nondisclosure and the safeguarding of proprietary information.

### Ongoing Business and Industry Seminars

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. CCWA trains more than 10,000 employees annually in one- or two-day seminars and provides privately tailored training contracts.

### Tailored Training Programs

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 Career Pathways. 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, CCWA coordinates and conducts job fairs for new or expanding companies.

### WorkKeys®

Community College Workforce Alliance is a certified WorkKeys® assessment center and can provide WorkKeys® 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 WorkKeys® as a highly effective tool in their hiring and training programs.

### Assessment Testing

In addition to WorkKeys®, 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 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. 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 CCWA work with area industries to understand their ongoing training and consulting requirements. 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

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

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

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).

## 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](http://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](mailto: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 Allied Health Preparation, Pre-Funeral Services; Allied Health Preparation, Pre-Nursing; Funeral Services; Emergency Medical Services; or Nursing;
  - b. Student has been suspended or dismissed from another college or university; and/or
  - c. Student is requesting a transcript review for transfer credits from a College outside the VCCS.
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
3. Out-of-state students.

## 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 director/registrar or assistant director/assistant registrar of Admissions and Records if the student is curriculum placed, enrolls 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. Transfer credits may be awarded from non-regionally accredited institutions with the approval of the appropriate academic dean. Students requesting transfer credits from non-regionally accredited institutions must submit course syllabi and course descriptions for review by the appropriate academic dean. Upon the approval of the dean, transfer credits will be awarded consistent with JTCC policies addressing the acceptance of transfer credits from regionally accredited institutions. 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.

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 Career Pathways.

## 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 students (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.

### 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 students (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.

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. Citizenship and Immigration Services (USCIS).

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 take the College's English placement test.

JTCC reserves the right to accept or reject credit recommendations that are noted on foreign credential evaluations.

### 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 the class begins. 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.

Seniors will not be allowed to pay for a course to secure a space with the intention of dropping and re-enrolling under senior waiver.

Students who are auditing courses must appear in person or send e-mails to the [admissionsandrecords@jtcc.edu](mailto:admissionsandrecords@jtcc.edu) e-mail account should they wish to drop or withdraw before the deadlines. Students will receive error messages and cannot drop or withdraw from audit courses via myTyler portal.

### Admission of Suspended and Dismissed Students

Students who have been academically suspended from John Tyler Community College may re-enroll after serving a one-semester suspension. Students who have been academically suspended from any other institution of higher education may enroll after submitting their college transcripts and copies of their letters of suspension. Students who have been 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 four weeks prior to the first day of classes for the semester in which admission is sought.

### 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](http://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 Virginia Placement Tests (VPT) in English and mathematics. 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.

Math test scores are valid for two (2) years after the date of the test. Students who take the placement test and who do not enroll in developmental math are allowed to take one (1) retest within twelve (12) months. Students who attempt developmental mathematics will be ineligible for a retest. Exceptions to this retest policy may be made on a case-by-case basis. A student who provides official evidence of a satisfactory mathematics score of 520 on the SAT or a mathematics score of 22 on the ACT taken within the last two years is exempt from taking the VCCS mathematics placement test.

## 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 reevaluating 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 and online via AskOnline at jtcc@askonline.net. 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 affairs.

## 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 and approved by the dean, 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 affairs or his/her designee.

## 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 affairs 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 last day of the drop/add period. Financial



aid students should consult with the Financial Aid office before changing their status from credit to audit.

Students who are auditing a course must appear in person or send an e-mail to the [admissionsandrecords@jtcc.edu](mailto:admissionsandrecords@jtcc.edu) e-mail account should they wish to drop or withdraw before the deadlines. Students will receive error messages and cannot drop or withdraw from an audit course via myTyler portal.

## 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 and enrolled.

Students who wish to request credit for life experiences must register for SDV 198 (Portfolio Development). Only 25% of the credits that are accepted can be used toward any curriculum at JTCC. 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, the Counseling Center or the Student Success Center.

Only credit-by-exam courses administered by JTCC can be used to satisfy course requirements. Credit-by-exam courses from other institutions are not transferable.

## 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.
- XY Senior Citizen/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 grade of “W,” as described above, also applies.

## 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. Veterans may be approved to waive the physical education courses upon presentation of the DD214 discharge form.

## Attendance

While individual instructor policies may vary somewhat, punctual and regular attendance is expected. Check your course syllabus for your instructor’s attendance policy. Instructors are required to submit Never Attended Forms on or before the census date of each session if a student has never attended their course. Attendance policy plays no role in submitting a Never Attended Form. 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 1–9) 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.

### Grade Change Policy

A student request for consideration of a grade change will only be undertaken within one year of the end of the semester in which the course was taken. Such a request must be submitted to the appropriate academic dean. A student’s failure to adhere to College policies and procedures addressing the dropping of and withdrawing from a class(es) does not constitute a justification for consideration of a grade change. Exceptions to the one year deadline may be made by the vice president for academic affairs if warranted by extraordinary circumstances.

### 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 mailing of official and unofficial student copies of transcripts will be handled within seven working days of the receipt of the request at a charge of \$3.00 per copy to the student. Effective Summer 2013, a third party vendor will be available to provide official transcripts electronically via e-mail. A URL will be posted on the JTCC web site for students to access to order transcripts. 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 or obtain transcripts 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 college-level 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, but course(s) and grades will remain listed on the

transcript. 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/registrar or assistant director/assistant registrar of Admissions and Records.

### ACADEMIC HONORS

#### Honors List

A student who has completed 24 college 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 (12 or more college credits, exclusive of developmental credits) 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

Students who fail to attain a minimum GPA of 2.0 for any semester shall be placed on academic warning. Students on academic warning should be encouraged to consult with their advisor/counselor and take advantage of academic support services provided by the College.

## Academic Probation

Students who fail to maintain a cumulative GPA of 1.50 shall be on academic probation until such time as their cumulative average is 1.75 or better. The statement “Academic Probation” shall be placed on their permanent records. Students on probation are ineligible for appointive or elective office in student organizations unless special permission is granted by the dean of students or another appropriate college administrator. Students are notified via their VCCS e-mail accounts when placed on probation. Instructions on how to seek removal of the negative service indicator placed on the account to prevent further enrollment is provided within the e-mail. Students may be required to carry less than a normal load the following semester and are required to consult with their advisor/counselor. Students shall be placed on probation only after they have attempted 12 semester credits.

## Academic Suspension

Students on academic probation who fail to attain a semester GPA of 1.50 or better shall be placed on suspension only after they have attempted 24 semester credits. Academic suspension shall be for one semester. The statement “Academic Suspension” shall be placed on students’ permanent records. Students who are placed on academic suspension and wish to appeal should follow the appeal process established by the College. Suspended students may be reinstated at the conclusion of the suspension period by following the process established by the College. Students who have been reinstated from academic suspension must achieve a 2.0 GPA for the semester of their reinstatement and must earn at least a 1.75 GPA in each subsequent semester of attendance. The statement “Subject to Dismissal” shall be placed on the students’ permanent records. Students who have been reinstated from academic suspension will remain subject to dismissal until their cumulative GPA is raised to a minimum of 1.75. Reinstated students may be required to carry less than a normal course load the following semester and are required to consult with their advisor/counselor. Colleges are encouraged to make additional academic support available to students who have been reinstated following academic suspension.

## Academic Dismissal

Students who do not attain at least a 2.0 GPA for the semester of reinstatement following academic suspension shall be academically dismissed. Students who achieve at least a 2.0 GPA for the semester of their reinstatement following academic suspension must earn at least a 1.75 GPA in each subsequent semester of enrollment. Failure to attain a 1.75 GPA in each subsequent semester until the cumulative GPA reaches 1.75 shall result in academic dismissal. The statement “Academic Dismissal” shall be placed on students’ permanent records. Academic dismissal is normally permanent. In exceptional circumstances, students may appeal and be reinstated following

processes established by the College. Students who have been reinstated after academic dismissal will remain subject to dismissal until their cumulative GPA is raised to a minimum of 1.75. Reinstated students may be required to carry less than a normal course load the following semester and are required to consult with their advisor/counselor. Colleges are encouraged to make additional academic support available to students who have been reinstated following academic dismissal.

## Satisfactory Progress

Students pursuing any credit programs are cautioned that, although an average between 1.50 and 1.99 may not result in formal academic probation, a minimum of 2.0 in their curriculum is a prerequisite to the receipt of an associate degree, diploma or certificate.

## 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](http://www.jtcc.edu/tuition).

The e-Rate is applicable to designated distance-learning courses delivered entirely over the Internet. Tuition rates include a \$7.50 per credit hour technology fee. Virginia residents are exempt from the \$15.00 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 \$35.00 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 Virginia driver's license, voter's registration, and payment of Virginia income taxes, although additional forms of documentation may be required. Students requesting a change of domicile status must furnish supporting documentation and secure approval by no later than the first day of their first semester of enrollment. Requests for a change of domicile presented after the established deadline will be considered for the subsequent semester.

Active duty military members, along with their spouses and dependents, may receive in-state tuition benefits as long as they have been assigned to a permanent duty station in the Commonwealth of Virginia. In order to secure the benefit, a copy of current permanent orders, valid military ID and proof of address must be presented prior to the start of the first semester of enrollment. The one year residency provision is waived in this instance and continued eligibility for the in-state benefit is guaranteed provided that the student maintains continuous enrollment.

### 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 Admissions and Records office at least two weeks prior to the date of the requested entitlement (the first day of classes of the semester in question). The director of Admissions and Records/registrar 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 vice president of Student Affairs. 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 Student Affairs) will review such

appeals and forward its decisions to students within ten business days of the receipt in accordance with Part VII, Section 8 VAC 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

An out-of-state student who has resided for one full year in Virginia may request a change of domicile status through the Admissions and Records office. Supporting documentation that presents clear evidence of domiciliary intent, such as a Virginia driver's license, voter's registration and payment of Virginia income taxes, must be presented by no later than the first day of the next semester of enrollment. Students who request a change of domicile and present documentation beyond the first day of class will be considered for the subsequent semester. The burden is assumed by the applicant to provide as much information and documentation as appropriate to demonstrate intent.

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

### 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. All students are encouraged to apply for financial assistance by submitting the Free Application for Federal Student Aid (FAFSA) online at [www.fafsa.ed.gov](http://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 5 (Guaranteed). The dates for applying for financial aid for the spring semester are September 15 (Priority) and November 2 (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 students through their John Tyler Community College (JTCC) e-mail. It is important that students monitor their 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 6 or November 2 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 5273 or less. The maximum award for the 2011-2012 academic year is \$5,500, with a minimum of \$555. A minimum of 12 credit hours each semester is required to receive full eligibility, with prorated 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.

### On-Ramp Program

The On-Ramp Program, supported by Workforce Investment Act (WIA) Rapid Response Funds, provides financial assistance to students seeking postsecondary education credentials, such as a college degree or an industry-recognized certification, state licensure or other portable workforce credentials. Designed to help those who are unemployed or underemployed improve their chances of job hunting success, this program also requires participants to complete a series of workshops that focus on the various skills needed during the job-search process. Students can learn more about this program and eligibility requirements at the On-Ramp Program web site [www.jtcc.edu/onramp](http://www.jtcc.edu/onramp) or by contacting John Tyler Community College's On-Ramp Program coordinator at [onramp@jtcc.edu](mailto:onramp@jtcc.edu). The program coordinator will explain the program details, will complete an intake application, and will determine if students are eligible for the program.

### 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.

### 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 who 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. Students may apply online at [www.jtcc.edu/loans](http://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 (SAP). 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 Satisfactory Academic Progress Policy is subject to change. For more detailed information about our SAP Policy, please visit the web site at [www.jtcc.edu/financialaid](http://www.jtcc.edu/financialaid).

The College's current 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 and accepted transfer credits will be counted.
- Students must meet minimum cumulative grade point average requirements based on a progressive scale. Only non-remedial courses with grades of A, B, C, D and F are included in this calculation. Transfer credits are excluded. In order to graduate, a minimum cumulative grade point average of 2.0 is required.

Credit Hours Attempted	Minimum Required GPA
1 - 15	1.50
16 - 30	1.75
31+	2.00

- 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. Students are expected to present their certificates of eligibility to VA staff during their initial visits in order to be certified. Certification requests must be initiated in person or via the [veterans@jtcc.edu](mailto:veterans@jtcc.edu) e-mail account immediately after enrollment. Enrollment adjustments that take place after certification, such as course drops, adds, swaps, and withdrawals, must be reported in person or via the [veterans@jtcc.edu](mailto:veterans@jtcc.edu) e-mail account. Any debt that may be incurred as a result of unreported enrollment adjustments will require payment in accordance with College policy. Eligible veteran students and their dependents, who are granted out-of-state domicile status upon completion of their online applications, should notify a member of the VA staff in order to receive instructions for a potential change of status. 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. The VA will only pay in-state rates for tuition.

John Tyler Community College is a proud member of the Servicemembers Opportunity Colleges (SOC) Consortium and committed to providing servicemembers, their families and veterans with ready access to low-cost, quality educational opportunities. Because servicemembers move so frequently, we maintain transfer practices which minimize the loss of credit for courses taken at another college or university and avoid duplication of coursework. Additionally, we limit academic residency for active duty service members to only 25%. This means that an active duty servicemember can earn a degree by taking as little as one quarter of his/her required courses for a degree program at John Tyler Community College. Lastly, we award credit for military training and experience as outlined in the ACE Guide and credit for extra institutional learning using one or more nationally-recognized, non-traditional learning tests (CLEP and DSST).

### 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 help them 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](http://www.jtcc.edu/scholarships). The

application deadline for the John Tyler Community College International Studies Scholarship for summer study abroad is March 15. The application deadline for all other scholarships is May 1.

For more information, visit [www.jtcc.edu/scholarships](http://www.jtcc.edu/scholarships). For questions, call 804-594-1574 or e-mail [foundation@jtcc.edu](mailto:foundation@jtcc.edu).

## 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 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 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 to receive an audit report:

For summer semester candidates	February 15
For fall semester candidates	June 15
For spring semester candidates	September 15

NOTE: Applications for graduation are generally due on the same dates each semester. However, if the due date falls on a weekend, the deadline will shift to the previous Friday. Please see the Graduation Deadlines and FAQs page (<http://www.jtcc.edu/services/graduation/graduation-deadlines-and-faqs/>) for this academic year's specific deadlines.

NOTE: Applications for Graduation for spring semester candidates will be accepted until February 1, but no official graduation audit reports advising candidates of outstanding course requirements will be forwarded to students who submit graduation applications after September 15. See the Graduation Deadlines and FAQs page (<http://www.jtcc.edu/services/graduation/graduation-deadlines-and-faqs/>) for more information on audit reports.

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. If you submit your form late, you will not be processed for spring semester graduation and will not be permitted to participate in commencement until the following year.

7. 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.

### 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 (SCHEV) 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 AFFAIRS

Student Affairs is comprised of the offices of the Vice President for Student Affairs, the Dean of Students, Admissions and Records, Student Activities, First-Year Student Experience, and the College Libraries. Services provided by personnel in Student Affairs include assistance with admissions, registration, and applying for graduation; student orientation; counseling and academic advising; career exploration and development; transfer information; tutoring; student activities; services for students with special needs; services for veterans; judicial affairs; student health education; testing services; library services. The Office of the Vice President for Student Affairs is located in room M101c in Moyar Hall on the Chester Campus and in room B206g in the Administration Building on the Midlothian Campus. The Office of the Dean of Students is located in room M107e in Moyar Hall on the Chester Campus and in room B213 in the Administration Building on the Midlothian Campus.

### Counseling

Professional counselors and student services specialists are available at both campuses to assist students with educational decisions, career planning and other concerns. Counseling personnel offer students assistance with test-taking skills, managing test anxiety, study skills, transferring to senior institutions, and stress management. 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. 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 the Counseling Centers 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 resumé writing.

### Student Success Centers/Tutoring

Students can receive free tutoring services in many of the courses offered by the institution in the Student Success Centers located in room M209 on the Chester Campus and room A208 on the Midlothian Campus. Tutoring is also available online via AskOnline at [jtcc@askonline.net](mailto:jtcc@askonline.net). General academic advising services also are available for program-placed students. Computer workstations are available where students may use tutorial software or work on writing assignments.

### 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 Association. 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](mailto: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. Professional counselors skilled in disabilities support services are available 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 Conduct (Student Rights and Responsibilities) and Judicial Affairs

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](http://www.jtcc.edu). The Office of the Dean of Students is responsible for the administration of all student disciplinary procedures.

## College Libraries

The College Libraries welcome John Tyler students both in person and virtually at <http://library.jtcc.edu>. 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.

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 College operates Testing 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. 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 Testing 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.

## Student Information Center

The Information Center represents John Tyler Community College by providing communications and customer service and acting as a primary telephone contact for the College. The Information Center representatives are able to answer a wide range of questions about the College using various databases, web pages and printed documentation. The Information Center also serves as the help desk for students needing access to the College Student Information System. The Information Center, located on the Chester Campus in Goyne Hall, room A105b,

provides services for both Chester and Midlothian campuses via telephone, e-mail, and the web. Hours of operation are Monday, 8:00 a.m. – 7:00 p.m. and Tuesday through Friday from 8:00 a.m. to 5:00 p.m. Calls are received from outside the College from callers using 804-796-4000. Those seeking assistance may also submit an online Help Request Form found online at [www.jtcc.edu/mytylerhelp](http://www.jtcc.edu/mytylerhelp). For more about the Information Center, visit [www.jtcc.edu/services/information-center](http://www.jtcc.edu/services/information-center).





# Programs of Study



# Programs of Study

## TRANSFER DEGREES

### Associate of Science Degrees

- **Business Administration**
  - Paralegal Specialization*
- **Engineering**
- **General Studies**
  - Logistics Specialization*
  - Psychology Specialization*
  - Science Specialization*
  - Secondary Teacher Education Specialization in Mathematics and Science*
  - Teacher Education Specialization Elementary (K-6)*
- **Information Systems**

### Associate of Arts Degree

- **Liberal Arts**
  - Communications Specialization*
  - International Studies Specialization*
  - Music Specialization*
  - Secondary Teacher Education Specialization in English*
  - Secondary Teacher Education Specialization in History*
  - Theatre Arts Specialization*

## ASSOCIATE OF APPLIED ARTS DEGREES

- **Visual Arts**
  - Film Specialization*
  - Photography 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**
  - General Track*
  - Bereavement Counseling Track*
  - Criminology Track*

- Disabilities Track*
- Forensics Track*
- Gerontology Track*
- Pre-Social Work Specialization*

- **Information Technology**
  - Cisco Network Track*
  - Computer Applications Track*
  - Network Support Track*
  - Program Development Track*
- **Mechanical Engineering Technology**
  - Mechatronics Technician Specialization*
- **Nursing**
  - Traditional Track*
  - Hybrid Distance Education Track*
- **Police Science**
  - Homeland Security Specialization*
- **Technical Studies**
  - Heating, Ventilation and Air Conditioning Track*
  - Industrial Electricity Track*
  - Mechanical Maintenance Track*
  - Precision Machining Computer Numerical Control (CNC) 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**

- **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 – Intermediate**
- **Geographic Information Systems**
- **Heating and Air Conditioning**
- **Human Services Administration and Supervision**
- **Industrial Electricity**
- **Mechanical Maintenance**
- **Network Support**
- **Paralegal Studies**
- **Program Development**
- **Residential Electricity**
- **Small Business Management**
- **Substance Abuse Assistant**
- **Supervision**
- **Surveying**
- **Web Design**
- **Welding**





# 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 web site at [www.jtcc.edu/academics](http://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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

<b>1<sup>st</sup> Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
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	
<b>Total Credits</b>	<b>17</b>	
<b>2<sup>nd</sup> Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
ENG 112 College Composition II	3	
MTH 270 Applied Calculus	3	
History or Political Science Elective	3	See Note 6.
Laboratory Science Elective	4	See Note 5.
Physical Education/Health Elective	1	
<b>Total Credits</b>	<b>14</b>	
<b>3<sup>rd</sup> Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
ACC 211 Principles of Accounting I	3	
ECO 201 Principles of Macroeconomics	3	
Humanities Elective	3	See Note 2.
Literature Elective	3	See Note 3.
Social/Behavioral Science Elective	3	See Note 1.
<b>Total Credits</b>	<b>15</b>	
<b>4<sup>th</sup> Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
ACC 212 Principles of Accounting II	3	
BUS 100 Introduction to Business	3	
CST 100 Principles of Public Speaking or CST 110 Introduction to Communication	3	
ECO 202 Principles of Microeconomics	3	
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
<b>Total Credits</b>	<b>15</b>	
<b>Total Credits For Program</b>	<b>61</b>	

## 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. Degree requirements include a conceptual humanities course (i.e., literature, philosophy, religion) that offers breadth of knowledge, therefore the elective requirement may be satisfied by completing an approved conceptual or applied humanities course. See web site ([www.jtcc.edu/humanitieselectives](http://www.jtcc.edu/humanitieselectives)) for a list of approved conceptual and applied humanities electives.
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, CHM 129, CHM 130, ENV 121, ENV 122, 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 and dean.

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 Administration, Paralegal Studies Specialization

Associate of Science (A.S.)

## Purpose

This program is intended to provide the student with a general course of study in paralegal studies at the freshman and sophomore levels and to prepare the student for a baccalaureate degree program in paralegal studies at select colleges and universities.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information. Keyboarding skills are recommended.

## Program Curriculum

### 1st Semester

	Credits	Standard Course Options
ACC 211 Principles of Accounting I	3	
ENG 111 College Composition I	3	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 4.
LGL 110 Introduction to Law and the Legal Assistant	3	
MTH 163 Precalculus I	3	
SDV 100 College Success Skills	1	
Health/Physical Education Elective	1	
<b>Total Credits</b>	<b>17</b>	

### 2nd Semester

	Credits	Standard Course Options
ACC 212 Principles of Accounting II	3	
ENG 112 College Composition II	3	
LGL 125 Legal Research	3	
MTH 164 Precalculus II or MTH 270 Applied Calculus	3	
<b>Total Credits</b>	<b>12</b>	

### 3rd Semester

	Credits	Standard Course Options
BIO 101 General Biology I	4	CHM 111, PHY 201
LGL 126 Legal Writing	3	
LGL Elective	3	
Psychology or Sociology Elective	3	PSY 126
Social/Behavioral Science Elective	3	See Note 1.
<b>Total Credits</b>	<b>16</b>	

### 4th Semester

	Credits	Standard Course Options
BIO 102 General Biology II	4	CHM 112, PHY 202
BUS 100 Introduction to Business	3	
CST 100 Principles of Public Speaking or CST 110 Introduction to Communication	3	
Humanities Elective	3	See Note 2.
Social/Behavioral Science Elective	3	See Note 1.
<b>Total Credits</b>	<b>16</b>	

**Total Credits For Program 61**

## 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, or SOC.
2. The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See [www.jtcc.edu/humanities/electives](http://www.jtcc.edu/humanities/electives) for a list of approved conceptual and applied humanities electives.
3. Students should consult their faculty advisors regarding appropriate course sequences.
4. Students with good computer skills may seek to satisfy this requirement by CLEP.

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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
CHM 111 College Chemistry I	4	
EGR 120 Introduction to Engineering	2	See Note 1.
ENG 111 College Composition I	3	
MTH 173 Calculus with Analytical Geometry I	5	
SDV 100 College Success Skills	1	
Humanities Elective	3	See Note 6.
<b>Total Credits</b>	<b>18</b>	

2nd Semester	Credits	Standard Course Options
CHM 112 College Chemistry II	4	
EGR 126 Computer Programming for Engineers	3	
EGR 140 Engineering Mechanics--Statics	3	See Note 2.
ENG 112 College Composition II	3	
MTH 174 Calculus with Analytical Geometry II	5	
<b>Total Credits</b>	<b>18</b>	

3rd Semester	Credits	Standard Course Options
EGR 246 Mechanics of Materials	3	See Note 3.
EGR 248 Thermodynamics for Engineers	3	
HLT/PED Health or Physical Education	1	
MTH 277 Vector Calculus	4	
PHY 241 General University Physics I	4	
Social/Behavioral Science Elective	3	See Note 5.
<b>Total Credits</b>	<b>18</b>	

4th Semester	Credits	Standard Course Options
EGR 245 Engineering Mechanics - Dynamics	3	See Note 4.
MTH 279 Ordinary Differential Equations	4	
PHY 242 General University Physics II	4	
Humanities Elective	3	See Note 6.
Social/Behavioral Science Elective	3	See Note 5.
<b>Total Credits</b>	<b>17</b>	

**Total Credits For Program 71**

## Notes and Additional Curriculum Options

1. MTH 164 or the equivalent is the prerequisite for EGR 120.
2. MTH 173 is the prerequisite for EGR 140.
3. EGR 140 and MTH 174 are prerequisites for EGR 246.
4. EGR 140, MTH 174, and PHY 241 are prerequisites for EGR 245.
5. The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, PLS, HIS, PSY, and SOC.
6. The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
7. 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.
8. Transfer Articulation Agreement with the School of Engineering and Applied Sciences at the University of Virginia. Graduates of this program with 3.5 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 Community College's campuses or attending classes in Charlottesville. JTCC graduates with GPAs of less than 3.5 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 (A.S.). 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

### 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 6.
MTH 158 College Algebra or MTH 163 Precalculus I	3	MTH 164, MTH 170, MTH 173. See Note 1.
SDV 100 College Success Skills	1	
History Elective	3	See Note 7.
Laboratory Science Elective	4	See Note 5.
<b>Total Credits</b>	<b>17</b>	
2nd Semester	Credits	Standard Course Options
ENG 112 College Composition II	3	
MTH 240 Statistics	3	MTH 158, MTH 164, MTH 170, MTH 173. See Note 1.
History Elective	3	See Note 7.
Laboratory Science Elective	4	See Note 5.
Social/Behavioral Science Elective	3	See Note 2.
<b>Total Credits</b>	<b>16</b>	
3rd Semester	Credits	Standard Course Options
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Humanities Elective	3	See Note 3.
Literature Elective	3	See Note 4.
Social/Behavioral Science Elective	3	See Note 2.
<b>Total Credits</b>	<b>15</b>	
4th Semester	Credits	Standard Course Options
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Humanities Elective	3	See Note 3.
Literature Elective	3	See Note 4.
Physical Education/Health Elective	1	
<b>Total Credits</b>	<b>13</b>	
<b>Total Credits For Program</b>	<b>61</b>	

### Notes and Additional Curriculum Options

- Students may elect to take MTH 158 and MTH 240 or MTH 163 and MTH 240 as minimum preparation for transfer. Students in the science, technology, engineering, and mathematics (STEM) track should take MTH 163, MTH 164, and MTH 173 given their transfer plans.
- The social/behavioral sciences elective requirements can be satisfied by courses with the following prefixes: ECO, GEO, PLS, HIS, PSY and SOC.
- Degree requirements include a conceptual humanities course (i.e., literature, philosophy, religion) that offers breadth of knowledge, therefore the elective requirement may be satisfied by completing an approved conceptual or applied humanities course. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
- The literature requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.
- The laboratory science requirements can be satisfied by the following courses: BIO 101, BIO 102, BIO 110, BIO 120, CHM 101, CHM 102, CHM 111, CHM 112, CHM 129, CHM 130, ENV 121, ENV 122, GOL 105, NAS 125, NAS 130, PHY 101, PHY 102, PHY 201, PHY 202, PHY 241, and PHY 242. STEM track majors should take CHM 111-112 plus PHY 201-202 (or PHY 241-242).
- Students with good computer skills may seek to satisfy this requirement by CLEP.
- 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 and dean.

For additional information on this program, please contact the Division of Mathematics, Natural and Behavioral Sciences: 804-706-5084 (Chester) or 804-594-1500 (Midlothian).

