The Johnson County Community College Vision, Values and Mission Statements

Vision
In its first 25 years, Johnson County Community College has emerged as one of the premier community colleges in the United States and earned a reputation for high-quality, comprehensive and flexible programming to meet the needs of the citizens of Johnson County. The college will continually strive to maintain and enhance its leadership role in delivering collegiate education, promoting economic development and providing cultural enrichment. In all its endeavors, the college, as an educational community, will affirm its commitment to the highest standards of quality in a caring and supportive atmosphere for students, staff and county residents, thereby maintaining a creative, vibrant environment for learning. Finally, the college will continue its proactive, innovative traditions and approaches to emerging issues in order to maintain its position at the forefront of community colleges in Kansas and nationwide.

Values
As an institution of higher education, Johnson County Community College supports a statement of values identified by the Carnegie Commission as applicable and enduring for all communities of learning. More specifically, we believe that Johnson County Community College should be:

• a place where all faculty, students and staff share goals and work together to strengthen teaching and learning;
• a place where freedom of expression and civility are practiced, encouraged and protected among all groups;
• a place where every person is respected and where diversity is encouraged;
• a place where individuals accept their obligations to the group and where well-defined governance processes guide behavior for the good of the institution;
• a place where the well-being of each member is supported and where service to others, internally and externally, is encouraged;
• a place which shares its ideas and resources with other members of the educational community – locally, regionally, nationally and internationally;
• a place in which the institution’s rituals affirming both tradition and change are shared and where the accomplishments of its staff and students are recognized.

We believe in the dignity and worth of each individual and the fundamental right of each person to realize his or her fullest potential; therefore:

• JCCC programs and services should be affordable and accessible to all who can benefit from them;
• programs and services need to be comprehensive in order to meet the diverse lifelong educational needs of the community; and
• high quality should be the hallmark of all programs, and services and should not be compromised by growth or reduction.

We believe that the college is held in trust for the people of Johnson County; therefore:

• the college assets are a community investment; accountability and responsibility must be exercised in fiscal management and in maintaining those assets for future generations;
• the college should, through continuous assessment, assure that its programs and services are of the highest quality, continually improved, current and that defined purposes and outcomes are achieved;
• the student learning goals established by the college’s instructional programs should be continuously refined and measured;
• the college should assure that students achieve the learning outcomes established by its instructional programs; and
• JCCC should provide leadership in making Johnson County a better place to live and work.

Mission
Johnson County Community College is a comprehensive community college committed to serving the current and emerging needs of the residents of Johnson County for higher academic education, technical/vocational
education and lifelong learning, incorporating diverse instructional methods and current technology in the teaching and learning process. The college seeks to respond to identified needs of the community by providing high-quality educational programs and student and community services that are accessible to all who can benefit from them. This is fulfilled through:

**General education** - innovative, high-quality general education courses integrated throughout the curriculum, enabling students to communicate effectively, use mathematics, employ appropriate methods of inquiry and problem solving and understand ethical issues and the importance of cultural and international diversity.

**Degree preparation** - coursework leading to an associate's degree and/or lower-division preparation for college/university transfer.

**Career education** - programs for occupational/technical preparation, upgrading and retraining to meet industry standards for work force development.

**Continuing education/community services/cultural education** - lifelong educational programming for personal and professional growth, for cultural and recreational enrichment and for international education leading to an understanding and appreciation of diversity.

**Developmental education** - instruction and programming that focus on basic skills development.

**Student development/student services** - admissions, testing, student activities, counseling and placement services to assist in the development and meet the needs of a diverse and changing student population.

**Cooperative partnerships/economic development** - educational partnerships with business, industry, government and other community groups; programs promoting economic development; and programs and services promoting articulation and collaboration with secondary schools, colleges and universities, and other educational organizations.
Message from the President

Dear Friends:
Thank you for your interest in Johnson County Community College. As you look through this catalog, you will find that JCCC offers courses and services that will meet your unique educational needs.

Perhaps you’re interested in completing the first two years of undergraduate work and then transferring to a four-year institution. Or, you’re changing careers and need specialized training to re-enter the work force with new skills. Or, you simply love learning and are at the stage in your life where you can easily attend college.

Whatever the reason, JCCC offers quality and value unmatched by other institutions. And as we approach the 30th anniversary of our founding, we have begun a number of initiatives to ensure that we will continue to meet your educational needs.

• We have broken ground for an expanded Commons building. When completed in the fall of 1999, the building will be twice as large as before. All Student Services functions, such as Admissions, Records, Counseling and Financial Aid, will be centralized. A new Student Success Lab will ensure that students have the skills necessary to succeed in college.

• We are finalizing plans to expand the Gym, which will allow us to increase our athletic, wellness and fitness classes.

• JCCC has successfully implemented technology that will allow you to register by phone and over the World Wide Web, rather than driving to campus and standing in line. More than 25 percent of all students enrolled in the spring 1998 semester used this technology, and we expect this number to increase.

• More classes are being offered over the Web, and we now schedule classes at off-campus sites throughout the county. This gives you more opportunities to learn when it’s most convenient for you.

• Our Continuing Education and Community Services branch continues to expand its courses, offering short-term classes for business and professional development, as well as personal enjoyment.

All our faculty and staff are here to work with you as you decide your educational goals. We look forward to you becoming part of our community.

Sincerely,

Charles J. Carlsen
President
Board of Trustees

Molly Baumgardner  Shirley Brown-VanArsdale  Virginia Krebs

Lynn Mitchelson  Dennis Moore  Elaine Perilla
### Academic Calendar

Please check the current credit class schedule. Dates listed are subject to change.

#### Summer Session 1998
- **June 1**: Last day to apply for and be guaranteed consideration for fall 1998 graduation.
- **June 8**: First day of 8-week and first 4-week classes.
- **July 2**: Last day of first 4-week classes.
- **July 3**: Independence Day holiday. Classes not in session. College offices closed.
- **July 6**: First day of second 4-week classes.
- **July 30**: Last day of summer session.

#### Fall Semester 1998
- **Aug. 17**: First day of fall credit classes.
- **Sept. 7**: Labor Day. Classes not in session. College offices closed.
- **Nov. 2**: Last day to apply for spring 1999 graduation.
- **Nov. 16**: Last day to drop a 16-week class.
- **Nov. 25**: Classes not in session. College offices closed.
- **Nov. 26-27**: Thanksgiving holiday. Credit classes not in session. College offices closed.
- **Dec. 14-17**: Final exams.
- **Dec. 18**: Last day of fall semester.
- **Dec. 24-Jan. 1**: Winter break. College offices closed.

**Note**: Saturday credit classes begin Aug. 22 and end Dec. 12. Saturday and Sunday classes will not meet Nov. 28 and 29.

#### Spring Semester 1999
- **Jan. 18**: Martin Luther King's birthday. College offices closed.
- **Jan. 19**: First day of spring credit classes.
- **March 15-20**: Spring break. Credit classes not in session. College offices open.
- **April 1**: Last day to apply for summer graduation.
- **April 15**: Last day to drop a 16-week class.
- **May 17-20**: Final exams.
- **May 21**: Commencement.
- **May 21**: Last day of spring semester.
- **May 31**: Memorial Day holiday. College offices closed.

**Note**: Saturday credit classes begin Jan. 23 and end May 15. Saturday and Sunday credit classes will not meet March 20 and 21.

#### Summer Session 1999
- **June 1**: Last day to apply for and be guaranteed consideration for fall 1999 graduation.
- **June 7**: First day of 8-week and first 4-week classes.
- **July 1**: Last day of first 4-week classes.
- **July 2**: Independence Day holiday. College offices closed.
- **July 5**: First day of second 4-week classes.
- **July 29**: Last day of summer session.

**Note**: Saturday credit classes begin June 1 and end July 29.
Admission

Admission Policies

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- Mobile Intensive Care Technician
- Paralegal
- Railroad Operations
- Respiratory Care

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Admission Procedures –
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Admission Policies
To be admitted to Johnson County Community College, you must meet one of the following requirements: You must be a high school graduate, have passed the GED exam or have reached the age of 18 and demonstrated through the JCCC student assessment process the ability to benefit from attending the college.

You may be admitted with special student status as defined below. People in this category are considered non-degree-seeking students.

1. If you are under 18 years old and have not received a high school diploma and are currently enrolled in grades 11 or 12 of an accredited high school, you may obtain special student status and be admitted to JCCC with written authorization from your high school. If you are attending a nonaccredited high school and/or are enrolled in an approved “gifted program,” you should contact the Admissions Office for specific admission guidelines.

2. If you are 18 or older and do not have a high school diploma or GED certificate, have not completed the student assessment process and are not degree-seeking, you also may be admitted with special student status.

Priority for admission will be considered in this order: Johnson County residents, other Kansas residents, out-of-state students and foreign students.

The college reserves the right to deny you admission, readmission or registration if you have violated the student code of conduct and are currently suspended from the college, are not making academic progress as outlined on page 34 or when the college is unable to provide the services, courses or program needed to assist you to meet your educational objectives.

Admission Procedures – Credit

New Students
To apply for admission to JCCC for the first time, you should follow these steps:

1. Complete an application form and return it to the Admissions Office. Application forms are available from the Admissions Office or in the credit class schedule. All new and readmitted students must complete a new application and pay the $10 application fee. The application fee must be paid at the time you submit the application to the Admissions Office.

2. Have official copies of your transcripts sent to the Admissions Office at JCCC.
   a. You must submit an official high school transcript, including final grades and graduation date, or the results of the GED exam. (If you graduated more than five years ago or have 15 or more hours of college credit, you may disregard this requirement.)
   b. You must submit an official transcript from each college or university you have attended.

   If you are currently attending another institution, you need to have your transcript sent at the end of the semester. (If you have a bachelor’s or higher degree and are not pursuing a degree at JCCC, you may disregard this requirement.)

   The issuing institution must mail the official transcript to JCCC. Hand-carried copies are not acceptable. You will not be allowed to re-enroll after one semester unless all outstanding transcripts are received in the Admissions Office.

3. You are encouraged – but not required – to submit American College Testing scores. If you plan to submit scores, you should take the ACT test as early as possible and request that scores be sent to JCCC.

Residency
Currently, Kansas law requires that you live in the state six months prior to the first day of the semester or session in order to be eligible for resident tuition rates. This law is subject to change at the discretion of the Kansas State Legislature. The six-month requirement may be waived, upon appeal to the director of admissions and records, if you were transferred or recruited by a Kansas company as a full-time employee to work in the state and have established a residence in Kansas. If you are a nonresident, foreign or visiting international student at JCCC, you must pay out-of-state tuition and fees. Address changes that result in a change to Kansas residency may require validation through a residency appeal. Contact the Admissions Office for details.

Continuing Students
An application for admission to JCCC is valid for one year beginning with the summer session and ending with the spring semester. To be considered a continuing student for the following year, you must have been enrolled during the previous spring semester. If a student misses the spring semester, a new application for admission is required.
Affiliate Programs (Cooperative Programs)

Johnson County Community College and the Metropolitan Community College District have developed cooperative agreements that allow Johnson County residents to enroll in selected career programs at resident cost per credit hour rates. Affiliate programs include Academic Bridges to Learning Effectiveness (ABLE), Aviation Maintenance Technology, Grounds and Turf Management, Health Information Technology, Occupational Therapy Assistant, Physical Therapist Assistant, Radiologic Technology, Surgical Technology, Travel and Tourism Management and Veterinary Technology. For more information about specific criteria required for individual program acceptance, contact the Metropolitan Community College District.

To participate in an affiliate program, the following requirements must be met:

1. Only Johnson County residents are eligible for admission to the affiliate program. Proof of residency is required.
2. After completing the admission process, being officially accepted into one of the above programs and registering for classes at MCCC, you must complete and sign the affiliate student contract, available at the JCCC Admissions Office.
3. JCCC will allow enrollment at the affiliate school for courses that are not being offered at JCCC. If you elect to take a course at the affiliate school that is offered at JCCC, you will be responsible for paying the out-of-state tuition at the affiliate school.
4. JCCC will not pay for any repeated course work. If you elect to repeat a course at the affiliate school, you must pay for the out-of-state tuition at the affiliate school.
5. You must apply for and receive all your financial aid at JCCC.
6. JCCC has the right to limit enrollment in the affiliate program and can make changes in the program at any time.

For more complete, up-to-date information, refer to the current semester’s credit class schedule.

Reverse Affiliate Programs (Cooperative Programs)

Missouri residents are allowed to enroll in the Hospitality Management, Chef Apprentice, Electronics Technology, Administration of Justice/Correctional Emphasis, Railroad Operations and Respiratory Care programs offered through Johnson County Community College at resident Missouri tuition rates.

To participate, the following requirements must be met:

1. Respiratory Care is a selective admission program. (See page 13 for specific details.)
2. Enrollment in the Hospitality Management/Chef Apprentice program is by approval of the Hospitality Management academic director. Contact the departmental head for more information.
3. Enrollment in the Electronics Technology program is by approval of the Engineering Technologies academic director.
4. Railroad Operations is a selective admission program. As a Missouri resident, you must apply for and receive all of your financial aid through the Metropolitan Community College District. Missouri residents in the above programs are not eligible for financial aid through Johnson County Community College.

International Students

International students must meet all college admission policies and provide required documentation as found in the guidelines established by the director of Admissions and Records. International students are students who are not U.S. citizens, as categorized below:

1. Resident aliens are international students who have been granted permanent resident status by Immigration and Naturalization Services.
2. JCCC foreign students are international students who are applying for an I-20 from JCCC to obtain a student (F-1) visa.
3. Visiting foreign students are international students who currently hold a valid visa or current I-20 from another institution.

Resident Aliens

Resident aliens must meet the following requirements:

1. Provide a “green card” or copies of your permanent residency application, along with the U.S. Department of Immigration and Naturalization Services receipt of filing. An employment authorization card is not sufficient. If you cannot provide your permanent residency card, out-of-state tuition will be assessed.
2. Submit official transcripts from all U.S. secondary and postsecondary educational institutions you have attended. The issuing institution must send the transcript directly to the JCCC Admissions Office. Hand-carried transcripts are not acceptable. Transcripts from foreign institutions are not required.*

Note: If you have been out of high school five or more years, you need not submit your high school transcript.
3. Complete the JCCC assessment and enrollment process.
   a. Complete the JCCC assessment test.
   b. Discuss course selection, based on your assessment results, with a JCCC counselor. Course selection may be restricted because of JCCC assessment test results.
   c. Enroll in classes approved by a counselor.
*If you want your foreign credits evaluated for a JCCC certificate or degree, you should submit transcripts from all foreign postsecondary institutions to Educational Credential Evaluators Inc. in Wisconsin. **Note:** This is not required for admission to JCCC. A applications for Educational Credential Evaluators Inc. are available from the Admissions and Records Office. There is a fee for their services.

**JCCC Foreign Students**

Foreign students applying for an I-20 from JCCC to obtain a student F-1 visa must meet all college admission policies in addition to the following requirements:

1. Complete a Foreign Student Application Packet. The packets are available from the Admissions Office.
2. Submit to the Admissions Office your completed application packet and all requested supporting documents including, but not limited to, a valid TOEFL score and verification of your ability to pay tuition, fees and other supporting costs. Specific information concerning application deadlines and other admission requirements is in the packet.

If you are accepted for admission, the JCCC assessment process as described above under “Resident Aliens” must be completed before you enroll in classes. Course selection may be restricted because of JCCC assessment test results.

**Visiting F-1 students from another college must meet the following requirements each semester:**

1. Complete a foreign student application.
2. Obtain and return the completed Confidential Reference for Visiting Students form, passport, I-94 card and current I-20 to the Admissions Office. A new form, with documentation, must be submitted prior to enrollment each semester.

**Note:** Visiting F-1 students are limited to 6 credit hours each spring and fall semester.

If you are considered a visiting foreign student, you will be assessed tuition at the same rate as foreign students.

**College Credit Class Options for High School Students**

High school students may enroll in college credit classes by selecting one or both of the following options:

- **College Now** - This program is for high school students enrolled in selected honors or advanced placement classes for which college credit equivalency has been established. Instruction is provided on the high school campus. You must submit a JCCC application and pay the $10 application fee. Your high school transcript is not required at the time of enrollment. Approval from your high school principal is necessary. A schedule of College Now classes and registration forms will be available early each semester at participating high schools. A maximum of 32 College Now hours is allowed.

- **Quick Step** - This program is for high school juniors and seniors and/or students identified as gifted with a current Individual Education Plan. Instruction is provided by JCCC faculty on the college campus. You must submit a JCCC application for admission, the $10 application fee and a signed Quick Step form at the time of enrollment indicating your high school principal’s approval to take college classes. If you are home-schooled or in an approved gifted program, you must contact the Admissions Office for complete admission requirements. You will need a high school transcript sent at the time of graduation. You can find a complete list of classes each semester in JCCC’s credit class schedule.
Tech Prep – This program is for high school students enrolled in selected technical courses for which JCCC college credit equivalency has been established. Instruction is provided on the high school campus or at JC-TEC (Johnson County Area Technical Educational Cooperative).

Career programs that have been aligned and may offer advanced standing at JCCC are:
- Accounting
- Metal Fabrication
- Drafting Technology
- Marketing and Management
- Electronics Technology
- Office Systems Technology
- Fashion Merchandising
- Paralegal
- Information Systems
- Railroad Operations
- Interior Merchandising
- Teleservice Representative
- Fashion Merchandising
- Paralegal
- Information Systems
- Railroad Operations
- Interior Merchandising
- Teleservice Representative

See your high school counselor to learn which courses at your school are JCCC college credit equivalent. Credit will be given only for a final grade of "C" or better. Credit will be posted after 12 additional hours of JCCC credit have been successfully completed.

Programs with Selective Admission

Admission to the college does not guarantee enrollment in any specific course or program. Selective admission programs have a limited number of openings each year and have specific entry-level admission requirements that must be met before selection for admission to the program. If you are interested in any of the following programs, obtain an admission packet from the Admissions Office. The packet provides the specific, up-to-date selection criteria. In addition, you should meet with a JCCC counselor as early as possible.

Registered Nurse
- Maximum number selected: 55
- Application deadline: Jan. 15
- Classes begin: Fall semester

Articulation of Licensed Practical Nurses
- Application deadline: Jan. 15
- Classes begin: Fall semester

Dental Hygiene
- Maximum number selected: 26
- Application deadline: Feb. 1
- Classes begin: Fall semester

Interpreter Training
- Maximum number selected: 30
- Application deadline: Listed in the current application packet
- Classes begin: Fall semester

Mobile Intensive Care Technician (Paramedic)
- Maximum number selected: 26
- Application deadline: Oct. 15
- Classes begin: Spring semester

Paralegal
- Maximum number selected: 50
- Application deadline: April 1 for fall semester
- Classes begin: Fall semester

Railroad Operations
- Contact the director of Railroad Operations.

Respiratory Care
- Maximum number selected: 20
- Application deadline: Oct. 15 (if openings exist, applications will be accepted through Feb. 15)
- Classes begin: Summer session

Respiratory Care CRTT-RRT Transition
- Application deadline: Oct. 15 for spring semester
- Application deadline: Feb. 15 for fall semester

A admission to each of the selective admission programs is highly competitive. Therefore, you should request and submit an application packet as early as possible.

*The Paralegal program has a number of options that can be considered. Deadline dates and beginning semesters will depend on your admission status and the option you choose. You should contact the Admissions Office or the program director of the Paralegal program to obtain specific information about the admission process and the program options.
Admission Procedures –
Area Vocational School Programs

Admission to the college does not guarantee enrollment in any specific AVS program. Some AVS programs have a limited number of openings each year and have specific entry-level admission requirements that must be met before admission to the program is made. If you are interested in any of the following AVS programs, obtain an admission packet from the AVS admissions office. The packet provides the specific selection criteria.

Health Occupations

Practical Nursing
- Maximum number selected: 24
- Application deadline: April 15
- Classes begin: Fall semester

Certified Nurse Aide

Certified Medication Aide

Home Health Aide

Certified Medication Aide Update

I.V. Therapy for Licensed Practical Nurses
- Contact 469-8500, ext. 4722, for information on these programs.

Admission Procedures –
Continuing Education

Admission to continuing education classes is usually open to any person 18 years of age or older. Any exception to this age restriction will be stipulated in college publications.

Cosmetology
- Maximum number selected: 25
- Application deadline: Contact AVS office, West Park Center
- Classes begin: Fall, spring, summer

Cosmetology – Nail Technician

Cosmetology – Esthetician
- Contact 469-8500, ext. 4722, for information on these programs.
Registration
and Costs

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Registration Procedures

Registration
Students will register for classes according to instructions and deadline dates contained in the schedule of classes published prior to the beginning of each semester. Registration is considered complete when the student has paid tuition and fees or when payment has been officially authorized by the Financial Aid Office or Business Office. Students with past due obligations to the college may not register for classes until such obligations are resolved to the satisfaction of the college.

The college reserves the right to deny registration to any individual who has violated the Student Code of Conduct, as defined in policy 319.01, and is currently suspended from the college, who is not making academic progress, as defined in policy 314.06, or when the college is unable to provide the services, courses or programs needed to assist a student in meeting his/her educational objectives.

No student may register in any course for the third time without counselor approval.

Counseling
Counselors will work with you to identify your educational and career interests in order to create an educational plan. Counselors also will inform you about course prerequisites, the transferability of courses and the sequence in which courses should be taken.

Once your educational plan has been developed and the assessment test has been taken (if needed), you are ready to register. The exact time and day to register will be listed in the credit class schedule available each semester at the Admissions and Records Office.

Assessment
As part of JCCC’s philosophy of assisting all students who enroll in credit classes to successfully achieve their academic goals, you are required to participate in the assessment process prior to enrollment, with the following exceptions:

• If you have satisfactorily completed a college-level composition course, you are not required to take the English or reading sections of the assessment test.
• If you have satisfactorily completed the first college-level mathematics course required for your JCCC degree program, you are not required to take the math section of the assessment test.
• If you indicate that your educational objective is “personal interest or self-improvement” or “improving skills for present job” on the JCCC application for admission and are not seeking a degree or certificate at JCCC, you may enroll in any credit course except mathematics, English or reading without participating in the assessment process.
• If you have ACT scores, you may be exempt from one or more sections of the assessment test. See the current course bulletin or contact Testing/Assessment Services for more information.
• If you plan to enroll in math or English at JCCC and do not have the appropriate ACT scores or prior college-level math or English, you will be required to take the assessment test.

Placement Based on Assessment
You may be required to enroll in Reading or English classes your first semester based on your assessment scores. Additional information is available in the Counseling Center and in Testing/Assessment Services.

Scheduling Classes
You are responsible for scheduling your own classes and for being aware of all schedule changes. The college reserves the right to cancel, combine or change the time, day or location of any class without obligation. The college also reserves the right to change the instructor and/or instructional methodology without obligation.

Student Course Load
For the fall or spring semester, you are considered full-time if you are enrolled in 12 or more credit hours; those enrolling in 6 to 11 credit hours are considered half-time, and those enrolling in 1 to 5 credit hours are considered less than half-time.

In the summer session, you are considered full-time if you are enrolled in six or more credit hours; if you are enrolled in fewer than six credit hours, you are a half-time student.

If you wish to enroll in more than 18 semester hours of credit for a fall or spring semester or more than nine hours of credit in the summer, you must, before enrolling, receive
written permission from a counselor and have a 2.5 cumulative G.P.A. for all hours attempted in college. All appeals should be made in writing and reviewed by the dean of Student Services for resolution.

Early Registration
Early registration is open to you if you are currently enrolled or have submitted an admission application to the Admissions Office by the deadline dates listed in the credit class schedule. During early registration, you may register according to procedures listed in the credit class schedule or by Web and Touchtone registration. To facilitate registration by Web or Touchtone, you should make sure any transcripts from other schools containing prerequisites for courses at JCCC have been received and articulated. You should also take care of any holds on your record, such as financial or library obligations, prior to enrollment.

On-campus Registration
On-campus registration takes place before the beginning of the semester. Specific dates, times and locations are listed each semester in the credit class schedule.

Late Registration
Late registration takes place during the first five working days of fall and spring semester classes. Specific dates, times and locations are listed each semester in the credit class schedule. A $10 late registration fee will be assessed if you initially register for the semester or session during late registration.

Registration for Late-start Classes
You may register for classes listed in the “Late-start Classes” section of the credit class schedule up until the day before the beginning of the class. A late fee of $10 is charged for registration after the class begins.

Adding and Dropping a Class

Adding a Credit Class
You may add a credit class through the first five working days during a nine- to 16-week semester, and on the first three working days of an eight-week term. The last day to add a class less than eight weeks in length will be determined by the director of Admissions and published each semester in the credit schedule of classes. Students may not attend a course unless officially registered for the course.

Dropping a Credit Class
16-week Class: You may drop a class up to November 15 for the fall semester and April 15 for the spring semester.

Classes Less than 16 Weeks: You may drop a class up to completion of three-fourths of the class. Specific dates may be obtained in the Admissions Office.

When you officially withdraw from a course, you may no longer attend that course. A "W" grade is recorded on your permanent record if you drop a course after one quarter of the semester or session has passed.

Note: If your records are on "hold," you will not be allowed to drop a class. See the "Records on Hold" policy, page 37. Exceptions to these policies may be authorized by the dean of student services. All appeals must be made in writing.

Adding and Dropping Credit Classes – Effect on Cost per Credit Hour
Courses with the same number of credit hours that are dropped and added simultaneously will be treated as an even exchange of cost per credit hour during the refund period of each semester or session. For courses with different total credit hours that are dropped and added simultaneously, you will receive the appropriate refund percentage for the dropped course and pay the total cost per credit hour for the added course. If you drop a class on one day and add a class on another, you will be required to pay for the added class.

After the expiration of the refund period, an even exchange for tuition purposes may be granted in the following situations:
• changes in sections for the same 16-week class
• changes in sections for the same short-term class that begins during the same week and extends over the same number of weeks
• changes from a higher-level math or English regular-start class to a lower-level math or English late-start class, which may occur until the late-start class begins. Students will not be granted an even exchange when dropping any other regular-start class and adding a late-start class or adding a self-paced class.

All changes occurring after the expiration of the refund period require written approval by the division administrator of the academic division under which the class is offered.

If a student drops a class and adds a different class after the expiration of the refund period, the student will be required to pay the additional tuition.

Dropping a Course Required by Assessment
You will be asked to drop all classes when dropping Reading/English classes you were required to enroll in by the assessment. All appeals should be made in writing and reviewed by the dean of Student Services for resolution.
Adding an Area Vocational Course
Registration deadlines for Area Vocational School programs are published in college publications, which are available at the AVS office and the JCCC Admissions and Records Office.

Adding a Continuing Education Class
You may add a continuing education class up until the day before the class begins.

Dropping a Continuing Education Class
Because continuing education classes begin at different times throughout the semester, continuing education classes may be dropped according to procedures outlined in the continuing education class schedule.

Costs
Credit Class Cost per Credit Hour
At the time of this catalog printing, the cost per credit hour is as follows. However, the JCCC board of trustees has the right to change cost per credit hour without notice.

Kansas Residents:
Total per Credit Hour $46.00

Out-of-state, Foreign and Visiting International Students:
Total per Credit Hour $122.00

Some courses may require additional fees. These fees are listed in the credit class schedule each semester. A $10 late fee will be assessed all late enrollees. A late payment fee may be assessed for students who register early and do not pay by the early payment date but do pay before the first day of on-campus registration.

If you register early, payment is due by the date listed in the credit class schedule. If you register during on-campus or late registration or to audit a class, payment is due the day you register.

The college has no deferred or partial payment policy. You will not be allowed to attend classes, enroll in classes, graduate or have a transcript issued until all costs per credit hour and past-due obligations are paid.

Returned Check Policy
If a check made payable to the college is returned for any reason, your records will be placed on hold, and you will be charged a return check fee of $25 for each returned check. Checks for tuition and fees will not be redeposited.

If the check for your tuition and fees is returned, you will be dropped from all classes in addition to being assessed the $25 returned check fee. Your records will be placed on hold until you pay the returned check fee and all outstanding JCCC financial obligations. Once you have a returned check, the college will accept only cash, money order, MasterCard, Visa, Discover or American Express payments for two years from the time all financial obligations were satisfied.

You will be notified at your current student address if your check is returned. If payment is not made to the college within 10 days, the matter may be referred to a collection agency.

If you are dropped from classes for a returned check and you wish to be reinstated in open classes, you must re-register and pay in full within one week from the date you are dropped. If you re-register after classes begin, you will be assessed a late registration fee of $10.

If you write a check at the bookstore, you may not return the merchandise for a refund until seven days have passed to verify the check has cleared.

For more information, contact the Business Office at 469-2567.

Area Vocational School Registration and Fees
Registration deadlines and fees for Area Vocational School programs are posted in college publications, available at the AVS office and the JCCC Admissions and Records Office.

Continuing Education Class Fees
Fees for continuing education classes are determined on an individual class basis. Check the continuing education class schedule for specific class fees.

Refunds
Credit Class Refunds
A full refund of cost per credit hour will be issued if JCCC exercises its right to cancel a class. If you withdraw from classes, you may receive a partial refund. You may apply for a refund by completing a drop form in the Admissions and Records Office. If you have completed registration and want to withdraw from a class or classes in which you are enrolled, you will receive the following refund:

• 100 percent of cost per credit hour if the drop form is processed by the Admissions and Records Office before – but not on – the first day of the semester or session.
• 80 percent of cost per credit hour if the drop form is processed by the Admissions Office – within two weeks after the beginning of 16-week classes for fall and spring semester; – four calendar days from the beginning of classes for an eight-week term;
- two calendar days from the beginning of classes for a four-week session;
- one calendar day after the beginning of classes for a two-week mini-session, a short course or a seminar.
• No refund will be authorized for withdrawals or registration changes made after the specified calendar days listed in the credit class schedule. The only exceptions are if the class is canceled by the college or it is necessary to revise the class schedule, in which case a 100 percent refund of cost per credit hour will be issued. Refunds are calculated based on the day you officially drop a class in the Admissions and Records Office, not when you stop attending class.

Exceptions to this policy may be authorized by the dean of Student Services. All appeals must be made in writing. Appeals may not be considered after half of a course has been completed.

**Continuing Education Class Refunds**

A full refund will be made if the college exercises its right to cancel a class or if the class is full when your registration is received. A request for refund will be honored if a written request is received in the JCCC Continuing Education Office three business days before the class begins. Exceptions to this policy may be authorized by the dean of Continuing Education.

**Textbook Costs**

If you are a full-time student, you can expect to pay approximately $300 a semester for textbooks. Textbooks may be purchased in the JCCC bookstore. Procedures for obtaining refunds for textbooks and for textbook buy-back are listed in the credit class schedule.
Student Financial Aid

The Purpose of Financial Aid

Financial Aid Eligibility Requirements

Financial Aid Process
  To Apply for Nonneed-based Financial Aid
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Disbursement

Types of Financial Assistance
  Scholarships and Grants
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  Loans
  Veterans Educational Benefits
  Notetaker Stipends

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Refund/Repayment Policy
  Institutional Refund Policy
  Repayment Policy

Satisfactory Academic Progress
  Financial Aid Probation and Ineligibility
  Appeals

Changes in Enrollment Status
The Purpose of Financial Aid

The purpose of financial aid programs at Johnson County Community College is to provide financial assistance to those students who would otherwise not be able to attend. With the costs of higher education rising in recent years, student financial aid has become increasingly important. The process of determining who receives limited financial aid resources is structured so the distribution of funds is as equitable as possible to meet the needs of students, while meeting the criteria of JCCC, agencies and constituents that provide funding for student aid programs.

JCCC participates in many financial aid programs. Each program has its own criteria defining who is eligible to receive consideration. Responsibility lies with the Student Financial Aid Office in matching students with appropriate funds for which they are eligible. To do this, the office must collect accurate information from student applicants. Students must do their part by completing applications and responding to informational requests in a timely manner.

Financial Aid Eligibility Requirements

To be considered for financial aid you must:
- Be enrolled in a program that leads to an associate's degree, an eligible vocational certificate or be in a transfer program that leads to a bachelor's degree at another institution.
- Be a U.S. citizen, an eligible noncitizen or a permanent resident of the United States.
- Maintain satisfactory academic progress according to the JCCC student financial aid policy. See page 23 for more information.
- Not be in default on a student loan or owe a repayment on a grant.
- Sign a Financial Aid Payment Authorization indicating the receipt of financial aid funds will be used only for educational purposes.
- Register with the selective service (if required) and sign a statement of selective service status.
- Have a high school diploma, GED certificate or demonstrate the ability to benefit through the Asset Test (receiving minimum scores designated by the U.S. Department of Education).
- Have a valid Social Security number.

Financial Aid Process

The financial aid process can become complex, depending on the type of financial aid a student is seeking, the number of offices and agencies that may be involved and the steps that may be required by the Department of Education or other involved agencies. Need-based financial aid eligibility is determined by an evaluation of the family's finances, estimating what the family can afford to contribute to education costs, with the family then receiving financial aid to cover their need. This evaluation formula is determined by the United States Congress. Families need to complete the Free Application for Federal Student Aid (FAFSA) for consideration for all federal, state and some institutional funds. Nonneed-based financial aid typically has merit criteria not considering the family's financial strength.

All financial aid applicants must have a current application for admission on file with the Admissions Office. Contact the Admissions Office if you are unsure.

To Apply for Nonneed-based Financial Aid

Complete the JCCC scholarship application for any merit or financial need-based scholarships. The scholarship deadline is April 1 for those programs for which the Student Financial Aid Office selects recipients. Some campus departments also select recipients for scholarships in their area and have various deadlines and processes. For details, refer to the JCCC scholarship brochure, which is available upon request from the Student Financial Aid Office. Students also are encouraged to apply for local scholarships or use computerized scholarship search programs that charge no fee or a minimal fee.

To Apply for Need-based Financial Aid

Complete the Free Application for Federal Student Aid (FAFSA). This must be sent to the federal processor at least 10 weeks before cost per credit hour is due. Upon receiving the results of your FAFSA, called the Student Aid Report, the Financial Aid Office will begin evaluating your data. Additional information may be needed, which will be requested from you by letter. Such additional documents might include copies of federal tax forms, W-2s and verification worksheets.

Upon receiving all required information, the Financial Aid Office will match your application with available funds. You will be sent an offer of financial aid, listing the types and amounts of financial aid for which you are eligible. To reserve these funds, you must sign and return your award notification within the time specified. Some funds will require additional processing.

For additional application information, refer to the financial aid brochure and other information available upon request from the Financial Aid Office.
Disbursement
Your financial aid will be used to pay your cost per credit hour and any other outstanding educational charges due to JCCC. Any remaining funds will be disbursed to you per the disbursement schedule listed in the credit class schedule. Specific disbursement information will be included with your Offer of Financial Aid. If you have questions, contact the Student Financial Aid Office.