# General Studies, Logistics 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. 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 (A.S.). Students should consult with their advisors to ensure that they select general electives that best prepare them for the specific requirements for their intended transfer college or university programs of study.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
BUS 100 Introduction to Business	3	
ENG 111 College Composition I	3	
GIS 101 Introduction to Geospatial Technology I	3	
MTH 158 College Algebra or MTH 163 Precalculus I	3	MTH 164, MTH 170, MTH 173. See Note 4.
SDV 100 College Success Skills	1	
Laboratory Science Elective	4	See Note 3.
<b>Total Credits</b>	<b>17</b>	
2nd Semester	Credits	Standard Course Options
BUS 111 Principles of Supervision	3	
ENG 112 College Composition II	3	
MTH 240 Statistics	3	MTH 158, MTH 164, MTH 170, MTH 173. See Note 4.
Laboratory Science Elective	4	See Note 3.
Social/Behavioral Science Elective	3	See Note 1.
<b>Total Credits</b>	<b>16</b>	
3rd Semester	Credits	Standard Course Options
CON 110 Contract Support Planning	3	
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Humanities Elective	3	See Note 2.
Social/Behavioral Science Elective	3	See Note 1.
<b>Total Credits</b>	<b>15</b>	
4th Semester	Credits	Standard Course Options
CON 111 Contract Strategy Execution	3	
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Humanities Elective	3	See Note 2.
Physical Education/Health Elective	1	
Social/Behavioral Science Elective	3	See Note 1.
<b>Total Credits</b>	<b>13</b>	
<b>Total Credits For Program</b>	<b>61</b>	

## 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 elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitieselectives](http://www.jtcc.edu/humanitieselectives)) for a list of approved conceptual and applied humanities electives.
3. The laboratory science requirements can be satisfied by the following courses: BIO 101, BIO 102, BIO 110, BIO 120, CHM 101, CHM 102, CHM 111, CHM 112, ENV 121, ENV 122, GOL 105, NAS 125, NAS 130, PHY 101, PHY 102, PHY 201, PHY 202, PHY 241, and PHY 242. STEM track majors should take CHM 111-112 plus PHY 201-202 (or PHY 241-242).
4. Students may elect to take MTH 158 and MTH 240 or MTH 163 and MTH 240 as minimum preparation for transfer. Students in the science, technology, engineering, and mathematics (STEM) track should take MTH 163, MTH 164, and MTH 173 given their transfer plans.

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, 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 A.S. 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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ENG 111 College Composition I	3	
HIS 121 United States History I	3	HIS 101, HIS 111
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 4.
MTH 158 College Algebra or MTH 163 Precalculus I	3	MTH 170, MTH 173. See Note 1.
PSY 200/PSY 203 Principles of Psychology and Lab	4	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>17</b>	
2nd Semester	Credits	Standard Course Options
ENG 112 College Composition II	3	
HIS 122 United States History II	3	HIS 102, HIS 112
MTH 240 Statistics	3	MTH 164, MTH 174. See Note 1.
SOC 200 Principles of Sociology	3	
Psychology Elective	3	See Note 5.
<b>Total Credits</b>	<b>15</b>	
3rd Semester	Credits	Standard Course Options
BIO 101 General Biology I	4	BIO 110, CHM 111, PHY 101, PHY 201
PSY 213 Statistics for Behavioral Sciences	3	
SOC 211 Principles of Anthropology I	3	
Social/Behavioral Science Elective	3	See Note 6.
Humanities Elective	3	See Note 2.
<b>Total Credits</b>	<b>16</b>	
4th Semester	Credits	Standard Course Options
BIO 102 General Biology II	4	BIO 120, CHM 112, PHY 102, PHY 202
Humanities Elective	3	See Note 2.
Literature Elective	3	See Note 3.
Physical Education/Health Elective	1	
Psychology Elective	3	See Note 5.
<b>Total Credits</b>	<b>14</b>	
<b>Total Credits For Program</b>	<b>62</b>	

## Notes and Additional Curriculum Options

- Students may elect to take MTH 158 and MTH 240 or MTH 163 and MTH 240 as minimum preparation for transfer. Students in the science, technology, engineering, and mathematics (STEM) track should take MTH 163, MTH 164, and MTH 173 to transfer.
- Degree requirements include a conceptual humanities course (i.e., literature, philosophy, religion) that offers breadth of knowledge, therefore the elective requirement may be satisfied by completing an approved conceptual or applied humanities course. See web site ([www.jtcc.edu/humanitieselectives](http://www.jtcc.edu/humanitieselectives)) for a list of approved conceptual and applied humanities electives.
- The literature requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.
- Students with good computer skills may seek to satisfy this requirement by CLEP.
- Students should consult with their advisors regarding appropriate psychology (PSY) electives.
- The social/behavioral science elective can be satisfied with the following prefixes: ECO, GEO, PLS, HIS, PSY and SOC.

For additional information on this program, please contact the Division of Mathematics, Natural and Behavioral Sciences: 804-706-5084 (Chester) or 804-594-1500 (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 (A.S.) 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, physics, forensic science, clinical lab science, pre-med, environmental science or geology.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information. Many of the required courses will require that a student test out of or complete developmental courses prior to taking the course.

## Program Curriculum

1st Semester	Credits	Standard Course Options
CHM 111 College Chemistry I	4	
ENG 111 College Composition I	3	
Math Elective	3	See Note 1.
SDV 100 College Success Skills	1	
History Elective	3	See Note 2.
<b>Total Credits</b>	<b>14</b>	

2nd Semester	Credits	Standard Course Options
CHM 112 College Chemistry II	4	
ENG 112 College Composition II	3	
Math Elective	3	See Note 1.
History Elective	3	See Note 2.
Social/Behavioral Science Elective	3	See Note 3.
<b>Total Credits</b>	<b>16</b>	

3rd Semester	Credits	Standard Course Options
BIO 101 General Biology I or PHY 201 General College Physics I or PHY 241 University Physics I	4	See Note 4.
Laboratory Science or Advanced Math Elective	4	See Note 5.
Social/Behavioral Science Elective	3	See Note 3.
Literature Elective	3	See Note 6.
Physical Education/Health Elective	1	
<b>Total Credits</b>	<b>15</b>	

4th Semester	Credits	Standard Course Options
BIO 102 General Biology II or PHY 202 General College Physics II or PHY 242 University Physics II	4	See Note 4.
Laboratory Science or Advanced Math Elective	4	See Note 5.
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Transfer Elective	2	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Humanities Elective	3	See Note 7.
<b>Total Credits</b>	<b>16</b>	

**Total Credits For Program 61**

## Notes and Additional Curriculum Options

- Science students must complete two of the following math courses: MTH 163, MTH 164, MTH 166, MTH 173, MTH 174, MTH 240, MTH 270, MTH 277, MTH 279. MTH 173 and MTH 174 are recommended for chemistry and physics majors. Biology majors should consult with their intended transfer institution and their advisor to choose the most appropriate math courses.
- 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 and dean.
- The social/behavioral sciences elective requirements can be satisfied by courses with the following prefixes: PSY, SOC, ECO, GEO, PLS and HIS.
- Students must complete one of the following lab sequences: BIO101/102, PHY201/202, or PHY241/242. In general, biology majors should choose BIO101/102. Students intending to major in biology or forensic science at VCU are strongly encouraged to substitute BIO110/120 for BIO101/102. Physics majors should complete PHY241/242.
- Science students may choose from the following science/advanced math electives: BIO 101, BIO 102, PHY 201, BIO 205, BIO 206, BIO 256, CHM 241, CHM 245, PHY 202, PHY 241, PHY 242, MTH 173, MTH 174, MTH 177, MTH 240, MTH 277, MTH 279. Please note that students cannot count both PHY201/202 and PHY241/242 toward their degree and that many of the listed courses have prerequisites. Students intending to major in geology can also use GOL 105 to count as a science elective. Physics majors should consider choosing the advanced math electives from the list above. Please check with your advisor to plan out your classes.
- The literature requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.
- Degree requirements include a conceptual humanities course (i.e., literature, philosophy, religion) that offers breadth of knowledge, therefore the elective requirement may be satisfied by completing an approved conceptual or applied humanities course. See web site ([www.jtcc.edu/humanitieselectives](http://www.jtcc.edu/humanitieselectives)) for a list of approved conceptual and applied humanities electives.

# General Studies, Secondary Teacher Education Specialization in Mathematics and Science

Associate of Science (A.S.)

## Purpose

This program is specifically designed for students who plan to transfer into a science or math major at most four-year colleges and plan to teach in mathematics and science at the secondary level. Following the prescribed coursework in this program will result in graduation with the Associate in Science Degree (A.S.) in General Studies with a Specialization in Secondary Teacher Education in Science or Math. Students who complete this program will be required to pass the PRAXIS I for acceptance into teacher education programs at senior institutions. 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, physics, or math. Specific secondary teacher education requirements vary at senior institutions, however, and students should consult with senior institutions for additional guidance regarding electives for pre-teacher preparation.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

### 1st Semester

	Credits	Standard Course Options
CHM 111 College Chemistry I	4	
ENG 111 College Composition I	3	
History Elective	3	See Note 1.
MTH 173 Calculus with Analytical Geometry I	5	See Note 2.
SDV 101 Orientation to Teaching	1	SDV 100
<b>Total Credits</b>	<b>16</b>	

### 2nd Semester

	Credits	Standard Course Options
CHM 112 College Chemistry II	4	
ENG 112 College Composition II	3	
History Elective	3	See Note 1.
MTH 240 Statistics	3	MTH 174. See Note 2.
Physical Education/Health Elective	1	
<b>Total Credits</b>	<b>14</b>	

### 3rd Semester

	Credits	Standard Course Options
EDU 200 Introduction to Teaching as a Profession 3		
Lab Science or Mathematics Elective	4	See Note 3.
Literature Elective	3	See Note 4.
PHY 201 General College Physics I	4	BIO 101, BIO 110, PHY 241. See Note 5.
Social/Behavioral Science Elective	3	See Note 6.
<b>Total Credits</b>	<b>17</b>	

### 4th Semester

	Credits	Standard Course Options
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Humanities Elective	3	See Note 8.
Lab Science or Mathematics Elective	4	See Note 3.
PHY 202 General College Physics II	4	BIO 102, BIO 120, PHY 242. See Note 5.
<b>Total Credits</b>	<b>14</b>	

### Total Credits For Program

**61**

## Notes and Additional Curriculum Options

1. It is recommended that the history elective include American history and world history. Students should consult with prospective four-year institutions.
2. Students may be required to take MTH 164 or MTH 166 as prerequisites for MTH 173. MTH 173 and MTH 240 are recommended for biology majors. MTH 173 and MTH 174 are recommended for math, chemistry, and physics majors.
3. Acceptable MTH electives include MTH 277. Acceptable lab science electives include BIO 231, BIO 232, BIO 256, BIO 279, GOL 105, NAS 125 and NAS 130
4. The literature requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.
5. Math and physics majors should take PHY 241 and PHY 242 rather than PHY 201 and PHY 202.
6. The social/behavioral sciences elective requirements can be satisfied by courses with the following prefixes: PSY, SOC, ECO, GEO, PLS and HIS.
7. It is recommended that students consult their prospective four-year transfer institution when selecting electives.
8. Degree requirements include a conceptual humanities course (i.e., literature, philosophy, religion) that offers breadth of knowledge, therefore the elective requirement may be satisfied by completing an approved conceptual or applied humanities course. See web site ([www.jtcc.edu/humanitieselectives](http://www.jtcc.edu/humanitieselectives)) for a list of approved conceptual and applied humanities electives.

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



# General Studies, Teacher Education Specialization - Elementary (K-6)

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 A.S. 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-teacher preparation.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information. 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	Credits	Standard Course Options
ENG 111 College Composition I	3	
HIS 121 United States History I	3	
ITE 115 Introduction to Computer Applications and Concepts	3	ITE 200. See Note 1.
MTH 158 College Algebra or MTH 163 Precalculus I	3	See Note 2.
SDV 101 Orientation to Future Teachers	1	SDV 100
Health/Physical Education Elective	1	HLT 116, PED 116
<b>Total Credits</b>	<b>14</b>	
2nd Semester	Credits	Standard Course Options
ART 101 History and Appreciation of Art	3	ART 102, MUS 121, MUS 122
ENG 112 College Composition II	3	
HIS 122 United States History II	3	See Note 3.
MTH 240 Statistics	3	MTH 164
PLS 135 American National Politics	3	
<b>Total Credits</b>	<b>15</b>	
3rd Semester	Credits	Standard Course Options
CST 100 Introduction to Public Speaking	3	
ECO 201 Principles of Macroeconomics	3	See Note 4.
EDU 200 Introduction to Teaching as a Profession	3	
HIS 112 History of World Civilization II	3	HIS 102, HIS 111. See Note 3.
PHY 101 Introduction to Physics I	4	See Note 5.
<b>Total Credits</b>	<b>16</b>	
4th Semester	Credits	Standard Course Options
BIO 101 General Biology I	4	See Note 5.
ENG 241 Survey of American Literature I	3	ENG 242, ENG 243, ENG 244, ENG 251, ENG 252
GEO 210 People and the Land: Cultural Geography	3	
Social/Behavioral Science Elective	3	See Note 7.
Humanities Elective	3	REL 230, REL 237. See Note 6.
<b>Total Credits</b>	<b>16</b>	
<b>Total Credits For Program</b>	<b>61</b>	

## Notes and Additional Curriculum Options

1. Students transferring to Virginia State University should take ITE 200. The computer literacy requirement also can be satisfied by other information technology courses and CLEP examinations.
2. Students may elect to take MTH 158 and MTH 240 or MTH 163 and MTH 240 as minimum preparation for transfer. Students in the science, technology, engineering, and mathematics (STEM) track should take MTH 163, MTH 164, and MTH 173 to transfer.
3. It is recommended that the HIS requirement include American history and world history. Students should consult with prospective four-year institutions.
4. ECO 120 may be used as a standard course option for some colleges and universities. Please consult with your transfer institution.
5. Two different science disciplines are recommended and are even required at some transfer institutions.
6. Some transfer institutions require foreign language, some do not. Degree requirements include a conceptual humanities course (i.e., literature, philosophy, religion) that offers breadth of knowledge, therefore the elective requirement may be satisfied by completing an approved conceptual or applied humanities course. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
7. The social/behavioral sciences elective requirements can be satisfied by courses with the following prefixes: PSY, SOC, ECO, GEO, PLS and HIS.

# 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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information. Keyboarding skills are recommended.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ACC 211 Principles of Accounting I	3	
ENG 111 College Composition I	3	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 6.
MTH 163 Precalculus I	3	See Note 5.
SDV 100 College Success Skills	1	
Health/Physical Education Elective	1	
<b>Total Credits</b>	<b>14</b>	
2nd Semester	Credits	Standard Course Options
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. See Note 5.
<b>Total Credits</b>	<b>15</b>	
3rd Semester	Credits	Standard Course Options
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/Behavioral Science Elective	3	See Note 3.
<b>Total Credits</b>	<b>16</b>	
4th Semester	Credits	Standard Course Options
BIO 102 General Biology II	4	CHM 112, PHY 202
BUS 100 Introduction to Business	3	
CST 110 Introduction to Communication	3	
Humanities Elective	3	See Note 4.
Social/Behavioral Science Elective	3	See Note 3.
<b>Total Credits</b>	<b>16</b>	
<b>Total Credits For Program</b>	<b>61</b>	

## Notes and Additional Curriculum Options

- All information technology courses must be completed within five years of a student's intended graduation date.
- Students should consult their faculty advisors regarding appropriate course sequences.
- The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY or SOC.
- The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
- There may be other possible course options in mathematics and natural sciences. Students should consult their faculty advisors.
- Students with good computer skills may seek to satisfy this requirement by CLEP.

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).

# Liberal Arts

## Associate of Arts (A.A.)

### 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

### 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 7.
MTH 158 College Algebra or MTH 163 Precalculus I	3	MTH 170, MTH 173
SDV 100 College Success Skills	1	
Foreign Language (101)	4	See Note 5.
History Elective	3	See Note 4.
<b>Total Credits</b>	<b>17</b>	
<b>2nd Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
ENG 112 College Composition II	3	
MTH 240 Statistics	3	MTH 164, MTH 270, MTH 174
Foreign Language (102)	4	See Note 5.
History Elective	3	See Note 4.
Social/Behavioral Science Elective	3	See Note 1.
<b>Total Credits</b>	<b>16</b>	
<b>3rd Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
Foreign Language (201)	3	See Note 5.
Laboratory Science Elective	4	See Note 8.
Literature Elective	3	See Note 6.
Philosophy/Religion Elective	3	See Note 2.
<b>Total Credits</b>	<b>13</b>	
<b>4th Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
Foreign Language (202)	3	See Note 5.
Laboratory Science Elective	4	See Note 8.
Physical Education/Health Elective	1	
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Visual & Performing Art Elective	3	See Note 3.
<b>Total Credits</b>	<b>14</b>	
<b>Total Credits For Program</b>	<b>60</b>	

### 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 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 and dean.
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 transfer 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, CHM 129, CHM 130, ENV 121, ENV 122, 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, Communications Specialization

Associate of Arts (A.A.)

## Purpose

The associate of arts curriculum in liberal arts with a specialization in communications is designed for students who plan to transfer to four-year colleges or universities and seek bachelor's degrees in fields such as mass communications, journalism, public relations and other related programs that require foreign language as part of their general education requirements.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ENG 111 College Composition I	3	
CST 100 Principles of Public Speaking	3	CST 110
MTH 158 College Algebra or MTH 163 Precalculus I	3	MTH 170, MTH 173
SDV 100 College Success Skills	1	
Foreign Language (101)	4	See Note 4.
History Elective	3	See Note 3.
<b>Total Credits</b>	<b>17</b>	
2nd Semester	Credits	Standard Course Options
ENG 112 College Composition II	3	
MTH 240 Statistics	3	MTH 164, MTH 270, MTH 174
Foreign Language (102)	4	See Note 4.
Communications Elective	3	See Note 2.
History Elective	3	See Note 3.
<b>Total Credits</b>	<b>16</b>	
3rd Semester	Credits	Standard Course Options
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 5.
Foreign Language (201)	3	See Note 4.
Communications Elective	3	See Note 2.
Laboratory Science Elective	4	See Note 6.
<b>Total Credits</b>	<b>13</b>	
4th Semester	Credits	Standard Course Options
PHI 220 Ethics	3	PHI 226
Foreign Language (202)	3	See Note 4.
Laboratory Science Elective	4	See Note 6.
Physical Education/Health Elective	1	
Social/Behavioral Science Elective	3	See Note 1.
<b>Total Credits</b>	<b>14</b>	
<b>Total Credits For Program</b>	<b>60</b>	

## Notes and Additional Curriculum Options

- The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, PLS, HIS, PSY and SOC.
- The communications elective requirements can be satisfied by the following courses: CST 111, CST 115, CST 126, CST 227, CST 229 or any other CST courses approved by the student's advisor, and ENG 121.
- 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 and dean.
- 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 transfer electives.
- Students with good computer skills may seek to satisfy this requirement by CLEP.
- 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, CHM 129, CHM 130, ENV 121, ENV 122, 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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## 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 158 College Algebra or MTH 163 Precalculus I	3	MTH 170, MTH 173
SDV 100 College Success Skills	1	
Foreign Language (101)	4	See Note 3.
History Elective	3	See Note 2.
<b>Total Credits</b>	<b>17</b>	
2nd Semester	Credits	Standard Course Options
ENG 112 College Composition II	3	
MTH 240 Statistics	3	MTH 164, MTH 270, MTH 174
Foreign Language (102)	4	See Note 3.
History Elective	3	See Note 2.
<b>Total Credits</b>	<b>13</b>	
3rd Semester	Credits	Standard Course Options
ENG 251 Survey of World Literature I	3	ENG 252
Laboratory Science Elective	4	See Note 5.
Foreign Language (201)	3	See Note 3.
Transfer Elective	3	See <a href="http://www.jtcc.edu/transferelectives">www.jtcc.edu/transferelectives</a> .
Humanities Elective	3	See Note 1.
<b>Total Credits</b>	<b>16</b>	
4th Semester	Credits	Standard Course Options
PLS 241 International Relations I	3	ECO 210, GEO 210, SOC 211
Foreign Language (202)	3	See Note 3.
Humanities Elective	3	See Note 1.
Laboratory Science Elective	4	See Note 5.
Physical Education/Health Elective	1	
<b>Total Credits</b>	<b>14</b>	
<b>Total Credits For Program</b>	<b>60</b>	

## Notes and Additional Curriculum Options

- Degree requirements include a conceptual humanities course (i.e., literature, philosophy, religion) that offers breadth of knowledge, therefore the elective requirement may be satisfied by completing an approved conceptual or applied humanities course. See web site ([www.jtcc.edu/humanitieselectives](http://www.jtcc.edu/humanitieselectives)) for a list of approved conceptual and applied humanities electives.
- 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.
- 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 transfer electives.
- Students with good computer skills may seek to satisfy this requirement by CLEP.
- 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, CHM 129, CHM 130, ENV 121, ENV 122, 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, Music Specialization

Associate of Arts (A.A.)

## Purpose

The associate of arts curriculum in liberal arts with a specialization in music is designed for students who plan to transfer to four-year colleges or universities and seek a bachelor's degree in music or music education, particularly in programs that require foreign language as part of their general education requirements.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

### 1st Semester

	Credits	Standard Course Options
ENG 111 College Composition I	3	
MTH 158 College Algebra or MTH 163 Precalculus I	3	MTH 170, MTH 173
MUS 101 Basic Musicianship I	3	MUS 111
SDV 100 College Success Skills	1	
Foreign Language (101)	4	See Note 3.
History Elective	3	See Note 1.
<b>Total Credits</b>	<b>17</b>	

### 2nd Semester

	Credits	Standard Course Options
ENG 112 College Composition II	3	
MTH 240 Statistics	3	MTH 164, MTH 270, MTH 174
MUS 102 Basic Musicianship II	3	MUS 112
Foreign Language (102)	4	See Note 3.
History Elective	3	See Note 1.
<b>Total Credits</b>	<b>16</b>	

### 3rd Semester

	Credits	Standard Course Options
Information Technology Elective	1	
Foreign Language (201)	3	See Note 3.
Laboratory Science Elective	4	See Note 5.
Literature Elective	3	See Note 4.
Music Elective	3	See Note 2.
<b>Total Credits</b>	<b>14</b>	

### 4th Semester

	Credits	Standard Course Options
Foreign Language (202)	3	See Note 3.
Laboratory Science Elective	4	See Note 5.
Music Elective	2	See Note 2.
Physical Education/Health Elective	1	
Social/Behavioral Science Elective	3	See Note 6.
<b>Total Credits</b>	<b>13</b>	

**Total Credits For Program 60**

## Notes and Additional Curriculum Options

- 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 and dean.
- The music elective requirements must include 3 credits in music history or appreciation and 2 credits of applied music.
- 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 transfer electives.
- The literature elective requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.
- 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, CHM 129, CHM 130, ENV 121, ENV 122, GOL 105, NAS 125, NAS 130, PHY 101, PHY 102, PHY 201, PHY 202, PHY 241, PHY 242.
- 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 music 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).

# Liberal Arts, Secondary Teacher Education Specialization in English

Associate of Arts (A.A.)

## Purpose

This program is specifically designed for students who plan to transfer into an English major at most four-year universities and plan to teach English at the secondary level. Following the prescribed coursework in this program will result in graduation with the Associate in Arts Degree (A.A.) in Liberal Arts with a Specialization in Secondary Teacher Education in English. Students who complete this program will be required to pass the PRAXIS I for acceptance into teacher education programs at four-year universities. 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 a major in English. Specific secondary teacher education requirements vary at universities; however, and students should consult with four-year universities for additional guidance regarding electives for pre-teacher preparation.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ENG 111 College Composition I	3	
ITE 115 Introduction to Computer Applications and Concepts	3	ITE 200. See Note 1.
MTH 158 College Algebra or MTH 163 Precalculus I	3	See Note 2.
SDV 101 Orientation to Future Teachers	1	SDV 100
Foreign Language (101)	4	See Note 3.
Physical Education/Health elective	1	
<b>Total Credits</b>	<b>15</b>	
2nd Semester	Credits	Standard Course Options
ENG 112 College Composition II	3	
HIS 121 United States History I	3	HIS 122
MTH 240 Statistics	3	MTH 164, MTH 270, MTH 173
Foreign Language (102)	4	See Note 3.
Social/Behavioral Science Elective	3	See Note 4.
<b>Total Credits</b>	<b>16</b>	
3rd Semester	Credits	Standard Course Options
Laboratory Science Elective	4	See Note 6 and Note 8.
EDU 200 Introduction to Teaching as a Profession	3	
HIS 101 History of Western Civilization	3	HIS 102, HIS 111, HIS 112. See Note 5.
Foreign Language (201)	3	See Note 3.
ENG 241 Survey of American Literature I	3	ENG 242, ENG 243, ENG 244, ENG 251, ENG 252
<b>Total Credits</b>	<b>16</b>	
4th Semester	Credits	Standard Course Options
Laboratory Science Elective	4	See Notes 6 and 8.
CST 100 Principles of Public Speaking	3	CST 110, CST 115
Foreign Language (202)	3	See Note 3.
Philosophy/Religion Elective	3	See Note 7.
<b>Total Credits</b>	<b>13</b>	
<b>Total Credits For Program</b>	<b>60</b>	

## Notes and Additional Curriculum Options

1. Students transferring to Virginia State University should take ITE 200. The computer literacy requirement also can be satisfied by CLEP examinations.
2. Students may elect to take MTH 158 and MTH 240 or MTH 163 and MTH 240 as minimum preparation for transfer.
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 should substitute other approved transfer electives especially in the disciplines of English and CST. Those students planning to transfer to VCU should take ENG 210 as one of their electives. It is recommended that students review the requirements for an English major at their prospective four-year institution.
4. The social/behavioral sciences elective can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PSY and SOC.
5. It is recommended that the HIS requirement include United States History and History of Western or World Civilizations. Students should consult prospective four-year institutions.
6. Two different science disciplines are recommended and are even required at some transfer institutions.
7. Consult with prospective four-year institution regarding a requirement for philosophy and/or religion.
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, CHM 129, CHM 130, ENV 121, ENV 122, 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 Engineering, Business, and Public Services: 804-706-5121 (Chester Campus) or 804-594-1480 (Midlothian Campus) or the Division of Arts, Humanities and Social Sciences: 804-706-5086 (Chester) or 804-594-1509 (Midlothian).

# Liberal Arts, Secondary Teacher Education Specialization in History

Associate of Arts (A.A.)

## Purpose

This program is specifically designed for students who plan to transfer into a History major at most four-year universities and plan to teach history at the secondary level. Following the prescribed coursework in this program will result in graduation with the Associate in Art Degree (A.A.) in Liberal Arts with a Secondary Teacher Education Specialization in History. Students who complete this program will be required to pass the PRAXIS I for acceptance into teacher education programs at four-year universities. 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 a major in history. Specific secondary teacher education requirements vary at universities; however, and students should consult with four-year universities for additional guidance regarding electives for pre-teacher preparation.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ENG 111 College Composition I	3	
HIS 121 United States History I	3	
Physical Education/Health elective	1	
MTH 158 College Algebra or MTH 163 Precalculus I	3	See Note 2.
SDV 101 Orientation to Future Teachers	1	SDV 100
Foreign Language (101)	4	See Note 3.
<b>Total Credits</b>	<b>15</b>	
2nd Semester	Credits	Standard Course Options
ENG 112 College Composition II	3	
ITE 115 Introduction to Computer Applications and Concepts	3	ITE 200. See Note 1.
HIS 122 United States History II	3	HIS 101, HIS 102. See Note 4.
MTH 240 Statistics	3	MTH 164
Foreign Language (102)	4	See Note 3.
<b>Total Credits</b>	<b>16</b>	
3rd Semester	Credits	Standard Course Options
Laboratory Science Elective	4	See Notes 7 and 9.
ECO 201 Principles of Macroeconomics	3	PLS 135, ECO 120, ECO 202. See Note 5.
EDU 200 Introduction to Teaching as a Profession	3	
Foreign Language (201)	3	See Note 3.
Literature Elective	3	See Note 6.
<b>Total Credits</b>	<b>16</b>	
4th Semester	Credits	Standard Course Options
Laboratory Science Elective	4	See Note 7 and Note 9.
Foreign Language (202)	3	See Note 3.
GEO 210 People and the Land: Cultural Geography	3	
Visual & Performing Arts Elective	3	See Note 8.
<b>Total Credits</b>	<b>13</b>	
<b>Total Credits For Program</b>	<b>60</b>	

## Notes and Additional Curriculum Options

- Students transferring to Virginia State University should take ITE 200. The computer literacy requirement also can be satisfied by CLEP examinations.
- Students may elect to take MTH 158 and MTH 240 or MTH 163 and MTH 240 as minimum preparation for transfer.
- 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 should substitute other approved transfer electives, particularly in the social/behavioral science areas of HIS, ECO, PLS, GEO, SOC and PSY. Some senior institutions require a philosophy or religion course. Students planning to transfer to Virginia Commonwealth University may need to take ENG 210.
- It is recommended that the history requirement include American History and History of Western Civilizations or History of World Civilizations.
- ECO 120 may be used as a standard course option for some colleges and universities. Please consult with your transfer institution.
- The literature elective requirement can be satisfied by any 200-level English literature course, exclusive of composition and creative writing courses.
- Two different science disciplines are recommended and even required at some transfer institutions.
- 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.
- 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, CHM 129, CHM 130, ENV 121, ENV 122, 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 Engineering, Business, and Public Services: 804-706-5121 (Chester Campus) or 804-594-1480 (Midlothian Campus) or 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.)