There are no waivers or partial payment plans at JCCC. If the financial aid award is not enough to pay all enrollment expenses, you must pay the balance no later than the published due date.

If you have not received your award notification by the payment deadline, you will be responsible for payment for courses.

Financial assistance may still be awarded after your payment has been made. In this instance, your payment will be refunded to you and the financial aid will be applied to your cost per credit hour expenses.

Types of Financial Assistance
Several types of financial assistance are available. These include scholarships, grants, student employment, loans and benefits. You will need to complete the Free Application for Federal Student Aid (FAFSA) and submit the completed form to the central processor to be considered for most financial aid programs. A priority deadline at JCCC is April 1.

Scholarships and Grants
- **Scholarships** are offered to qualified applicants. Scholarships are primarily categorized into two basic groups. The first type includes institutional scholarships in which recipients are selected by the Student Financial Aid Office. To apply for these scholarships, students must complete the JCCC scholarship application by April 1. The second type of scholarships includes those in which various departments on the college campus select recipients. Examples include: athletic, hospitality management, dental hygiene and nursing. To apply for these departmental scholarships, students need to contact the specific department for which they are interested.

  For a listing of scholarships and detailed information, refer to the scholarship brochure available in the Student Financial Aid Office. For additional information regarding outside scholarships, visit http://www.student-services.com/fastweb/

- **Federal Pell Grants** is a need-based program funded by the federal government. The award amount is directly related to the applicant's federal application result. Pell Grant maximum amounts may vary from year to year, with the maximum being $2,700 during the 1997-98 award year. The grant must be applied toward education-related expenses.

  - **The Federal Supplemental Educational Opportunity Grant** is a government grant that ranges from $125 to $1,000 an academic year and must be applied toward education-related expenses. SEOG is a need-based program that must be given to the most needy students, with the amount determined by the Financial Aid Office. At JCCC, SEOG is awarded very early in the application processing year due to limited funding.

Student Employment
- **Employment** opportunities, both on-campus and in the community, are available while you attend JCCC. Information concerning employment is available through the JCCC Career Center, 155 GEB.

- **Federal Work Study** provides jobs for students who have financial need. This gives students the opportunity to earn money during the academic year to help pay for educational expenses.

  The pay rate is at least the current federal minimum wage, but may be higher, depending on the type of work and skills required. The maximum amount a student can earn is $4,000 an academic year, and is awarded by the Student Financial Aid Office.

  The Student Financial Aid Office works closely with the Career Center to coordinate placement of students in appropriate jobs.

Loans
- **Federal Perkins Loan**, a 5-percent interest rate federal government loan, is processed through JCCC. This need-based loan ranges from $400 to $2,500 a year. The loan is interest-free while you are enrolled in at least six credit hours. Repayment, including interest, begins nine months after you leave school.

- **Federal Subsidized Stafford Loan** funds are processed through lenders of the student's choice. Eligibility for this federal need-based loan is determined by the JCCC Financial Aid Office. A first-year JCCC student may borrow up to $2,625 (if eligible). A second-year JCCC student may borrow up to $3,500 (if eligible). This loan has a variable interest not to exceed 8.25 percent; however, it is interest-free while you are enrolled in at least six credit hours. Interest begins accruing and you must begin repaying the loan six months after leaving school or being enrolled in school less than half time. The loan is subject to processing fees that are deducted from the loan proceeds.
• **Federal Unsubsidized Stafford Loan** funds are processed through lenders of the student’s choice. Eligibility for this loan is determined by the JCCC Student Financial Aid Office. First-year undergraduate JCCC students may borrow up to $2,625 in an unsubsidized Federal Stafford Loan, or a combination of a Subsidized and Unsubsidized Federal Stafford Loan; second-year undergraduate students may borrow up to $3,500. This loan has a variable interest rate not to exceed 8.25 percent, and accrual of interest begins immediately. Independent undergraduate students, or dependent students whose parents are unable to obtain a PLUS loan, may be eligible to borrow up to $4,000 in an additional Unsubsidized Stafford Loan. You must begin repayment of the principal six months after leaving school or dropping below six credit hours. The loan is subject to processing fees that are deducted from the loan proceeds.

• **Federal Parent Loans for Undergraduate Students (PLUS)** are processed through lenders of the parents’ choice. Eligibility is determined by the Student Financial Aid Office and is not based upon financial need. Parents of eligible dependent students may borrow up to the yearly cost of education (as determined by JCCC) for each child. The amount borrowed may not exceed the cost of education minus any other financial aid the student is eligible for. This loan has a variable interest rate not to exceed 9 percent, and repayment of the loan begins immediately. PLUS loan checks will be mailed to the school and made co-payable to the school and to the parent.

A n in-depth discussion of all federal aid programs can be found in The Student Guide – Financial Aid, published by the Department of Education and available upon request in the Financial Aid Office.

**Veterans Educational Benefits**

Veterans Educational Benefits are typically approved for all of JCCC’s degree programs. Veterans, reservists and eligible dependents requesting benefits must complete the appropriate forms, which are available through the Veterans Affairs Office, 151 GEB. All applicants for VA educational benefits must have a degree program plan developed and approved (or updated) by a JCCC academic counselor before each registration. Benefit pay is authorized only for those courses specifically listed or indicated on your program plan. We reserve the right to request a program plan on a per need basis. You must maintain enrollment to receive educational benefits. To maintain benefit eligibility, you are required to meet the same published standards of satisfactory academic progress as all financial aid recipients at JCCC.

VA benefit pay rates are based on the following enrollment schedule:

<table>
<thead>
<tr>
<th>Credit hours enrolled*</th>
<th>Eligibility rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 or more semester hours</td>
<td>full-time benefits</td>
</tr>
<tr>
<td>9-11 semester hours</td>
<td>3/4-time benefits</td>
</tr>
<tr>
<td>6-8 semester hours</td>
<td>1/2-time benefits</td>
</tr>
</tbody>
</table>

* Fewer hours are needed to be eligible for veterans benefits during the summer session.

**Notetaker Stipends**

Notetaker stipends are available if you wish to take notes for deaf or hard-of-hearing students in your classes. This stipend will reimburse you the cost per credit hour for that class at the end of the semester. Contact the JCCC Student Access Center for more information.

**Costs**

The cost per credit hour is established annually by the JCCC board of trustees. Because amounts may vary, the following budget illustrates estimated academic year costs for a Kansas resident living in an apartment and enrolled in a total of 24 credit hours:

- Tuition and fees ......................... 1,104
- Books and supplies ..................... 840
- Room and board .......................... 6,750
- Transportation ......................... 1,620
- Personal ................................. 1,170
- Total cost of attendance ............. $11,484

**Refund/Repayment Policy**

A refund and/or repayment may result when a student officially withdraws from all classes, drops out, is expelled or otherwise fails to complete the period of enrollment.

**Institutional Refund Policy**

For federal aid recipients attending JCCC for the first time, a federal pro-rata refund policy will be applied if the student withdraws from all classes before 60 percent of the semester has passed. The following formula demonstrates the calculation of the pro-rata refund of costs due for students in this category. An administrative fee may be retained before calculating the pro-rata refund not to exceed $100 or 5 percent of the total institutional charges.

The number of weeks not completed by the student is divided by the total number of weeks in the term. This equals the percentage of the term not completed. This percentage is multiplied by the total costs per credit hour, which equals the amount of the scheduled refund. The scheduled refund minus any unpaid charges equals the total amount of the refund.
For federal aid recipients not attending JCCC for the first time, costs per credit hour will be refunded according to the following federal refund policy. An administrative fee may be retained before calculating the prorata refund not to exceed $100 or 5 percent of the total institutional charges.

1. 100 percent of costs per credit hour if the student withdraws from all classes on or before the first day of classes.
2. 90 percent of costs per credit hour if the student withdraws from all classes after the first day of classes but before the end of the first 10 percent, in time, of the period of enrollment.
3. 50 percent of costs per credit hour if the student withdraws from all classes after the end of the first 10 percent but before the end of the first 25 percent, in time, of the period of enrollment.
4. 25 percent of costs per credit hour if the student withdraws from all classes after the end of the first 25 percent but before the end of the first 50 percent, in time, of the period of enrollment.

For students receiving financial aid, the refund will be repaid to the appropriate fund according to the following distribution priority, which is statutorily prescribed.

1. Unsubsidized federal Stafford Loan
2. Subsidized federal Stafford Loan
3. Federal PLUS Loan
4. Federal Perkins Loan
5. Federal Pell Grant program
6. Federal SEOG program
7. Other Title IV aid programs
8. Other federal sources of aid
9. Other state, private or institutional aid
10. The student, if any portion of the refund remains after repayment of the above funds

Repayment Policy

The following repayment policy will be applied to all students who totally withdraw from all classes after receiving federal financial aid for educational costs, other than costs per credit hour. (Federal loans and work study awards are excluded from this repayment calculation.)

A repayment obligation occurs if the funds the student received for educational expenses exceed the educational costs for the portion of the enrollment term the student completed. If any portion of the cash payment of financial aid funds cannot be attributed to the cost of education, then that portion is to be returned to the fund from which it was received.

If a student withdraws from all classes (or to an enrollment status of less than half-time) after financial aid has been disbursed and before the 20th day of class, a 100 percent repayment of all financial aid programs is required. If a student withdraws from some classes (to an enrollment status of at least half-time) after financial aid has been disbursed and before the 20th day of class, a partial repayment of financial aid programs is required.

Johnson County Community College will notify students of any overpayment obligation and it is the student’s responsibility to make prompt repayment. Students who fail to repay will not be eligible for additional financial aid funds at any institution until this obligation has been met. The repayment will be returned to the proper program according to the following distribution priority.

1. Federal Perkins Loan
2. Federal Pell Grant
3. Federal SEOG program
4. Other Title IV aid programs
5. Other federal sources of aid
6. Other state, private or institutional aid

Examples of the application of the refund and repayment policies will be available to students upon request by contacting the Financial Aid Office.

Satisfactory Academic Progress

Satisfactory academic progress is the measurement of your scholastic progress or advancement. Federal legislation governing the administration of all federal student financial aid programs require that a student make satisfactory academic progress toward a certificate, degree or transfer program leading to a bachelor's degree. To comply with this regulation, the following standards of satisfactory academic progress have been established. All recipients of all financial aid programs, including state and institutionally funded programs, are subject to these standards for renewal of their financial aid eligibility. Some JCCC institutional programs have additional or more stringent renewal criteria.

Satisfactory academic progress evaluation is based on the number of attempted course hours at JCCC and transfer hours at other postsecondary institutions and will occur at the end of each enrolled semester. Any classes taken during any summer session (within the same summer) are viewed as one enrolled term. Only credit courses are considered for satisfactory academic progress evaluation.

The minimum standards of satisfactory academic progress are evaluated by the following criteria:
1. Grade Point Average
Students must attain a minimum cumulative G.P.A. based on the total number of credit hours completed. These minimum are:

<table>
<thead>
<tr>
<th>Number of successfully completed hours</th>
<th>Minimum cumulative G.P.A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-30</td>
<td>1.7</td>
</tr>
<tr>
<td>31-97</td>
<td>2.0</td>
</tr>
</tbody>
</table>

2. Percentage of Completion
Students must successfully complete 66 percent of all credit hours attempted as appearing on their official academic transcript at JCCC, up to a maximum of 97 attempted credit hours. Students attempting more than 97 credit hours will not be eligible to receive financial aid. This includes all enrollment periods, whether financial aid was requested or received during that time.

Note: Courses in which a grade of “F” (failure), “I” (incomplete), “W” (withdrawn) and “R” (repeated) are recorded and counted as total hours attempted but not completed. Of these grades, the “F” is the only one included in the computation of the cumulative G.P.A. Self-paced courses that are not completed by the end of the semester in which the student enrolled will be recorded with a grade of “I” until the course is completed. An incomplete self-paced course may jeopardize financial aid eligibility in future enrollment periods.

Financial Aid Probation and Ineligibility
Financial aid probation status applies to the next enrolled semester following the semester the student was determined as not making satisfactory academic progress. Students may continue to receive financial aid funding while on financial aid probation status. To remove probation status, the student must:

• Reinstate his or her academic good standing according to the minimum criteria of satisfactory academic progress, or

1. Enroll at least half time (6 credit hours during a regular academic term and 3 credit hours during a summer term), and

2. Complete all courses with a grade of “D” or better, and

3. Receive a 2.0 grade point average for the probation term.

If the student does not satisfactorily complete the above criteria, the student will be placed on financial aid ineligibility and will not receive any financial aid until satisfactory academic progress standards are attained. Students denied aid due to “ineligible” status must take credit courses at JCCC at their own expense until the minimum academic standards are met.

Note: Probation or ineligible status may be retroactively incurred based on evaluation of the student's previous JCCC academic history. All JCCC courses previously taken, as well as all transfer hours, will be considered in the satisfactory academic progress process. Classes withdrawn within the first 20 days of class will be included in the attempted hours calculation determining satisfactory academic progress for financial aid eligibility, even though these credit hours will not appear on the student's official academic transcript.

Appeals
Students may appeal their satisfactory academic progress status by completing and submitting a written appeal form to the Office of Student Financial Aid. Forms are available from this office and must be submitted with appropriate documentation. Appeals may include unusual circumstances that have affected the student's academic performance. Appeals are reviewed by the Student Affairs Committee, and their decision or recommendation is final. If the appeal is approved, the student's financial aid eligibility will be reinstated with a "probation" status. If the appeal is denied, the student will remain in "ineligible" status and must pay for educational costs.

Changes in Enrollment Status
If you withdraw from any of your classes after the beginning of the term, you may be required to repay a portion of the funds you received. A copy of the specific financial repayment and refund policy may be obtained from the Student Financial Aid Office.
Student Support Services

Alumni Association
Athletics, Intercollegiate and Intramural
Bookstore
Brown & Gold Club
Career Center
Cheerleading
Children’s Center
Clubs and Organizations
Cosmetology Salon
Counseling Center
Dental Hygiene Clinic
Dining Services
Forensics
Instructional Support Services
  Academic Achievement Center
  English as a Second Language
  Computer Learning Lab for Basic Skills
  Learning Strategies Program

Math Resource Center
PLATO Literacy System
Project Finish
Writing Center
Library
Massage Therapy Clinic
Music Organizations
Phi Theta Kappa
Student Access Center
  Disability Support Services
  Deaf/Hard-of-Hearing Student Services
  Notice of Nondiscrimination
Student Activities Program
Student Senate
Student Housing
Student Publications
Testing/Assessment Services
Theater
Volunteer Program
Alumni Association
The JCCC Alumni Association is an organization for graduates and people who have taken at least one year of credit courses at JCCC. Graduates and others interested in joining the Alumni Association should call the JCCC Foundation Office. You will be able to meet with fellow alumni, participate in college programs and plan the future of the organization.

Athletics, Intercollegiate and Intramural
Intercollegiate and intramural athletics play an important role at Johnson County Community College. JCCC offers a wide range of intramural sports and athletics so you can participate, develop skills and make friends during your leisure time. Intercollegiate athletic teams and individuals have brought the college and themselves national recognition.

JCCC's athletic facilities are among the finest in the country, allowing JCCC to host a number of state and national tournaments. Talented coaching staffs and trainers combine to make the campus athletic programs for men and women outstanding.

Men compete in baseball, tennis, basketball, golf, soccer, cross-country and track at JCCC. Women may take part in tennis, volleyball, basketball, softball, cross-country, golf and track. The college will participate in other intercollegiate athletics as approved by the board of trustees.

JCCC is a member of the National Junior College Athletic Association and the Kansas Jayhawk Community College Conference. You must meet NJCAA and conference eligibility rules to compete in intercollegiate activities.

Brown & Gold Club
The Brown & Gold Club of JCCC is organized to serve the senior adult population of Johnson County through education programs and special events.

Membership requirements:
- You must be 55 years of age or older.
- You must currently live in Johnson County with at least six months' residency.
- You must pay an annual nonrefundable membership fee of $7.

For more information, contact the Student Activities Office in the Commons Building, 469-3807.

Career Center
The Career Center can assist you with deciding on a major and/or career and conducting a successful job search. Our services include:

1. CHOICES
   - This four-session workshop is designed to help students choose a major and/or career, learn how to set goals and make effective career and life plans.
   - Cost: $20.
   - Includes four self-scoring career tests.
   - Day and night sessions available; offered twice monthly.

2. Counseling and job search preparation
   Trained counselors will help you:
   - Plan your career and education.
   - Choose a major and/or career.
   - Identify and clarify your interests, personality, work values and skills.
   - Research occupations in our resource center.
   - Write résumés, cover letters and thank you notes.
   - Conduct a successful job search.
   - Prepare for job interviews.
   - Learn about careers by talking with JCCC alumni from our Connections database.

3. Employment services
   Need help finding a job? We offer:
   - Full- and part-time job listings in various salary ranges.
   - On-campus recruiting with local employers.
   - Kansas City area employer research tools.
   - Internet access to local, regional and national job listings.

Bookstore
Textbooks, classroom supplies and many miscellaneous items are available for purchase in the JCCC bookstore. The JCCC bookstore carries all required textbooks, both new and used (when available), as well as a complete selection of optional study guides and reference materials recommended by the teaching staff. Computers and software are available at academic prices. MasterCard, Visa, American Express and Discover cards are accepted for all purchases. Bookstore hours of operation are listed each semester in both the credit and continuing education class schedules.
4. Internships and service learning

- Earn college credit for volunteer work through the service learning program.
- Earn college credit and gain valuable work experience with an internship.
- Earn extra money through the federal work study program and work pool.

Walk in 155 GEB to see a counselor, call us at 469-3870 with questions or to schedule an appointment, or visit us on the Internet at http://www.jccc.net/acad/studserv/career.

Cheerleading

In support of our athletic programs, JCCC offers a cheer/dance squad. The squad participates at all home basketball games and select away games. For tryout information and scholarship requirements, contact the Student Activities Office, 205 COM.

Children's Center

The Children’s Center of Johnson County Community College is a licensed child-care center dedicated to serving the needs of young children by providing a high-quality early childhood program within a safe, nurturing environment. The program is designed to support the efforts of JCCC students to pursue their educational goals.

Through the use of developmentally appropriate practice, the Children's Center staff will encourage the physical, social, emotional and cognitive development of each child served. Part-time and full-time scheduling is available, with a preschool program offered from 9 to 11:30 a.m.

You may use two different methods to schedule care at the Children’s Center. Reserved care is used when a routine schedule is needed for a child. Occasional care is most beneficial for irregular, sometimes unpredictable, child-care needs. Early enrollment is recommended to secure the schedule of your choice. The center accepts children ages 18 months through 8 years before 3:30 p.m. and ages 18 months through 10 years after 3:30 p.m.

An hourly fee is charged for all child care. For specific information, contact the Children’s Center on the west side of the campus, 469-4438.

Clubs and Organizations

Recognized clubs and organizations at JCCC have the approval of the Student Senate and the Student Life Office. Once officially recognized, a club or organization is entitled to all the rights and privileges afforded other JCCC clubs.

Clubs and organizations recognized by the college may not discriminate in membership or participation practices based upon factors related to race, religion, sex, place of origin, age, creed, handicapped, marital status or parental status. Club funds may be used only for club activities that are open to all club or organization members.

A complete listing of approved clubs and organizations or applications to form a new club may be obtained from the Student Information Desk, 205 COM.

Cosmetology Salon

You and your family may receive beauty services at the cosmetology salon. These services are provided at a nominal fee and include hair-related treatments as well as facials and manicure services. All services are performed by students under the supervision of a licensed cosmetology instructor. Contact the Cosmetology program at 469-2390 for additional information or an appointment.

Counseling Center

The mission of the counseling program is to assist individuals in the process of educational, career and personal decision making. The counselor/advisee relationship involves making decisions in which students realize their maximum educational potential through a continual exchange of information.

The Counseling Center is staffed by full-time and part-time professional counselors who assist students in the process of reaching their goals. Counselors are also available for short-term personal counseling and can provide referral services.

A full-time transfer assistant coordinates transfer program/articulation agreements with regional four-year institutions and coordinates on-campus visits each semester with these institutions.

Currently enrolled students may meet with a counselor on a walk-in basis or may schedule an appointment with individual counselors. A counseling desk, located in the lobby of the Counseling Center, is staffed by a counselor and is available for students whose questions can be answered quickly.

- Academic advising. At JCCC, academic advising plays a significant role in the total process of educating students. A division at JCCC is conducted in the Counseling Center. The process is ongoing, multifaceted and the responsibility of both the student and the counselor. A division at JCCC is developmental in nature, helping clarify life and career goals from which educational plans can be developed to realize those goals.
• Pre-advising. If you are not currently enrolled at JCCC, you must attend a pre-advising session. A pre-advising session provides important information that you will need for consulting with a counselor. Schedules for pre-advising sessions are listed in the credit class schedule each semester. They are also available in 155 GEB or by calling the Counseling Center.

• Student Success Lab. An extensive interactive resource center, which includes information from the Career Center and Counseling Center, is available for student use. Educational and career information allows for student research. A access to the college information network and the Internet is also available.

Dental Hygiene Clinic
At the Dental Hygiene Clinic, you and your family may have an oral examination and have your teeth scaled, polished, X-rayed and treated with fluoride for a small fee. Dental hygiene students, supervised by licensed dentists and dental hygienists, provide these services and explain proper oral care. Call the clinic, 469-3808, to make an appointment. Multiple visits to the clinic usually are required.

Dining Services
The cafeteria on the first level of the College Commons serves breakfast and lunch, plus a variety of snacks and beverages throughout the day, Monday through Saturday; dinner is served Monday through Thursday. A cafeteria on the lower level of the Commons is open for lunch service Monday through Friday. Hours of operation are listed each semester in the credit class schedule. In addition, vending machines are in each building on campus.

Forensics
College debate teams participate in state, regional and national competition. JCCC’s teams have won wide recognition for their outstanding record in competition with both community and upper-division colleges and universities.

Instructional Support Services
Academic Achievement Center
The Academic Achievement Center, a Kansas Excellence in Education program, helps you develop basic skills through individualized instruction, small classes and a tutor exchange. Instructors help plan a program of study and offer guidance as needed. In addition, the center offers a 3-credit-hour medical terminology course. You may work on any of the following:

- Basic math review
- Reading comprehension
- Reading rate
- Spelling improvement
- Vocabulary development
- Medical terminology
- Algebra preparation
- Chemistry preparation
- Study skills
- Tutor exchange
- Individualized study

English as a Second Language
Whether you speak little or no English or speak English well, JCCC offers a course at your level. ESL courses are available for permanent Kansas residents 16 years of age or older who are not otherwise enrolled in school. Instructional fees will be assessed for nonresidents and those holding visas. Class size is limited. Registration and course placement testing are required. Courses include ESL level 1 through level 6, conversational English, pronunciation improvement, business English and citizenship preparation. For more information, contact JCCC’s Community Services Division.

Computer Learning Lab for Basic Skills
You can improve your reading, writing and math skills and prepare for the GED in JCCC’s Flexible Training Lab with individualized computer-assisted instruction. Each course is tutorial in nature and includes a pretest, a tutorial and a post-test. In addition, the English Language Learning System (ELLIS) is available if you wish to improve your grammar, vocabulary and conversational skills. For more information, call Phil Wegman at 469-4446. There is no fee for currently enrolled JCCC students. The training fee for Business and Industry Institute referrals is $49 for each 10-hour instructional block, which includes the assessment for placement into the curriculum.

Learning Strategies Program
This program offers you an opportunity to acquire the thinking and learning skills you need to be a successful learner. A partial list of these skills includes reading college textbooks, taking useful class notes, organizing information, preparing for and taking tests and managing time for study. The program benefits a variety of students, including successful students who want to improve their learning efficiency as well as those who feel overwhelmed by the demands of college coursework. The information learned in Learning Strategies courses is applied to the other courses you are taking and will improve your performance in those courses. For more information, contact the Learning Strategies instructors.
Math Resource Center
The Math Resource Center offers individualized instruction and personal assistance to help you develop math skills. The center serves students on a drop-in basis. The MRC offers a variety of resources, including free peer tutoring, group study sessions, computer programs and videotapes. You may do homework and study for exams in the MRC, using the resources or requesting assistance as needed. If you are enrolled in alternative delivery math courses such as self-paced Introduction to Algebra, self-paced Intermediate Algebra or self-paced Trigonometry, you may use the MRC computers and equipment as an integral part of your learning.

PLATO Learning System
PLATO teaches basic reading and writing skills using multimedia technology. PLATO integrates voice, still images, video, graphics and text. Basic skills are taught using a real-life application to help learners establish a solid foundation. Call JCCC’s Community Services division for more information. No fee.

Project Finish
You can improve your skills in basic reading, writing and math, or prepare to pass the GED high school equivalency test through Project Finish. A program will be developed to meet your individual needs. Instruction is free. Project Finish centers are located at Roeland Park Community Center, JCCC’s Olathe Center, Oak Park Library, Gardner Library, DeSoto Library/Multi-service Center, Spring Hill Library, Antioch Library and Edgerton Community Hall. For information, contact JCCC’s Community Services Division.

Writing Center
The Writing Center, a Kansas Excellence in Education program, helps you improve your writing skills through computerized and individualized instruction. You work at your own pace on proofreading, editing, revising and researching, while improving your ability to write sentences, compose paragraphs and develop essays. Instructors of composition courses and student tutors provide feedback on writing assignments from any JCCC class. The grammar hotline, 469-4413 and on-line at wcenter@johnco.cc.ks.us, provides quick answers to grammar questions. For information, contact the Writing Center.

Library
The JCCC library maintains a collection of books, periodicals, films, slides, tapes, microfilm and other resources available to students and Johnson County residents. A highly trained staff of librarians and library aides is available to help you find and use the resources. Currently, the library houses 90,000 books, 600 current periodicals, 400,000 documents on microform and hundreds of slides, videotapes and audio recordings. In addition to these traditional library materials, the library offers numerous basic and advanced reference products available on networked computer workstations. These include an on-line catalog, encyclopedias and general reference works, indexes to general periodical literature, indexes to professional literature and the Internet. Books are arranged on shelves according to the Library of Congress classification. A printed outline of the LC classification is available at the circulation desk. Reference books, most audiovisual material, and all magazines and newspapers must be used in the library. A coin-operated photocopier is available if copies are needed. Books are due 21 days from the day they are checked out. No fines will be assessed for overdue books, but if you fail to return library materials, you will have your records placed on hold. If a book is lost, the cost of the book plus a $5 service charge will be assessed. Occasionally, instructors may place materials on reserve and specify a loan period. You will be charged 25 cents an hour for each reserve item kept past the loan period or $5, whichever is less. Registration and transcript privileges will be restricted until all library obligations are met.

Massage Therapy Clinic
You and your family may have a full body massage at the Massage Therapy Clinic. This service is provided for a nominal fee by therapeutic massage students supervised by licensed massage therapists. Contact the Center for Professional Education at 469-4422 for additional information or to make an appointment.

Music Organizations
The college jazz band, choirs, choruses and ensembles are open to all students with musical talents whether or not they are music majors. These groups present numerous programs each year, both on- and off-campus, and participate in various college events.

Phi Theta Kappa
Phi Theta Kappa is a national honor society that recognizes and encourages scholarship among community college students. The JCCC chapter, Alpha Iota Gamma, provides opportunities for students to develop
leadership abilities, be of service to their community and exchange ideas in a stimulating academic environment.

To be invited to become a member of Phi Theta Kappa, you must be currently enrolled. An invitation to become a member will be extended at the beginning of the fall or spring semester to all full-time and part-time students who have completed 12 hours of credit toward a degree or certificate at JCCC with a cumulative grade point average of 3.5 or above. For more information, contact the Honors Office in 237 GEB.

**Student Access Center**

JCCC provides a range of services to allow persons with disabilities to participate in educational programs and activities. If you desire support services, contact the Student Access Center, (913) 469-8500, ext. 3332, or TDD 469-3885.

**Disability Support Services**

JCCC students with disabilities have access to a variety of support services including reading, notetaking and other services that allow equal access to courses. Assistive computer equipment especially designed for students with disabilities (such as speech synthesizers, screen readers, scanners, adjustable tables and braille printers) is also available. Campus buildings are equipped with ramps, elevators and restrooms designed to accommodate wheelchairs. Parking areas convenient to the buildings are reserved for students with disabilities. In addition, an orientation for students with disabilities is held at the beginning of the fall and spring semesters. If you need more information about services, activities and facilities available to students with disabilities, contact the Disability Support Services supervisor.

**Deaf/Hard-of-Hearing Student Services**

Deaf and Hard-of-Hearing Services offers a range of support that prepares deaf and hard-of-hearing students to enter the mainstream of regular career and transfer programs at JCCC. Services available include academic counseling, support services (such as interpreting and notetaking) and a summer preparatory program for incoming freshmen. If you need more information about services, activities and facilities available to deaf and hard-of-hearing students, contact the Support Services supervisor.

**Notice of Nondiscrimination**

Johnson County Community College is committed to a policy of nondiscrimination involving equal access to education and employment opportunity to all regardless of sex, race, age, religion, color, national origin, handicap or veteran status. The administration further extends its commitment to fulfilling and implementing the federal, state and local laws and regulations as specified in Title IX and Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. For assistance in these areas, contact the office of the dean of Student Services, Johnson County Community College, 12345 College Blvd., Overland Park, KS 66210-1299, (913) 469-8500, or the Director, Office of Civil Rights, HHS, Washington, D.C. 20201.

**Student Activities Program**

JCCC's Student Activities Office, in cooperation with the Campus Activities Board, brings you a variety of activities (cultural, social, educational, recreational and vocational) throughout the year.

Activities are planned and implemented entirely by students for students through the committee structure of the Campus Activities Board. Activities include films (feature, captioned and showcase), travel (trips during spring break), special events (comedians, novelty acts, blood drives and thematic programming), recreation (off-campus outings, intramural competition, student gatherings and sports events), lectures (controversial issues and distinguished speakers), and concerts (bands, solo artists and karaoke).

More information can be obtained at the Student Information Desk in the Commons Building.

**Student Senate**

The Student Senate exists to provide a method of government representation for all students at JCCC and allocates funds in support of student clubs and organizations. The senate is made up of 25 senators-at-large and five executive board members. Executive board members consist of the president, vice president, secretary, treasurer and parliamentarian, all of which are scholarship-receiving positions. Elections for executive board positions take place in the spring semester, with senator elections occurring in the fall. Student Senate meetings are held on Mondays from 12:30 to 2 p.m.

**Student Housing**

Although JCCC has no housing on campus, the Student Activities Office will help you obtain information about housing in the Johnson County area. A housing packet includes a list of community members or students who wish to rent a room(s) in their home.

If you change your address, it should be reported to the Admissions and Records Office immediately.
Student Publications

The Campus Ledger is the award-winning student newspaper authorized by the board of trustees and published regularly throughout the academic year. The Ledger provides students and other members of the college community a free and open forum for responsible news and commentary concerning campus life. News, features, entertainment, sports, campus events and editorial concerns are emphasized in each issue. Staff members are paid salaries and must be enrolled in a minimum of six credit hours each semester. Students interested in working for The Ledger should stop by the news office in the lower level of the Commons building and check the Human Resources job posting board in April and November.

Testing/Assessment Services

Testing/Assessment Services provide a variety of services including administration of the assessment policy for all students enrolled in credit courses. Placement assessments include study skills, math and English. The English assessment includes components for both reading and writing skills.

Other services include career testing, proficiency examinations, telecourse testing and instructional make-up testing if you have missed a regularly scheduled exam. In addition, the center administers standardized tests such as the ACT, CLEP, GED and others.

If you have developed an educational plan in the Counseling Center, you may seek credit for life experience through the Assessment of Prior Learning Program, which is administered through Testing/Assessment Services. If you are interested in finding out more about nontraditional credit options, contact Testing/Assessment Services for more information.

Theater

JCCC’s Theatre Department presents several full-length productions each year, ranging from Shakespeare to touring children’s plays to musicals to comedies and serious drama. Auditions are open to all students. Also, several programs of experimental one-act plays are produced, and student directing assignments are possible. Scholarships are available for participation. Students who are interested in scholarships should participate in the mid-spring auditions.

Volunteer Program

Community service opportunities are offered by Johnson County Community College to students and community members through a variety of volunteer opportunities both on-campus (assisting with programs, services and special events) and off-campus (individual referrals to community agencies, alternative spring breaks and activities through college clubs and organizations).

The Service-Learning Program is curriculum-based and integrates service options (at community schools, care facilities, agencies, organizations and projects) with the academic coursework and reflection in a number of JCCC courses.
Academic and Student Policies and Procedures

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Parking
  Handicapped Parking
  Bicycles
  Emergency Parking or Loading
Security
  Reporting Accidents, Incidents or Crimes
  JCCC Campus Safety and Security Annual Report
Unlawful Discrimination or Harassment
  Complaint Procedure
Student Code of Conduct
  Appeals of Disciplinary Action
Student Appeals Other than Appeals of Disciplinary Action
  Academic
  Nonacademic
Student Career Development Policy
Student Health
Student Right to Know
Academic Progress

JCCC has implemented an academic progress policy to prescribe practices that may help you succeed. To maintain continuing enrollment at the college, you will be subject to the academic progress policy with the following exceptions:

1. If you enroll in courses offered through contract arrangements between JCCC and an outside agency.
2. If you enroll in courses that have been especially designed for specific populations.
3. If you have completed at least a bachelor's degree, unless you are seeking an associate degree or post-secondary certificate.
4. If you attend on a part-time basis, up to attempting 12 credit hours. Thereafter, all part-time students must meet these criteria:

Any student whose cumulative grade point average falls below the following guidelines will be placed on academic probation and will remain on probation until the minimum cumulative G.P.A. levels outlined below are met.

<table>
<thead>
<tr>
<th>Credit Hours Attempted with a Grade of A, B, C, D or F</th>
<th>Cumulative G.P.A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-30</td>
<td>1.7</td>
</tr>
<tr>
<td>More than 30</td>
<td>2.0</td>
</tr>
</tbody>
</table>

If you have been placed on academic probation or were on academic probation the previous semester, you must raise your G.P.A. to the required cumulative level to be released from probationary status.

You will be notified in writing of your probationary status no later than four weeks after the beginning of the next semester. You will be required to see a JCCC counselor. Your records will be placed on hold and will not be released until grades have been posted for the current semester. If you are on academic probation, you will be allowed to enroll during continuing student enrollment only after meeting with a counselor by a date to be specified in the academic probation letter or when your semester grades are posted and one of the academic progress conditions are met. To participate in continuing student enrollment, you must achieve a 2.0 G.P.A. for the current term or raise your G.P.A. to the level required for good standing or you will be dropped from the classes in which you have enrolled and will be placed on suspension as described below.