## Purpose

The associate of arts curriculum in liberal arts with a specialization in theatre arts is designed for students who plan to transfer to four-year colleges or universities and seek a bachelor's degree in theatre, particularly in programs that require foreign language as part of their general education requirements.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
CST 131 Acting I	3	
ENG 111 College Composition I	3	
MTH 158 College Algebra or MTH 163 Precalculus I	3	MTH 170, MTH 173
SDV 100 College Success Skills	1	See Note 1.
Foreign Language (101)	4	See Note 3.
History Elective	3	See Note 2.
<b>Total Credits</b>	<b>17</b>	
2nd Semester	Credits	Standard Course Options
CST 132 Acting II	3	
ENG 112 College Composition II	3	
MTH 240 Statistics	3	MTH 164, MTH 270, MTH 174
Foreign Language (102)	4	See Note 3.
History Elective	3	See Note 2.
<b>Total Credits</b>	<b>16</b>	
3rd Semester	Credits	Standard Course Options
CST 130 Introduction to the Theatre	3	CST 195, CST 231, CST 232
Information Technology Elective	1	
Foreign Language (201)	3	See Note 3.
Laboratory Science Elective	4	See Note 5.
Literature Elective	3	See Note 4.
<b>Total Credits</b>	<b>14</b>	
4th Semester	Credits	Standard Course Options
CST 136 Theatre Workshop	3	CST 145, CST 252
Foreign Language (202)	3	See Note 3.
Laboratory Science Elective	4	See Note 5.
Physical Education/Health Elective	1	
Social/Behavioral Science Elective	3	See Note 6.
<b>Total Credits</b>	<b>14</b>	
<b>Total Credits For Program</b>	<b>61</b>	

## 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 and dean.
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 transfer electives.
4. The literature elective 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, CHM 129, CHM 130, ENV 121, ENV 122, GOL 105, NAS 125, NAS 130, PHY 101, PHY 102, PHY 201, PHY 202, PHY 241, PHY 242.
6. 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).





# Applied Arts Degrees

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](http://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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ART 101 History and Appreciation of Art I	3	
ART 111 Introduction to the Arts I	3	
ART 121 Drawing I	3	
ART 131 Fundamentals of Design I	3	
ENG 111 College Composition I	3	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>16</b>	

2nd Semester	Credits	Standard Course Options
ART 102 History and Appreciation of Art II	3	
ART 122 Drawing II	3	
ART 132 Fundamentals of Design II	3	
ART 133 Visual Arts Foundation	4	
ENG 112 College Composition II	3	
Health or Physical Education Elective	1	
<b>Total Credits</b>	<b>17</b>	

3rd Semester	Credits	Standard Course Options
General Elective	3	
Information Technology Elective	1	
Communications Studies and Theatre Elective	3	
Art Elective	3	See Note 1.
Art Elective	3	See Note 1.
Photography or Film Elective	3	See Note 6.
<b>Total Credits</b>	<b>16</b>	

4th Semester	Credits	Standard Course Options
ART 287 Portfolio and Resume Preparation	1	
Art Elective	3	See Note 1.
Art Elective	3	See Note 2.
General Elective	3	
Mathematics/Science Elective	3	See Note 3.
Social/Behavioral Science Elective	3	See Note 4.
<b>Total Credits</b>	<b>16</b>	

**Total Credits For Program 65**

## Notes and Additional Curriculum Options

- Acceptable art electives include the following: ART 138, ART 153, ART 154, ART 203, ART 204, 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. Students should consult with their academic advisor about other options.
- Must be a culminating experience course (2nd in a sequence or higher): ART 154, ART 204, ART 218, ART 232, ART 242, ART 244, ART 248 or ART 249. Students should consult with their academic advisor about other options.
- The mathematics/science elective requirement can be satisfied by courses with the following prefixes: BIO, CHM, GOL, MTH, NAS and PHY.
- The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY and SOC.
- Part-time students should consult their faculty advisors regarding appropriate course sequences.
- Approved ART or CST courses may be used to satisfy the photography or film elective. Students should consult with their faculty advisors.
- 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.

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, Film Specialization

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

## Purpose

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

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ART 101 History and Appreciation of Art I	3	
CST 151 Film Appreciation I	3	
ART 121 Drawing I	3	
ART 131 Fundamentals of Design I	3	
ENG 111 College Composition I	3	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>16</b>	

2nd Semester	Credits	Standard Course Options
ART 102 History and Appreciation of Art II	3	
ART 132 Fundamentals of Design II	3	
ART 133 Visual Arts Foundation	4	
Communication Studies and Theatre Elective	3	See Note 1.
ENG 112 College Composition II	3	
<b>Total Credits</b>	<b>16</b>	

3rd Semester	Credits	Standard Course Options
ART 150 History of Film and Animation	3	
General Elective	3	
Health or Physical Education Elective	1	
Information Technology Elective	1	
PHT 150 Film Production I	3	
Photography or Film Elective	3	See Note 2.
Photography or Film Elective	3	See Note 2.
<b>Total Credits</b>	<b>17</b>	

4th Semester	Credits	Standard Course Options
ART 287 Portfolio and Resume Preparation	1	
Art Elective	3	
Mathematics/Science Elective	3	See Note 3.
PHT 151 Film Production II	3	
PHT 274 Digital Film Editing and Post Production	3	
Social/Behavioral Science Elective	3	See Note 4.
<b>Total Credits</b>	<b>16</b>	

**Total Credits For Program 65**

## Notes and Additional Curriculum Options

1. Film students are encouraged to take CST 140 Acting for the Camera.
2. Approved ART or CST courses may be used to satisfy the photography or film elective. Students should consult with their faculty advisors.
3. The mathematics/science elective requirement can be satisfied by courses with the following prefixes: BIO, CHM, GOL, MTH, NAS and PHY.
4. The social/behavioral science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY and SOC.
5. Part-time students should consult their faculty advisors regarding appropriate course sequences.
6. 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.

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 Specialization

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

## Purpose

For students who intend to pursue careers in photography. Program coursework provides a foundation for the fine and applied arts and allows students to learn techniques specific to photography. Students are required to prepare portfolios of their work.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ART 101 History and Appreciation of Art I	3	
ART 111 Introduction to the Arts I	3	
ART 121 Drawing I	3	
ART 131 Fundamentals of Design I	3	
ENG 111 College Composition I	3	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>16</b>	
2nd Semester	Credits	Standard Course Options
ART 102 History and Appreciation of Art II	3	
ART 132 Fundamentals of Design II	3	
ART 133 Visual Arts Foundation	4	
ENG 112 College Composition II	3	
PHT 164 Introduction to Digital Photography	3	
<b>Total Credits</b>	<b>16</b>	
3rd Semester	Credits	Standard Course Options
Communication Studies and Theatre Elective	3	
General Elective	3	
Health or Physical Education Elective	1	
Information Technology Elective	1	
PHT 110 History of Photography	3	
PHT 135 Electronic Darkroom	3	
PHT 221 Studio Lighting I	3	
<b>Total Credits</b>	<b>17</b>	
4th Semester	Credits	Standard Course Options
ART 287 Portfolio and Resume Preparation	1	
Art Elective	3	See Note 1.
Mathematics/Science Elective	3	See Note 2.
PHT 264 Digital Photography II	3	
Photography or Film Elective	3	See Note 5.
Social/Behavioral Science Elective	3	See Note 3.
<b>Total Credits</b>	<b>16</b>	
<b>Total Credits For Program</b>	<b>65</b>	

## Notes and Additional Curriculum Options

- Approved Photography courses may be used to fulfill the Art elective requirement. Students should consult with their faculty advisor.
- The mathematic/science elective requirement can be satisfied by courses with the following prefixes: BIO, CHM, GOL, MTH, NAS and PHY.
- The social/behavioral science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY and SOC.
- Part-time students should consult their faculty advisors regarding appropriate course sequences.
- Approved ART or CST courses may be used to satisfy the photography or film elective. Students should consult with their faculty advisors.
- 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.

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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ART 101 History and Appreciation of Art I	3	
ART 111 Introduction to the Arts I	3	
ART 121 Drawing I	3	
ART 131 Fundamentals of Design I	3	
ENG 111 College Composition I	3	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>16</b>	

2nd Semester	Credits	Standard Course Options
ART 102 History and Appreciation of Art II	3	
ART 122 Drawing II	3	
ART 132 Fundamentals of Design II	3	
ART 133 Visual Arts Foundation	4	
ENG 112 College Composition II	3	
<b>Total Credits</b>	<b>16</b>	

3rd Semester	Credits	Standard Course Options
ART 141 Typography I	4	
ART 217 Electronic Graphic Design I	4	
ART 250 History of Design	3	
Health or Physical Education Elective	1	
Information Technology Elective	1	
Photography or Film Elective	3	See Note 4.
<b>Total Credits</b>	<b>16</b>	

4th Semester	Credits	Standard Course Options
ART 218 Electronic Graphic Design II	4	
ART 291 Computerized Graphic Design I	4	
Communication Studies and Theatre Elective	3	
Mathematics/Science Elective	3	See Note 1.
Social/Behavioral Science Elective	3	See Note 2.
<b>Total Credits</b>	<b>17</b>	

**Total Credits For Program 65**

## Notes and Additional Curriculum Options

1. The mathematic/science elective requirement can be satisfied by courses with the following prefixes: BIO, CHM, GOL, MTH, NAS and PHY.
2. The social/behavioral sciences elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY and SOC.
3. Part-time students should consult their faculty advisors regarding appropriate course sequences.
4. Approved ART or CST courses may be used to satisfy the photography or film elective. Students should consult with their faculty advisors.
5. 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.

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).







# Applied Science Degrees

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](http://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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ACC 211 Principles of Accounting I	3	
BUS 100 Introduction to Business	3	
ENG 111 College Composition I	3	
MTH 120 Introduction to Mathematics	3	MTH 158, MTH 163, MTH 170
PSY 126 Psychology for Business and Industry	3	PSY 200/PSY 203
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>16</b>	

2nd Semester	Credits	Standard Course Options
ACC 212 Principles of Accounting II	3	
BUS 125 Applied Business Mathematics	3	
BUS 200 Principles of Management	3	
ECO 120 Survey of Economics	3	ECO 201, ECO 202
Health or Physical Education Elective	2	
Philosophy or Religion Elective	3	See Note 1.
<b>Total Credits</b>	<b>17</b>	

3rd Semester	Credits	Standard Course Options
ACC 221 Intermediate Accounting I	4	
ACC 231 Cost Accounting I	3	
BUS 220 Introduction to Business Statistics	3	
BUS 241 Business Law I	3	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 3.
<b>Total Credits</b>	<b>16</b>	

4th Semester	Credits	Standard Course Options
ACC 215 Computerized Accounting	3	
ACC 222 Intermediate Accounting II	4	
ACC 261 Principles of Federal Taxation I	3	
AST 205 Business Communications	3	
CST 100 Principles of Public Speaking	3	
<b>Total Credits</b>	<b>16</b>	

**Total Credits For Program 65**

## 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.
3. Students with good computer skills may seek to satisfy this requirement by CLEP.
4. 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.

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) apply principles of sustainable design to buildings; (8) evaluate a building design using building codes and zoning regulations; and (9) use communication skills effectively in the work environment.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ARC 121 Architectural Drafting I	3	
ARC 221 Architectural CAD Applications Software I	3	
ARC 258 Building Codes, Contract Documents and Professional Office Practices	3	
ENG 111 College Composition I	3	
MTH 163 Precalculus I	3	MTH 173
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>16</b>	
2nd Semester	Credits	Standard Course Options
ARC 122 Architectural Drafting II	3	
ARC 243 Environmental Systems	4	
CST 100 Principles of Public Speaking	3	
MEC 270 Computations for Engineering Technology	3	
MTH 164 Precalculus II	3	MTH 174
<b>Total Credits</b>	<b>16</b>	
3rd Semester	Credits	Standard Course Options
ARC 231 Advanced Architectural Drafting I	4	
ARC 246 Materials and Methods of Construction	4	
CIV 171 Surveying I	3	GIS 101
MEC 131 Mechanics I – Statics for Engineering Technology	3	EGR 140
Laboratory Sciences Elective	4	See Note 3.
<b>Total Credits</b>	<b>18</b>	
4th Semester	Credits	Standard Course Options
ARC 232 Advanced Architectural Drafting II	4	
General Elective	3	
Health/Physical Education Elective	2	
Humanities Elective	3	See Note 2.
Social/Behavioral Science Elective	3	See Note 4.
<b>Total Credits</b>	<b>15</b>	
<b>Total Credits For Program</b>	<b>65</b>	

## 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 must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitieselectives](http://www.jtcc.edu/humanitieselectives)) for a list of approved conceptual and applied humanities electives.
3. The laboratory 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 and SOC.
5. 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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ACC 211 Principles of Accounting I	3	
BUS 100 Introduction to Business	3	
ENG 111 College Composition I	3	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 3.
MTH 120 Introduction to Mathematics	3	MTH 158, MTH 163, MTH 170
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>16</b>	
2nd Semester	Credits	Standard Course Options
ACC 212 Principles of Accounting II	3	
BUS 125 Applied Business Mathematics	3	
BUS 200 Principles of Management	3	
ECO 120 Survey of Economics	3	ECO 201, ECO 202
Health/Physical Education Elective	1	
Philosophy or Religion Elective	3	See Note 2.
<b>Total Credits</b>	<b>16</b>	
3rd Semester	Credits	Standard Course Options
BUS 220 Introduction to Business Statistics	3	
BUS 241 Business Law I	3	
CST 100 Principles of Public Speaking	3	
PSY 126 Psychology for Business and Industry	3	PSY 200/PSY 203
Business Elective	3	See Note 1.
<b>Total Credits</b>	<b>15</b>	
4th Semester	Credits	Standard Course Options
AST 205 Business Communications	3	
BUS 205 Human Resource Management	3	
BUS 266 Production and Operations Management	3	
BUS 298 Seminar and Project	3	
MKT 100 Principles of Marketing	3	
Information Technology Restricted Elective	3	ITE 130, ITE 140, ITE 150, ITE 215
<b>Total Credits</b>	<b>18</b>	
<b>Total Credits For Program</b>	<b>65</b>	

## 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, ITD, ITE, ITN, ITP, FIN and MKT.
2. The philosophy or religion elective requirement can be satisfied by courses with a PHI or REL prefix.
3. Students with good computer skills may seek to satisfy this requirement by CLEP.
4. 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.

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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information. 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

## Program Curriculum

1st Semester	Credits	Standard Course Options
CHD 119 Introduction to Reading Methods	3	
CHD 120 Introduction to Early Childhood Education	3	
CHD 145 Methods and Materials for Teaching Art, Music and Movement to Children	3	
ENG 111 College Composition I	3	
HLT 106 First Aid and Safety	2	See Note 5.
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>15</b>	
2nd Semester	Credits	Standard Course Options
CHD 118 Methods and Materials in the Language Arts for Children	3	
CHD 146 Methods and Materials for Teaching Math, Science and Social Studies to Children	3	
CHD 205 Guiding the Behavior of Children	3	
CHD 215 Models of Early Childhood Education Programs	3	
CHD 216 Early Childhood Programs, School, and Social Change	3	
ENG 112 College Composition II	3	
<b>Total Credits</b>	<b>18</b>	
3rd Semester	Credits	Standard Course Options
CHD 165 Observation and Participation in Early Childhood/Primary Settings	3	See Notes 1 and 2.
CHD 210 Introduction to Exceptional Children	3	
CHD 270 Administration of Childcare Programs	3	
EDU 235 Health, Safety, and Nutrition Education	3	
MTH 120 Introduction to Mathematics	3	
PSY 235 Child Psychology	3	
<b>Total Credits</b>	<b>18</b>	
4th Semester	Credits	Standard Course Options
CHD 166 Infant and Toddler Programs	3	
CHD 190 Coordinated Practice I	3	CHD 290
CHD 265 Advanced Observation and Participation in Early Childhood/Primary Settings	3	See Notes 1 and 3.
CHD 298 Seminar Portfolio Development	1	See Note 3.
Humanities Elective	3	See Note 4.
SOC 215 Sociology of the Family	3	
<b>Total Credits</b>	<b>16</b>	
<b>Total Credits For Program</b>	<b>67</b>	

## 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

**Program Requirements and  
Special Conditions continued**

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.

4. The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
5. 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.
6. 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.
7. Part-time students should consult their faculty advisors regarding appropriate course sequences.
8. 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.

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 developmental 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; and (9) locate, compile and analyze appropriate resources, activities and materials.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
CHD 120 Introduction to Early Childhood Education	3	
CHD 145 Methods and Materials for Teaching Art, Music and Movement to Children	3	
CHD 190 Coordinated Practice I	3	CHD 290. See Note 1.
ENG 111 College Composition I	3	
HLT 106 First Aid and Safety	2	See Note 2.
SDV 101 Orientation to Education	1	SDV 100
<b>Total Credits</b>	<b>15</b>	
2nd Semester	Credits	Standard Course Options
CHD 146 Methods and Materials for Teaching Math, Science and Social Studies	3	
CHD 205 Guiding the Behavior of Children	3	
CHD 210 Introduction to Exceptional Children	3	
CHD 216 Early Childhood Programs, School, and Social Change	3	
ENG 112 College Composition II	3	
ITE 295 Computers for Educators	3	ITE 115. See Note 3.
<b>Total Credits</b>	<b>18</b>	
3rd Semester	Credits	Standard Course Options
CHD 119 Introduction to Reading Methods	3	
CHD 165 Observation and Participation in Early Childhood/Primary Settings	3	
EDU 200 Introduction to Teaching as a Profession	3	See Note 1.
MTH 170 Fundamentals Contemporary Math	3	MTH 163
MUS 121 Music Appreciation I	3	ART 101, ART 102, HUM 201, HUM 202, PHI 101, PHI 102, PHI 111, REL 230, REL 231, REL 232
PSY 235 Child Psychology	3	PSY 230
<b>Total Credits</b>	<b>18</b>	
4th Semester	Credits	Standard Course Options
CHD 265 Advanced Observation and Participation In Early Childhood/Primary Settings	3	See Note 4.
CHD 298 Seminar and Portfolio Development	1	See Note 4.
Humanities Elective	3	See Note 5.
EDU 235 Health, Safety and Nutrition Education	3	
SOC 215 Sociology of the Family	3	PSY 200/PSY 203, SOC 200
General Elective	2	
<b>Total Credits</b>	<b>15</b>	
<b>Total Credits For Program</b>	<b>66</b>	

continued

**Early Childhood Development, Teacher Assistant Specialization**  
continued**Notes and Additional Curriculum Options**

1. CHD 190 - Coordinated Practice I and EDU 200 - Introduction to Teaching as a Profession are courses that require placement in approved activities by the program head.
2. 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.
3. Students with good computer skills may seek to satisfy this requirement by CLEP.
4. CHD 298 must be taken in conjunction with CHD 265.
5. The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
6. Part-time students should consult their faculty advisors regarding appropriate course sequences.
7. 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.

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 also will 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.

continued

## Program Curriculum

1st Semester	Credits	Standard Course Options
Information Technology Elective	1	
CST 110 Introduction to Communication	3	CST 100, CST 115
ENG 111 College Composition I	3	
FNS 121 Anatomy for Funeral Services I	3	BIO 141, BIO 142, NAS 161, NAS 162
FNS 110 Introduction to Funeral Services	3	
PSY 116 Psychology of Death and Dying	3	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>17</b>	
2nd Semester	Credits	Standard Course Options
ACC 211 Principles of Accounting I	3	
BUS 241 Business Law I	3	
HLT 143 Medical Terminology I	3	
Religion Elective	3	
SOC 200 Principles of Sociology	3	
CHM 110 Survey of Chemistry	3	
<b>Total Credits</b>	<b>18</b>	
3rd Semester	Credits	Standard Course Options
FNS 111 Theory of Embalming I	3	
FNS 113 Theory of Embalming Laboratory I	1	
FNS 125 Microbiology for Funeral Service	3	BIO 150, BIO 205
FNS 126 Pathology for Funeral Service	3	
FNS 213 Restorative Art	3	
FNS 231 Principles of Funeral Management I	4	
<b>Total Credits</b>	<b>17</b>	
4th Semester	Credits	Standard Course Options
FNS 112 Theory of Embalming II	3	
FNS 114 Theory of Embalming Laboratory II	1	
FNS 214 Restorative Art Technical Applications	1	
FNS 232 Principles of Funeral Management II	4	
FNS 236 Funeral Service Law	2	
FNS 245 Ethics	3	See Note 6.
<b>Total Credits</b>	<b>14</b>	
<b>Total Credits For Program</b>	<b>66</b>	

## 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](http://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 Examining with a minimum score of 75 on the Arts Section and 75 on the Science Section. (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 internship with a licensed funeral services provider in the Commonwealth of Virginia as prescribed by the Regulations of the Board of Funeral Directors and Embalmers; and (4) take the Virginia State Board Examination after completing the educational requirements, the internship, applying and being approved by the Board.

continued

**Funeral Services**

continued

**Program Requirements and Special Conditions**

1. Be 18 years of age or older.
  2. Graduation from an accredited four-year high school or its equivalent, such as a recognized G.E.D., or other evidence of academic achievement, such as a post-secondary transcript with at least nine credits exclusive of developmental courses, and a satisfactory grade point average from a regionally accredited post-secondary institution.
  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 110, ENG 111, PSY 116, SDV 100, BUS 241, SOC 200, FNS 110, ITE elective, REL elective and HLT 143.
  6. Students must apply separately for admission to the Funeral Services Program. For the Fall 2014 cohort, the application deadline for admission is July 15, 2014.
  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 3 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.
3. The annual passage rate of first-time takers on the National Board Examination (NBE) for the most recent three-year period for this institution and all ABFSE accredited funeral service education programs is posted on the ABFSE web site ([www.abfse.org](http://www.abfse.org)).
  4. General courses and prerequisite courses can be taken in any order during the first two semesters.
  5. ACC 211, FNS 121 and CHM 110 are prerequisites for placement into the Funeral Services Program.
  6. FNS 245 can only be taken in the last semester and not without prior approval from the Funeral Services Program department chair.
  7. Students are required to take the National Board Examination as part of FNS 245 at an additional cost of \$400. The cost will increase to \$500 effective January 1, 2014.
  8. Students are required to take the National Board Examination before graduation.
  9. ACC 211, FNS 121, CHM 110 and all FNS courses must be completed with a grade of "C" or better.
  10. All developmental courses must be completed prior to a student being placed into the Funeral Services Program.
  11. 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.
  12. Admission to the Funeral Services Program will occur once per year. Effective Fall 2014, only 20 students will be admitted to the Funeral Services program every fall semester as a cohort.

For additional information on this program, you may log on to our web site at [www.jtcc.edu/funeralservices](http://www.jtcc.edu/funeralservices) or contact Rhonda Keyes Pleasants, department chair, at 804-706-5118 or the Division of Health Sciences at 804-706-5075 (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, physical disabilities and gerontology. Students will function effectively in a variety of therapeutic and rehabilitative activities.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ENG 111 College Composition I	3	
HMS 100 Introduction to Human Services	3	
SDV 100 College Success Skills	1	
SOC 200 Principles of Sociology	3	
Track Courses	6	
<b>Total Credits</b>	<b>16</b>	
2nd Semester	Credits	Standard Course Options
Mathematics/Science Elective	3	MTH 120, MTH 158, MTH 163, MTH 170, BIO 101, CHM 101, CHM 111, PHY 101, PHY 201. See Note 6.
MEN 101 Mental Health Skill Training I	3	
PSY 100 Principles of Applied Psychology	3	PSY 200/PSY 203
Track Courses	6	
<b>Total Credits</b>	<b>15</b>	
3rd Semester	Credits	Standard Course Options
HMS 251 Substance Abuse I	3	HMS 258
Humanities Elective	3	See Note 7.
Information Technology Elective	3	See Note 14.
MEN 102 Mental Health Skill Training II	3	MEN 198, MEN 225
Track Courses	6	
<b>Total Credits</b>	<b>18</b>	
4th Semester	Credits	Standard Course Options
Social Science Elective	3	See Note 15.
Health/Physical Education Elective	2	See Note 8.
MEN 190 Coordinated Practice	3	MEN 290. See Notes 5 and 17.
MEN 196 On-Site Training	3	MEN 296. See Notes 5 and 17.
Track Courses	6	
<b>Total Credits</b>	<b>17</b>	
<b>Total Credits for Program</b>	<b>66</b>	

## SUGGESTED COURSES FOR FIELDS OF INTEREST (TRACK)

General	Credits	Standard Course Options
ENG 112	3	
HMS 236	3	HMS 106
MEN 121	3	HMS 122
PSY 215	3	PSY 230
SOC 211	3	
HMS/MEN Elective	6	
General Elective	3	
<b>Total</b>	<b>24</b>	

continued

<b>Bereavement Counseling</b>	<b>Credits</b>	<b>Standard Course Options</b>
ENG 112	3	
SOC 246	3	
HMS 106	3	
Social Science Elective	3	See Note 15.
SOC 211	3	
HMS/MEN Electives	3	
General Elective	6	
<b>Total</b>	<b>24</b>	

<b>Criminology</b>	<b>Credits</b>	<b>Standard Course Options</b>
ADJ 100	3	
ADJ 105	3	
ADJ 107	3	
ADJ 211	3	
ADJ 212	3	
SOC 268	3	
General Electives	6	
<b>Total</b>	<b>24</b>	

<b>Disabilities</b>	<b>Credits</b>	<b>Standard Course Options</b>
HMS 106	3	
MEN 121	3	
MEN 122	3	
SOC 268	3	
HMS/MEN Elective	9	
General Elective	3	
<b>Total</b>	<b>24</b>	

<b>Forensics</b>	<b>Credits</b>	<b>Standard Course Options</b>
ADJ 107	3	
ADJ 138	3	
ADJ 186	3	
ADJ 228	3	HMS 251
ADJ 247	3	
HMS 106	3	SOC 246, PSY 116
PSY 225	3	SOC 236
General Elective	3	
<b>Total</b>	<b>24</b>	

<b>Gerontology</b>	<b>Credits</b>	<b>Standard Course Options</b>
HMS 106	3	
HMS 236	3	
MEN 121	3	MEN 122
SOC 246	3	PSY 116
SOC 268	3	SOC 215
General Electives	9	
<b>Total</b>	<b>24</b>	

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 developmental coursework before enrolling in HMS 100.
3. Students must complete HMS 100 with a grade of “C” or better prior to enrolling in MEN 101.
4. Students must complete MEN 101 with a grade of “C” or better prior to enrolling in MEN 102.
5. MEN 102 must be taken prior to enrolling in MEN 190 and MEN 196 or MEN 290 and MEN 296. MEN 190 and MEN 196 are corequisites and must be taken in the same semester. 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. Students will secure their own internship sites prior to the start of their MEN 190 and MEN 196 classes or their MEN 290 and MEN 296 classes. All internships must be approved by the Human Services and Mental Health program chair.
6. Students should consult with their academic advisor for appropriate mathematics, psychology and general elective courses.
7. The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
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 faculty advisor.
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.
11. 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.
12. Students who are convicted felons or are on the sex offender registry in any state will not be able to secure internship sites. This will prevent them from completing requirements for the Human Services degrees and certificates.
13. Students planning to pursue bachelor’s degrees in criminology should take a course in history.
14. Students who have strong computer skills may seek to satisfy this requirement by CLEP.
15. The social science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY, and SOC.
16. 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.
17. Students who are 18 years of age or younger may not be able to secure an internship. Should students be unable to secure an internship, they will be unable to complete the requirements of the Human Services degree and therefore be unable to graduate.

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

# Human Services, Pre-Social Work Specialization

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 a variety of mental health and social services fields. Students will be able to function effectively in therapeutic, medical, residential and rehabilitative settings. This specialization is also designed for students who plan to pursue a bachelor's degree in social work degree.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ENG 111 College Composition I	3	
HMS 100 Introduction to Human Services	3	See Notes 1, 2, 3, 16.
SDV 100 College Success Skills	1	
SOC 200 Principles of Sociology	3	SOC 201, SOC 202
BIO 101 General Biology I	4	See Note 12.
Social Science Elective	3	See Note 10.
<b>Total Credits</b>	<b>17</b>	
2nd Semester	Credits	Standard Course Options
MEN 101 Mental Health Skill Training I	3	See Notes 1, 3, 4, 16.
PSY 100 Principles of Applied Psychology	3	See Note 9.
Mathematics/Science Elective	3	See Note 13.
ENG 112 College Composition II	3	
BIO 102 General Biology II	4	See Note 12.
<b>Total Credits</b>	<b>16</b>	
3rd Semester	Credits	Standard Course Options
HMS 251 Substance Abuse I	3	
MEN 102 Mental Health Skill Training II	3	See Notes 1, 4, 6, 16.
Humanities Elective	3	See Note 8.
PSY 230 Developmental Psychology	3	
General Elective	3	See Note 11.
SOC 211	3	SOC 212
<b>Total Credits</b>	<b>18</b>	
4th Semester	Credits	Standard Course Options
MEN 190 Coordinated Practice	3	MEN 290. See Notes 1, 5, 7 and 20.
MEN 196 On-Site Training	3	MEN 296. See Notes 1, 5, 7 and 20.
Health/Physical Education Elective	2	
PHI Ethics	3	See Note 17.
Foreign Language 101 Course	4	ARA 101, FRE 101, SPA 101. See Note 15.
<b>Total Credits</b>	<b>15</b>	
<b>Total Credits For Program</b>	<b>66</b>	

## Notes and Additional Curriculum Options

### Notes and Additional Curriculum Options

- Students must obtain a grade of "C" or better in the following core courses in order to remain in the Human Services program: HMS 100, MEN 101, MEN 102, MEN 190 and MEN 196 or MEN 290 and MEN 296. Students who plan to transfer to VCU School of Social Work must earn grades of "B" or better in HMS 100, MEN 101, MEN 102 (see note 16).
- It is recommended that students complete all developmental coursework before enrolling in HMS 100.
- Students must complete HMS 100 prior to enrolling in MEN 101. Students who plan to transfer to VCU School of Social Work must enroll in a Social Work designated section of HMS 100 and earn a minimum grade of "B" (see note 16).
- Students must complete MEN 101 prior to enrolling in MEN 102 (see note 16).
- MEN 102 must be completed prior to enrolling in MEN 190/MEN 290 and MEN 196/MEN 296 (see note 16).
- Students who are not planning to transfer to VCU may take MEN 198 or MEN 225 in place of MEN 102.
- MEN 190 and MEN 196, or MEN 290 and MEN 296 are corequisites and must be taken in the same semester. These courses are internships and students (under professional supervision) engage in practical hands-on training consisting of 100 hours in outside agencies. Students will secure their own internship sites prior to the start of their MEN 190 and MEN 196 classes or their MEN 290 and MEN 296 classes. All internships must be approved by

continued

- the Human Services and Mental Health Program chair. Students completing an internship in human services may be subjected to criminal background check as well as, sex offender registry checks and a TB screening as a condition of their placement in a training/internship site. Students will be expected to cover any costs incurred for these procedures. This may also be required as a condition of employment. Students who are convicted felons or are on the sex offender registry in any state may not be able to secure training/ internship sites. This in turn, will prevent them from completing the requirements for the Human Services degrees and certificates (see note 1).
8. The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
  9. Students who plan to transfer to VCU School of Social Work will require PSY 200/203 for transfer.
  10. Students who plan to transfer to VCU School of Social Work will require an ECO, HIS, or PLS course for transfer. All other students can consider the following social science electives with the following prefixes: ECO, GEO, HIS, PLS, PSY, or SOC. It is recommended that students select electives with the assistance of their advisors.
  11. Students who plan to transfer to VCU will require ENG 210 Advanced Composition.
  12. Students who do not plan to transfer to VCU may take other laboratory science courses in place of BIO 101 and 102. These include: BIO 110, BIO 120, CHM 101, CHM 102, CHM 111, CHM 112, CHM 129, CHM 130, GOL 105, NAS 125, NAS 130, PHY 101, PHY 102, PHY 201, PHY 202, PHY 241 and PHY 242.
  13. Math/Science elective requirement can be satisfied by completing MTH 120, MTH 158, MTH 163 or MTH 170 or BIO 110, BIO 120, CHM 101, CHM 102, CHM 111, CHM 112, PHY 101 or PHY 102. Students who plan to transfer to VCU School of Social Work will require MTH 158, MTH 163 or MTH 170 for transfer.
  14. Part-time students should consult their faculty advisors regarding appropriate course sequences.
  15. Students who plan to transfer to VCU School of Social Work will require a foreign language at the 101 level. Students should consult with their advisors about appropriate language courses.
  16. Additional requirements for Transfer to VCU School of Social Work. Students who plan to transfer to VCU School of Social Work must have a minimum cumulative GPA of 2.5 and earn grades of "B" or better in the following core courses: HMS 100, MEN 101, and MEN 102.
  17. Choose one course from the following PHI Ethics options: PHI 220, 225, or 226.
  18. Students who plan to transfer to VCU School of Social Work must complete a Letter of Interest after successfully completing 15 credits toward the Pre-Social Work Specialization degree at John Tyler Community College and send it to the Office of Undergraduate Admissions at VCU.
  19. This Specialization is in part for Human Services students and for students who plan to transfer to the School of Social Work at Virginia Commonwealth University. Students who are interested in completing bachelor's degrees in social work at other four-year colleges and universities should confer with their advisors before pursuing this program.
  20. Students who are 18 years of age or younger may not be able to secure an internship. Should students be unable to secure an internship, they will be unable to complete the requirements of the Human Services degree and therefore be unable to graduate.

For additional information on this program, please contact the Division of Health Sciences: 804-706-5075.

# 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

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information. Keyboarding skills are recommended

## Program Curriculum

1st Semester	Credits	Standard Course Options
PHI 111 Logic I	3	PHI 220. See Note 6.
ENG 115 Technical Writing	3	ENG 111
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 5.
ITE 130 Introduction to Internet Services	3	
MTH 158 College Algebra	3	MTH 163
SDV 100 College Success Skills	1	
Health/Physical Education Elective	1	
<b>Total Credits</b>	<b>17</b>	
2nd Semester	Credits	Standard Course Options
BUS 100 Introduction to Business	3	
ITE 215 Advanced Computer Applications & Integration	3	See Note 5.
ITN 101 Introduction to Network Concepts	3	
ITP 100 Software Design	3	
IT Track Courses	6/7	
<b>Total Credits</b>	<b>18/19</b>	
3rd Semester	Credits	Standard Course Options
ACC 211 Principles of Accounting I	3	
ECO 120 Survey of Economics	3	ECO 201, ECO 202
ITP 251 Systems Analysis and Design	3	
PSY 126 Psychology for Business and Industry	3	PSY 100, PSY 200/PSY 203
IT Track Course	3	
<b>Total Credits</b>	<b>15</b>	
4th Semester	Credits	Standard Course Options
ACC 212 Principles of Accounting II	3	
BUS 220 Introduction to Business Statistics	3	
ITE 221 PC Hardware and OS Architecture	3	
ITE 290 Coordinated Internship	1	
IT Track Courses	6	
<b>Total Credits</b>	<b>16</b>	
<b>Total Credits For Program</b>	<b>66/67</b>	

## Notes and Additional Curriculum Options

- ITE 290 represents a one-credit internship that will focus on student's particular track.
- All information technology courses must be completed within five years of student's intended graduation date.
- Students should consult their faculty advisors regarding appropriate course sequences.
- Prerequisite requirement(s) must be met for all classes.
- Students with good computer skills may seek to satisfy this requirement by CLEP.
- The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
- 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.
- IT required track courses:

continued



<b>Cisco Network</b>	<b>Credits</b>
ITN 154 Networking Fundamentals - Cisco	4
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
<b>Total</b>	<b>16</b>

<b>Computer Applications</b>	<b>Credits</b>
ITD 110 Web Page Design I	3
ITD 130 Database Fundamentals	3
ITD 132 Structured Query Language	3
ITD 210 Web Page Design II	3
ITE Elective Track Course (ITE 140 OR ITE 150)	3
<b>Total</b>	<b>15</b>

<b>Network Support</b>	<b>Credits</b>
ITN 171 Unix I	3
ITN 111 Server Administration Windows 2008	3
ITN 245 Network Troubleshooting	3
ITN 260 Network Security Basics	3
ITP Elective Track Course (ITP 110, ITP 120, OR ITP 160)	3
<b>Total</b>	<b>15</b>

<b>Program Development</b>	<b>Credits</b>
ITP 110 Visual Basic Programming I	3
ITP 120 Java Programming I	3
ITP 210 Visual Basic Programming II OR	3
ITP 220 Java Programming II	
ITP 160 Introduction to Game Design and Development	3
ITN Elective Track Course (ITN 171, ITN 111, OR ITN 154)	4
<b>Total</b>	<b>16</b>

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.) Program Curriculum

### 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

1st Semester	Credits	Standard Course Options
CAD 151 Engineering Drawing Fundamentals I	3	CAD 201
ELE 150 A.C. and D.C. Circuit Fundamentals	4	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 1.
MEC 113 Materials and Processes of Industry	3	
MTH 103 Applied Technical Mathematics I	3	MTH 120, MTH 158, MTH 163, MTH 170
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>17</b>	
2nd Semester	Credits	Standard Course Options
CAD 152 Engineering Drawing Fundamentals II	3	CAD 202
ELE 159 Electrical Motors	3	
MEC 101 Introduction to Engineering Technology I	2	
MEC 102 Introduction to Engineering Technology II	2	
MTH 104 Applied Technical Mathematics II	3	MTH 120, MTH 158, MTH 164, MTH 170
Humanities Elective	3	See Note 2.
<b>Total Credits</b>	<b>16</b>	
3rd Semester	Credits	Standard Course Options
CAD 241 Parametric Solid Modeling I	3	
ENG 111 College Composition I	3	
MEC 131 Mechanics I – Statics for Engineering Technology	3	
MEC 211 Machine Design I	4	
Health/Physical Education Elective	1	
Laboratory Science Elective	4	See Note 3.
<b>Total Credits</b>	<b>18</b>	
4th Semester	Credits	Standard Course Options
MEC 270 Computations for Engineering Technology	3	
MEC 132 Mechanics II – Strength of Materials for Engineering Technology	3	
MEC 212 Machine Design II	4	
MEC 266 Applications of Fluid Mechanics	3	
Social/Behavioral Science Elective	3	See Note 4.
<b>Total Credits</b>	<b>16</b>	
<b>Total Credits For Program</b>	<b>67</b>	

### Notes and Additional Curriculum Options

1. Students with good computer skills may seek to satisfy this requirement by CLEP.
2. The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
3. The laboratory science requirements 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, and PHY 242
4. The social/behavioral science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY and SOC.
5. 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.

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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
CAD 151 Engineering Drawing Fundamentals I	3	CAD 201
ELE 150 A.C. and D.C. Circuit Fundamentals	4	
ENG 111 College Composition I	3	
MEC 113 Materials and Processes of Industry	3	
MTH 103 Applied Technical Mathematics I	3	MTH 163
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>17</b>	
2nd Semester	Credits	Standard Course Options
CAD 152 Engineering Drawing Fundamentals II	3	CAD 202
ELE 159 Electrical Motors	3	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 3.
MEC 101 Introduction to Engineering Technology I	2	
MEC 102 Introduction to Engineering Technology II	2	
MTH 104 Applied Technical Mathematics II	3	MTH 164
Health/Physical Education Elective	1	
<b>Total Credits</b>	<b>17</b>	
3rd Semester	Credits	Standard Course Options
CAD 241 Parametric Solid Modeling I	3	
ELE 239 Programmable Controllers	3	
MEC 140 Introduction to Mechatronics	3	
MEC 211 Machine Design I	4	
Social/Behavioral Science Elective	3	See Note 1.
<b>Total Credits</b>	<b>16</b>	
4th Semester	Credits	Standard Course Options
ELE 240 Advanced Programmable Logic Controllers	3	
MEC 212 Machine Design II	4	
MEC 266 Applications of Fluid Mechanics	3	
MEC 270 Computations for Engineering Technology	3	
Humanities Elective	3	See Note 2.
<b>Total Credits</b>	<b>16</b>	
<b>Total Credits For Program</b>	<b>66</b>	

## Notes and Additional Curriculum Options

1. The social/behavioral science elective requirement can be satisfied by courses with the following prefixes: ECO, GEO, HIS, PLS, PSY and SOC.
2. The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
3. Students with good computer skills may seek to satisfy this requirement by CLEP
4. 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.

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).

# Nursing

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

## 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.

## Program Requirements and Special Conditions

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

## Special Accreditation Status

The Nursing Program is approved by the Virginia 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.

## Tracks Available

**Traditional Track:** Typical classroom sessions are Monday through Friday during the day. Clinicals may be days, evenings and/or weekends.

**Hybrid Distance Education Track (HDEP):** Theory is delivered in a virtual format. Wimba Classroom is used for course meetings and office hours. Faculty may require mandatory on-campus activities and/or mandatory Wimba Classroom participation. Clinicals may be days, evenings, and/or weekends.

## General Requirements

1. Detailed current information for interested applicants is located at [www.jtcc.edu/nursing](http://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](http://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. Math, science and ITE courses have specific time constraints.
5. 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.
6. 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.
7. Applicants must have a curricular GPA of at least 2.5 to be considered for admission. However, this is a competitive admissions process.
8. All transcripts must be on file in the Admissions and Records office in order for a student to be considered for admission.
9. 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](http://www.jtcc.edu/nursing) for all program policies and procedures.
10. 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, hardware, software and internet. Expenses associated with the acceptance process are the burden of the student including, but not limited to: the criminal background check, drug screening, physical examination, etc.
11. Students may wish to consider the purchase of accident insurance and personal health insurance due to the inherent risk of exposure to disease. John Tyler Community 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.
12. It is the student's responsibility to review all program materials, including the Nursing Program web site at [www.jtcc.edu/nursing](http://www.jtcc.edu/nursing), and to stay current with the program requirements, policies and procedures.
13. Students have Nursing Program advisors assigned after they have been curriculum placed by the counseling office.

continued

## Program Curriculum

1st Semester	Credits	Standard Course Options
BIO 141 Human Anatomy & Physiology I	4	BIO 231. See Note 5.
ENG 111 College Composition I	3	
MTH 158 College Algebra	3	
PSY 230 Developmental Psychology	3	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>14</b>	
2nd Semester	Credits	Standard Course Options
BIO 142 Human Anatomy & Physiology II	4	BIO 232
NUR 111 Nursing I	7	
NUR 226 Health Assessment	3	
<b>Total Credits</b>	<b>14</b>	
3rd Semester	Credits	Standard Course Options
NUR 221 Second-Level Nursing Principles and Concepts 1	9	
SOC 200 Principles of Sociology	3	
<b>Total Credits</b>	<b>12</b>	
4th Semester	Credits	Standard Course Options
NUR 245 Maternal/Newborn Nursing	3	
NUR 246 Parent/Child Nursing	3	
NUR 247 Psychiatric Mental Health Nursing	3	
HLT 143 Medical Terminology I or HLT 230 Principles of Nutrition and Human Development	3	See Note 5.
Information Technology Elective	1	
<b>Total Credits</b>	<b>13</b>	
5th Semester	Credits	Standard Course Options
NUR 223 Second-Level Nursing Principles and Concepts III	9	
NUR 254 Dimensions of Professional Nursing	1	NUR 255
Humanities Elective	3	PHI 220. See Note 5.
<b>Total Credits</b>	<b>13</b>	
<b>Total Credits For Program</b>	<b>66</b>	

## NOTES AND ADDITIONAL CURRICULUM OPTIONS

1. The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
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 within 10 years prior to acceptance to the Nursing Program.
4. Part-time students should consult their faculty advisors regarding appropriate course sequences.
5. BIO 231, BIO 232, HLT 230, and PHI 220 courses may be required by some four-year universities for those pursuing the B.S.N. Students should consult their selected four-year university and their nursing faculty advisor for guidance.
6. 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.

# 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.

## PROGRAM REQUIREMENTS AND SPECIAL CONDITIONS

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information. 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

1st Semester	Credits	Standard Course Options
ADJ 100 Survey of Criminal Justice	3	
ENG 111 College Composition I	3	
ITE 115 Introduction to Computer Applications and Concepts	3	Note 4.
MTH 120 Introduction to Mathematics	3	MTH 158, MTH 163, MTH 170
SOC 200 Principles of Sociology	3	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>16</b>	
2nd Semester	Credits	Standard Course Options
ADJ 105 The Juvenile Justice System	3	
ADJ 107 Survey of Criminology	3	
ADJ 229 Law Enforcement and the Community	3	
PSY 100 Principles of Applied Psychology	3	PSY 200/PSY 203
Philosophy or Religion Elective	3	See Note 1.
<b>Total Credits</b>	<b>15</b>	
3rd Semester	Credits	Standard Course Options
ADJ 111 Law Enforcement Organization and Administration I	3	
ADJ 230 Civil Liabilities in Criminal Justice	3	
ADJ 211 Criminal Law, Evidence and Procedures I	3	
ADJ 228 Narcotics and Dangerous Drugs	3	
ADJ 236 Principles of Criminal Investigation	3	
ADJ 247 Criminal Behavior	3	
<b>Total Credits</b>	<b>18</b>	
4th Semester	Credits	Standard Course Options
ADJ 112 Law Enforcement Organization and Administration II	3	
ADJ 212 Criminal Law, Evidence and Procedures II	3	
ADJ 227 Constitutional Law for Justice Personnel	3	
CST 100 Principles of Public Speaking	3	
Administration of Justice Elective	3	
Health/Physical Education Elective	2	
<b>Total Credits</b>	<b>17</b>	
<b>Total Credits For Program</b>	<b>66</b>	

## 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 their advisor.
3. Part-time students should consult their faculty advisors regarding appropriate course sequences.
4. Students with good computer skills may seek to satisfy this requirement by CLEP.
5. 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.

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).

# Police Science, Homeland Security Specialization

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

## Purpose

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

## PROGRAM REQUIREMENTS AND SPECIAL CONDITIONS

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information. 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

1st Semester	Credits	Standard Course Options
ADJ 100 Survey of Criminal Justice	3	
ENG 111 College Composition I	3	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 3.
MTH 120 Introduction to Mathematics	3	MTH 158, MTH 163, MTH 170
SOC 200 Principles of Sociology	3	SOC 201, SOC 202
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>16</b>	
2nd Semester	Credits	Standard Course Options
ADJ 160 Police Response to Critical Incidents	3	
ADJ 107 Survey of Criminology	3	
ADJ 229 Law Enforcement and the Community	3	
PSY 100 Principles of Applied Psychology	3	PSY 200, PSY 203, PSY 201, PSY 202
Philosophy or Religion Elective	3	Recommended : REL 230. See Note 4.
<b>Total Credits</b>	<b>15</b>	
3rd Semester	Credits	Standard Course Options
ADJ 163 Crime Analysis and Intelligence	3	
ADJ 170 Street Gangs and Law Enforcement	3	
ADJ 211 Criminal Law, Evidence and Procedures I	3	
ADJ 228 Narcotics and Dangerous Drugs	3	
ADJ 236 Principles of Criminal Investigation	3	
ADJ 247 Criminal Behavior	3	
<b>Total Credits</b>	<b>18</b>	
4th Semester	Credits	Standard Course Options
ADJ 234 Terrorism and Counter-Terrorism	3	
ADJ 212 Criminal Law, Evidence and Procedures II	3	
ADJ 227 Constitutional Law for Justice Personnel	3	
ADJ 244 Terrorism Response Planning	3	
CST 100 Principles of Public Speaking	3	
Health/Physical Education Elective	2	
<b>Total Credits</b>	<b>17</b>	
<b>Total Credits For Program</b>	<b>66</b>	

## NOTES AND ADDITIONAL CURRICULUM OPTIONS

1. Students planning to transfer to a four-year program should choose options and substitutions with the assistance of their advisor.
2. Part-time students should consult their faculty advisors regarding appropriate course sequences.
3. Students with good computer skills may seek to satisfy this requirement by CLEP.
4. The philosophy or religion elective requirement can be satisfied by courses with a PHI or REL prefix.
5. 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.

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).

# 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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information. 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	Credits	Standard Course Options
ENG 111 College Composition I	3	
IND 116 Applied Technology	3	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 1.
MTH 103 Applied Technical Mathematics I	3	MTH 163.
SDV 100 College Success Skills	1	
Technical Elective	3	See Note 2.
<b>Total Credits</b>	<b>16</b>	
2nd Semester	Credits	Standard Course Options
ENG 115 Technical Writing	3	ENG 112
PSY 126 Psychology for Business and Industry	3	
Health or Physical Education Elective	2	
Microcomputer/Programming/Software Elective	3	See Note 3.
Technical Electives	6/7	See Note 2.
<b>Total Credits</b>	<b>17/18</b>	
3rd Semester	Credits	Standard Course Options
IND 101 Quality Assurance Technology I	3	
IND 197 Cooperative Education	3	
Humanities Elective	3	See Note 4.
Technical Electives	7	See Note 2.
<b>Total Credits</b>	<b>16</b>	
4th Semester	Credits	Standard Course Options
IND 137 Team Concepts and Problem Solving	3	
IND 297 Cooperative Education	3	
Social/ Behavioral Science Elective	3	See Note 6.
Technical Electives	7	See Note 2.
<b>Total Credits</b>	<b>16</b>	
<b>Total Credits For Program</b>	<b>65/66</b>	

## SUGGESTED TECHNICAL COURSES FOR FIELDS OF INTEREST:

Heating, Ventilation and Air Conditioning	Credits
AIR 121 Air Conditioning and Refrigeration I	3
AIR 122 Air Conditioning and Refrigeration II	3
AIR 134 Circuits and Controls I	3
AIR 154 Heating Systems I	3
ELE 131 National Electrical Code I	3
ELE 150 A.C. and D.C. Circuit Fundamentals	4
Technical Elective	4
<b>Total</b>	<b>23</b>



<b>Industrial Electricity</b>	<b>Credits</b>
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
Technical Elective	1
<b>Total</b>	<b>23</b>

<b>Mechanical Maintenance</b>	<b>Credits</b>
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
<b>Total</b>	<b>23</b>

<b>Precision Machining Technology</b>	<b>Credits</b>
DRF 160 Machine Blueprint Reading	3
MAC 121 Computer Numerical Control 1	3
MAC 150 Introduction to Computer-Aided Manufacturing	3
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
<b>Total</b>	<b>24</b>

<b>Precision Machining Computer Numerical Control (CNC)</b>	<b>Credits</b>
MAC 121 Computer Numerical Control 1	3
MAC 122 Computer Numerical Control II	3
MAC 123 Computer Numerical Control III	3
MAC 150 Introduction to Computer-Aided Manufacturing	3
MAC 161 Machine Shop Practices I	3
MAC 162 Machine Shop Practices II	3
MAC 195 Introduction to Coordinate Measuring Machines	3
MAC 209 Standards, Measurements and Calculations	3
<b>Total</b>	<b>24</b>

<b>Residential Electricity</b>	<b>Credits</b>
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
<b>Total</b>	<b>23</b>

**Technical Studies**  
continued

<b>Welding</b>	<b>Credits</b>
WEL 150 Welding Drawing Interpretation	2
WEL 120 Introduction to Welding	2
WEL 116 Oxyfuel Welding	2
WEL 123 Shielded Metal Arc Welding (Basic)	3
WEL 130 Inert Gas Welding	3
IND 105 Non Destructive Testing and Inspection	3
WEL 160 Gas Metal Arc Welding	3
WEL 175 Semi-Automatic Processes	3
WEL 199 Supervised Study	2
<b>Total</b>	<b>23</b>

### NOTES AND ADDITIONAL CURRICULUM OPTIONS

1. Students with good computer skills may seek to satisfy this requirement by CLEP.
2. The technical elective requirement can be satisfied by courses with the following prefixes: AIR, ARC, DRF, EGR, ELE, IND, INS, MAC, MEC, SAF or WEL. Selection must be approved in advance by the faculty advisor.
3. 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.
4. The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitieselectives](http://www.jtcc.edu/humanitieselectives)) for a list of approved conceptual and applied humanities electives.
5. Part-time students should consult their faculty advisors regarding appropriate course sequences.
6. The social/behavioral sciences elective requirements can be satisfied by courses with the following prefixes: PSY, SOC, ECO, GEO, PLS and HIS.
7. 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.

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).



# Certificates

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](http://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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

### 1st Semester

	Credits	Standard Course Options
ARC 121 Architectural Drafting I	3	
ARC 221 Architectural CAD Applications Software I	3	
CIV 171 Surveying I	3	GIS 101
MTH 103 Applied Technical Mathematics I	3	MTH 115, MTH 163, MTH 273
SDV 100 College Success Skills	1	
Technical Elective	3	See Note 1.
<b>Total Credits</b>	<b>16</b>	

### 2nd Semester

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

**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, CAD, ELE, EGR, 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).

# Child Care

## Certificate (C)

### 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

### Program Curriculum

1st Semester	Credits	Standard Course Options
CHD 120 Introduction to Early Childhood Education	3	
CHD 145 Methods and Materials for Teaching Art, Music and Movement to Children	3	
CHD 190 Coordinated Practice I	3	
ENG 111 College Composition I	3	
HLT 106 First Aid and Safety	2	
Information Technology Elective	1	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>16</b>	

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

**Total Credits For Program 34**

### 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

### Program Curriculum

<b>1st Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
ART 101 History and Appreciation of Art I	3	
ART 111 Introduction to the Arts I	3	
ART 121 Drawing I	3	
ART 131 Fundamentals of Design I	3	
ENG 111 College Composition	3	
<b>Total Credits</b>	<b>15</b>	
<b>2nd Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
ART 102 History and Appreciation of Art II	3	
ART 122 Drawing II	3	
ART 132 Fundamentals of Design II	3	
ART 133 Visual Arts Foundation	4	
ENG 112 College Composition II	3	
ART 287 Portfolio and Resume Preparation	1	See Note 2.
<b>Total Credits</b>	<b>17</b>	
<b>Total Credits For Program</b>	<b>32</b>	

### Notes and Additional Curriculum Options

1. Part-time students should consult their faculty advisors regarding appropriate course sequences.
2. Students must 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

### Program Curriculum

1st Semester	Credits	Standard Course Options
ENG 111 College Composition I	3	
HIS 121 United States History I	3	HIS 101, HIS 111
MTH 158 College Algebra or MTH 163 Precalculus I	3	MTH 170, MTH 173
Laboratory Science Elective	4	See Note 3.
Social/Behavioral Science Elective	3	See Note 1.
<b>Total Credits</b>	<b>16</b>	

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

**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 elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitieselectives](http://www.jtcc.edu/humanitieselectives)) for a list of approved conceptual and applied humanities electives.
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)

## 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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ADJ 160 Police Response to Critical Incidents	3	
ADJ 163 Crime Analysis and Intelligence	3	
ADJ 227 Constitutional Law for Justice Personnel	3	
ENG 111 College Composition I	3	
Health/Physical Education Elective	2	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>15</b>	
2nd Semester	Credits	Standard Course Options
ADJ 234 Terrorism and Counter Terrorism	3	
ADJ 236 Principles of Criminal Investigation	3	
ADJ 244 Terrorism Response Planning	3	
ADJ 247 Criminal Behavior	3	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 1.
<b>Total Credits</b>	<b>15</b>	
<b>Total Credits For Program</b>	<b>30</b>	

## Notes and Additional Curriculum Options

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

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).