If you do not raise your G.P.A. to the level required for good standing or achieve a 2.0 G.P.A. in the probationary semester, you will be suspended from the institution and will not be reinstated until one semester has elapsed.

If you are academically suspended by JCCC, you will not be allowed to re-enter JCCC for at least one semester. You will be readmitted on probationary status and must maintain a 2.0 G.P.A. each semester while on probation or raise your cumulative G.P.A. to the designated level.

As a reinstated student, if you are suspended a second time from JCCC, you cannot return for one full year.

If you are academically suspended from JCCC, you may submit an appeal to the dean of Student Services. Appeals must be in writing and will be reviewed by the Student Affairs Committee. Results of the committee's decision will be mailed to you 30 business days after receipt of the appeal. For the purposes of this policy, a business day shall be a weekday during which regular classes are being held at the college. The decision of the Student Affairs Committee is final.

If you are receiving financial aid, you must meet the academic progress standards in the student financial aid handbook and on page 25 of this catalog. These requirements are not the same as the academic requirements to remain enrolled at JCCC.

If you are academically suspended from JCCC, you may appeal in writing through the office of the dean of Student Services. All appeals must provide written documentation substantiating your reasons for requesting that you be reinstated on probation and allowed to enroll for the next regular semester. The Student Affairs Committee will make a determination after review of the appeal and documentation. Written results will be mailed to you 30 business days after receipt of the written appeal. A “business day” is a weekday during which regular classes are being held at the college. The decision of the Student Affairs Committee is final.

Academic Records Retention

When you apply for admission to JCCC, an application file is created for you. This file contains academic transcripts, academic program plans and various other documents. This file is maintained in the Admissions Office as long as you maintain continuous enrollment. One year after you are no longer enrolled, all records are microfilmed.

If you apply for admission but do not enroll within one year after the application is filed, the original application and all submitted documents are destroyed.

More information is available from the Admissions Office.
**Academic Renewal**

A cademic renewal refers to the opportunity for a fresh start at the undergraduate level. Sometimes a prior academic record presents a major obstacle to your overall G.P.A., hence overall success. If you are in this category and want an opportunity to start fresh, you may apply for academic renewal. You must submit a written appeal for academic renewal according to the following guidelines:

1. All credits taken five or more years ago must be dropped from all colleges or universities based on the semester applying for academic renewal.
2. At least 12 semester credits must have been completed at JCCC within the last two years. The G.P.A. for all coursework taken during this time must be at least 2.0.
3. A cademic renewal will be granted only once.
4. A cademic renewal does not affect or alter your record for financial aid awards or athletic eligibility.
5. A ll previous coursework and original grades approved for academic renewal will continue to appear on your transcript. However, the credits and grades will not be included in your cumulative totals when applying for selective admission programs at JCCC, admission to honors programs or clubs governed by JCCC policy and/or graduation from JCCC.
6. Credits dropped as a result of academic renewal cannot be used to meet course or program prerequisites or graduation requirements.
7. You must meet with a counselor before applying for academic renewal to ensure that interpretation of this policy is correct.
8. This policy applies at JCCC only. If you transfer from JCCC to another institution, you will have to follow the receiving institution's policy.

**Access to Student Information**

Your rights concerning access to educational records are spelled out in Public Law 90-380 as amended by Public Law 93-568 and in regulations published by the Department of Health, Education and Welfare in the June 17, 1976, Federal Register. The law and regulations published by HEW require educational institutions to:

1. Provide you the opportunity to inspect your educational records. If you wish to see your records, you should contact the JCCC Admissions and Records Office.
2. Provide you the opportunity to challenge through a hearing the content of your educational records if you believe the records contain information that is inaccurate, misleading or in violation of the right of privacy. (Grades are not subject to challenge.)
3. Limit disclosure of information from your record to those who have your written consent or to officials specifically permitted within the law, such as college officials and – under certain conditions – local, state and federal officials.

One exception that permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person employed by the college in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the college has contracted (such as an attorney, auditor or collection agent); a person serving on the board of trustees; or a student serving on an official committee such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks.

If you are a dependent student under 18 years of age, parents will have access to your educational record. The college will assume you are a dependent if parents provide a written statement that you are listed as a dependent on their federal income tax forms.

The college may provide the following information:
- Your name
- Address
- Telephone number
- Date and place of birth
- Major field of study
- Participation in officially recognized activities
- Sports – weight and height of an athletic team member
- Date of attendance
- Degrees
- Awards received
- Most recent previous educational institution attended

If you object to the disclosure of any of the information listed above, you may notify the Admissions and Records Office in writing of the items that should not be released without your consent.

You may obtain a copy of the college's policies on access to student information and implementation of these procedures from the Admissions and Records Office.

You may file a complaint with the Department of Education if you believe your rights under the law have been violated and if efforts to resolve the situation through JCCC appeal channels have proven unsatisfactory. You should send complaints to:

FERPA, Department of Education
Room 514 E
200 Independence Ave. SW
Washington, D.C. 20201
The college will comply with the Kansas Open Records Act, as found in Chapter 171 of the 1983 Kansas Legislative Session Laws. The act is to be liberally construed and applied to promote compliance.

Federal law now requires military recruiters to be afforded the same opportunity to recruit on the campus as that provided to other prospective employers. The Solomon Amendment passed by Congress allows armed forces agencies to request directory information from colleges of currently enrolled students. This information will only be used by branches of the armed services for recruitment purposes.

**Advanced Standing Credit**

Students may earn up to 30 hours of advanced standing credit through nontraditional options. This credit may be applied toward a degree or certificate program at JCCC, but will not satisfy the residency requirement for graduation. To apply for advanced standing credit, you must be currently enrolled or have been enrolled at JCCC previously. Advanced standing credit, with the exception of transfer credit, will be included on your permanent record after 6 credit hours have been successfully completed in residence at the college. Exceptions to the application transcripting policy may be made for specific certificate/career programs. Students may not be enrolled in the class for which they are applying for advanced standing credit.

Credit will not be awarded if:

1. You have received a grade for college classes representing the same content (advanced standing credit cannot be used to repeat classroom credit).
2. You have been awarded credit through other nontraditional programs in areas representing the same content.

The Testing/Assessment Center coordinates all programs leading to advanced standing credit, and maintains current advanced standing credit guidelines for each program. A fee will be charged for all advanced standing credit evaluation.

**Portfolio or Certificate Evaluation**

You may be granted credit if you have acquired, through prior learning experiences, knowledge and skills equivalent to that obtained in college classes. Credit may be awarded only in subject areas in which JCCC offers equivalent classes and where portfolio or certificate evaluation is an option. A fee will be charged for each credit.

**Military Credit**

You may be granted credit for educational experience completed while in the armed services if you have completed basic training. Applicants submitting DD form 214, A med Forces of the United States Report of Transfer of Educational Achievement through the United States Armed Forces Institute, may receive credit and advanced placement as recommended by the American Council on Education if the courses are equivalent to the courses offered by the college. A fee will be charged for the military credit evaluation.

**National Standardized Tests**

The college may grant credit to you if, through national standardized testing programs, you can demonstrate knowledge and skill equivalent to that obtained in undergraduate college classes. Credit will be awarded only in subject areas in which JCCC offers comparable classes. A fee will be charged for those examinations.

If you transfer to JCCC with credit awarded by another college for national standardized tests, you must submit an official score report to the Testing/Assessment Center to validate credit previously awarded.

**Proficiency Examinations**

You may be granted credit by proficiency examination for certain JCCC classes for which proficiency examinations are available. Credit will be granted if you can demonstrate a satisfactory level of performance. A fee will be charged for each examination.

**Attendance**

If, by the end of the second week of the semester (prorated for classes less than 16 weeks in length), you have not attended at least one session of each course in which you are enrolled, you will automatically be dropped from those courses not attended with no refund of tuition and fees.

You will be notified by mail if you are dropped and will have six working days to appeal for reinstatement. You will be reinstated only if an instructor or administrative error was made. Appeals for reinstatement must be signed by the appropriate division administrator and submitted to the Admissions and Records Office.

It is the policy of JCCC that punctual attendance at all scheduled classes is regarded as integral to all courses and is expected of all students. Each JCCC instructor will include attendance guidelines in his or her course syllabus; you will be responsible for knowing and adhering to those guidelines. Penalties for excessive absences may include reduction of grade. It is your responsibility to obtain class materials missed due to absence.

If you are under obligation to participate in jury duty, a generally recognized religious observance or activities where you are required to represent the college, you must give written notice to the instructor at least one week in
advance of the observance. Questions on whether a religious holiday is recognized or an activity is college-sponsored should be directed to the dean of Student Services and/or the Student Affairs Committee. You shall be accorded the opportunity to independently make up coursework or work of equal value for the day(s) the event was scheduled and take a scheduled exam at an alternate time determined by the instructor. Failure to provide timely written notice may result in loss of this opportunity. You should be aware that the quality of your learning experience may suffer as a result of your absence if coursework is not made up.

For all other absences, authorization of excuse is the province of the individual instructor and subject to the standard appeal process.

If you receive benefits from a governmental agency, you must follow any policy the specific agency stipulates.

**Auditing a Class**

Auditing a course means that you attend a class regularly without being required to take exams, complete assignments or perform other tasks required by the instructor. You receive no credit for courses completed by auditing.Registering to audit a class does not constitute continuous enrollment for graduation purposes. Credit registration cannot be converted to audit status at any time.

Tuition and fees for audited classes will be assessed at the same rate as that charged for enrolling in credit courses. Financial aid will not pay for courses completed by auditing.

You may enroll to audit a class if space is available after late registration, according to the schedule published in the schedule of credit classes.

Brown & Gold Club members auditing a class are not eligible for reduced tuition and must pay their own cost per credit hour charges.

**Classes by Arrangement**

If you find it impossible or undesirable to attend regular classes on campus, JCCC offers classes by arrangement. You may complete a class by arrangement out of the classroom according to a schedule set up with the instructor. Before enrolling in a class by arrangement, you should contact the instructor (or the division administrator if the instructor is unavailable) to find out how much instructor contact is required and how performance is measured. The selection of classes by arrangement is limited.

**Independent Study**

By enrolling in independent study, you may explore in depth an area not covered in the regular curriculum. You must show above-average performance in the area to be eligible. For details, contact the division administrator for the area in which you are interested.

**Self-paced Study**

Classes are offered on a self-paced schedule of study that allows you to enroll in the class at any time during the semester and take up to one calendar year to complete class requirements. With self-paced study, you may set your own pace of learning to complete the class requirements as rapidly or as leisurely as you care to. Other than the one-year limit, there are no restrictions on the time you may take to complete a unit or the entire class.

Enrollment requires completion of a self-paced study contract, which may be obtained in the program office listed for the class, and of a registration form in the Admissions Office. You are required to meet with the sponsoring instructor to complete the contract and obtain class materials.

Although one year is allotted to complete a self-paced class, the credit hours are counted only for the semester in which you registered for the class. The credits will be listed on your transcript for the semester of initial enrollment, not the semester of completion.

**Self-paced courses graduation policy** - When you apply for graduation and the only course enrolled in is self-paced, then:

1. If you apply for graduation within a year of enrolling in self-paced course(s), the self-paced course(s) will satisfy current enrollment requirements.
2. If the self-paced course is needed to meet graduation requirements, then you must complete the self-paced course by the grade deadline for the semester in which you apply to graduate.
3. If the self-paced course is not needed to meet graduation requirements, the course will satisfy current enrollment requirement for the semester in which you are applying to graduate. You simply need to complete the course within the allotted year.

For additional information, contact the appropriate division office.

**Credit Transferred from Other Colleges**

Transfer credits will be accepted from colleges and universities starting from the year that they are accredited or hold candidacy status with the North Central Association of Colleges and Schools, Middle States Association of Colleges and Schools, New England Association of Colleges and Schools, Northwest Association of Colleges and Schools,
Southern Association of Colleges and Schools, Western Association of Colleges and Schools or other institutions approved by JCCC. All transfer credit will be converted to the semester-hour system. All credits earned with an "F" grade or higher will be transferred and calculated in your cumulative G.P.A. Quality points and grade points will be transferred and averaged into your cumulative grade point earned at JCCC.

Final Examinations

Final examinations are scheduled during the last week of the semester. The final examination schedule for the fall and spring semesters appears in each semester’s credit class schedule and is available during the last three weeks of the semester at the Admissions and Records Office.

Grading System

Johnson County Community College uses the following grades to indicate the level at which you have achieved the educational objectives of a class:

- **A** - outstanding achievement of objectives
- **B** - highly satisfactory achievement of objectives
- **C** - adequate achievement of objectives
- **D** - passing, marginal achievement of objectives
- **P** - passing (credit earned, but not calculated into your G.P.A.)
- **F** - no credit, unsatisfactory achievement
- **W** - withdrawal without academic assessment

You may withdraw from a class no later than November 15 for the fall semester and April 15 for the spring semester (prorated for classes less than 16 weeks in duration). You will receive a “W” on your transcript if you withdraw after the official state reporting date of the 20th day of class during a regular semester or after one-fourth of a summer or mini-session has been completed. You will be considered withdrawn from a class only after you complete a drop form in the Admissions Office, not when you stop attending class.

- **I** - incomplete

You will receive this grade only if special circumstances prevent you from completing the class. You must make arrangements with the instructor before semester grades are submitted, and you must sign a contract agreeing to complete the class requirements. All class requirements must be completed by the deadline indicated on the contract. This deadline can be no later than the end of the next full semester following the grading period for which the "I" was given. A "I" will be changed to an "F" if this deadline is not met. The instructor is responsible for initiating a grade change when you successfully complete the work outlined in the contract. During the semester you are completing the "I" contract, you cannot re-enroll in the class and are not considered currently enrolled on the basis of the "I" contract. You may not withdraw from a course in which an "I" has been assigned.

- **R** - repeated class

When you repeat a class, only the latter grade earned will be used in computing your cumulative G.P.A. Prior to spring 1995, an “R” will replace the earlier grade on your transcript. Beginning spring 1995, the “R” grade will no longer be used, and the original grade will remain on your transcript with a special notation indicating the grade has been excluded from the cumulative G.P.A. A “W” cannot be changed to an “R” or removed from the transcript. You may not enroll in any course for the third time without counselor approval. You cannot use advanced standing credit to repeat a class.

- **X** - audit status (no credit awarded)

Pass/Fail Grading System

A counselor’s approval is required before you may choose the pass/fail option. You must meet with a counselor, complete the appropriate form and submit it to the Admissions Office before the eighth week of the fall and spring semester or the fourth week of the summer session. You will be allowed to enroll in only one class each semester under this option. The grades earned under the option are “P,” “F” or “W,” if you choose to withdraw. You will receive a “P” if your assigned grade is “A,” “B,” “C” or “D.”

Once this option has been filed in the Admissions and Records Office, it may not be changed back to the “A-F” system. Note: some schools, scholarship committees and honorary societies do not accept this grading system and may convert grades of “P” to “C” when computing G.P.A. or in some other way penalize you. Appeals to this policy should be submitted in writing to the director of Admissions and Records.

Grade Changes

Grade changes and withdrawal appeals must be submitted in writing to the Records Office within one semester of your initial enrollment in the course. Additional information and forms may be obtained in the Records Office.

Grade Point Average

- **A** = 4 grade points a semester credit hour
- **B** = 3 grade points a semester credit hour
- **C** = 2 grade points a semester credit hour
- **D** = 1 grade point a semester credit hour
- **F** = 0 grade points a semester credit hour
In calculating grade point averages, the hours with grades "P," "W," "I" and "X" or designated "R" will not be counted as hours attempted. Beginning spring 1995, the "R" grade will no longer be used; however, the original grade of a repeated course will be excluded from hours attempted. Courses with grades of "F" will be counted when figuring grade point averages.

Honors

Honor Roll
If you enroll in and complete a minimum of six credit hours and earn a G.P.A. of 3.5 or higher during any semester, your name will appear on the Part-time Honor Roll list. If you enroll in and complete a minimum of 12 credit hours and earn a G.P.A. of 3.50 to 3.99, your name will appear on the Dean's List. If you enroll in and complete a minimum of 12 credit hours and earn a G.P.A. of 4.00, your name will appear on the President's List.

Graduation with Honors
If you earn a cumulative grade point average of 3.5 or higher in at least 30 hours at JCCC, you will be graduated with honors. Only JCCC hours will be calculated in G.P.A. for honors designation.

Recognition of Achievement Award
If you successfully complete an adult continuing education or community services course, conference, workshop or seminar, you may be granted a Recognition of Achievement Award.

Academic Standards for the Honors Program
For specific information, contact the coordinator of the Honors Program.

Records on Hold
If your records have been placed on hold for any of the following actions (for example - but not limited to): an unsubmitted official transcript, a financial obligation to JCCC, library books due or failure to pay for parking violations, you will not be allowed to do any of the following until the hold is removed:
1. Drop or add any class during the semester.
2. Enroll in courses in subsequent semesters.
3. Obtain a transcript.
4. Receive a diploma or certificate.

Contact Admissions and Records for more information. Appeals to this policy should be made to the director of Admissions and Records.

Transcripts
The Records Office will maintain your academic record of coursework completed at the college. Transcripts will be released only after receipt of your signed written request. Transcripts issued to you will be marked "Issued to Student." A $2 fee for each official transcript ordered must accompany the written request.

Transcripts will not be released if your records are on hold for financial or disciplinary reasons.

Official transcripts from other institutions cannot be released to any individual or institution. Copies designated "for JCCC staff use only" may be released to appropriate JCCC staff for advising or institutional research purposes. Any release of your transcript information will be approved and documented by the director of Admissions and Records.