# Precision Machining Technology

Certificate (C)

## Purpose

This program provides workforce readiness skills for a career in advanced manufacturing and/or manual machining. It is the recommended curriculum for machinist apprentices as identified by the Virginia Department of Labor and Industry. The curriculum is based on the standards of the National Institute for Metalworking Skills, Inc. (NIMS) with the opportunity to earn Level I industry credentials for manual and CNC.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

<b>1st Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
MAC 195 Geometric Dimensioning and Tolerancing	2	
MAC 161 Machine Shop Practices I	3	
MTH 103 Applied Technical Mathematics	3	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>9</b>	
<b>2nd Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
MAC 121 Computer Numerical Control I	3	
PSY 126 Psychology for Business and Industry	3	PSY 100
MAC 162 Machine Shop Practices II	3	
Precision Machining Technology Elective	3	MAC 195, MAC 295
<b>Total Credits</b>	<b>12</b>	
<b>3rd Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
ENG 115 Technical Writing	3	ENG 111
MAC 122 Computer Numerical Control II	3	
MAC 134 CMM Operation and Programming	2	
MAC 163 Machine Shop Practices III	3	
<b>Total Credits</b>	<b>11</b>	
<b>4th Semester</b>	<b>Credits</b>	<b>Standard Course Options</b>
MAC 164 Machine Shop Practices IV	3	
MAC 123 Computer Numerical Control III	3	
MAC 295 EDM and CAM	2	
<b>Total Credits</b>	<b>8</b>	
<b>Total Credits For Program</b>	<b>40</b>	

## Notes and Additional Curriculum Options

1. Part-time students should consult their faculty advisors regarding 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).

# Welding

Certificate (C)

## Purpose

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

## Program Requirements and Special Conditions

This program has a limited enrollment. Students must provide their own personal protection safety equipment. Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
WEL 150 Welding Drawing and Interpretation	2	
MTH 103 Applied Technical Mathematics I	3	
SDV 100 College Success Skills	1	
WEL 116 Oxyfuel Welding	2	
WEL 120 Introduction to Welding	2	
WEL 123 Shielding Metal Arc Welding (Basic)	3	
<b>Total Credits</b>	<b>13</b>	
2nd Semester	Credits	Standard Course Options
IND 105 Nondestructive Inspection and Testing	3	
WEL 130 Inert Gas Welding	3	
WEL 160 Gas Metal Arc Welding	3	
<b>Total Credits</b>	<b>9</b>	
3rd Semester	Credits	Standard Course Options
ENG 115 Technical Writing	3	ENG 111
WEL 175 Semi-Automatic Processes	3	
PSY 126 Psychology for Business and Industry	3	
<b>Total Credits</b>	<b>9</b>	
4th Semester	Credits	Standard Course Options
WEL 124 Shielded Metal Arc Welding (Advanced)	3	
WEL 199 Supervised Study	3	
<b>Total Credits</b>	<b>6</b>	
<b>Total Credits For Program</b>	<b>37</b>	

## Notes and Additional Curriculum Options

1. 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 Studies 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](http://www.jtcc.edu/academics).

# Accounting

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

### Purpose

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

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in mathematics, and scores will be used for appropriate course placement. If students have deficiencies in mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

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

### 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English, and scores will be used for appropriate course placement. If students have deficiencies in English, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

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

### 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English, and scores will be used for appropriate course placement. If students have deficiencies in English, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

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

### 1st Semester

	Credits
HMS 100 Introduction to Human Services	3
HMS 106 Working with Death and Dying	3
HMS 236 Gerontology	3
<b>Total Credits</b>	<b>9</b>

### Standard Course Options

SOC 246, PSY 116  
MEN 121, MEN 122

### 2nd Semester

	Credits
HMS 225 Functional Family Intervention	3
MEN 101 Mental Health Skill Training I	3
MKT 100 Principles of Marketing	3
<b>Total Credits</b>	<b>9</b>

### Standard Course Options

HMS 250, SOC 215, SOC 268  
HMS 121, MEN 198  
BUS 111, BUS 165, BUS 200

### 3rd Semester

	Credits
MEN 102 Mental Health Skill Training II	3
MEN 190 Coordinated Practice	3
MEN 196 On-Site Training	3
<b>Total Credits</b>	<b>9</b>

### Standard Course Options

HMS 227, MEN 198, HMS 225  
MEN 290. See Notes 3 and 4.  
MEN 296. See Notes 3 and 4.

**Total Credits For Program 27**

## 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. All students who plan to pursue a degree or certification in Human Services are required to complete a 100 hour internship. Students will secure their own internship sites prior to the start of their MEN 190 and MEN 196 classes or their MEN 290 and MEN 296 classes. All internships must be approved by the Human Services and Mental Health Program chair.
4. Students who are 18 years of age or younger may not be able to secure an internship. Should students be unable to secure an internship, they will be unable to complete the requirements of the Human Services degree and therefore be unable to graduate.

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

# 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

### 1st Semester

	Credits	Standard Course Options
CHM 110 Survey of Chemistry	3	CHM 101, CHM 111
CST 110 Introduction to Communication	3	CST 100, CST 115
ENG 111 College Composition I	3	
SDV 100 College Success Skills	1	
Information Technology Elective	1	
<b>Total Credits</b>	<b>11</b>	

### 2nd Semester

	Credits	Standard Course Options
ACC 211 Principles of Accounting	3	
FNS 121 Anatomy for Funeral Service I	3	BIO 141, BIO 142, NAS 161, NAS 162
HLT 143 Medical Terminology I	3	
PSY 116 Psychology of Death and Dying	3	
<b>Total Credits</b>	<b>12</b>	

### 3rd Semester

	Credits	Standard Course Options
Religion Elective	3	
SOC 200 Principles of Sociology	3	
<b>Total Credits</b>	<b>6</b>	

**Total Credits for Program 29**

## Notes and Additional Curriculum Options

1. 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.
2. Effective Fall 2014, only 20 students will be admitted to the Funeral Services Program every fall semester as a cohort. Applications will be due by July 15, 2014.

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

# Allied Health Preparation, Pre-Nursing

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

### 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 found at [www.jtcc.edu/nursing](http://www.jtcc.edu/nursing).

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
BIO 141 Human Anatomy and Physiology I	4	BIO 231. See Note 4.
ENG 111 College Composition I	3	
MTH 158 College Algebra	3	
PSY 230 Developmental Psychology	3	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>14</b>	
2nd Semester	Credits	Standard Course Options
BIO 142 Human Anatomy and Physiology II	4	BIO 232. See Note 4.
SOC 200 Principles of Sociology	3	
HLT 143 Medical Terminology I		HLT 230. See Note 4.
Humanities Elective	3	PHI 220. See Notes 2 and 4.
Information Technology Elective	1	
<b>Total Credits</b>	<b>14</b>	
<b>Total Credits For Program</b>	<b>28</b>	

## Notes and Additional Curriculum Options

1. Students must have documented a year of high school biology and chemistry with a grade of "C" or better or the college-level equivalent prior to taking BIO 141 and BIO 142. Students must complete BIO 231 prior to taking BIO 232. BIO 231 and BIO 232 require one full year of college biology and one full year of college chemistry or divisional approval as prerequisites.
2. The humanities elective requirement must be satisfied by completing one 3-credit conceptual humanities course that offers breadth of knowledge. Additional humanities electives may be conceptual or applied with a focus on skills, techniques and procedures. See web site ([www.jtcc.edu/humanitiesselectives](http://www.jtcc.edu/humanitiesselectives)) for a list of approved conceptual and applied humanities electives.
3. Students planning to apply for admission to the JTCC Nursing Program must complete BIO 141 or BIO 231, ENG 111, PSY 230, MTH 158 and SDV 100 with a minimum grade of "C" in each course.
4. BIO 231, BIO 232, HLT 230, and PHI 220 courses may be required by some four-year universities for those pursuing the B.S.N. Students should consult their selected four-year university and their nursing faculty advisor for guidance.

For additional information on this program, please contact the Division of Health Sciences: 804-622-8700 (Nursing Education Center).

# Applied Technology

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

### 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

### 1st Semester

	Credits	Standard Course Options
ENG 115 Technical Writing	3	
IND 116 Applied Technology	3	
MTH 103 Applied Technical Mathematics I	3	
<b>Total Credits</b>	<b>9</b>	

### 2nd Semester

	Credits	Standard Course Options
DRF 160 Machine Blueprint Reading	3	
IND 137 Team Concepts & Problem Solving	3	
MEC 113 Materials and Processes of Industry	3	
SAF 126 Principles of Industrial Safety	3	
<b>Total Credits</b>	<b>12</b>	

**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.)

## Program Curriculum

### 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information. 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.

1st Semester	Credits	Standard Course Options
ENG 111 College Composition	3	
HLT 106 First Aid and CPR	2	See Note 1.
HLT 120 Foundations and Principles of Sports Coaching	3	
RPK 180 Youth Sports Administration	3	
SDV 100 Student Success Skills	1	
<b>Total Credits</b>	<b>12</b>	

2nd Semester	Credits	Standard Course Options
HLT 206 Exercise Science	3	
PSY 230 Developmental Psychology	3	
HLT 156 Health Care for Athletic Injuries	3	
RPK 210 Principles and Psychology of Coaching	3	
<b>Total Credits</b>	<b>12</b>	

3rd Semester	Credits	Standard Course Options
HLT 230 Principles of Nutrition and Human Development	3	
RPK 296 On-Site Training	1	See Note 2.
<b>Total Credits</b>	<b>4</b>	

**Total Credits For Program** **28**

### 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).

# Basic Precision Machining Technology

Career Studies Certificate (C.S.C.)

## Program Curriculum

### Purpose

To prepare students for basic precision machining positions.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements.

1st Semester	Credits	Standard Course Options
MAC 161 Machine Shop Practices I	3	
<b>Total Credits</b>	<b>3</b>	

2nd Semester	Credits	Standard Course Options
MAC 162 Machine Shop Practices II	3	
<b>Total Credits</b>	<b>3</b>	

3rd Semester	Credits	Standard Course Options
MAC 163 Machine Shop Practices III	3	
<b>Total Credits</b>	<b>3</b>	

4th Semester	Credits	Standard Course Options
MAC 164 Machine Shop Practices IV	3	
<b>Total Credits</b>	<b>3</b>	

**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).

# Bereavement and Grief Counseling

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

### 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English, and scores will be used for appropriate course placement. If students have deficiencies in English, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

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

1st Semester	Credits	Standard Course Options
HMS 100 Introduction to Human Services	3	
HMS 106 Working with Death and Dying	3	
MEN 101 Mental Health Skill Training I	3	HMS 121
SOC 246 Sociology of Death and Dying	3	PSY 116
<b>Total Credits</b>	<b>12</b>	
2nd Semester	Credits	Standard Course Options
MEN 102 Mental Health Skill Training II	3	HMS 227, MEN 198, HMS 225
MEN 190 Coordinated Practice	3	MEN 290. See Notes 3 and 7.
MEN 196 On-Site Training	3	MEN 296 See Notes 3 and 7.
<b>Total Credits</b>	<b>9</b>	
<b>Total Credits For Program</b>	<b>21</b>	

### 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. All students who plan to pursue a degree or certification in Human Services are required to complete a 100 hour internship. Students will secure their own internship sites prior to the start of their MEN 190 and MEN 196 classes or their MEN 290 and MEN 296 classes. All internships must be approved by the Human Services and Mental Health Program chair.
4. Part-time students should consult their faculty advisors regarding appropriate course sequences.
5. 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.
6. Students who are convicted felons or are on the sex offender registry in any state will not be able to secure internship sites. This will prevent them from completing requirements for the Human Services degrees and certificates.
7. Students who are 18 years of age or younger may not be able to secure an internship. Should students be unable to secure an internship, they will be unable to complete the requirements of the Human Services degree and therefore be unable to graduate.

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

# 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English, and scores will be used for appropriate course placement. If students have deficiencies in English, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
BUS 100 Introduction to Business	3	
ENG 111 College Composition I	3	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 3.
<b>Total Credits</b>	<b>9</b>	
2nd Semester	Credits	Standard Course Options
Business Elective	3	AST 205, BUS 200, BUS 205
Information Technology Elective	3	ITE 140, ITE 150, ITE 215
Business/Information Technology Elective	3	
<b>Total Credits</b>	<b>9</b>	
<b>Total Credits For Program</b>	<b>18</b>	

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

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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ACC 211 Principles of Accounting I	3	
CHD 215 Models of Early Childhood Education Programs	3	
EDU 235 Health, Safety and Nutrition Education	3	
<b>Total Credits</b>	<b>9</b>	

2nd Semester	Credits	Standard Course Options
BUS 200 Principles of Management	3	
CHD 270 Administration of Early Childhood Programs	3	
CHD 290 Coordinated Practice III	3	
<b>Total Credits</b>	<b>9</b>	

**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).

# Cisco Network

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

### Purpose

This program is designed to prepare individuals for employment in the computer networking field.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English, and scores will be used for appropriate course placement. If students have deficiencies in English, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ITN 101 Introduction to Network Concepts	3	
ITN 154 Networking Fundamentals-Cisco	4	
ITE 115 Introduction to Computer Software Applications	3	See Note 1.
<b>Total Credits</b>	<b>10</b>	

2nd Semester	Credits	Standard Course Options
ITN155 Introductory Routing-Cisco	3	
<b>Total Credits</b>	<b>3</b>	

3rd Semester	Credits	Standard Course Options
ITN 156 Basic Switching and Routing-Cisco	3	
<b>Total Credits</b>	<b>3</b>	

4th Semester	Credits	Standard Course Options
ITN 157 WAN Technologies-Cisco	3	
ITE 290 Coordinated Internship	1	
<b>Total Credits</b>	<b>4</b>	

**Total Credits For Program 20**

### Notes and Additional Curriculum Options

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

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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements.

## Program Curriculum

1st Semester	Credits	Standard Course Options
CAD 260 Computer Applications for Surveyors and Technicians	3	
<b>Total Credits</b>	<b>3</b>	

2nd Semester	Credits	Standard Course Options
CAD 262 Computer-Aided Civil Design and Hydrology	3	GIS 101
CAD Elective	3	
<b>Total Credits</b>	<b>6</b>	

**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).

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements.

## Program Curriculum

1st Semester	Credits	Standard Course Options
CAD 201 Computer-Aided Drafting and Design I	3	
CAD 231 Computer-Aided Drafting I	3	
<b>Total Credits</b>	<b>6</b>	

2nd Semester	Credits	Standard Course Options
CAD 202 Computer-Aided Drafting and Design II	3	
Drafting Elective	3	ARC 221, GIS 101, CAD 241, CAD 260
<b>Total Credits</b>	<b>6</b>	

**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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in mathematics, and scores will be used for appropriate course placement. If students have deficiencies in mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ITE 115 Introduction to Computer Software Applications	3	See Note 1.
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	
<b>Total Credits</b>	<b>12</b>	
2nd Semester	Credits	Standard Course Options
ITE 215 Advanced Computer Applications and Integration	3	See Note 1.
ITD 130 Database Fundamentals	3	
ITD 132 Structured Query Design	3	
ITD 210 Web Page Design II	3	
ITE 290 Coordinated Internship	1	
<b>Total Credits</b>	<b>13</b>	
<b>Total Credits For Program</b>	<b>25</b>	

### Notes and Additional Curriculum Options

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

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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements.

## Program Curriculum

1st Semester	Credits	Standard Course Options
MAC 121 Computer Numerical Control I	3	
MAC 209 Standards, Measurements and Calculations	3	
<b>Total Credits</b>	<b>6</b>	
2nd Semester	Credits	Standard Course Options
MAC 122 Computer Numerical Control II	3	
MAC 150 Introduction to Computer-Aided Manufacturing	3	
<b>Total Credits</b>	<b>6</b>	
3rd Semester	Credits	Standard Course Options
MAC 123 Computer Numerical Control III	3	
MAC 134 CMM Operation and Programming	2	
<b>Total Credits</b>	<b>5</b>	
<b>Total Credits For Program</b>	<b>17</b>	

### 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

The curriculum is designed to prepare individuals to work with young children in safe and healthy environments that are supportive of children's individual physical, cognitive and social-emotional development. Occupational opportunities include employment as assistant teachers, teachers, group leaders or family child care providers in program for young children.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
CHD 120 Introduction to Early Childhood Education	3	
CHD 145 Methods and Materials for Teaching Art, Music and Movement to Children	3	
CHD 205 Guiding the Behavior of Children	3	
SDV 100 College Success Skills	1	
<b>Total Credits</b>	<b>10</b>	
2nd Semester	Credits	Standard Course Options
CHD 165 Observation and Participation in Early Childhood/Primary Settings	3	
CHD 167 CDA Theories and Applications: Portfolio	3	CHD 216. See Note 1.
EDU 235 Health, Safety and Nutrition Education	3	
<b>Total Credits</b>	<b>9</b>	
<b>Total Credits For Program</b>	<b>19</b>	

## Notes and Additional Curriculum Options

- Students who will use this credential to satisfy national Head Start requirements will enroll in CHD 167 to prepare a portfolio to submit to the Virginia Department of Social Services for evaluation. Students not using this program in that way should enroll in CHD 216 to meet the requirements for the Early Childhood Development certificate and ultimately the Associate in Applied Science (A.A.S.) degree.

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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in mathematics, and scores will be used for appropriate course placement. If students have deficiencies in mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ELE 131 National Electrical Code 1	3	
ELE 150 A.C. and D.C. Circuit Fundamentals	4	
<b>Total Credits</b>	<b>7</b>	
2nd Semester	Credits	Standard Course Options
ELE 138 National Electrical Code Review	3	
ELE 151 Electrical Troubleshooting	3	ELE 156
<b>Total Credits</b>	<b>6</b>	
<b>Total Credits For Program</b>	<b>13</b>	

## 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 - Intermediate

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

### 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

To be eligible for placement in the program, students are required to have transcripts of previous high school and college courses sent to John Tyler Community College, submit the required health certificate, and have current CPR certification at the Health Care Provider level.

## Program Curriculum

1st Semester	Credits	Standard Course Options
EMS 111 Emergency Medical Technician - Basic	7	
EMS 120 Emergency Medical Technician - Basic Clinical	1	
<b>Total Credits</b>	<b>8</b>	
2nd Semester	Credits	Standard Course Options
EMS 151 Introduction to Advanced Life Support	4	
EMS 153 Basic ECG Recognition	2	
EMS 157 ALS Trauma Care	3	
EMS 170 ALS Internship I	1	
EMS 213 ALS Skills Development	1	
<b>Total Credits</b>	<b>11</b>	
3rd Semester	Credits	Standard Course Options
EMS 155 ALS Medical Care	4	
EMS 159 ALS Special Populations	3	
EMS 172 ALS Clinical Internship II	1	
EMS 173 ALS Field Internship II	1	
EMS 215 Registry Review	1	
<b>Total Credits</b>	<b>10</b>	
<b>Total Credits For Program</b>	<b>29</b>	

### Notes and Additional Curriculum Options

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



# Geographic Information Systems

Career Studies Certificate (C.S.C.)

## Program Curriculum

### Purpose

To provide an introduction to the concepts of Geographic Information Systems (GIS), Global Positioning Systems (GPS) and remote sensing components of Geospatial Technology. The curriculum provides applications of the technology to site development, business and security.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements.

1st Semester	Credits	Standard Course Options
CIV 171 Surveying I	3	
CAD 201 Computer Aided Drafting and Design	3	
<b>Total Credits</b>	<b>6</b>	
2nd Semester	Credits	Standard Course Options
GIS 101 Introduction to Geospatial Technology I	3	
Technical Elective	3	CAD 202, ARC 221, GIS 102
<b>Total Credits</b>	<b>6</b>	
<b>Total Credits For Program</b>	<b>12</b>	

## 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).

# Heating and Air Conditioning

Career Studies Certificate (C.S.C.)

## Program Curriculum

### Purpose

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

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in mathematics, and scores will be used for appropriate course placement. If students have deficiencies in mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

1st Semester	Credits	Standard Course Options
AIR 121 Air Conditioning and Refrigeration I	3	
ELE 150 A.C. and D.C. Circuit Fundamentals	4	
MTH 103 Applied Technical Mathematics I	3	
<b>Total Credits</b>	<b>10</b>	
2nd Semester	Credits	Standard Course Options
AIR 122 Air Conditioning and Refrigeration II	3	
AIR 134 Circuits and Controls I	3	
ELE 131 National Electrical Code I	3	
<b>Total Credits</b>	<b>9</b>	
3rd Semester	Credits	Standard Course Options
AIR 154 Heating Systems I	3	
<b>Total Credits</b>	<b>3</b>	
<b>Total Credits For Program</b>	<b>22</b>	

## 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.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English and mathematics, and scores will be used for appropriate course placement. If students have deficiencies in English and/or mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

### 1st Semester

	Credits	Standard Course Options
BUS 111 Principles of Supervision I	3	
MEN 102 Mental Health Skill Training II	3	HMS 227, MEN 198
PSY 126 Psychology for Business and Industry	3	
<b>Total Credits</b>	<b>9</b>	

### 2nd Semester

	Credits	Standard Course Options
BUS 200 Principles of Management	3	BUS 201
MEN 190 Coordinated Practice	3	See Notes 1, 4 and 5. MEN 290
MEN 196 On-Site Training	3	See Notes 1, 4 and 5. MEN 296
<b>Total Credits</b>	<b>9</b>	

**Total Credits For Program 18**

## Notes and Additional Curriculum Options

1. MEN 102 must be successfully completed before enrolling in MEN 190 and MEN 196 or MEN 290 and MEN 296.
2. 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. Student will be expected to cover any costs incurred for these procedures. This may also be required as a condition of employment.
3. Students who are convicted felons or are on the sex offender registry in any state will not be able to secure internship sites. This will prevent them from completing requirements for the Human Services degrees and certificates.
4. All students who plan to pursue a degree or certification in Human Services are required to complete a 100 hour internship. Students will secure their own internship sites prior to the start of their MEN 190 and MEN 196 classes or their MEN 290 and MEN 296 classes. All internships must be approved by the Human Services and Mental Health Program chair.
5. Students who are 18 years of age or younger may not be able to secure an internship. Should students be unable to secure an internship, they will be unable to complete the requirements of the Human Services degree and therefore be unable to graduate.

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

# Industrial Electricity

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

### Purpose

Provides electrical maintenance basics.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in mathematics, and scores will be used for appropriate course placement. If students have deficiencies in mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

### 1st Semester

	Credits	Standard Course Options
ELE 150 A.C. and D.C. Circuit Fundamentals	4	
MTH 103 Applied Technical Mathematics I	3	MTH 104
<b>Total Credits</b>	<b>7</b>	

### 2nd Semester

	Credits	Standard Course Options
ELE 118 Practical Electricity	2	
ELE 159 Electrical Motors	3	
<b>Total Credits</b>	<b>5</b>	

### 3rd Semester

	Credits	Standard Course Options
ELE 156 Electrical Control Systems	3	
ELE 239 Programmable Controllers	3	See Note 1.
<b>Total Credits</b>	<b>6</b>	

### 4th Semester

	Credits	Standard Course Options
ELE 137 National Electric Code – Industrial	3	
ELE 240 Advanced Programmable Logic Controllers	3	See Note 2.
<b>Total Credits</b>	<b>6</b>	

**Total Credits For Program 24**

## 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.)

## Program Curriculum

### Purpose

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

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in mathematics, and scores will be used for appropriate course placement. If students have deficiencies in mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

1st Semester	Credits	Standard Course Options
ELE 150 A.C. and D.C. Circuit Fundamentals	4	
IND 116 Applied Technology	3	MEC 113
MAC 131 Machine Lab I	2	
MEC 154 Mechanical Maintenance I	3	
MTH 103 Applied Technical Mathematics I	3	
<b>Total Credits</b>	<b>15</b>	

2nd Semester	Credits	Standard Course Options
DRF 160 Machine Blueprint Reading	3	
ELE 159 Electrical Motors	3	
MEC 254 Mechanical Maintenance II	3	
WEL 123 Shielded Metal Arc Welding (Basic)	4	WEL 130
<b>Total Credits</b>	<b>13</b>	

**Total Credits For Program** **28**

### 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

### Purpose

Prepare students for entry-level positions in computer networking.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in mathematics, and scores will be used for appropriate course placement. If students have deficiencies in mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

1st Semester	Credits	Standard Course Options
ITE 115 Introduction to Computer Software Applications	3	See Note 1.
ITN 101 Introduction to Network Concepts	3	
ITN 111 Server Administration Windows 2008	3	
ITN 171 UNIX I	3	
<b>Total Credits</b>	<b>12</b>	

2nd Semester	Credits	Standard Course Options
ITE 215 Advanced Computer Applications and Integration	3	See Note 1.
ITE 221 PC Hardware and OS Architecture	3	
ITE 290 Coordinated Internship	1	
ITN 260 Network Security Basics	3	
ITN 245 Network Troubleshooting	3	
<b>Total Credits</b>	<b>13</b>	

**Total Credits For Program** **25**

### Notes and Additional Curriculum Options

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

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.)

### Purpose

This program is designed to prepare individuals for employment in the legal field as a paralegal or legal assistant. This is a first-level program for a person who intends to pursue a certificate and/or associate degree in paralegal studies or legal assisting.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English, and scores will be used for appropriate course placement. If students have deficiencies in English, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

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

### Notes and Additional Curriculum Options

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

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).

# Program Development

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

### Purpose

Prepares students for entry-level positions in computer programming.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in mathematics, and scores will be used for appropriate course placement. If students have deficiencies in mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ITE 115 Introduction to Computer Software Applications	3	See Note 1.
ITP 100 Software Design	3	
ITP 110 Visual Basic Programming I	3	
ITP 120 Java Programming I	3	
<b>Total Credits</b>	<b>12</b>	
2nd Semester	Credits	Standard Course Options
ITE 215 Advanced Computer Applications and Integration	3	See Note 1.
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	
<b>Total Credits</b>	<b>13</b>	
<b>Total Credits For Program</b>	<b>25</b>	

### Notes and Additional Curriculum Options

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

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.)

## Program Curriculum

### Purpose

Provides an introduction to the fundamentals of residential wiring.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in mathematics, and scores will be used for appropriate course placement. If students have deficiencies in mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

1st Semester	Credits	Standard Course Options
ELE 110 Home Electric Power	3	
ELE 118 Practical Electricity	2	
MTH 103 Applied Technical Mathematics I	3	MTH 104
<b>Total Credits</b>	<b>8</b>	
2nd Semester	Credits	Standard Course Options
ELE 127 Residential Wiring Methods	3	
ELE 151 Electrical Troubleshooting	3	
<b>Total Credits</b>	<b>6</b>	
3rd Semester	Credits	Standard Course Options
ELE 131 National Electrical Code I	3	
ELE 150 A.C. and D.C. Circuit Fundamentals	4	
<b>Total Credits</b>	<b>7</b>	
<b>Total Credits For Program</b>	<b>21</b>	

### 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.)

## Program Curriculum

### Purpose

Provides management skills specific to small businesses.

### Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English, and scores will be used for appropriate course placement. If students have deficiencies in English, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

1st Semester	Credits	Standard Course Options
ACC 211 Principles of Accounting I	3	
ENG 111 College Composition I	3	
<b>Total Credits</b>	<b>6</b>	
2nd Semester	Credits	Standard Course Options
ACC 261 Principles of Federal Taxation I	3	
AST 205 Business Communications	3	
<b>Total Credits</b>	<b>6</b>	
3rd Semester	Credits	Standard Course Options
BUS 165 Small Business Management	3	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 1.
MKT 100 Principles of Marketing	3	
<b>Total Credits</b>	<b>9</b>	
<b>Total Credits For Program</b>	<b>21</b>	

### Notes and Additional Curriculum Options

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

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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English, and scores will be used for appropriate course placement. If students have deficiencies in English, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
HMS 100 Introduction to Human Services	3	
HMS 251 Substance Abuse I	3	
MEN 101 Mental Health Skill Training I	3	HMS 121
<b>Total Credits</b>	<b>9</b>	
2nd Semester	Credits	Standard Course Options
HMS 252 Substance Abuse II	3	ADJ 228
HMS 258 Case Management and Substance Abuse	3	
MEN 102 Mental Health Skill Training II	3	HMS 227, MEN 198, HMS 225
<b>Total Credits</b>	<b>9</b>	
3rd Semester	Credits	Standard Course Options
MEN 190 Coordinated Practice	3	MEN 290. See Notes 4 and 7.
MEN 196 On-Site Training	3	MEN 296. See Notes 4 and 7.
<b>Total Credits</b>	<b>6</b>	
<b>Total Credits For Program</b>	<b>24</b>	

## 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 or MEN 290 and MEN 296. Students must meet with their advisor prior to enrolling in MEN 190 and MEN 196 or MEN 290 and MEN 296.
4. MEN 190 and MEN 196 are corequisites and must be taken in the same semester. MEN 290 and MEN 296 are corequisites and must be taken in the same semester. All students who plan to pursue a degree or certification in Human Services are required to complete a 100 hour internship. Students will secure their own internship sites prior to the start of their MEN 190 and MEN 196 classes or their MEN 290 and MEN 296 classes. All internships must be approved by the Human Services and Mental Health Program chair.
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.
7. Students who are 18 years of age or younger may not be able to secure an internship. Should students be unable to secure an internship, they will be unable to complete the requirements of the Human Services degree and therefore be unable to graduate.

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

# Supervision

Career Studies Certificate (C.S.C.)

## Purpose

Upgrade skills needed for supervisory positions within business.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in English, and scores will be used for appropriate course placement. If students have deficiencies in English, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
BUS 111 Principles of Supervision I	3	
ENG 111 College Composition I	3	
ITE 115 Introduction to Computer Applications and Concepts	3	See Note 2.
<b>Total Credits</b>	<b>9</b>	
2nd Semester	Credits	Standard Course Options
AST 205 Business Communications	3	
BUS 200 Principles of Management	3	
Business Elective	3	See Note 1.
<b>Total Credits</b>	<b>9</b>	
3rd Semester	Credits	Standard Course Options
BUS 201 Organizational Behavior	3	
Business Elective	3	See Note 1.
<b>Total Credits</b>	<b>6</b>	
<b>Total Credits For Program</b>	<b>24</b>	

## Notes and Additional Curriculum Options

1. The business elective requirement can be satisfied by any 100- or 200-level course in the following areas: ACC, AST, BUS, ITE or MKT.
2. Students with good computer skills may seek to satisfy this requirement by CLEP.

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.

## Program Requirements and Special Conditions

Students must meet JTCC admission requirements.

## Program Curriculum

1st Semester	Credits	Standard Course Options
CIV 171 Surveying I	3	
CAD 201 Computer-Aided Drafting and Design I	3	
<b>Total Credits</b>	<b>6</b>	
2nd Semester	Credits	Standard Course Options
CIV 172 Surveying II	3	
CAD 260 Computer Applications for Surveyors and Technicians	3	GIS 101
<b>Total Credits</b>	<b>6</b>	
<b>Total Credits For Program</b>	<b>12</b>	

## 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 Requirements and Special Conditions

Students must meet JTCC admission requirements. Students must also complete placements tests (or equivalent) in mathematics, and scores will be used for appropriate course placement. If students have deficiencies in mathematics, JTCC offers developmental and prerequisite courses to prepare students for the curriculum. New students should see a counselor and returning students their advisor for more information.

## Program Curriculum

1st Semester	Credits	Standard Course Options
ART 131 Fundamentals of Design	3	
ART 217 Electronic Graphic Design I	4	
ART 263 Interactive Design	3	
ITE 130 Introduction to Internet Services	3	
<b>Total Credits</b>	<b>13</b>	

2nd Semester	Credits	Standard Course Options
ART 218 Electronic Graphic Design II	4	
ART 250 History of Design	3	
ART 264 Interactive Design II	3	
ITD 110 Web Page Design	3	
<b>Total Credits</b>	<b>13</b>	

**Total Credits For Program 26**

## Notes and Additional Curriculum Options

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 Requirements and Special Conditions

Students must meet JTCC admission requirements.

## Program Curriculum

1st Semester	Credits	Standard Course Options
WEL 116 Oxyfuel Welding	2	
WEL 120 Introduction to Welding	2	
WEL 123 Shielded Metal Arc Welding (Basic)	3	
WEL 150 Welding Drawing and Interpretation	2	
<b>Total Credits</b>	<b>9</b>	

2nd Semester	Credits	Standard Course Options
IND 105 Welding Nondestructive Inspection and Testing	3	
WEL 130 Inert Gas Welding	3	
WEL 160 Gas Metal Arc Welding	3	
<b>Total Credits</b>	<b>9</b>	

3rd Semester	Credits	Standard Course Options
WEL 175 Semi-Automatic Processes	3	
WEL 199 Supervised Study	3	
<b>Total Credits</b>	<b>6</b>	

**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 Descriptions

**COURSE NUMBERS**

Course numbers appear before the course titles. Courses numbered 1 – 9 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/application to various businesses. Covers the accounting cycle, income determination and financial reporting. 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 related 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 138****Defensive Tactics**

(2 credits)

Surveys and demonstrates the various types of non-lethal force tools and tactics for use by criminal justice personnel in self-defense, arrest, search, restraint and transport of those in custody. Lecture: 2 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 170****Street Gangs and Law Enforcement**

(3 credits)

Teaches the philosophy and history of gangs in America through the eyes of law enforcement, courts, corrections and the citizenry. Examines methods by which law enforcement defines the gang problem and intervenes in gang membership. Explores gang globalization; differentiates street gangs and terrorist cells. Lecture: 3 hours per week.

**ADJ 186****Forensic Psychology**

(3 credits)

Introduces student to the constructs of criminal psychology. Introduces the student to the exploration of criminal investigative analysis, VI-CAP, mental disorders and the etiology of certain criminal behaviors. Lecture: 3 hours per week.

**ADJ 211 – 212****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 230****Civil Liabilities in Criminal Justice**

(3 credits)

Covers the basic legal concepts, theories and court cases relative to the increasing civil litigation against law enforcement personnel and the representative supportive government agencies that fund them. Lecture: 3 hours.

**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 245****Management of Correctional Facilities**

(3 credits)

Describes management options and operational implications for staffing, security, safety, and treatment. Considers impact of changes in public policy on corrections. 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 101****Keyboarding I**

(3 credits)

Teaches the alpha/numeric keyboard with emphasis on correct techniques, speed, and accuracy. Teaches formatting of basic personal and business correspondence, reports and tabulation. A laboratory corequisite (AST 103) may be required. 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.

**AIR 134****Circuits and Controls I**

(3 credits)

Presents circuit diagrams for air conditioning units, reading and drawing of circuit diagrams, types of electrical controls. Includes analysis of air conditioning circuits, components, analysis and characteristics of circuits and controls, testing and servicing.

Introduces electricity for air conditioning which includes circuit elements, direct current circuits and motors, single and three-phase circuits and motors, power distribution systems, and protective devices. Studies the electron and its behavior in passive and active circuits and components. Demonstrates electronic components and circuits as applied to air conditioning system. Part I of II. Lecture: 2 hours. Laboratory: 2 hours.

Total: 4 hours per week.

**AIR 154****Heating Systems I**

(3 Credits)

Introduces types of fuels and their characteristics of combustion; types, components and characteristics of burners, and burner efficiency analyzers. Studies forced air heating systems including troubleshooting, preventive maintenance and servicing. Part I of II. Lecture: 2 hours and Laboratory: 2 hours.

Total: 4 hours per week.

**Arabic****ARA 101 – 102****Beginning Arabic I – II**

(4 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 hours per week.

**ARA 201****Intermediate Arabic I**

(3 Credits)

Continues to develop understanding, speaking, reading and writing skills and emphasizes basic Arabic sentence structure.

Discusses the diversity of cultures in the Arab world. Classes are conducted in Arabic. Prerequisite: ARA 102. Part I of II.

Lecture: 3 hours per week.

**ARA 202****Intermediate Arabic II**

(3 Credits)

Continues to develop understanding, speaking, reading and writing skills and emphasizes basic Arabic sentence structure.

Discusses the diversity of cultures in the Arab world. Classes are conducted in Arabic. Prerequisite: ARA 201. Part II of II.

Lecture: 3 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 211****Computer Aided Drafting Applications**

(3 credits)

Utilizes computer's hardware and software to create orthographic and pictorial drawings. Requires creation of working drawings by adding the necessary sections, dimensions, and notes to the computer generated views. Prerequisite: ARC 210 or equivalent. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 hours per week.

**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 222****Architectural CAD Applications Software II**

(3 credits)

Uses advanced features of architectural CAD software to teach students to develop working drawings and details that adhere to the practices and techniques of architectural drawing principles. Use local prerequisites. 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 103****History of Far Eastern Art I**

(3 credits)

Surveys the history of Far Eastern art from the prehistoric period to the present. Part I focuses on the art of India and Southeast Asia. Part II focuses on the art of China, Japan, and Korea. Emphasizes architecture, painting and sculpture with some instruction in printmaking and decorative arts. Part I of II. Lecture: 3 hours per week.

**ART 104****History of Far Eastern Art II**

(3 credits)

Surveys the history of Far Eastern art from the prehistoric period to the present. Part I focuses on the art of India and Southeast Asia. Part II focuses on the art of China, Japan, and Korea. Emphasizes architecture, painting and sculpture with some instruction in printmaking and decorative arts. Part II of II. Lecture: 3 hours per week.

**ART 106****History of Modern Art**

(3 credits)

Surveys the history of modern architecture, sculpture, painting, and graphic arts in representational and non-representational forms. Focuses on the periods and movements that influenced the arts of the twentieth century. Emphasizes contemporary art forms, particularly the interaction between art and society, industry, and design. Lecture: 3 hours per week.

**ART 109****History of Women Artists**

(3 credits)

Surveys the work of women artists through history, with emphasis on the role of women artists. 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 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 hour. Studio instruction: 4 hours. Total: 5 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 credits each)

Explores the concepts of two- and three-dimensional design and color. May include field trips as required. Lecture: 1 hour. Studio instruction: 4 hours. Total: 5 hours per week.

**ART 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 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 hours. Total: 4 hours per week.

**ART 141****Typography I**

(4 credits)

Studies the history of letterforms and typefaces and examines their uses in contemporary communications media. Emphasizes applications to specific design problems. Includes identification and specification of type and uses current technologies for copy fitting and hands-on typesetting problems. Prerequisite: ART 140. Part I of II. Lecture: 2 hours. Laboratory: 4 hours. Total: 6 hours per week.

**ART 145****Introduction to Fashion Design**

(3 credits)

Introduces the essential elements of fashion design. Includes the study of garment silhouette and terminology, basic drawing skills of the fashion figure and garments, creating flats, using croquis, rendering fabrics, designing a fashion line, and understanding the apparel manufacturing and freelance design industries. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**ART 148****Garment Construction**

(3 credits)

Gives students a foundational understanding of garment construction and fabric manipulation in order to create apparel. Includes the fundamentals of hand and machine sewing techniques and basic pattern symbols. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 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 zootrope and kinoscope 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 153 – 154****Ceramics I – II**

(3 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: 2 hours. Studio instruction 3 hours. Total: 5 hours per week.

**ART 203****Animation I**

(4 credits)

Introduces the student to the basic techniques of animation, combining traditional and computer-generated skills. Teaches theoretical elements of the aesthetics of sequential imagery. Provides practical experience in two-dimensional and/or three-dimensional animation. Exposes the student to a variety of animation techniques through lectures, presentations, classroom work, and outside assignments. Prerequisite(s): ART 122. Lecture: 2 hours. Laboratory: 4 hours. Total: 6 hours per week.

**ART 204****Animation II**

(4 credits)

Builds on the student's skills in the techniques of animation developed in ART 203 Animation I. Emphasizes computer-generated, high-quality animations. Teaches the advanced techniques of two- and three-dimensional computer animation. Prerequisite(s): ART 203. Lecture: 2 hours. Laboratory: 4 hours. Total: 6 hours per week.



**ART 217**  
**Graphic Design I**

(4 credits)

Focuses on creative concepts and skills necessary for graphic design problem solving using current technology. Includes techniques specific to computer applications for the production of print design using text and image. Part I of II. Lecture: 2 hours. Laboratory: 4 hours. Total: 6 hours per week.

**ART 218**  
**Graphic Design II**

(4 credits)

Builds on the studies completed in Graphic Design I. Teaches advanced problem solving skills, concept development and project management. Applies intermediate level production techniques to 2D and 3D graphic design using current technologies and principles of pre-press production. Part II of II. Lecture: 2 hours. Laboratory: 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 instruction: 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 instruction: 2 hours. Total: 5 hours per week.

**ART 243 – 244**  
**Watercolor I – II**

(3 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: 2 hours. Studio instruction: 3 hours. Total: 5 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 perspective. Prerequisite: ART 122. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

**ART 263**  
**Interactive Design I**

(3 credits)

Focuses on conceptualization and problem solving for interactive design. Instructs students in techniques specific to web, multimedia for the web and other interactive design projects using current technology and standards. Interactive functionality and usability are covered. Part I of II. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**ART 264**  
**Interactive Design II**

(3 credits)

Builds on the studies completed in Interactive Design I. Focuses on conceptualization and problem solving for interactive design. Instructs students in intermediate techniques specific to web, multimedia for the web and other interactive design projects using current technology and standards. Includes interactive documents and experiences. Part II of II. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**ART 271****Printmaking I**

(3 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 hours. Total: 5 hours per week.

**ART 287****Portfolio and Resume Preparation**

(1 credit)

Focuses on portfolio preparation, resume writing and job interviewing for students. Recommended for final semester program students. Requires instructor's approval. Lecture: 1 hour per week.

**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.

**ART 298****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.

**Basic Skills****BSK 1****Whole Numbers**

(1 credits)

Covers whole number principles and computations. Credits not applicable toward graduation. Lecture: 1 hour. Total: 1 hour per week.

**Biology****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: 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 206****Cell Biology**

(4 credits)

Introduces the ultrastructure and functions of cells. Emphasizes cell metabolism, cell division, and control of gene expression. Prerequisite: one year of college biology or one year of college chemistry. Lecture: 3 hours. Recitation and laboratory: 3 hours. Total: 6 hours per week.

**BIO 231****Human Anatomy and Physiology I**

(4 credits)

Integrates the study of gross and microscopic anatomy with physiology, emphasizing the analysis and interpretation of physiological data. Prerequisites one year of college biology and one year of college chemistry (can be BIO 101, BIO 102, BIO 110, or BIO 120 and CHM 101, CHM 102, CHM 111 or CHM 112) or divisional approval. Part I of II. Lecture: 3 hours. Recitation and laboratory: 3 hours. Total: 6 hours per week.

**BIO 232****Human Anatomy and Physiology II**

(4 credits)

Integrates the study of gross and microscopic anatomy with physiology, emphasizing the analysis and interpretation of physiological data. Prerequisites one year of college biology and one year of college chemistry or divisional approval. Part II of II. 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.

# Business Management and Administration

**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 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 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****Organic Chemistry I**

(3 credits each)

Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses, and typical reactions. Emphasizes reaction mechanisms. Prerequisite: CHM 112. Part I of II. Lecture: 3 hours per week.

**CHM 245****Organic Chemistry Laboratory I**

(2 credits each)

Includes qualitative organic analysis. Part I of II. Prerequisite or corequisite: CHM 241. Lecture: 1 hour per week. Laboratory: 3 hours per week. Total: 4 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 storytelling 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. 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: 4 hours. Total: 5 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 167****CDA Theories and Applications: Portfolio**

(2 – 3 credits)

Supports the student/CDA candidate in completing the Professional Resource File and all documentation required for the national CDA credential. This course is designed for students pursuing the CDA (Child Development Associate) credential. Lecture: 2- 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: 4 hours. Total: 5 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.

**Chinese****CHI 101****Beginning Chinese I**

(5 credits)

Introduces understanding, speaking, reading, and writing skills; emphasizes basic Chinese sentence structure. Lecture: 5 hours per week.

**CHI 102****Beginning Chinese II**

(5 credits)

Introduces understanding, speaking, reading, and writing skills; emphasizes basic Chinese sentence structure. Lecture: 5 hours per week. Prerequisite: CHI 101.

**CHI 201****Intermediate Chinese I**

(4 credits)

Offers intensive practice in comprehending and speaking Chinese, with emphasis on developing structure and fluency. Prerequisite: CHI 102. Part I of II. Lecture: 4 hours per week.

**CHI 202****Intermediate Chinese II**

(4 credits)

Offers intensive practice in comprehending and speaking Chinese, with emphasis on developing structure and fluency. Prerequisite: CHI 201. Part II of II. Lecture: 4 hours per week.

**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**

(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: 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 140****Acting for the Camera**

(3 credits)

Explores the practical and artistic elements involved in acting for the camera through such activities as: performance of commercial, film and television scripts, developing knowledge of the technical side of camera work and the study of the business of acting. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**CST 151****Film Appreciation I**

(3 credits)

Provides students with a critical understanding of film through the discussion and viewing of motion pictures with emphasis upon the study of film history and the forms and functions of film. Students will develop skills to analyze the shared social, cultural and historical influences of films and their contexts. Part I of II. Lecture: 3 hours per week.

**CST 152****Film Appreciation II**

(3 credits)

Provides students with a critical understanding of film through the discussion and viewing of motion pictures with emphasis upon the study of film history and the forms and functions of film. Students will develop skills to analyze the shared social, cultural and historical influences of films and their contexts. Part II of II. Lecture: 3 hours per week.

**CST 160****Improvisation I**

(3 credits)

Explores the basic techniques of improvisation through short and long form exercises and the study of the history of improvisation and improvisation theory and practices. Lecture: 3 hours per week.

**CST 161****Improvisation II**

(3 credits)

Explores the basic techniques of improvisation through short and long form exercises and the study of the history of improvisation and improvisation theory and practices. Includes more extensive study of long form and in-depth character development. Lecture: 3 hours per week.

**CST 210****Theatre Aesthetics**

(3 credits)

Introduces the study of theatre aesthetics through exploration into the theatrical theories, styles, dramaturgical structures, and types of dramatic literature, which have influenced playwriting and theatrical practice from the ancient Greek to Modern periods. Lecture: 3 hours per week.

**CST 227****Business and Professional Communication**

(3 credits)

Emphasizes principles and practical application to effective professional oral communication behaviors to include speaking, listening, and relating, and rhetorical sensitivity within professional, business, and organizational contexts. Lecture: 3 hours per week.

**CST 228****Persuasion**

(3 credits)

Studies practical message strategies and argumentation in such areas as business, politics, mass media, and campaigns. Emphasizes practical application. Lecture: 3 hours per week.

**CST 229****Intercultural Communication**

(3 credits)

Emphasizes the influence of culture on the communication process including differences in values, message systems, and communication rules. Lecture: 3 hours per week.

**CST 231 – 232****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 251****Stage Lighting and Sound**

(3 credits)

Provides students with a basic understanding of the principles of stage lighting and sound. Instructs students in the fundamentals of stage lighting such as: functions of lighting, qualities of light, design, basic electricity, lighting instruments and equipment, board operation, and safety. Instructs students in the functions of sound, equipment, design, and sound operation. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**CST 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.

# Computer-Aided Drafting and Design

**CAD 151****Engineering Drawing Fundamentals I**

(3 credits)

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. Part I of II. (Credit will not be awarded for both CAD 151 and DRF 151.) Lecture: 1 hour. Laboratory: 4 hours. Total: 5 hours per week.

**CAD 152****Engineering Drawing Fundamentals II**

(3 credits)

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. Part II of II. (Credit will not be awarded for both CAD 152 and DRF 152.) Lecture: 1 hour. Laboratory: 4 hours. Total: 5 hours per week.

**CAD 155****Fundamentals of Architectural Drafting**

(3 credits)

Introduces fundamentals of architectural drafting and planning of functional buildings. Presents architectural lettering, symbols, and dimensioning, and working drawings including site plans, floor plans, elevations, sections, and details. Lecture: 2 hours and Laboratory: 3 hours. Total: 5 hours per week.

**CAD 201****Computer Aided Drafting and Design I**

(3 – 4 credits)

Teaches computer-aided drafting concepts and equipment designed to develop a general understanding of components of a typical CAD system and its operation. (Credit will not be awarded for both CAD 201 and DRF 201.) Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**CAD 202****Computer Aided Drafting and Design II**

(3 credits)

Teaches production drawings and advanced operations in computer aided drafting. (Credit will not be awarded for both CAD 202 and DRF 202.) Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.



**CAD 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. (Credit will not be awarded for both CAD 231 and DRF 231.) Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**CAD 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. Part I of II. (Credit will not be awarded for both CAD 241 and DRF 241.) Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**CAD 260****Computer Applications for Surveyors and Technicians**

(3 credits)

Studies and evaluates numerous COGO software and associated drafting packages. Includes calculations and drafting of traverse adjustment, subdivision, and curves. (Credit will not be awarded for both CAD 260 and DRF 260.) Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**CAD 262****Computer-Aided Civil Design and Hydrology**

(3 credits)

Introduces computer-aided-design for civil/surveying as applied to highway design, site layout, advanced, highway design, hydrology tools, watershed analysis, and pipe sizing. (Credit will not be awarded for both CAD 262 and DRF 262.) Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

## Contracting

**CON 110****Contract Support Planning**

(3 credits)

Teaches Contract Support Planning which is a phase of the acquisition process where communication between the customer and acquisition professional is imperative. Introduces a process for knowing customers and their requirements from strategic and small business perspectives, supporting customers and providing them with what they need, when they need it and at a reasonable price. Applies support in the contracting community of practice for information and resources to satisfy this requirement. Lecture: 3 hours per week.

**CON 111****Contract Strategy Execution**

(3 credits)

Teaches the Contract Strategy Execution phase in the acquisition process where initial research and analysis of customers' requirements are put into action. Describes the process by which the efforts of all personnel responsible for an acquisition are coordinated and integrated through a comprehensive plan for fulfilling customers' requirements. Lecture: 3 hours per week.

## Dance

**DAN 163****Jazz I**

(1 credit)

Introduces dance through contemporary jazz movements. Includes floor stretches, isolations, dance patterns and locomotor movements. Part I of II. Laboratory: 2 hours per week.

**DAN 165****Tap Dance**

(1 credit)

Teaches the basic footwork, patterns, and coinciding body movements to various rhythms. Includes development of choreographic routines. Laboratory: 2 hours per week.

**DAN 166****Ballet**

(1 credit)

Teaches ballet as a discipline with correct alignment and ballet form. Expresses movement through traditional dance form with choreographic emphasis. Laboratory: 2 hours per week.

**DAN 200****History of Modern Dance**

(3 credits)

Explores the origin and development of modern dance, with concentration on American choreographers Doris Humphrey, Isadora Duncan and Martha Graham. Studies the cultural, intellectual and physical influences on the development of different techniques and movement theories as well as modern dance companies. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

# Developmental Math

## MTT 1

### Developmental Mathematics (Technology-Based) I

(1 credits)

Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses and curricula. Designed for the study of one developmental math unit prescribed by the student's placement test results. Credits not applicable toward graduation.

## MTT 2

### Developmental Mathematics (Technology-Based) II

(2 credits)

Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses and curricula. Designed for the study of any combination of two developmental math units prescribed by the student's placement test results. Credits not applicable toward graduation.

## MTT 3

### Developmental Mathematics (Technology-Based) III

(3 credits)

Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses and curricula. Designed for the study of any combination of three developmental math units prescribed by the student's placement test results. Credits not applicable toward graduation.

## MTT 4

### Developmental Mathematics (Technology-Based) IV

(4 credits)

Covers mathematics topics in a technology-based setting to prepare students for the study of college level mathematics courses and curricula. Designed for the study of any combination of four developmental math units prescribed by the student's placement test results. Credits not applicable toward graduation.

# Drafting

## 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.

# 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**

(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: 2 hours. Laboratory: 3 hours. Total: 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 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 hours. Laboratory: 2 hours. Total: 4 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**

(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: 3 hours. Laboratory: 2 hours. Total: 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)

Examines installation, programming, interfacing and concepts of troubleshooting programmable controllers. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**ELE 240****Advanced Programmable Logic Controllers**

(3 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 hours. Laboratory: 1 hour. Total: 3 hours per week.

## Emergency Medical Services

**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**

(7 credits)

Prepares student for certification as a Virginia and National Registry EMT-Basic. Focuses on all aspects of pre-hospital basic life support as defined by the Virginia Office of Emergency Medical Services curriculum for Emergency Medicine Technician Basic. Prerequisite: EMS 100/ equivalent. Corequisite: EMS 120. Lecture: 5 hours. Laboratory: 4 hours. Total: 9 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. Laboratory: 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**

(3 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: 2 hours. Laboratory: 2 hours. Total: 4 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.

**EMS 213****ALS Skills Development**

(1 credit)

Utilizes reinforcement and remediation of additional advanced life support skills, as needed. Laboratory: 2 hours per week.

**EMS 215****Registry Review**

(1 credit)

Reviews material covered in the intermediate/paramedic program. Prepares the student for National Registry testing. Lecture: 1 hour per week.

# Engineering

**EGR 120****Introduction to Engineering**

(2 credits)

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: 2 hours.

**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 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. Prerequisite: ENF 1 or ENF 2, or ENG 3 and ENG 5, or ENG 3 and ENG 6.

**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. Prerequisite: ENG 111. Total: 3 hours per week.

**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. Prerequisite: ENG 111 Total: 3 hours per week.

**ENG 121****Introduction to Journalism I**

(3 credits)

Introduces students to all news media, especially news gathering and preparation for print. Prerequisite: ENG 111 or 112 or divisional approval. Part I of II. Lecture: 3 hours per week.

**ENG 210****Advanced Composition**

(3 credits)

Helps students refine skills in writing non-fiction prose. Guides development of individual voice and style. Introduces procedures for publication. Prerequisite: ENG 112 or divisional approval. Lecture: 3 hours per week.

**ENG 211 – 212****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 236****Introduction to the Short Story**

(3 credits)

Examines selected short stories emphasizing the history of the genre. Involves critical reading and writing. Prerequisite: ENG 112 or divisional approval. Lecture: 3 hours.

**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 250****Children's Literature**

(3 credits)

Surveys the history, development and genres of children's literature, focusing on analysis of texts for literary qualities and in terms of audience. 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.

**English Fundamentals****ENF 1****Preparing for College English I**

(8 credits)

Provides integrated reading and writing instruction for students who require extensive preparation to succeed in college-level English courses. Students will place into the course based on placement test score. Upon successful completion and faculty recommendation, students will move into Preparing for College English III (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation. Lecture: 8 hours per week.

**ENF 2****Preparing for College English II**

(4 credits)

Provides integrated reading and writing instruction for students who require intermediate preparation to succeed in college-level English courses. Students will place into the course based on placement test score. Upon successful completion and faculty recommendation, students will move into Preparing for College Level III (if they require additional preparation) or into college-level English (if they require no additional preparation). Credit is not applicable toward graduation. Lecture: 4 hours per week.

**ENF 3****Preparing for College English III**

(2 credits)

Provides integrated reading and writing instruction for students who require minimal preparation for college-level English but still need some preparation to succeed. Students in this course will be co-enrolled in college-level English. Students will place into this course based on placement test score. Credit is not applicable toward graduation. Corequisite: ENG 111. Lecture: 2 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 examinations. Prerequisite: divisional approval. Laboratory: 2 hours per week.

**ENV 121****General Environmental Science I**

(4 credits)

Explores fundamental components and interactions that make up the natural systems of the earth. Introduces the basic science concepts in the discipline of biological, chemical, and earth sciences that are necessary to understand and address environmental issues. Part I of II. Lecture: 3 hours. Recitation and Laboratory: 3 hours. Total: 6 hours per week.