Verification of Enrollment
Requests for verification of enrollment must be made in writing. You may either fill out a verification of enrollment form on campus or write a letter and mail it to JCCC Records Office with the following information:
1. Your full name
2. Social Security number
3. Date of birth
4. Semester(s) to be verified
5. For health insurance, please provide parent name and Social Security number for identification.
6. Complete address where information must be mailed
7. Your signature

Current semester enrollment verifications can be requested after classes have been in session for one week.

Substitute House Bill 1022, passed by the 1993 Kansas Legislature, changed requirements for the concurrent enrollment of high school students in community college courses. Under these requirements, the college is able to provide verification to the high school that the student is attending and making progress in the college course.

If you are a home school student, the same information may be released to the home school administrator. If you have questions regarding this policy, contact the office of the dean of Students.

Alcohol and Drugs
The Drug-free Schools and Communities Act Amendments of 1989 require all schools and institutions of higher education to adopt and implement a program to prevent the illicit use of drugs and the abuse of alcohol
by students and employees on college property or as part of any college activities.

The following statement is part of JCCC’s program adopted to comply with this act.

Standards of Conduct
Johnson County Community College supports and endorses the Federal Drug-free Workplace Act of 1988 (Public Law 100-690, Sec. 5151 et. seq.) and the Drug-free Schools and Communities Act amendments of 1989 (Public Law 101-226). Pursuant to these acts, the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance or abuse of alcohol (as defined in these acts) by a student on college property or as part of any college activities is prohibited. Any student of the college found to be abusing alcohol or using, possessing, manufacturing or distributing controlled substances in violation of the law on college property or at college events shall be subject to disciplinary action in accordance with applicable policies of the college. Students who violate this policy will be subject to sanctions that include suspension and expulsion from the college.

Legal Sanctions
Students are reminded that illegal possession or use of drugs or alcohol may also subject individuals to criminal prosecution. The college will refer violations of proscribed conduct to appropriate authorities for prosecution. Kansas law provides that any person who violates the criminal statutes on controlled substances by possessing, offering for sale, distributing or manufacturing opiates and narcotics, such as cocaine and heroin, shall be guilty of a class C felony. For a conviction of a class C felony, the court may sentence a person to a term of imprisonment of a minimum of three to five years, a maximum of 10 to 20 years, and a fine of up to $15,000. Unlawful possession of a depressant, stimulant or hallucinogenic drug is punishable as a class A misdemeanor, with a penalty of up to one year in jail and a fine of $2,500. Depressants include barbiturates, Valium and barbitol. Hallucinogens include LSD, marijuana and psilocybin. State law classifies amphetamines and methamphetamine as stimulants.

The Federal Controlled Substances Act provides penalties of up to 15 years’ imprisonment and fines of up to $25,000 for unlawful distribution or possession with intent to distribute narcotics. For unlawful possession of a controlled substance, a person is subject to up to one year of imprisonment and fines up to $5,000. Any person who unlawfully distributes a controlled substance to a person under 21 years of age may be punished by up to twice the term of imprisonment and fine otherwise authorized by law.

Health Risks
A buse of alcohol and use of drugs are harmful to one’s physical, mental and social well-being. Accidents and injuries are more likely to occur if alcohol and drugs are used. Alcohol and drug users can lose resistance to disease and destroy their health. Tolerance and psychological dependence can develop after sustained use of drugs.

A lcoholism is the number one drug problem in the United States. A lcoholism takes a toll on personal finances, health, social relationships and families. It can have significant legal consequences. Abuse of alcohol or use of drugs may cause an individual driving a motor vehicle to injure others and may subject the abuser to criminal prosecution. Drunk drivers are responsible for more than half of all traffic fatalities.

More specifically, the major categories of drugs are listed below and include the significant health risks of each.

• Amphetamines – Physical dependency, heart problems, infections, malnutrition and death may result from continued high doses of amphetamines.

• Narcotics – Chronic use of narcotics can cause lung damage, convulsions, respiratory paralysis and death.

• Depressants – These drugs, such as tranquilizers and alcohol, can produce slowed reactions, slowed heart rate, damage to liver and heart, respiratory arrest, convulsions and accidental overdoses.

• Hallucinogens – These drugs may cause psychosis, convulsions, coma and psychological dependency.

Counseling, Treatment or Rehabilitation Programs
Maryland community agencies are available to assist students seeking alcohol and drug counseling and treatment. Among these agencies are the Johnson County Mental Health Center, the Johnson County Substance Abuse Center, the Johnson/Leavenworth Regional Prevention Center and the Heart of America Family and Children Services. In addition to these, many area hospitals and community agencies are available to provide drug and alcohol counseling services.

Students seeking additional information about health problems and treatment related to alcohol and drug problems may contact a counselor through the JCCC Counseling Center, 155 GEB.

Sanctions
A student who violates any provision of this policy shall be subject to appropriate disciplinary action including suspension and expulsion as provided in policy 319.01 of the student personnel policies. In addition, any student who violates the standards of conduct as set forth in this Statement of Prevention of Alcohol Abuse and Drug Use may be subject to referral for prosecution.

The term “controlled substance” as used in this policy
means substances included in schedules I through V as defined by section 812 of title 21 of the United States Code and as further defined by the Code of Federal Regulations, 21 C.F.R. 1300.11 through 1300.15. The term does not include the use of a controlled substance pursuant to a valid prescription or other uses authorized by law. The term “alcohol” as used in this policy means any product of distillation or a fermented liquid that is intended for human consumption and that is more than 3.2 percent by weight as defined in chapter 41 of the Kansas statutes.

Fireworks, Firearms, Ammunition

A Johnson County Ordinance forbids the detonation of fireworks within the city limits. Firearms and ammunition on campus are strictly prohibited.

Lost and Found

To report or inquire about lost items, stop by the Security Office, 115 CEC, or dial ext. 5678 (LOST) to contact them by phone. In addition, if you should experience a property theft, contact Security and a report will be filed. The college is not responsible for lost or stolen items.

No-smoking Policy

Smoking is prohibited in all enclosed areas of Johnson County Community College. Any violation of this smoking regulation may result in a misdemeanor conviction as prescribed in the state of Kansas statutes.

Parking

You do not need to register your vehicles with JCCC in order to park on campus. Increasing enrollment makes spaces sometimes difficult to find, especially during the peak hours of 8:30 a.m. to noon, so allow extra time.

Parking lots are marked with signs designating areas for student, handicapped, staff and faculty parking.

Motorcycles and motorcycles are considered motor vehicles and their operators are required to comply with all parking and traffic regulations. There are designated parking areas for motorcycles and motor scooters.

Responsibility for finding a legal parking space rests with the motor vehicle operator. If you do not comply with campus parking regulations, you will be charged a fine. Fines must be paid within 10 business days of the offense. After this time, beginning on the 11th day, an additional charge of $1 a day may be assessed per violation. These fines may be paid at the Business Office.

Offenses for which you will be ticketed and fined will include the following:
1. Parking in handicapped parking without a permit
2. Failure to display a parking sticker, if required
3. Parking in restricted parking
4. Parking in posted “No Parking” areas
5. Improper parking
6. Parking on the grass
7. Parking in a loading or service zone
8. Restricting traffic flow
9. Parking in pedestrian areas
10. Parking next to the curb
11. Overtime parking (in a 30-minute zone)

Failure to pay fines will result in further action being taken. If you have received two violations, you will, after receipt of a third offense, have your records placed on hold. This action will not allow you to add/drop classes, enroll in future classes or obtain a copy of your transcript until the fines are paid. The third offense also may result in your vehicle being towed at your expense.

Handicapped Parking

Only students, staff and visitors with state handicapped parking permits will be allowed to park in the handicapped areas. Enforcement of handicapped parking will be handled by Overland Park police or Safety and Security. Violations written by Overland Park police will require the violator to appeal in Overland Park Municipal Court. Johnson County Community College will not be responsible for this action.

Bicycles

Bicycles do not need to be registered. Bicycle racks are available throughout the campus. Bicycles must be placed in these racks. They may not be locked to rails, lamp posts, trees or placed inside buildings.

Security

Students, faculty and staff at Johnson County Community College have access to academic, recreational and administrative facilities on campus. The general public can attend cultural and recreational events on campus, with access limited to the facilities where these events are held. When facilities are not scheduled for use, they are secured and all alarms activated. Access to closed facilities is on an “as needed” basis and incorporates strict key control procedures.

Normal hours of operation are 5:30 a.m. to 11 p.m.
Reporting Accidents, Incidents or Crimes

When an incident occurs that requires you to telephone for law enforcement, medical or firefighting assistance, there are certain things you must remember to do and not do. All such incidents that happen on campus must be reported immediately to Safety and Security, ext. 4111. That department is staffed to dispatch immediate aid to you, relay the circumstances of the emergency to the appropriate off-campus agency and escort police, ambulance or fire equipment to the scene.

In a medical emergency, do no more than your qualifications and experience allow. Give aid, but don't cause harm. In case of fire, call for help and spread the alarm.

Should a criminal act occur, you should be prepared to give as much information as possible. This is especially true if the suspect has not had time to clear the campus or the immediate area. Don't disturb the scene.

All reports of a criminal nature are forwarded to the local law enforcement agency for further disposition. To report a crime or incident of a nonemergency nature, dial 4112.

If you are locked out of your vehicle, need a jump start or would like an escort to your vehicle, dial 4112 or stop by the campus communications dispatch center in room 115 of the CEC building, or use any of the campus emergency phones located in parking lots and walkways.

Unlawful Discrimination or Harassment Complaint Procedure

Students or prospective students believing that they are the subject of discrimination or harassment prohibited by college policy should take the following steps:

1. The student should feel free to discuss the issue directly with any party participating in or allowing the conduct

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### Johnson County Community College Campus Safety and Security Annual Report

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| **Group B Offenses**   |                      |                     |                      |                     |                      |                     |
| Bad Checks             | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   |
| Curfew/Loitering/Vagrancy | 0               | 0                   | 0                    | 0                   | 0                    | 0                   |
| Disorderly Conduct     | 6                    | 0                   | 2                    | 0                   | 4                    | 0                   |
| Driving Under the Influence | 0                | 0                   | 0                    | 0                   | 0                    | 0                   |
| Drunkenness            | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   |
| Family Offenses, Nonviolent | 0               | 0                   | 0                    | 0                   | 0                    | 0                   |
| Liquor Law Violations  | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   |
| Peeping Tom            | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   |
| Runaway                | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   |
| Trespass of Real Property | 0                | 0                   | 0                    | 0                   | 0                    | 0                   |
| All Other Offenses     | 5                    | 0                   | 5                    | 0                   | 0                    | 0                   |
| **TOTAL GROUP B OFFENSES** | 11                 | 0                   | 7                    | 0                   | 4                    | 0                   |
| Hate Crimes            | 0                    | 0                   | 0                    | 0                   | 0                    | 0                   |
to occur. Students are assured that retaliation due to such complaints is also strictly prohibited and that if retaliation occurs, then discipline up to and including expulsion or termination will also occur.

2. If the student does not feel comfortable in addressing this issue directly with the offending party or parties or if such discussions do not produce a result acceptable to the student, then the student should make a written complaint as set forth below:

   a. The written complaint should include a specific identification of the conduct complained of and of the parties involved. The complaint should also include an explanation of why the student believes that the alleged actions or harassment is based on gender, national origin or race, or other impermissible basis. The complaint should be signed and dated.

   b. Students should file their written complaint with the dean of Student Services within 30 calendar days of the time the alleged harassment or discrimination took place unless good cause is shown for delay. If the student is not comfortable speaking with the dean of Student Services, then the student may submit the complaint to the director of Human Resources.

3. The person receiving the complaint should proceed under the following guidelines:

   a. The party receiving the complaint should immediately submit a copy of the complaint to the president of the college for his/her records. The president shall appoint two officers of the college to investigate the complaint and the president shall designate either the vice president for Academic Affairs or the vice president for Administrative Services to review the investigators' findings and determine appropriate action at the conclusion of the investigation. The investigators shall immediately investigate the complaint by discussing the complaint with the complainant and by interviewing any witnesses with relevant information, including but not limited to parties participating in or observing the conduct. The alleged offending party shall be given a copy of the complaint. Further, the alleged offending party may respond either by a signed written response from such alleged offending party or by a written response from the alleged offending party's attorney. Such written response to be considered by the investigators must be received by the investigator not later than seven (7) calendar days after the alleged offending party is given a copy of the complaint. All parties in the investigation shall be advised that information surrounding the complaint should be kept confidential. Witnesses and alleged offending parties should be advised that retaliation against a complainant is strictly prohibited and may lead to discipline up to and including expulsion or termination.

   b. The investigators shall summarize their findings in a report to the designated vice president. The vice president shall review the investigators' report and shall, if warranted, take disciplinary action or recommend disciplinary action as otherwise provided in college policies, up to and including the expulsion or termination of any person violating the policies. The vice president's decision on the recommendations of the investigators as contained in their written report shall be in writing. A copy of the vice president's report of action to be taken or recommended and the report of the investigators will be provided to the alleged offending party and the complainant within ten (10) working days after the vice president receives the report of the investigators. A appeal by the alleged offending party of the decision of the vice president shall be made under the grievance section of policy 416.07 (beginning at step 3 – Time for filing of grievance in this case is extended to ten (10) days rather than five (5) days as provided in 416.07) and under section 416, or the master contract if a professional employee is involved, and if demotion, suspension without pay, or termination for cause is recommended. The complaint may also request a review by the president of the college of the report and the determination of the vice president. Such request for a review by the complainant shall be made in writing and filed in the office of the president within ten (10) calendar days of the date the report of the vice president and the report of the investigator is provided to the complainant.

   c. A ny form of retaliation taken because of the filing of a complaint is prohibited.

   d. If review is sought, then the president shall review the complaint, interview the complainant and investigators, if necessary, and complete such other interviews as may be necessary to make a determination. The president shall complete the review within ten (10) working days unless otherwise agreed by the parties hereto. If the president finds that conduct has occurred which violates college policy, then the president may order or recommend that discipline be taken as otherwise provided in these policies. Following completion of this review, the president shall inform the complainant and the alleged offending party of his/her findings and conclusions.

   An appeal of any discipline taken by the college can be had pursuant to the policies as provided for herein and as set forth by the board of trustees.

The time lines set forth in this policy are implemented in
order to ensure that allegations are investigated and concluded in a timely fashion so that any ongoing conduct can be immediately halted and immediate discipline taken if warranted. The complainant may, however, agree to an extension of time, and the failure to comply with all time limits shall not invalidate a complaint or investigation or discipline.

All particulars of any complaint shall be kept confidential to the extent possible during and after investigation. Particulars of the complaint shall only be released to others to the extent necessary to fully investigate the complaint or if such information is compelled by law to be disclosed.

The college's commitment to eradication of any sort of illegal discriminatory conduct includes prohibiting actions taken in retaliation for complaining of violations of college policy. Retaliation includes taking any action which may have any impact on the terms or conditions of employment or education, including but not limited to lowering grades, increasing discipline or assignment, demotion, changes in pay or hours, detrimental changes in job duties or functioning, if such conduct is taken because of the individual's filing of a complaint under this policy, whether or not such complaint is determined to be valid. Such retaliation is strictly prohibited by law and by this policy and shall lead to discipline up to and including termination or expulsion. Any person believing that retaliation has taken or is taking place should immediately follow the steps set forth above for investigation and resolution of complaints.

**Student Code of Conduct**

Students enrolled at Johnson County Community College are expected to conduct themselves as responsible individuals. You are subject to the jurisdiction of the college during your period of enrollment, and the college reserves the right to take disciplinary action, including suspension or expulsion, against you if, in the opinion of the college administration, you have not acted in the best interest of other students or the college. The following types of behavior are considered violations of the student code of conduct and may subject you to disciplinary action and/or referral to appropriate law enforcement agencies.

1. **Alcoholic beverages** - No student shall consume or possess any alcoholic beverages, beer and/or wine on any college-owned or college-operated facility or at any college-sponsored event either on or off campus.

2. **Assembly** - No person or persons shall assemble in a manner that obstructs the free movement of people about the campus or the free and normal use of college buildings and facilities, or prevents or disrupts the normal operation of the college.

3. **Assault and Battery** - No student shall threaten or commit a physical or sexual attack on faculty, staff or another student. No student shall force or threaten to force another student, faculty or staff member to have sexual contact against that person's will. A ny student charged with sexual assault on or off campus may be prosecuted under criminal statutes and disciplined under the campus code of student conduct. Even if the criminal justice authorities choose not to prosecute, the college reserves the right to pursue disciplinary action.

4. **Cheating** - No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials. This includes students who aid and abet, as well as those who attempt such behavior.

5. **Contracts** - No student shall enter into a contract with an outside agency using the name of the college. Contracts entered into in violation of this rule shall be the personal responsibility of the student.

6. **Counterfeiting and Altering** - No student shall reproduce, copy or tamper with or alter in any way, manner, shape or form any writing, record, document of identification or any form used or maintained by the college. This shall include computerized data.

7. **Disruptive Behavior** - No student shall behave in a manner that is unacceptable in a learning environment or that endangers or infringes on the rights and/or safety of himself or herself or other students or staff. If misconduct in the classroom warrants an immediate suspension from the class for the remainder of the class period, the instructor may do so without a prior hearing. If the student does not voluntarily leave the classroom, campus security officers may remove the student from the classroom upon oral request by the instructor. The instructor shall provide written notice of the suspension to the appropriate program director/division administrator and the dean of Student Services within one work day.