**ENV 122****General Environmental Science II**

(4 credits)

Explores fundamental components and interactions that make up the natural systems of the earth. Introduces the basic science concepts in the disciplines of biological, chemical, and earth sciences that are necessary to understand and address environmental issues. Part II of II. Lecture: 3 hours. Laboratory: 3 hours. Total: 6 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. Lecture: 3 hours per week.

**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 hours per week. May include one additional hour of oral practice per week.

## FRE 201-202

### Intermediate French I – II

(3 credits each)

Continues to develop understanding, speaking, reading and writing skills. French is used in the classroom. Prerequisite: FRE 102 or equivalent. Lecture: 3 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 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**

(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: 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.

**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.

**Geographic Information Systems****GIS 101****Introduction to Geospatial Technology I**

(3 credits)

Provides an introduction to the concepts of Geographic Information Systems (GIS), Global Positioning Systems, (GPS) and remote sensing components of Geospatial Technology. Teaches the introductory concepts of geographic location and problem solving by using GIS and GPS units in demonstrating solutions to cross-curricular applications of the technology. Part I of II. Prerequisite: Basic Computer Literacy. Lecture: 3 hours per week.

**GIS 102****Introduction to Geospatial Technology II**

(3 credits)

Continues with the concepts of Geographic Information Systems (GIS), Global Positioning Systems (GPS) and remote sensing components of Geospatial Technology. Covers additional concepts of geographic location and problem solving by using GIS and GPS units in demonstrating solutions to cross-curricular applications of the technology. Part II of II. Prerequisite: Basic Computer Literacy. Lecture: 3 hours per week.

**GIS 200****Geographical Information Systems I**

(3 - 4 credits)

Provides hands-on introduction to a dynamic desktop GIS (Geographic Information System). Introduces the components of a desktop GIS and their functionality. Emphasizes manipulation of data for the purpose of analysis, presentation, and decision-making. Prerequisite: ITE 115 or ITE 119 or equivalent. Lecture: 3 hours. Laboratory: 2 hours. Total: 5 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.

# German

## GER 101

### Beginning German I

5 credits

Introduces understanding, speaking, reading, and writing skills and emphasizes basic German sentence structures. Part I of II. Lecture: 5 hours per week. May include one additional hour oral practice per week.

## GER 102

### Beginning German II

5 credits

Introduces understanding, speaking, reading, and writing skills and emphasizes basic German sentence structures. Part II of II. Lecture: 5 hours per week. May include one additional hour oral practice per week. Prerequisite: GER 101.

## GER 201

### Intermediate German I

3 credits

Continues to develop understanding, speaking, reading, and writing skills. German is used in the classroom. Prerequisite: GER 102 or equivalent. Part I of II. Lecture: 3 hours per week. May include one additional hour oral practice per week.

## GER 202

### Intermediate German II

3 credits

Continues to develop understanding, speaking, reading, and writing skills. German is used in the classroom. Prerequisite: GER 201 or equivalent. Part II of II. Lecture: 3 hours per week. May include one additional hour oral practice per week.

# Health

## 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 120

### Foundations and Principles of Sport Coaching

(3 credits)

Explores the foundational knowledge applicable to sports coaching. Presents an overview based on current sport science. Covers the coaching areas of philosophy, pedagogy, physical training, behavioral analysis, and risk management. Includes principles and techniques of coaching. Covers a review of local athletic policies, procedures, regulations, and rules. Fulfills the VHSL Component and the coaching Principles Component required by the state of Virginia for coaching. Lecture: 3 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 156

### Health Care for Athletic Injuries

(3 credits)

Teaches prevention and care of athletic injuries, recognition and management of head and spinal injuries, fractures, strains, sprains, as well as cardiac emergencies. Discusses taping, protective equipment, and medical referral. Lecture: 3 hours per week.

**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 208****Fitness and Exercise Training**

(3 credits)

Introduces techniques for conducting physical fitness assessments and includes an introduction to electrocardiography. Emphasizes tests of Cardiorespiratory fitness, muscular strength and endurance, joint flexibility, body composition, and pulmonary capacity. Emphasizes the safety guidelines and precautions used in testing. Covers equipment use and maintenance. Prerequisite: HLT 100 or approval of instructor. Lecture: 2 hours. Laboratory 2 hours. Total: 4 hours per week.

**HLT 215****Personal Stress and Stress Management**

(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: 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.

# 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 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 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 225****Topics in European History I**

(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. Stresses 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 105

### NDI and Testing

(3 credits)

Studies nondestructive inspection and testing methods as they relate to industry. May include radiographic (RT), ultrasonic (UT), eddy current (ET), magnetic particle (MT), and liquid penetrant (PT) or other methods of testing. Lecture: 3 hours per week.

## IND 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.

## IND 197

### Cooperative Education

(1-5 credits)

Supervises in on-the-job training for pay in approved business, industrial and service firms, coordinated by the college's cooperative education office. Is applicable to all occupational-technical curricula at the discretion of the college. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

## IND 297

### Cooperative Education

(1-5 credits)

Supervises in on-the-job training for pay in approved business, industrial and service firms, coordinated by the college's cooperative education office. Is applicable to all occupational-technical curricula at the discretion of the college. Credit/work ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

# 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 115. 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 136

### Database Management Software

(3 credits)

Covers an introduction to relational database theory and how to administer and query databases using multiple commercial database systems. 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.

# 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 119****Information Literacy**

(3 credits)

Presents the information literacy core competencies focusing on the use of information technology skills. Skills and knowledge will be developed in database searching, computer applications, information security and privacy, and intellectual property issues. 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 111****Server Administration**

(3 credits)

Covers basic instruction in various network protocols, name resolution services, remote access, security, and print installation, configuration, administration, monitoring, and troubleshooting of Server Administration software (Specify Version) in an Active Directory domain environment. Prerequisite: ITN 101. Lecture: 3 hours per week.

**ITN 154****Networking Fundamentals – Cisco**

(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: ITN 101. Lecture: 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****Switching, Wireless, and WAN Technologies (ICND2) - Cisco**

(3 credits)

Provides the skills and knowledge to install, operate, and troubleshoot a small-to-medium sized branch office enterprise network, including configuring several switches and routers, configuring wireless devices, configuring VLANs, connecting to a WAN, and implementing network security. Prerequisite ITN 154. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 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. Prerequisite: ITN 155. 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. Prerequisite: ITN 156. 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: ITN 101. Lecture: 3 hours per week.

**ITN 245****Network Troubleshooting**

(3 credits)

Focuses on servicing and maintaining local area networks (LANs). Teaches network installation, network troubleshooting, installation of file servers and workstations, configuring of network boards and cables, and diagnosing common network problems. Prerequisite: ITN 101. 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 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. Prerequisite: ITE115. 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. Prerequisite: ITP 110. 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. Prerequisite: ITP 100. Lecture: 3 hours per week.

# Japanese

## JPN 101 Beginning Japanese I

(5 credits)

Develops the understanding, speaking, reading, and writing of Japanese, and emphasizes the structure of the language. Part I of II. Lecture: 5 hours per week. May include one additional hour of oral practice per week.

## JPN 102 Beginning Japanese II

(5 credits)

Develops the understanding, speaking, reading, and writing of Japanese, and emphasizes the structure of the language. Part II of II. Prerequisite: JPN 101. Lecture: 5 hours per week. May include one additional hour of oral practice per week.

## JPN 201 Intermediate Japanese I

(4 credits)

Continues the development of the skills of understanding, speaking, reading, and writing of Japanese. Classes conducted in Japanese. Prerequisite: JPN 102. Part I of II. Lecture: 4 hours per week. May include one additional hour of oral practice per week.

## JPN 202 Intermediate Japanese II

(4 credits)

Continues the development of the skills of understanding, speaking, reading, and writing of Japanese. Classes conducted in Japanese. Prerequisite: JPN 102. Part II of II. Lecture: 4 hours per week. May include one additional hour of oral practice per week.

# 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. Prerequisite: LGL 110. 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. Prerequisite: LGL 110. Lecture: 3 hours per week.

## LGL 125

### Legal Research

(3 credits)

Provides an understanding of various components of a law library, and emphasizes research skills through the use of digests, encyclopedias, reporter systems, codes, Shepard's Citations, ALR, and other research tools. May include overview of computer applications and writing projects. Prerequisite: LGL 110. Lecture: 3 hours per week.

## LGL 126

### 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. Prerequisite: LGL 125. 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. Prerequisite: LGL 110. 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. Prerequisite: LGL 110. Lecture: 3 hours per week.

## LGL 218

### Criminal Law

(3 credits)

Focuses on major crimes, including their classification, elements of proof, intent, conspiracy, responsibility, parties, and defenses. Emphasizes Virginia law. May include general principles of applicable constitutional law and criminal procedure. Prerequisite: LGL 110. Lecture: 3 hours per week.

## LGL 235

### Legal Aspects of Business Organizations

(3 credits)

Studies fundamental principles of agency law and the formation of business organizations. Includes sole proprietorships, partnerships, corporation, limited liability companies, and other business entities. Reviews preparation of the documents necessary for the organization and operation of businesses. Prerequisite: LGL 110. Lecture: 3 hours per week.

## 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. Prerequisite: LGL 110. Lecture: 3 hours per week.

## LGL 250

### Immigration Law

(3 credits)

Provides an introduction to immigration law and policy, giving an overview of the United States legal system that regulates the admission, exclusion, removal, and naturalization of immigrants. Includes issues concerning refugees, asylum seekers, illegal immigrants, and undocumented aliens. Prerequisite: LGL 110. Lecture: 3 hours per week.

# Machine Technology

## MAC 121 – 122

### Computer Numerical Control I – II

(3 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 123

### Computer Numerical Control III

(3 credits)

Focuses on numerical control techniques in metal forming and machine processes. Includes theory and practice in lathe and milling machine computer numerical control program writing, setup and operation. Lecture: 2 hours. Laboratory: 2 hours.

Total: 4 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 134

### CMM Operation and Programming

2 credits

Focuses on inspection using a Coordinate Measuring Machine. Includes hands-on demonstration of CMM setup, initialization and operation. Covers the essential aspects of the software and CMM operation, using a sample part for hands-on practice. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 hours per week.

## MAC 150

### Introduction to Computer-Aided Manufacturing

(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: 3 hours per week.

## MAC 295

### EDM and CAM

(2 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. Lecture: 2 hours. Laboratory (if applicable): 1 hour. Total: 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 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: Modules 1-3. 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: Modules 1-3 or MTH 2. Lecture: 3 hours per week.

**MTH 158****College Algebra**

(3 credits)

Covers the structure of complex number systems, polynomials, rational expressions, graphing, systems of equations and inequalities and functions, quadratic and rational equations and inequalities. Prerequisites: Modules 1-5 or MTH 3. Lecture: 3 hours per week.

**MTH 163****Precalculus I**

(3 credits)

Presents college algebra; matrices; and algebraic, exponential and logarithmic functions. Prerequisites: Modules 1-9, MTH 4, and MTH 158. (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. (Credit will not be awarded for both MTH 164 and MTH 168.) Lecture: 3 hours per week.

**MTH 166****Precalculus with Trigonometry**

(5 credits)

Presents college algebra, analytic geometry, trigonometry, and algebraic exponential, and logarithmic functions. Prerequisite: Modules 1-9, MTH 4, and MTH 158. Lecture: 5 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. Prerequisite: Modules 1-5 or MTH 3. Lecture: 3 hours per week.

**MTH 173****Calculus with Analytic Geometry I**

(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: MTH 164 or appropriate score on VPT placement. (Credit will not be awarded for more than one of MTH 173, MTH 175, or MTH 273.) Lecture: 5 hours per week.

**MTH 174****Calculus with Analytic Geometry II**

(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: 5 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: MTH 158, MTH 163, MTH 166 or Modules 1-9. (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 173. (Credit will not be awarded for both MTH 270 and MTH 271.) Lecture: 3 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.

**Math Essentials****MTE 1****Operations with Positive Fractions**

(1 credit)

Includes operations and problem-solving with proper fractions, improper fractions, and mixed numbers without the use of a calculator. Emphasizes applications and includes U. S. customary units of measure. Credit is not applicable toward graduation. Lecture: 1 hour per week. Prerequisite: Qualifying placement score.

**MTE 2****Operations with Positive Decimals and Percents**

(1 credit)

Includes operations and problem-solving with positive decimals and percents. Emphasizes applications and includes U. S. customary and metric units of measure. Credit is not applicable toward graduation. Prerequisite: MTE 1 or qualifying placement score. Lecture: 1 hour per week.

**MTE 3****Algebra Basics**

(1 credit)

Includes basic operations with algebraic expressions and solving simple algebraic equations using signed numbers with emphasis on applications. Credit is not applicable toward graduation. Lecture: 1 hour per week. Prerequisite: MTE 2 or qualifying placement score.

**MTE 4****First Degree Equations and Inequalities in One Variable**

(1 credit)

Includes solving first-degree equations and inequalities containing one variable, and using them to solve application problems. Emphasizes applications and problem solving. Credit is not applicable toward graduation. Lecture: 1 hour per week. Prerequisite: MTE 3 or qualifying placement score.

**MTE 5****Linear Equations, Inequalities and Systems of Linear Equations in Two Variables**

(1 credit)

Includes finding the equation of a line, graphing linear equations and inequalities in two variables and solving systems of two linear equations. Emphasizes writing and graphing equations using the slope of the line and points on the line, and applications. Credit is not applicable toward graduation. Lecture: 1 hour per week. Prerequisite: MTE 4 or qualifying placement score.

**MTE 6****Exponents, Factoring and Polynomial Equations**

(1 credit)

The student will learn to perform operations on exponential expressions and polynomials. Students will also learn techniques to factor polynomials and use these techniques to solve polynomial equations. Emphasis should be on learning all the different factoring methods, and solving application problems using polynomial equations. Credit is not applicable toward graduation. Lecture: 1 hour per week. Prerequisite: MTE 5 or qualifying placement score.

**MTE 7****Rational Expressions and Equations**

(1 credit)

Includes simplifying rational algebraic expressions, solving rational algebraic equations and solving applications that use rational algebraic equations. Credit is not applicable toward graduation. Lecture: 1 hour per week. Prerequisite: MTE 6 or qualifying placement score.

**MTE 8****Rational Exponents and Radicals**

(1 credit)

Includes simplifying radical expressions, using rational exponents, solving radical equations and solving applications using radical equations. Credit is not applicable toward graduation. Lecture: 1 hour per week. Prerequisite: MTE 7 or qualifying placement score.

**MTE 9****Functions, Quadratic Equations and Parabolas**

(1 credit)

Includes an introduction to functions in ordered pair, graph, and equation form. Also introduces quadratic functions, their properties and their graphs. Credit is not applicable toward graduation. Lecture: 1 hour per week. Prerequisite: MTE 8 or qualifying placement score.

# 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 140**

### **Introduction to Mechatronics**

(3 credits)

Presents foundational concepts in mechatronics including analog and digital electronics, sensors, actuators, microprocessors, and microprocessor interfacing to electromechanical systems. Surveys components and measurement equipment used in the design, installation, and repair of mechatronic equipment and circuits. Prerequisite: divisional approval. Lecture: 1 hour. Laboratory: 3 hours. Total: 4 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 hours. Laboratory: 1 hour. Total: 3 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 226**

### **Practical Metallurgy**

(3 credits)

Studies metals and their structure. Focuses on effects of hardening, tempering, and annealing upon the structure and physical properties of ferrous and non-ferrous metals. Covers the equipment and processes in heat treating. Lecture: 3 hours. Total: 3 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 hours. Laboratory: 1 hour. Total 3 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.

## **MEC 270**

### **Computations for Engineering Technology**

(3 credits)

Presents the use of spreadsheets and Matlab or equivalent to solve a variety of problems in introductory engineering analysis, such as graphing data, unit conversions, simple statistical analysis, sorting, searching and analyzing data, curve fitting, interpolation, solving algebraic equations, logical decisions, evaluating integrals, comparing economic alternatives, and finding optimum solutions. The acquisition and processing of data as well as macro programming in Basic are also covered. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

# 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

### Intellectual Disabilities 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 225

### Counseling Therapy

(3 credits)

Studies various models of counseling theories and appropriate application of counseling techniques in the helping profession. Lecture: 3 hours per week.

## 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 137****Chorus Ensemble**

(2 credits)

Ensemble consists of performance from the standard repertoires, including study of ensemble techniques and interpretation. Divisional approval required. May be repeated for credit. Laboratory: 4 hours per week.

**MUS 141 - 142****Class Piano I – II**

(2 credits each)

Offers the beginning piano student activities in learning musical notation, in accomplishing sight-reading skills, and in mastering techniques of keyboard playing. Presents appropriate literature. Open to all students and may be used to fulfill applied minor instrument requirement for music major. MUS 142 prerequisite: MUS 141. Lecture: 1 hour. Laboratory 2 hours. Total: 3 hours per week.

**MUS 163****Guitar Theory and Practice I**

(3 credits)

Studies the fundamentals of sound production, music theory, and harmony as they apply to guitar. Builds proficiency in both the techniques of playing the guitar and in the application of music fundamentals to these techniques. Presents different types of guitars and related instruments. Emphasizes music as entertainment and as a communication skill. Part I of II. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

**MUS 164****Guitar Theory and Practice II**

(3 credits)

Studies the fundamentals of sound production, music theory, and harmony as they apply to guitar. Builds proficiency in both the techniques of playing the guitar and in the application of music fundamentals to these techniques. Presents different types of guitars and related instruments. Emphasizes music as entertainment and as a communication skill. Part II of II. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

**MUS 174****Afro-Caribbean Drumming**

(2 credits)

Focuses on the drumming traditions of West Africa, the Caribbean Islands, and South America beginning with their roots and continuing through the development of Jazz and African American spirituals. Includes hand drumming, drum materials and construction, and the different purposes of drumming. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 hours per week.

**MUS 221****History of Music I**

(3 credits)

Presents the chronology of musical styles from antiquity to the present time. Relates the historical development of music to parallel movements in art, drama, and literature. Develops techniques for listening analytically and critically to music. Part I of II. Lecture: 3 hours per week.

**MUS 222****History of Music II**

(3 credits)

Presents the chronology of musical styles from antiquity to the present time. Relates the historical development of music to parallel movements in art, drama, and literature. Develops techniques for listening analytically and critically to music. Part II of II. Lecture: 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 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: 4 hours. Laboratory: 3 hours. Total: 7 hours per week.

## NUR 221

### Second Level Nursing Principles and Concepts

(9 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: 5 hours. Laboratory: 4 hours. Total: 9 hours per week.

## NUR 223

### Second Level Nursing Principles and Concepts III

(9 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: 4 hours. Laboratory: 5 hours. Total: 9 hours per week.

## NUR 226

### Health Assessment

(3 credits)

Introduces the systematic approach to obtaining a health history and performing a physical assessment. Lecture: 2 hours. Laboratory: 1 hour. Total: 3 hours per week.

## NUR 230

### Pharmacology

(3 credits)

Introduces general principles of drug action, pharmacology of the major drug classes, and specific agents within each class. Includes math calculations necessary to adapt dosages to the multidimensional needs of individuals across the lifespan. Lecture: 3 hours per week.

## NUR 245

### Maternal/Newborn Nursing

(3 credits)

Develops nursing skills in caring for families in the antepartum-, intrapartum-, and post-partum periods. Lecture: 2 hours. Laboratory: 1 hour. Total: 3 hours per week.

## NUR 246

### Parent/Child Nursing

(3 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: 2 hours. Laboratory: 1 hour. Total: 3 hours per week.

## NUR 247

### Psychiatric/Mental Health Nursing

(3 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: 2 hours. Laboratory: 1 hours. Total: 3 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.

# Philosophy

## PHI 101 – 102

### Introduction to Philosophy I – II

(3 credits each)

Introduces a broad spectrum of philosophical problems and perspectives with an emphasis on the systematic questioning of basic assumptions about meaning, knowledge, reality and values. Lecture: 3 hours per week.

## PHI 111

### Logic I

(3 credits)

Introduces inductive and deductive reasoning with an emphasis on common errors and fallacies. Lecture: 3 hours per week.

**PHI 112****Logic II**

(3 credits)

Evaluates deductive arguments utilizing methods of symbolic logic. Lecture: 3 hours per week.

**PHI 115****Practical Reasoning**

(3 credits)

Studies informal logic and language techniques as they relate to reasoning and argument. Provides practice in analyzing arguments and constructing sound arguments. Lecture: 3 hours per week.

**PHI 211****The History of Western Philosophy I**

(3 credits)

Provides historical survey of representative philosophers from the pre-Socratics to the present. Introduces the student to development of philosophical thought through selected readings of original works and appropriate critical materials. Part I of II. Lecture: 3 hours per week.

**PHI 212****The History of Western Philosophy II**

(3 credits)

Provides historical survey of representative philosophers from the pre-Socratics to the present. Introduces the student to development of philosophical thought through selected readings of original works and appropriate critical materials. Part II of II. Lecture: 3 hours per week.

**PHI 220****Ethics**

(3 credits)

Provides a systematic study of representative ethical systems. Lecture: 3 hours per week.

**PHI 225****Selected Problems in Applied Ethics**

(3 credits)

Analyzes and discusses significant contemporary ethical issues and problems existing throughout the various professions such as business, medicine, law, education, journalism, and public affairs. May be repeated for credit. Lecture: 3 hours per week.

**PHI 226****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 credits)

Studies fundamental techniques of the camera and its expressive possibilities. Lecture: 3 hours. Total: 3 hours per week.

**PHT 107****Nature Photography**

(3 credits)

Teaches fundamentals of 35mm color slide photography of natural objects. Emphasizes selection of equipment and film, compositional theory, and the flash photography formula. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**PHT 110****History of Photography**

(3 credits)

Surveys important photographers, processes, and historical influences of the 19th and 20th centuries. Lecture: 3 hours per week.

**PHT 120****Screenwriting**

(3 credits)

Focuses on the craft of writing for the screen. Examines film and television screenplay structure. Analyzes dramatic strategies in film and television. Learn and apply correct script form and creatively engage in the various stages of original scriptwriting. Lecture: 3 hours per week.

**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 150****Film Production I**

(3 credits)

Introduces students to the basic techniques and procedures involved in motion picture production. Emphasizes aspects of filmmaking from scripting and preproduction through editing and postproduction. Includes the exploration of professional film crew roles in grip, lighting, production management, directing, sound and editing. Part I of II. This course is cross-listed with ART 160. Credit will not be awarded for both. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**PHT 151****Film Production II**

(3 credits)

Reinforces techniques covered in Film Production I emphasizing technical and theoretical aspects of the filmmaking process. Requires student collaboration on film assignments from scripting and preproduction through editing and postproduction, and roles in grip, lighting, production management, directing, sound, and editing. Part II of II. This course is cross-listed with ART 161. Credit will not be awarded for both. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 hours per week.

**PHT 164****Introduction to Digital Photography**

(3 credits)

Teaches the fundamentals of photography including camera function, composition, and image production as they apply to digital imagery. Lecture: 1 hour. Laboratory: 4 hours. Total: 5 hours per week.

**PHT 206****Large Format Photography**

(3 credits)

Discusses 4x5 view camera techniques and controls, and sheet film processing. Demonstrates the image-making advantages of large format photography. Prerequisite: PHT 102 or equivalent. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

**PHT 216****Wildlife Photography**

(3 credits)

An advanced course in the photography of natural objects. Emphasis will be placed on critiquing the student's photographic work. Offers seminars on specific subject areas such as animals, plants, birds, insects, and wilderness scenes. Prerequisite PHT 117 or divisional permission. Lecture: 2 hours. Laboratory: 2 hours. Total: 4 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 231****Photojournalism I**

(3 credits)

Introduces equipment, techniques, skills, and concepts of photojournalism. Teaches photography for features, spot news, and photo essays. Emphasizes editing, captioning, and layout. May require individual projects. Prerequisite PHT 102 or equivalent. Part I of II. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

**PHT 232****Photojournalism II**

(3 credits)

Introduces equipment, techniques, skills, and concepts of photojournalism. Teaches photography for features, spot news, and photo essays. Emphasizes editing, captioning, and layout. May require individual projects. Prerequisite PHT 102 or equivalent. Part II of II. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

**PHT 247****Alternative Photographic Processes**

(3 credits)

Explores manipulated imagery including traditional and non-traditional processes such as non-silver and electronic imaging. Uses enlarged film negatives in order to investigate a variety of methods. Prerequisite PHT 102 or equivalent. Lecture: 1 hour. Laboratory: 4 hours. Total: 5 hours per week.

**PHT 264****Digital Photography II**

(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. Lecture: 2 hours. Laboratory: 3 hours. Total: 5 hours per week.

**PHT 274****Digital Film Editing and Post Production**

(3 credits)

Introduces students to techniques and procedures involved in digital film editing and post production. Covers aspects of editing to include industry standard software packages. Emphasizes the mechanics and obstacles of working with the moving image in the 21st century including available tools and methods, importance of file types, and how to keep things organized. Lecture: 2 hours. Laboratory 2 hours. Total: 4 hours per week.

# Physical Education and Recreation

**PED 101 – 102****Fundamentals of Physical Activity I – II**

(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 hour. Laboratory: 2 hours. Total: 3 hours per week.

**PED 103****Aerobic Fitness I**

(2 credits)

Develops cardiovascular fitness through activities designed to elevate and sustain heart rates appropriate to age and physical condition. Part I of II. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 hours per week.

**PED 109****Yoga**

(1 credits)

Focuses on the forms of yoga training emphasizing flexibility. Laboratory: 2 hours. Total: 2 hours per week.

**PED 111 – 112****Weight Training I – II**

(2 credits each)

Focuses on muscular strength and endurance training through individualized workout programs. Teaches appropriate use of weight equipment. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 hours per week.

**PED 116****Lifetime Fitness and Wellness**

(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 hour. Laboratory: 2 hours. Total: 3 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 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 a week.

**PED 139****Ice Skating**

(2 credits)

Introduces the skills of figure skating with emphasis on form. Includes equipment selection and safety. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 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. Utilizes the use of weights, balls and bands, fitness equipment or a combination thereof that promote cardiovascular endurance and develops muscle strength. Benefits all levels of participation. Laboratory: 2 hours per week.

**PED 150****Soccer**

(1 credit)

Emphasizes soccer skills and techniques, strategies, rules, equipment, and physical conditioning. Laboratory: 2 hours per week.

**PED 154****Volleyball**

(1 credit)

Introduces skills, techniques, strategies, rules, and scoring. Laboratory: 2 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 per week.

**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 per week.

**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****General College Physics I**

(4 credits)

Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity and magnetism and selected topics in modern physics. Part I of II. Prerequisite: MTH 163 or MTH 173. Lecture: 3 hours. Laboratory: 3 hours. Total: 6 hours per week.

**PHY 202****General College Physics II**

(4 credits)

Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity and magnetism, and selected topics in modern physics. Prerequisite: PHY 201. Part II of II. 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 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: PHY 241, MTH 174 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 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 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. Prerequisite: Eligible for ENG 111. 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. Prerequisite: Eligible for ENG 111. Laboratory: 2 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, PSY 201 or PSY 202. 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.

## 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.

## 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.

## REL 247

### History of Christianity

(3 credits)

Surveys the development of Christianity from its origins to the present. Lecture: 3 hours per week.

# Russian

## RUS 101 - 102

### Beginning Russian I – II

(5 credits each)

Develops the understanding, speaking, reading, and writing of Russian, and emphasizes the structure of the language. May include oral drill and practice. RUS 102 prerequisite: RUS 101. Lecture: 5 hours per week. May include one additional hour of oral practice per week.

## RUS 201 - 202

### Intermediate Russian I – II

(3 credits each)

Continues the development of the skills of understanding, speaking, reading, and writing of Russian. Class conducted in Russian. RUS 201 prerequisite: RUS 102 or equivalent. RUS 202 prerequisite: RUS 201 or equivalent. May include oral drill and practice. Lecture: 3 hours per week.

# Sociology

## 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 207

### Medical Sociology

(3 credits)

Surveys the social, economic, cultural, and individual factors in health and illness. Examines issues of wellness, health-care systems, physician-nurse-patient relationships, medical costs, ethics and policy. Lecture: 3 hours per week.