If misconduct warrants additional or different discipline, the instructor shall consult with the dean of Student Services who may elect to:

a. meet with the student, the instructor (if consenting) and other appropriate people to explore and adopt nondisciplinary solutions, including the establishment of guidelines for retaining the student in class;

b. conduct a meeting with the student and other people appropriate to the case, make a written determination of the facts and take disciplinary
8. **Dumping and Littering** - No student shall deposit, dump, litter or otherwise dispose of any refuse on college property, except in duly designated refuse depositories.

9. **Gambling** - No student shall engage in any form of gambling, as defined in K.S.A. 21-4302 as amended from time to time, on college-owned or college-operated property or at any college-sponsored event either on or off campus.

10. **Drugs** - No student shall unlawfully manufacture, distribute, dispense, possess or use a controlled substance, as defined in college policies as amended from time to time and/or as defined in the Controlled Substances Act (K.S.A. 65-4101 as amended from time to time) on any college-owned or college-operated property or at any college-sponsored event either on or off campus.

   The policy of the board of trustees for athletics is as follows:

   Illicit drug usage within the context of competitive athletics can compromise the physical well-being and health and safety of the individual; therefore, all athletes who practice and compete for varsity athletic teams at Johnson County Community College will be required to participate in the college's Drug and Alcohol Abuse Prevention program. Specifics of the drug testing procedures, list of drugs of abuse and counseling procedures are outlined within the Student Athlete Handbook.

11. **Smoking** - No student shall be allowed to smoke in any enclosed indoor area of the college.

12. **Unlawful Discrimination or Harassment** - No student shall engage in harassment of another student, instructor or staff member of the college. This shall include harassment based on gender, race, age, disability, national origin or other basis impermissible under the law. Sexual harassment is defined as conduct involving unwelcome sexual advances, requests for sexual favors or other verbal or physical conduct of a sexual or gender-based nature.

   A. Harassment based on race, ancestry, age, disability or national origin includes verbal, physical or other conduct of a nature specifically offensive to a person because of race, age, disability, ancestry or national origin.

   B. Harassment based on gender, race, age, ancestry, disability, national origin or other bases protected by law is strictly prohibited when:

   1. submission to such conduct is made either explicitly or implicitly a term or condition of academic success; or

   2. submission to or rejection of such conduct by an individual is used as the basis for academic decisions affecting either the instructor, student or staff member; or

   3. such conduct has the purpose or effect of unreasonably interfering with the instructor, student or staff member’s performance or creating an intimidating, hostile or offensive environment.

   Persons violating this policy will face student discipline up to and including suspension or expulsion. Any person believing that he or she has been subject to unlawful harassment as set forth in this policy should utilize the unlawful discrimination or harassment complaint procedure as found on page 44 of this catalog.

13. **Theft/Vandalism** - No person nor persons shall engage in the theft of or damage to property belonging to another person or to the college. This includes tampering with coin-operated machines.

14. **Use of College Facilities** - No student shall be in campus buildings except during days established in the academic calendar and on campus during normal college hours of operation. Students wishing to use college facilities at times outside of normal hours of operation must secure permission from the director of student life. For purpose of this policy, normal hours of operation will be 5:30 a.m. through 11 p.m.

15. **Weapons** - No student, except authorized law enforcement officers or security personnel, shall possess, use or threaten to use:

   a. any weapon described and defined in K.S.A. 21-4201 as amended from time to time, and any other weapons, including but not limited to pellet guns;

   b. any explosives, including but not limited to dynamite, nitroglycerin or any other combustible, blasting caps, fireworks, firebombs, grenades, plastic charges or devices intended for detonation purposes, and/or any other similar devices or compounds used for detonation or blasting; on any college-owned or college-operated property or at any college-sponsored event either on or off campus.

   Students who violate this policy are subject to suspension from the college with loss of all credit for the current semester and no refund of tuition and fees for the semester, as well as permanent prohibition from future enrollment or participation in college or
college-sponsored activities. The student will not be allowed to enroll at the college at any future time.

16. **Safety** - No student shall engage in behavior that violates any safety rules of any classroom, laboratory or other college premises, whether such procedures be written or oral rules or directions. This shall include, but not be limited to, the wearing of any required personal protective equipment and the following of prescribed methods and procedures for handling and disposing of certain materials that may be hazardous, unstable, infectious, etc.

17. **Student Electronic Mail** - No student shall deviate from acceptable standards of ethics and conduct in the use of computing resources as outlined in the guidelines given to the student at the time of electronic mail account registration.

18. **No student shall willfully violate any published regulation for student conduct adopted or approved by the board of trustees.**

With the exception of matters involving weapons as herein defined or an immediate danger to life, limb or property, a suspension or other disciplinary action will be preceded by an opportunity for you to confer with the dean of Student Services. At such a conference, you will be advised of the nature and extent of the alleged offense. If you deny having committed such offense, you will be given an opportunity to present your version of the incident. Subsequent to the conference, the dean of Student Services may impose disciplinary action deemed appropriate.

**Appeals of Disciplinary Action**

If the dean of Student Services elects to impose disciplinary measures, you will be informed in writing of the nature and terms of such disciplinary action and will be further advised of the right to appeal the decision. A copy of the written notice will be sent to you by certified mail.

If the dean of Student Services decides to impose any disciplinary action, you may appeal that decision using the following procedure.

1. You may appeal the decision of the dean of Student Services to the campus appeals board. The campus appeals board is composed of five voting members and a nonvoting chair as follows:
   a. one dean or assistant dean selected by the president who shall act as chair, shall conduct the hearing and shall not vote; and
   b. two students selected by the Student Senate; and
   c. three faculty selected by the Faculty Association.

   No one of the members of the campus appeals board shall have been involved in the matter that forms the basis of the disciplinary action. If a member of the appeals board is or has been involved in the matter in question, he or she shall recuse himself or herself from the proceedings and the academic vice president will appoint a member to replace such person.

2. You must deliver a written appeal to the office of the academic vice president within seven business days of the date that the dean of Student Services sent the notice of the disciplinary action or you will be deemed to have waived the right to appeal the disciplinary decision and the dean's decision will be deemed final. The written appeal shall state the reasons that you believe the decision of the dean of Student Services should be modified or reversed.

For the purpose of this procedure, a “business day” shall be a weekday during which regular classes are held at the college.

3. Within seven business days of the date that the notice of appeal is received, the chair of the campus appeals board shall notify you in writing of the time, date and place of the appeal meeting.

4. The appeal hearing shall be held not less than seven business days, nor more than 20 business days, after the date that the chair sends the notice of the hearing.

5. You and the administration shall have the following rights during the hearing:
   a. each party shall have the right to have legal counsel present at each party's own expense;
   b. each party shall have the right to hear or read a full report of the testimony of the other party’s witnesses;
   c. each party shall have the right to present witnesses in person or to present their testimony by sworn affidavit;
   d. you and the administration shall each have the right to testify and give reasons supporting your respective positions;
   e. the hearing shall be conducted in an orderly manner;
   f. the appeals board shall render a fair and impartial decision based on substantial evidence presented at the hearing;
   g. the hearing shall be tape recorded.

The chair of the appeals board shall adopt such other procedures as he or she may deem appropriate to provide a fair and orderly hearing. The hearing shall not be open to the public.

6. After the hearing, the appeals board shall prepare a written decision affirming, modifying or reversing the dean’s decision and summarizing the evidence supporting its decision. The appeals board’s decision shall be
mailed to you and the dean of Student Services no later than 10 business days after the close of the hearing.

7. If you are dissatisfied with the decision of the appeals board, that decision may be appealed to the college president by delivering a written notice of appeal to the president's office within seven business days of the date the appeals board's decision is mailed to you. The written notice of appeal to the president shall state the reasons that you believe that the board's decision should be modified or reversed. If you do not deliver a written notice of appeal to the president's office within the time limit, you will be deemed to have waived the right to appeal and the decision of the appeals board will be deemed final.

8. If you file the notice of appeal with the president within the time limit, the president shall review the matter by reviewing the tape-recorded record of the appeal board's hearing and any written materials submitted as part of the appeal board's hearing. In his sole discretion, the president may request that the parties submit additional evidence and, if additional evidence is requested, it shall be presented in a manner granting substantially the same procedural rights to both parties as were afforded during the appeal to the appeals board. Neither party shall have the right to request that the president hear additional evidence. The president shall issue a written decision affirming, modifying or reversing the decision of the appeals board. The president's decision shall be final.

9. Unless appealed, any disciplinary action imposed by the dean of Student Services shall become effective as of the date that the time to file an appeal with the appeals board has expired. However, the college reserves the right to exclude from campus any person who it has reason to believe poses a threat to the safety of any other person on campus or who has disrupted college activities or operations. If you appeal to the campus appeals board, the effective date of any disciplinary action will be the date after the appeals board issues its decision or such other date as may be designated by the appeals board. A appeal to the president will not alter the effective date of any disciplinary action imposed by the appeals board.

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**Student Appeals Other than Appeals of Disciplinary Actions**

**Academic**

The Johnson County Community College academic appeals process provides you with an approach to question academic behavior by faculty members, administration, counselors, staff or other college personnel. Examples of expected appropriate academic behavior are set forth in the American Association of University Professors' Code of Ethics.

For appeals regarding any academic concerns, such as differences of opinion on grades, assignments, classroom procedures or related issues, the following procedures will be followed:

1. You are encouraged to discuss any academic concern with the faculty member directly as it occurs. Your counselor may be consulted and be included in these discussions.

2. Where resolution is impossible or unsatisfactory to either party, the issue should be appealed in writing to the program director or his or her designee, preferably within the same academic semester or term, but no later than 20 business days after the end of the semester or term. For the purpose of this policy, a "business day" shall be a weekday during which regular classes are held at the college. The program director will respond to you in writing within five business days after the meeting, describing resolution to the appeal.

3. Should you consider the response of the program director an unsatisfactory resolution, you may appeal to the assistant dean responsible for the area. To appeal, you must file with the appropriate assistant dean, within 10 business days of receipt of the program director's response, a written statement with supporting information on the problem. The assistant dean will send you a written response within five working days.

4. Should you consider the response of the assistant dean an unsatisfactory resolution, you may appeal to the dean of Instruction. To appeal, you must file with the dean of Instruction, within 10 business days of the receipt of the assistant dean's response, a written statement with the supporting information on the problem. Similar written statements may be provided by the faculty member. The dean of Instruction's decision is final. The dean of Instruction will send you a written response within five business days.

These proceedings will occur in a professional manner and all efforts will be made to protect the rights of all parties involved.
Nonacademic

The Johnson County Community College nonacademic appeals process is to be used for issues other than disciplinary or academic matters, and provides you with protection against unwarranted infringement of your rights. A grievance may concern an alleged violation of college policies, infringement of your rights and other such problems dealing with other students, college staff and faculty and authorized college activities.

The following procedures will be followed to ensure an appropriate resolution of a student grievance or complaint at the lowest possible level:

1. You will attempt to rectify the grievance with the supervisor of the area in which the alleged violation occurred within 10 business days. Every effort will be made to resolve the grievance at the lowest possible level.

2. Where resolution is impossible or unsatisfactory to either party, the issue should be appealed in writing to the appropriate supervisor. The supervisor must inform you in writing of any decision made and the reason for that decision within five business days. If you feel the grievance has not been resolved, you may submit a written grievance to the dean of Student Services within 10 business days from the time the complaint was filed at the previous level.

3. You will submit a written grievance to the dean of Student Services and request a conference. The dean must, within five college working days, inform you in writing of any decision made and the reasons for making that decision. The decision of the dean of Student Services is final. The dean will notify the affirmative action/Title IX officer of the college in writing of any grievance involving alleged illegal discrimination, including any claim that you have been subjected to illegal discrimination on the basis of race, sex, national origin, age, religion or disability. Claims of illegal discrimination will be investigated by the designated officer who will make a report to the president.

These proceedings will occur in a professional manner and all efforts will be made to protect the rights of all parties involved.

Student Career Development Policy

It is the policy of JCCC that all students will have equal access to career development services.

Career development services will be provided in a consistent and coordinated manner, appropriately documented and directed toward early identification of student needs.

Department and individual responsibility, including, but not limited to, staff, facilities, equipment and technical support, are detailed in the procedures for implementation of the JCCC career development policy.

Student Health

The college does not provide on-campus medical services, nor does it assume responsibility for injuries you may incur while participating in college activities. Medical services are available at local clinics and hospitals.

The college does not provide health and accident insurance for students. You must contract for this coverage on an individual basis.

A medical examination may be required for selected academic programs or participation in selected cocurricular activities or when the students' health may be at risk.

For additional information concerning student health policies and procedures, contact the dean of Student Services.

Student Right to Know

In 1995-1996, the completion or graduation rate for students who entered Johnson County Community College in fall 1993 as first-time, full-time, degree-seeking students was 7.0 percent. Thirteen and three-tenths percent of these students were still attending JCCC in fall 1996.

Current or prospective students interested in obtaining further information should contact the dean of Student Services in 152 GEB.

(Published in compliance with the Student Right-to-Know and Campus Security Act; Public Law 101-542, Sec. 103 et. seq.)
Continuing Education and Community Services

Continuing Education
Adult Basic Education/
General Educational Development
  ABE/GED Program
  Intensive English Program

Business and Industry Institute
Center for Professional Education
Center for Literary Culture
Citizens Forums

CLEAR Program
Community Services Courses
Cultural Education
  Vol-Stars, JCCC’s Cultural Volunteers
Speakers Bureau
Special Events
Youth Program
Continuing Education

Continuing Education Courses/Special Events

JCCC offers busy people of all ages and backgrounds short-term courses on hundreds of topics in a friendly, informal atmosphere at convenient hours and locations. It’s all part of “learning for life” at the college. You may register for courses by phone, mail, in person or fax.

Adult Basic Education/General Educational Development

ABE/GED Program

Basic skill enhancement training in Johnson County is provided through Project Finish, a community-based, open-enrollment, no-fee basic education program that is jointly sponsored by Johnson County Community College and the Johnson County Library.

Individualized instruction is provided on a one-on-one tutorial or small-group basis in centers located conveniently throughout Johnson County. Computer-assisted instruction is also available to provide participants the opportunity to improve basic reading, writing and math skills. In addition, the program provides individuals with the opportunity to obtain a high school equivalency diploma (GED) or learn the English language for the non-native English speaker.

English as a Second Language (ESL) classes are available for the beginning, intermediate and advanced student.

Intensive English Program

The Intensive English program offers beginning, intermediate and advanced pre-academic listening, speaking, vocabulary, pronunciation, grammar, reading, writing and conversation classes for non-native speakers.

Business and Industry Institute

The Business and Industry Institute provides high-quality training, consulting and economic development services to area businesses and organizations. These services are intended to meet both current and long-term education and skill-based needs. Among the services offered are:

• **On-site Training.** Workforce training, taught at the business site, can be designed to fit the needs of your individual business, using your own equipment and facilities so your employees can learn under actual work conditions.

• **On-campus Training.** Continuing education courses, seminars, workshops and programs in technology and business are offered at JCCC. Courses and programs can be designed to meet the specifications of your individual business.

• **Business and Office Skills.** Skill-oriented seminars and workshops are available both on campus and on site at company locations.

• **Economic Development.** The institute is active in helping new and expanding industries obtain state funding to pay for training and job skills development.

• **Management and Professional Development.** Professional, skill-oriented management and supervisory seminars and workshops are offered both on campus and on site at company locations.

• **Computer Learning Program.** Employees are trained in business applications, using much of today’s best-selling software. The clearly written manuals and concentrated hands-on experience significantly reduce the time required for you to become productive. The training labs are continuously upgraded with the latest equipment and the newest versions of software.

• **Academy for Information Technology.** High-end computer users can now study at the academy for continuing education or college credits.

• **Small Business Development Center.** The Small Business Development Center offers a wide range of small business services, including training programs, counseling, applied research and a library for small business owners and potential owners in Johnson, Wyandotte and Miami counties. There is no charge for the counseling service, and results are strictly confidential.

• **Workplace Skills Enhancement.** Customized, job-specific basic skills in written and spoken language, math and thinking skills can be developed to improve performance on the job. After a job analysis and assessment process, an on-site training program is offered to meet a specific organization’s employee needs.

• **Supervisory Skills Assessment Center.** Supervisors are assessed against 10 dimensions. A plan is then created for focused development.

• **Certification Programs.**
  - Supervisory Skills
  - Team Leader Facilitator
Center for Professional Education

The Center for Professional Education offers a broad range of educational opportunities designed to update and maintain your skills, provide information on current developments and innovations and meet mandatory continuing education requirements for licensure, relicensure or recertification. The center offers the following services and programs to the professional community:

- **On-campus Training.** Continuing education courses, seminars and workshops, most of which are approved by state licensing boards in Kansas and Missouri for continuing education credit.

- **On-site Training.** Courses and programs that are custom-designed to meet the special needs of the institution, agency or company. These courses are offered at your workplace and are scheduled at times convenient to you.

- **Open Computer Lab.** Computerized independent study modules approved for RN, LPN and LMHT relicensure credit in Kansas are offered in JCCC’s open computer lab. Also offered are computerized studies for real estate relicensure credit.

- **Cosmetology.** This program provides theory and skill development in hair care, nail technology, skin care and makeup application. Three options are available in the cosmetology program: nail technologist, cosmetologist and esthetician.

- **Cosponsorships.** The center works cooperatively with a variety of associations, institutions and agencies to provide high-quality continuing education programs at JCCC and elsewhere in the metropolitan area.