**SOC 211****Principles of Anthropology I**

(3 credits)

Inquires into the origins, development, and diversification of human biology and human cultures. Includes fossil records, physical origins of human development, human population genetics, linguistics, cultures' origins and variation, and historical and contemporary analysis of human societies. Part I of II. 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 266****Race and Ethnicity**

(3 credits)

Considers race and ethnicity as social constructs that deeply affect our personal experience and our social institutions. Examines the relationships of racial and ethnic groups with each other and with the larger society, and the ways in which these relationships are constantly changing. Explores the experience of different groups and examines ideas of racial justice and equality. Introduces significant theoretical approaches to the study of race and ethnicity. Lecture: 3 hours 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 addition, 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 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 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.

**SPA 201 – 202****Intermediate Spanish I – II**

(3 credits each)

Continues to develop understanding, speaking, reading, and writing skills. Prerequisite: SPA 102 or equivalent. May include oral drill and practice. Lecture: 3 hours per week. May include one additional hour of oral practice per week.

**SPA 211 – 212****Intermediate Spanish Conversation I – II**

Continues to develop fluency through emphasis on idioms and other complex sentence structures. Prerequisite: SPA 202 or equivalent. Lecture: 3 – 4 hours per week.

## Student Development

**SDV 100****College Success Skills**

(1 – 3 credits)

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: 1-3 hours 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**

(2 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: 2 hours per week.

## Welding

**WEL 116****Welding I (Oxyacetylene)**

(2 credits)

Teaches oxygen/acetylene welding and cutting including safety of equipment, welding, brazing and soldering procedures and cutting procedures. Lecture: 1 hour. Laboratory: 3 hours. Total: 4 hours per week.

**WEL 120****Introduction to Welding**

(2 credits)

Introduces history of welding processes. Covers types of equipment, and assembly of units. Stresses welding procedures such as fusion, non-fusion, and cutting oxyacetylene. Introduces arc welding. Emphasizes procedures in the use of tools and equipment. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 hours per week.

**WEL 123****Shielded Metal Arc Welding (Basic)**

(3 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: 4 hours. Total: 6 hours per week.

**WEL 124****Shielded Metal Arc Welding (Advanced)**

(3 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: 4 hours. Total: 6 hours per week.

**WEL 130****Inert Gas Welding**

(3 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: 4 hours. Total: 6 hours per week.

**WEL 150****Welding Drawing and Interpretation**

(2 credits)

Teaches fundamentals required for successful drafting as applied to the welding industry. Includes blueprint reading, geometric principles of drafting and freehand sketching, basic principles of orthographic projection, preparation of drawings and interpretation of symbols. Lecture: 2 hours per week.

**WEL 160****Gas Metal Arc Welding**

(3 credits)

Introduces semi-automatic welding processes with emphasis on practical application. Includes the study of filler wires, fluxes and gases. Lecture: 2 hours. Laboratory: 4 hours. Total: 6 hours per week.

**WEL 175****Semi-Automatic Processes**

(3 credits)

Introduces semi-automatic processes performed with carbon steel. Emphasizes practical applications in field techniques. Includes the study of filler wires, fluxes and cover gasses. Lecture: 1 hour. Laboratory: 4 hours. Total: 5 hours per week.

**WEL 199****Supervised Study**

(3 credits)

Assigns problems for independent study incorporating previous instruction and supervised by the instructor. May be repeated for credit. Lecture: 1 hour. Laboratory: 2 hours. Total: 3 hours per week.





# Governance



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Glenn DuBois, Chancellor

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## John Tyler Community College

Marshall W. Smith, President

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VP, Financial Services – Insurance Specialist  
Davenport & Company LLC

**Mr. Brian Dail**

Business Analyst – Crosspointe  
Rolls Royce North America

**The Honorable Rosalyn R. Dance**

Virginia House of Delegates-63rd District

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Principal, Timmons Group

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Chesterfield County Economic Development

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Partner, Eliades & Eliades

**Mr. Peter Eliades**

Partner, Eliades & Eliades

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Community Volunteer

**Mrs. Karen Gammon**

Artist & Author, John Tyler Alumna

**Mr. Art Heinz**

Nationwide Insurance

**Mr. David Bowen Hyatt**

President, Insulation Specialties, Inc.

**Mr. Bryce D. Jewett, Jr.**

President, Jewett Machine Manufacturing Company, Inc. and  
Jewett Automation

**Mr. Vandy V. Jones, III**

Director of Economic Development  
City of Petersburg

**Dr. Roy Kaplan**

Associate Professor of Chemistry  
John Tyler Community College

**Dr. John C. Koch**

Professor, Division of Mathematics, Natural and Behavioral  
Sciences, John Tyler Community College

**Mr. David O. Ledbetter**

Partner, Hunton & Williams, *retired*

**Ms. Margaret G. Lewis, FACHE, Member Emeritus**

President, HCA-Capital Division

**Mr. Tim McManus**

CEO, Chippenham & Johnston-Willis Medical Center

**Mr. Nicholas Narro**

John Tyler Community College Student Representative

**Ms. Christine Schwab**

Vice President & Chief Risk Officer, Dominion

**Mr. Craig Schwartz**

SVP Manufacturing, PMUSA

**Mr. John H. Settle, Jr.**

Senior Trust and Fiduciary Specialist- SVP  
Wells Fargo Private Bank

**Mr. William H. Talley, III**

Chairman, William H. Talley & Son, Inc.

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Senior Partner, Dixon Hughes Goodman, LLP

**Mr. Ricardo Torres**

President and CEO, National Student Clearinghouse

**Mr. Ron White**

District Representative and Military Liaison  
Office of Congressman J. Randy Forbes (VA-04)





# Faculty & Staff

For a continually updated list of John Tyler Community College faculty and staff, please visit the College web site at [www.jtcc.edu](http://www.jtcc.edu).

## Administration

### PRESIDENT

#### Smith, Marshall W.

B.A., University of Alabama; M.Ed., West Georgia College; Ph.D., University of Alabama

### STAFF

#### Carter, Kara

Administrative Assistant

#### Hilliar, Mara M.

Executive Assistant to the President  
B.A., University of Virginia

#### Murphy, Michael J.

Coordinator, Fort Lee Operations  
B.A., James Madison University; M.A., Indiana University of Pennsylvania

### PRESIDENT'S CABINET

#### Dew, Beverley M.

Executive Director, Foundation  
B.S., Virginia Commonwealth University

#### Drinkwater, L. Ray

Vice President, Student Affairs  
B.A., Virginia Commonwealth University;  
M.Ed., University of Virginia; Ph.D., Virginia Commonwealth University

#### Fiege, William C.

Vice President, Academic Affairs  
B.S., Longwood University; M.S., Bloomsburg University; Ph.D., Old Dominion University

#### Horton, Joanne M.

Director, College Relations and Special Assistant to the President  
A.A.S., State University of New York; B.S., Old Dominion University; M.S., Virginia Commonwealth University; Accredited Public Relations (APR)

#### Jovanovich, Donna

Director, Institutional Effectiveness  
B.A., Lake Forest College; M.S.T., University of Wisconsin-Oshkosh; Ph.D., 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 and Administration  
B.S., East Carolina University; M.P.A., Virginia Commonwealth University

## College Relations

### DIRECTOR

#### Horton, Joanne M.

A.A.S., State University of New York; B.S., Old Dominion University; M.S., Virginia Commonwealth University; Accredited Public Relations (APR)

### STAFF

#### Busch, Heather C.

Web Communications Manager  
B.A., University of Virginia; M.A., Virginia Commonwealth University

#### Carrington, Meredith T.

Graphic Designer  
B.A., Mary Baldwin College

#### Kendrick, Lisa M.

Public Relations & Events Specialist  
B.A., Mary Baldwin College

#### Traylor, Joel

Media Specialist  
B.A., James Madison University

#### Walker, Holly W.

Public Relations & Marketing Specialist  
B.S., Virginia Commonwealth University  
M.L.A., University of Richmond

#### Zador, James M.

Web Developer  
B.A., Mercyhurst College

#### Zhai, Jianhua

Web Developer  
B.A., Qufu Normal University; M.A., Shandong University

## Institutional Effectiveness

### DIRECTOR

#### Jovanovich, Donna

B.A., Lake Forest College; M.S.T., University of Wisconsin-Oshkosh; Ph.D., Virginia Commonwealth University

### STAFF

#### Archer, Darlene

Data Analyst  
B.S., Virginia State University

#### Owens, Selma S.

Administrative Assistant  
A.A.&S., John Tyler Community College

## Division of Student Affairs

### 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

## Office of Admissions and Records

### DIRECTOR

#### James, Joy R.

B.S., East Carolina University

### STAFF

#### Baxter, Leigh B.

Assistant Registrar  
B.M., M.M., Virginia Commonwealth University

#### Chieppa, Jeffrey

Peoplesoft Programmer & SIS Support Specialist  
A.A., Community College of Morris Randolph; B.A., Strayer University

#### Clarke, Angela B.

Enrollment Services Specialist  
A.A.S., A.A.&S., John Tyler Community College

#### Harrison, Karen M.

Enrollment Services Specialist

#### Harvey, Marilyn M.

Enrollment Services Specialist  
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

**McLean, James**

Enrollment Services Specialist  
B.S., Liberty University

**Nichols, Barbara J.**

Education Support Specialist  
B.A., Mary Baldwin College

**Price, Shira**

Education Support Specialist  
A.G.S., John Tyler Community College

**Tutton, Rusty**

Graduation Coordinator  
B.S., Virginia Commonwealth University

**Szwarc, Carolyn S.**

Enrollment Services Specialist  
A.A.&S., John Tyler Community College

**Tripp, Vittoria L.**

Graduation Coordinator  
A.A.&S., John Tyler Community College

**OFFICE OF VETERANS AFFAIRS****COORDINATOR****Evins, James M.**

A.A., University of Maryland; B.I.S., Virginia Commonwealth University

**Lathrop, Carmen**

Veterans Advisor  
A.S., Richard Bland College; B.S., Southern Illinois University; B.A., Saint Leo College

**STUDENT INFORMATION CENTER****MANAGER****Wilkins, Adrienne**

B.S., University of Maryland; M.A., Teachers College, Columbia University

**Byerly, Wendy**

Information Center Representative

**Office of the Dean of Students****Interim Dean of Students****Kirkland, Sandra**

B.S., M.A., Virginia Commonwealth University

**STAFF****Haas, C. Denise**

Senior Administrative Assistant

**COUNSELING AND STUDENT SUCCESS CENTER – CHESTER****DIRECTOR****Tindall, Michelle D.**

B.A., M.Ed., Virginia State University

**STAFF****Atkinson, Heather A.**

Student Services Specialist  
B.A., Mary Washington College; M.S., Longwood University

**Baines, Elizabeth**

Student Services Specialist  
B.S., Old Dominion University

**Crites, Tara**

Student Services Specialist  
A.A.S., Richard Bland College; B.S., M.T., Virginia Commonwealth University

**Kirkland, Sandra**

Professional Counselor  
B.S., M.A., Virginia Commonwealth University

**Parrott, Tom**

Academic Advisor  
B.A., Bob Jones University; M.A., Calvary Baptist Theological Seminary

**Smith, Altrice**

Professional Counselor  
B.S., M.Ed., James Madison University

**Smith, Kathleen**

Student Services Specialist  
B.A., Ed.M., College of William and Mary

**Stilwell, Blair**

Professional Counselor  
B.A., M.Ed., Virginia Commonwealth University

**COUNSELING AND STUDENT SUCCESS CENTER – MIDLOTHIAN****DIRECTOR****Varney, Ruth A.**

B.S., Auburn University; M.Ed., Ph.D., Virginia Commonwealth University

**STAFF****Cassada, Barbie**

Student Services Specialist  
B.S.W., Rochester Institute of Technology; M.A., Mary Baldwin College

**Dean, Randy**

Education Support Specialist  
B.S., M.Ed., College of William and Mary

**Mason, Sandra F.**

Administrative Assistant

**Sorrell, Patsy A.**

Student Services Specialist  
B.S., Radford University; M.Ed., George Mason University

**Spencer, Michelle**

Professional Counselor  
B.A., Auburn University; M.S.W., M.Ed., Virginia Commonwealth University

**Stevens-Davis, Michelle**

Student Services Specialist  
B.S., Virginia Commonwealth University

**Watson, Barbara**

Student Services Specialist  
B.A., Virginia Intermont College; M.A., Virginia State University; M.F.A., Norfolk University

**TESTING CENTER****TESTING 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

## Office of Student Activities

### COORDINATOR

#### **Carpenter-Horning, Amanda K.**

B.S., Virginia Commonwealth University;  
M.B.A., Liberty University; Ed.S., Liberty University

#### **Johnson, Wanda**

Student Services Specialist

## Library

### CHESTER

#### LIBRARIAN

#### **Luebke, Linda L.**

B.A., Gettysburg College; A.M.L.S.,  
University of Michigan

#### STAFF

#### **Hoang, Ha**

Library Specialist

B.A., Trinity College; M.S., London School  
of Economics and Political Science

#### **Painter, Jill A.**

Instructional Assistant

A.A.S., John Tyler Community College;  
B.S., University of Central Florida

### MIDLOTHIAN

#### LIBRARIAN

#### **McKann, Helen H.**

B.A., Mary Washington College; M.L.S.,  
University of Maryland

#### STAFF

#### **Abu-Saleh, Emad M.**

Instructional Assistant

A.A.S., South Central Technical College

#### **Kush, Christine M.**

Library Specialist

A.A.S., Holy Cross College; B.A., Indiana  
University

## Division of Academic Affairs

### Vice President

#### **Fiege, William C.**

B.S., Longwood University; M.S.,  
Bloomsburg University; Ph.D., Old  
Dominion University

#### **Mathieu, Jill Y.**

Senior Administrative Assistant

#### **Mallory, Rena**

Academic Scheduler / SIS Specialist  
A.A.S., John Tyler Community College

## INSTRUCTIONAL TECHNOLOGY

### COORDINATOR

#### **Tucker, Diane**

B.S., M.S., Emporia State University

## 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

#### **Brame, Victoria**

Instructor, English

B.A., George Washington University;  
M.A., New York University

#### **Brooks, Martha F.**

Professor, English

B.F.A., M.F.A., Virginia Commonwealth  
University; Ph.D., Duke University

#### **Burnham, Sharon J.**

Assistant Professor, 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

#### **Dunford, Andrea**

Instructor, English

B.S., M.A., University of North Carolina

#### **Emswiler, Samantha**

Instructor, Philosophy

B.A., University of Pittsburgh; M.A.  
University of Miami

#### **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

#### **Head, David M.**

Professor, History

B.A., Furman University; M.A., Ph.D.,  
Florida State University

#### **Johnson, Judith I.**

Associate Professor, English

B.S., Radford College; M.S.B.A., Boston  
University; M.A., Virginia State University

#### **Keniston, Leonda W.**

Assistant Professor, Sociology/

Interim Assistant Dean

B.S., M.S., Virginia Commonwealth  
University

#### **Kirn, John F.**

Assistant Professor, History

B.A., Cornell University; M.A., Ph.D.,  
University of Virginia

#### **Landon, Jeffrey W.**

Assistant Professor, English

B.A., Virginia Commonwealth University;  
M.F.A., George Mason University

#### **Lewis, Shannon**

Instructor, English

B.A., University of South Carolina; M.A.,  
Virginia Polytechnic Institute and State  
University

#### **Luke, Ashanti**

Instructor, English

B.A., M.P.W., University of Southern  
California

#### **Miller, Alyce**

Assistant Professor, History

B.A., M.A., Ph.D., University of North  
Carolina

#### **Paden, Mary Grace**

Assistant Professor, English

B.A., College of William & Mary; M.A.,  
Georgetown University

**Rutz, Michael**

Instructor, Sociology  
B.S., James Madison University; M.S.,  
Virginia Commonwealth University

**Silvent, Christopher**

Assistant Professor, Art  
B.A., Christopher Newport; M.F.A., Florida  
State University

**Speidel, Penny L.**

Associate Professor, Reading  
B.A., Ohio Wesleyan University; M.S.,  
Nazareth College

**Sullivan, Kerrigan J.**

Associate 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

**Tolj, Alexandr**

Instructor, English  
B.A., McDaniel College; M.A. California  
State University - Fullerton

**Tompkins, Patrick M.**

Associate Professor, English  
B.A., Villanova University; M.A., Iowa  
State University; M.F.A., Virginia  
Commonwealth University

**Vaccarella, Kevin**

Associate Professor, Religion  
B.A., University of Pittsburgh; M.A.,  
University of South Carolina; Ph.D.,  
Florida State University

**Wentworth, Mary Beth**

Associate Professor, English  
B.A., Emory and Henry College; M.A.,  
College of William & Mary

**Williams, Jr., 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

**Yanovitch, Amanda**

Instructor, English  
B.A., M.A., University of Richmond

**STAFF****Arterburn, Kathy F.**

Administrative Assistant

**Holmes, Candice A.**

Administrative Assistant  
B.S., Old Dominion University

**Lyon, Stacey L.**

Administrative Assistant  
A.A.S., John Tyler Community College

**Robinson, Glenton**

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****Bell, Lester D.**

Instructor, Precision Machining  
Technology  
NIMS Certified, Machining Level 1

**Careatti, John A.**

Instructor, 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  
Certificate in Welding, John Tyler  
Community College; Certificate  
of Completion of Apprenticeship,  
Maintenance Machinist, Commonwealth  
of Virginia

**Cosby, James L.**

Associate Professor, Accounting  
B.S., Richmond Professional Institute;  
M.S., Virginia Commonwealth University

**Elliott, Jeffrey S.**

Assistant Professor, Information  
Technology  
B.A., Averett College; M.S., Virginia  
Commonwealth University

**Gay, James**

Instructor, HVAC  
Certificate, Boiler Technician  
U.S. Navy; Master Gas Fitting License  
and Master Heating, Ventilation, and  
Air License, Virginia Department  
of Professional and Occupational  
Regulation

**Gross, Matt**

Instructor, Welding  
Certified Welding Educator, Certified  
Welding Inspector, American Welding  
Society

**Holtzman, Caroline**

Instructor, Engineering  
B.S., M.S., Virginia Polytechnic Institute  
and State University

**Hood, Deborah D.**

Professor, Information Technology  
B.S., Clarion State University; M.A.,  
Western Kentucky University; M.S., Nova  
Southeastern University

**Khan, Subhotash**

Associate Professor, Engineering  
B.S., Indian Institute of Technology; M.S.,  
Duke University; Ph.D., West Virginia  
University

**Madden, Elaine**

Assistant Professor, Business  
Management  
B.S., Indiana University of Pennsylvania;  
M.B.A., University of Baltimore

**Massengill, Alan A.**

Instructor, Electricity  
Master Electrician License, Virginia  
Department of Professional and  
Occupational Regulation

**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.**

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

**Thysell, Leslie**

Associate Professor, Accounting  
B.S., M.S., Virginia Commonwealth University; M.B.A., Florida Institute of Technology

**Wyatt, William G.**

Professor, Drafting  
A.A.S., John Tyler Community College; B.S., M.S., Eastern Kentucky University; M.Ed., Virginia Polytechnic Institute and State University

**STAFF****Ball, Cynthia D.**

Administrative Assistant

**Bosher, Dianne J.**

Administrative Assistant  
A.A.S., John Tyler Community College

**Caporale, Joy**

Administrative Assistant  
B.B.A., Monroe College

**Chaffin, Penny E.**

Instructional Assistant  
A.A.S., John Tyler Community College

**Colcleaser, B. Alice**

Instructional Assistant  
A.A.S., 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

**CAREER PATHWAYS****DEPARTMENT****Westcott, Peggy A.****Director**

B.S., Cornell University; M.A.T., Smith College; Ph.D., Old Dominion University

**STAFF****Marshall, Suzan A.**

PEER Consortium Coordinator  
B.S., M.S.Ed., Old Dominion University

**Wallin, Joanne M.**

Administrative Assistant

**Williams, Margaret**

A.A.A., Richard Bland College

## Division of Health Sciences

**DEAN****Ulmer, Deborah L.**

B.S.N., Virginia Wesleyan College; M.Ed., Ph.D., Ph.D., Virginia Commonwealth University

**FACULTY****Barry, Yvonne**

Professor, Human Services  
B.S.W., M.S.W., McGill University; Ed.D., University of Massachusetts

**Clinger, Terri S.**

Assistant Professor, Nursing  
B.S.N., M.S.N., Old Dominion University

**Deutsch-Atwell, Sherri L.**

Associate Professor, Nursing  
A.A.S., State University of New York College at Alfred; B.S.N., State University of New York at Stony Brook; M.S.N., Boston University

**Diggs, Christine H.**

Associate Professor, Human Services  
A.A.S., Central Texas Junior College; B.A., University of North Texas; M.S.S.W., University of Texas at Arlington; Ph.D., University of Texas at Austin

**Harpold, Matthew**

Instructor, Exercise Science  
B.S., James Madison University; M.S., Georgia Southern University

**Hornsby, Barbara J.**

Associate Professor, Nursing  
B.S.N., M.S.N., Virginia Commonwealth University

**Kennon, Theresa K.**

Associate Professor, Nursing  
A.A.S., John Tyler Community College  
B.S.N., M.S.N., Old Dominion University

**Langford, Mary H.**

Instructor, EMS  
A.A.S., Hudson Valley Community College

**Leahy, Nancy B.**

Associate Professor, Nursing  
B.S.N., University of Virginia; M.S., Virginia Commonwealth University

**Lowe-Danzeisen, Laura M.**

Associate Professor, Nursing  
A.A. and A.D.N., Fort Scott University; B.S.N., University of Saint Mary; M.S.N., Troy University

**Moore, Michael**

Instructor, Funeral Services  
A.A.S., John Tyler Community College  
B.A., Norfolk State University

**Mueller, Linda A.**

Associate Professor, Nursing  
B.S., University of Rochester; M.S., Syracuse University

**Pleasants, Rhonda K.**

Associate 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.**

Associate Professor, Nursing  
B.S.N., State University of New York; M.S., Virginia Commonwealth University

**Russo, Brooke S.**

Assistant Professor, Nursing  
A.D.N., Sandhills Community College; B.S., Armstrong Atlantic State University; M.S.N., Walden University

**Sutton, Rhonda F.**

Associate Professor  
A.A.S., Southern Arkansas University;  
B.S., University of Texas; M.S.N.,  
Northwestern State University

**Thomas, Connie Patton**

Instructor, Nursing  
A.A.S., John Tyler Community College;  
B.S.N., M.S.N., University of Phoenix

**Williams, Tammy E.**

Associate Professor  
B.S., B.S., M.S., M.S., Virginia  
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**Carlisle, Steven J.**

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B.S., College of William & Mary; Ph.D.,  
University of Virginia

**Carr, Carol E.**

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B.A., Florida Atlantic University; M.A.,  
Ohio State University; Ph.D., Atlanta  
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B.S., M.S., Old Dominion University

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B.S., University of Mississippi; M.S.,  
Georgia Institute of Technology; Ph.D.,  
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B.S., Augusta University; M.I.S., Virginia  
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B.A., Saint Mary's College; Ph.D.,  
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**Mohajer, Yousef**

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B.S., The City College of the University  
of New York; M.A., Princeton University;  
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B.S., M.S., University of Pune; Ph.D.,  
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B.A., Edison State College; M.A., College  
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B.S., Washington & Lee University; Ph.D.,  
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B.S., Ecole Nationale Supérieure des  
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B.S., Basrah University; M.S., Manchester  
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B.S., Marywood University; M.A., Ph.D.,  
Fordham University

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B.S., Baylor University; Ph.D., Texas A & M  
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B.A., Wheaton College; Ph.D., Virginia  
Commonwealth University

**Snow, Rhodora**

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B.S., University of the Philippines; Ph.D.,  
University of New Orleans

**Swift, Marian**

Instructor, Math  
B.A., M.T., University of Virginia

**Tran, Phuc**

Associate Professor, Physics  
B.S., University of Pennsylvania; Ph.D.,  
University of Virginia

**Williams, Kenneth E.**

Associate Professor, Mathematics  
B.S., M.S., Virginia Commonwealth  
University

**Xu, Yijing**

Professor, Mathematics  
M.S., Beijing Normal University; Ph.D.,  
University of Illinois

**STAFF****Bearekman, Steve**

Lab Technician  
A.S., John Tyler Community College; B.S.,  
Virginia Commonwealth University

**Estes, Carol A.**

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B.A., California State University

**Ganzert, Kimberly M.**

Administrative Assistant  
A.A.S., John Tyler Community College

**Harris, Aretha R.**

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B.S., M.T., Virginia Commonwealth  
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**Thomason, Marie W.**

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Business Manager  
B.S., Virginia Polytechnic Institute  
and State University; M.B.A., Virginia  
Commonwealth University

**Morales, Dave**

Director, Information Technology  
B.S., College of William and Mary

**Ornduff, Donna**

Instructional Assistant

**Pollock, Jameo D.**

Central Virginia Rapid Response  
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A.B.A., B.B.A., M.Ed., Strayer University

**Reed, Jessica R.**

Contract Administrative Specialist  
A.A.S., John Tyler Community College

**Simmons, Andrea P.**

Experiential Learning Coordinator  
B.B.A., M.Ed., American InterContinental  
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**Sims, Nina**

Director, Marketing and Sales  
B.S., Virginia Commonwealth University

**Smith, Wesley A.**

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B.S., Virginia Commonwealth University

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Professional in Human Resources (PHR)

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A.A., Collin County Community College;

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A.A.S., Community College of

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Grounds Maintenance

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Housekeeping

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Grounds Maintenance

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Grounds Maintenance

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Housekeeping

**Hicks, Marcus**

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Postal Specialist

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Housekeeping

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Groundswoker

**White, Ralph J.**

Housekeeping

**Williams, Angela M.**

Administrative Assistant  
A.A.S., Strayer University

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**STAFF****Abi-Falah, Imad**

Applications Security Administrator  
B.S., Virginia Commonwealth University

**Blackwell, Scott W.**

Microsoft Network/Exchange Administrator  
B.A., Roanoke College

**Carwile, Vicky L.**

Information Technology Security Officer

**Chaoul, Michel F.**

Programmer /Analyst  
B.S., Lebanese American University

**Greene, Jeffrey S.**

Telecommunications Coordinator  
B.S., Winthrop University

**Mitchell, Lincoln**

AV/Multi-Media Speacialist  
B.A., Virginia Commonwealth University

**Ramirez, Jose**

Computer Support 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, Ed.D.,  
Nova Southeastern University

**Williams, Patricia C.**

ITSC Help Desk Coordinator  
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****Aikens, Ericka**

Financial Aid Specialist  
B.S., Virginia Commonwealth University

**Brown, Sarah A.**

Financial Aid Counselor  
B.S., Virginia State University

**Goode, Christina I.**

Administrative Assistant  
A.S., John Tyler Community College

**Martin, Diane**

Administrative Assistant

**Randolph, Priscilla**

Enrollment Support Specialist  
A.A.S., John Tyler Community College;  
B.S., Virginia Commonwealth University

**Shaw, Geneva**

Financial Aid Specialist  
B.S., Old Dominion University

**Smith, Linda C.**

Financial Aid Specialist  
B.S., M.S., Virginia Commonwealth  
University

**Starks, Canyetta D.**

Administrative Assistant

## Security

**MANAGER****Medaglia, Frank****SUPERVISOR****Kearns, Thomas****STAFF****Ahmed, Bilal**

Security Officer

**Bean, Kenneth**

Security Officer  
A.A.S., John Tyler Community College

**Daugherty, Bradley N.**

Security Officer

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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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John Tyler Community College's curriculum advisory committees are comprised of members of the local community who assist the College in development and enhancement of occupational/technical programs of study. The advisory committees assist in the review and evaluation of educational programs and training equipment and advise the College concerning employment practices, certification and licensure requirements, and other areas related to the training and occupational placement of students.

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**Chester Campus**

13101 Jefferson Davis Highway  
Chester, Virginia 23831-5316

**Midlothian Campus**

800 Charter Colony Parkway  
Midlothian, Virginia 23114-4383



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