- **Videoconferences.** High-quality videoconferences are offered for a wide range of professionals, including offerings of the American Law Institute, American Medical Association, Kansas Bar Association, Practicing Law Institute, Consortium for Health Education and Consortium for Health Technology Education and others.

- **Seminar.** Training and professional development courses for public safety professionals, including law enforcement officers, emergency medical technicians, mobile intensive care technicians and other health care professionals. Self-study modules are also available.

- **The Insurance Institute.** Semester-length courses leading to professional designations in the insurance industry, including chartered property and casualty underwriter, associate in claims, chartered life underwriters, associate in risk management, associate in underwriting and certified professional insurance woman/man. Seminars and workshops are offered to meet the Kansas and Missouri continuing education requirements of licensed property/casualty, life/health and title insurance agents.

- **Law.** Seminars, workshops and videoconferences for attorneys and paralegals.

- **Mediation.** Training and professional development courses for mediation certification in the state of Kansas are offered every semester. Upon completion of JCCC’s training and practicum experience, a participant is eligible to apply for certification with the Kansas Supreme Court.

- **The Police Academy.** The regional police academy offers 500 hours of instruction to full-time law enforcement officers in order to meet the Kansas state mandate for basic police certification. The academy is offered in cooperation with area law enforcement agencies and serves more than 16 police jurisdictions in Kansas.

- **Public Safety Training.** Training and professional development courses for public safety professionals, including law enforcement officers, emergency medical technicians, mobile intensive care technicians and firefighters.

- **The Real Estate Institute.** Prelicense instruction to prepare you to sit for the Kansas real estate salesperson’s license examination. A approved continuing education for relicensure of Kansas and Missouri real estate agents and brokers. Courses leading to professional designations and state relicensure/certification in real estate appraisal.

- **Technical Training.** Hands-on technical training for code enforcement officers, plumbers, electricians, pest control and water quality inspectors and HVAC technicians.

- **Therapeutic Massage.** Classroom and clinical instruction in therapeutic massage, which satisfies the education and training requirements for licensure established by the city of Overland Park. The 500-hour curriculum includes classes in massage theory and technique, human sciences, professional business, ethics and movement.
Center for Literary Culture
The Center for Literary Culture is a national, award-winning program for writers and those who love to read. It sponsors annual writers conferences and various creative writing workshops.

Citizens Forums
JCCC invites interested citizens to attend and participate in discussions on current social, political, ethical or economic issues.

CLEAR Program
CLEAR (College Learning Experiences, Activities and Resources) provides noncredit continuing education classes for adults with developmental disabilities or severe learning disabilities. The program, sponsored by JCCC, is designed to teach independent living skills and provide life-enhancing experiences. All classes are held on the JCCC campus. A full range of classes is offered each spring and fall semester, with an abbreviated schedule offered in the summer. Contact the CLEAR office at 469-8500, ext. 3247, with questions.

Community Services Courses
The stimulation of talented instructors and classmates who share common interests is available through JCCC's community services courses. These classes, workshops, lectures, seminars and other activities are for you to whom academic credit is not a priority. No tests, grades or required homework is involved.

Cultural Education
The Cultural Education Center houses one of the most comprehensive performing arts complexes in the region, including the 1,250-seat Yardley Hall, 400-seat Theatre, 100-seat Black Box Theatre, 55-seat Recital Hall and the 3,400-square-foot Gallery of Art. A 600-space parking garage is conveniently situated adjacent to the building. The Cultural Education Center was designed to meet the needs of all special patrons.

More than 100,000 people attend more than 350 events, activities and performances in the theaters of JCCC's Cultural Education Center annually. For the entire Cultural Education Center, approximately 200,000 people attend classes, performances, events and activities each year.

The ticket buyers for events in the CEC are 70 to 85 percent Johnson County residents.

More than 40 percent of all the events, activities and performances that the Cultural Education division serves in the theaters of the CEC are sponsored by community groups or local arts presenters. These are just a few of the organizations and types of events they present:

- The Kansas City Symphony, including the annual SummerFare and FamilyFare concerts.
- American Youth Ballet: holiday performances of Sleeping Beauty and Cinderella.
- Overland Park Arts Commission: presenting the Kansas City Symphony featuring Dudley Moore, Doc Severinsen and Manhattan Transfer.
- Barbershop quartet, Sweet Adelines and Shriners regional competitions.
- Overland Park Regional Medical Center presentations.
• Kansas City Camerata
• Kansas City Civic Orchestra concerts
• The UMKC Conservatory of Music
• Kansas City Youth Symphony
• KU Alumni Association

Approximately 37 percent of all the events, activities and performances that the Cultural Education division serves in the CEC theaters are sponsored by other JCCC departments. These include:

• The JCCC Foundation concerts by Kathleen Battle, the State Symphony of Russia and each year's Celebrity Series of classical artists such as Christopher Parkening, André Previn and the Pittsburgh Symphony and the Prague Chamber Orchestra
• Staff Development in-service meetings
• Campus Activities Board country music concerts with Billy Dean, Trisha Yearwood, Suzy Boggus and the Mavericks
• Community Services' Travelogue Series and school performances for elementary and middle school audiences
• Gallaudet University presentations of I. King Jordan, deaf comedian Kathy Buckley and Winnie the Pooh
• Burlington Northern employee development meetings
• The JCCC Theatre Department's four productions each year
• The Humanities Division's Ruel Joyce and Jazz Recital Series, free concerts by local professional jazz and classical musicians
• JCCC vocal and instrumental groups' presentations of two concerts a year
• Business and Industry Institute seminars by Tom Peters, Joel Barker and Peter Senge
• Lectures and forums, including Women Victorious speakers and Let's Talk Issues
• Brown & Gold Club celebrations and shows

Approximately 23 percent of CEC activities are sponsored by the Cultural Education division. They include:

• The Center Series, with theater, dance, music and comedy by a variety of nationally known performers
• The Metropolitan Performing Arts Collaborative, with Missouri Repertory Theatre, Lyric Opera, the Kansas City Symphony and State Ballet of Missouri
• The New Millennium A Arts Festival, presenting cutting-edge theater, dance and performance artists
• The World Culture Sampler Series, featuring emerging classical artists in recital
• Partnerships with more than 50 community organizations that have produced many projects

Vol-Stars, JCCC's Cultural Volunteers

The CEC volunteers, or Vol-Stars, have served as ushers for all events in the CEC since 1990. The Vol-Stars have a great love for JCCC and the arts and strive to provide service to the college while contributing to the cultural enrichment of the community. More than 300 Vol-Stars serve at 150 to 200 events each year.

Speakers Bureau

JCCC's Speakers Bureau provides guest speakers for various community organizations. They speak on a number of timely topics, and are great idea starters for program planners. You can make arrangements by calling the Community Services office.

Special Events

Special events attract thousands of people to the JCCC campus and to locations throughout the county each year. Among the many special events sponsored or cosponsored by the college are public forums, candidate forums, lectures, concerts, conferences, theater, dance, film festivals and a wide range of public service activities such as dental health days, blood drives, job fairs, the annual Women Victorious guest speaker and historical festivals. Special events broaden community involvement with the college, bring speakers of international stature to the community, help educate citizens and make the county a more interesting, stimulating place to live.

Youth Program

Classes and workshops in art, language, music, academic enhancement and special interests have been developed to stimulate creativity and growth in young people. Summer activities include a special series for high-ability students, sports clinics and various youth college classes.
Graduation, Degree and Certificate Programs

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Implementation

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University Transfer Programs

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Transfer Information

Career Programs

Associate of Science Degree

Associate of Applied Science Degree

Certificate of Completion
Graduation Requirements

Johnson County Community College awards the associate of arts, associate of science and associate of applied science degrees.

Johnson County Community College believes that an associate degree represents more than an accumulation of units. The degree should symbolize a successful attempt on the part of the college to lead students through patterns of learning experiences designed to develop certain capabilities and insights. It should reflect the conviction of the faculty that those who receive the degrees possess in common certain basic principles, concepts and skills unique to, and shared by, the various disciplines.

Those receiving the associate degree are expected to demonstrate the ability to think and to communicate clearly and effectively both orally and in writing; to use mathematics; to understand the modes of inquiry of the major disciplines, including the sciences and technologies; to be aware of our culture and of other cultures and times; to achieve insights gained through experience in thinking about ethical problems; to develop the capacity for self-understanding and problem solving; and finally, to gain sufficient depth in some field of knowledge to contribute to society.

Thus, Johnson County Community College’s philosophy of general education combines two traditional approaches, one based on distribution requirements and the other based on student achievement of outcomes. Distribution: All programs of substantial length require students to complete a certain number of general education hours, depending upon the particular degree or certificate. Courses are identified by the Educational Affairs Committee as general education courses if they address in a substantial manner those outcomes expressed in the aims of general education in the curriculum handbook. Outcomes: The General Education and Outcomes Assessment Subcommittee of the Educational Affairs Committee has developed the process by which general education outcomes are defined and assessed at JCCC.

When you apply for graduation, the Admissions and Records Office will complete a degree check to assure that degree requirements will be met. This should be done at least one semester before you decide to graduate.

To be guaranteed consideration for graduation, you must file the written application by the following dates:

- Nov. 1 for spring graduation
- April 1 for summer graduation
- June 1 for fall graduation

Written appeals for deadline extensions may be made to the director of Admissions and Records. If you apply after the deadline, you will not receive notification of your degree status until all grades have been posted for the semester in which you applied to graduate. Appeals for spring graduation will not be considered after Feb. 1, and for summer graduation will not be considered after June 15 and appeals for fall graduation will not be considered after Oct. 15. If you failed to apply by the published deadline dates, but will complete all degree requirements in the current semester, you may appeal to graduate in the following semester and request a waiver of current enrollment status.

You must earn a minimum of 15 semester hours of credit in residence at Johnson County Community College and earn a cumulative G.P.A. of 2.0 or better on all coursework. Advanced standing credits will not count toward satisfying the 15 credit hours residency requirement. Prerequisite courses that needed to be completed before enrollment in college-level courses will not count toward fulfilling degree requirements.

You must be enrolled in the college at the time you anticipate completing degree requirements and file an intent to graduate form. You may complete the requirements for a degree at the end of each term or semester. The degree status will be recorded on your permanent transcript record upon certification of completion of the graduation requirements.

Commencement Exercises

You will be awarded a diploma or certificate when you have successfully completed your program requirements. These awards will be issued at the end of each semester or term. Commencement will be held only once a year in May. If you completed degree or certificate requirements during the semester in which you applied to graduate, appeals will be considered after Oct. 15. If you failed to apply by the published deadline dates, but will complete all degree requirements in the current semester, you may appeal to graduate in the following semester and request a waiver of current enrollment status.

You must pick up the diploma at the Admissions and Records Office; diplomas cannot be mailed.

Associate Degrees

An associate degree is earned when you successfully complete a minimum of 64 hours of college credit courses in an approved educational program.

Competency in the basic skills - reading, writing and computation - is essential if you are to function effectively in collegiate programs. You must meet the following minimum requirements to complete a degree:

1. Minimum proficiency in reading and writing, either at the original assessment, a subsequent assessment or in courses that address these competencies prior to enrollment in degree-specific courses
2. Minimum proficiency in computational skills, either at the initial assessment, a subsequent assessment or in courses that address these competencies prior to enrollment in degree-specific mathematics courses.

The college is committed to integrating computers into its curriculum on an institution-wide basis. Information technology must be relevant and applicable to the curriculum under JCCC’s college-wide framework. JCCC has not made computer literacy mandatory. Rather, the faculty strive to integrate the use of computers into traditionally non-computer areas and to increase the use of computers in more traditional, computer-using areas.

In addition to demonstrating the basic skills competencies, you are expected to develop proficiency in more advanced skills required by the courses outlined in the degree programs. The associate degree requirements are intended to develop effective communication, problem solving and knowledge acquisition through interpretation, comparison, analysis, synthesis, evaluation, research and creative thinking.

Implementation

The associate of arts, associate of science and associate of applied science degree requirements became effective for all new students in the fall 1985 semester. If you were enrolled at the time of implementation, you have the option to complete degree requirements in effect prior to this policy change if you maintain continuous enrollment and successfully complete at least one class (i.e., do not withdraw from all classes) during each regular semester, except for programs with selective admission requirements.

You are considered continuously enrolled if you complete at least one class during each regular fall and spring semester. If you do not maintain continuous enrollment, you will be required to follow the graduation requirements that are in effect at the time of re-enrollment.

Associate of Arts Degree

An approved associate of arts program is one designed specifically to meet your educational objectives and needs through the completion of the general education distribution requirements. The program is individually approved by a counselor.

Most students transferring to four-year colleges and universities earn an associate of arts degree.

The 64 hours of credit necessary to complete the associate of arts degree shall include the following:

Communications................................................... 9 hours
Humanities...................................................... 6 hours
(Social Science and/or Economics).................... 6 hours
Science and Mathematics ................................ 9 hours
(All must include one course from a lab science and one from mathematics)
Health and/or Physical Education ..................... 1 hour

Specific courses that meet the associate of arts degree requirements are as follows:

I. Communications – 9 hours
   A. English Composition – 6 hours
      ENGL 121 Composition I ......................... 3
      ENGL 122 Composition II ...................... 3
      COM 125 Oral/Written Communications * ............ 6
      * Satisfies both Composition I and Oral Communication requirements.

II. Humanities – 6 hours
   No more than one course from each of the five areas may count toward the six required hours.
   A. Literature/Theater
      ENGL 130 Introduction to Literature.............. 3
      ENGL 230 Introduction to Fiction .............. 3
      ENGL 231 American Prose ........................ 3
      ENGL 235 Drama as Literature .................. 3
      ENGL 241 British Writers ........................ 3
      ENGL 250 World Masterpieces .................... 3
      ENGL 254 Masterpieces of the Cinema ......... 3
      ENGL 256 American Poetry ....................... 3
      THEA 120 Introduction to Theater .......... 3

   B. Foreign Language
      (Note: These courses have prerequisites that must be satisfied before enrollment.)
      FL 178 Intermediate Russian I .................. 3
      FL 179 Intermediate Russian II .............. 3
      FL 190 Intermediate Japanese I ............ 3
      FL 191 Intermediate Japanese II ........... 3
      FL 220 Intermediate German I ............. 3
      FL 221 Intermediate German II ............. 3
      FL 230 Intermediate Spanish I ............. 3
      FL 231 Intermediate Spanish II ............ 3
      FL 240 Intermediate French I .............. 3
      FL 241 Intermediate French II ............. 3
### C. History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 124</td>
<td>Community Life/Values</td>
<td>3</td>
</tr>
<tr>
<td>HIST 125</td>
<td>Western Civilization I</td>
<td>3</td>
</tr>
<tr>
<td>HIST 126</td>
<td>Western Civilization II</td>
<td>3</td>
</tr>
<tr>
<td>HIST 130</td>
<td>European History from 1750</td>
<td>3</td>
</tr>
<tr>
<td>HIST 135</td>
<td>Eastern Civilization</td>
<td>3</td>
</tr>
<tr>
<td>HIST 140</td>
<td>U.S. History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST 141</td>
<td>U.S. History Since 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIST 151</td>
<td>World History I: The Traditional World</td>
<td>3</td>
</tr>
<tr>
<td>HIST 152</td>
<td>World History II: The Modern World</td>
<td>3</td>
</tr>
<tr>
<td>HIST 160</td>
<td>Modern Russian History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 162</td>
<td>Modern Latin America</td>
<td>3</td>
</tr>
</tbody>
</table>

### D. Humanities

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 180</td>
<td>Art History: Ancient/Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>ART 182</td>
<td>Art History: Renaissance/Modern</td>
<td>3</td>
</tr>
<tr>
<td>HUM 122</td>
<td>Introduction to Humanities</td>
<td>3</td>
</tr>
<tr>
<td>HUM 136</td>
<td>The Human Experience</td>
<td>3</td>
</tr>
<tr>
<td>HUM 145</td>
<td>World Humanities I</td>
<td>3</td>
</tr>
<tr>
<td>HUM 146</td>
<td>World Humanities II</td>
<td>3</td>
</tr>
<tr>
<td>MUS 121</td>
<td>Introduction to Music Listening</td>
<td>3</td>
</tr>
<tr>
<td>MUS 125</td>
<td>Introduction to Jazz Listening</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 140</td>
<td>History of Photography</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 141</td>
<td>Issues of Contemporary Photography</td>
<td>3</td>
</tr>
<tr>
<td>REL 120</td>
<td>Exploring World Religions</td>
<td>3</td>
</tr>
</tbody>
</table>

### E. Philosophy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 121</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 124</td>
<td>Logic and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 143</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 154</td>
<td>History of Ancient Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 176</td>
<td>Philosophy of Religion</td>
<td>3</td>
</tr>
</tbody>
</table>

### III. Social Science/Economics – 6 hours

Only one course from each of the five areas may count toward the six required hours.

#### A. Anthropology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 125</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 126</td>
<td>Physical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 130</td>
<td>World Cultures</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 210</td>
<td>Peoples of the World</td>
<td>3</td>
</tr>
</tbody>
</table>

#### B. Economics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 130</td>
<td>Basic Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 132</td>
<td>Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 230</td>
<td>Economics I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 231</td>
<td>Economics II</td>
<td>3</td>
</tr>
<tr>
<td>IDSP 175</td>
<td>Global Resources from Geologic and Economic Viewpoints</td>
<td>3</td>
</tr>
</tbody>
</table>

#### C. Political Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 122</td>
<td>Political Science</td>
<td>3</td>
</tr>
<tr>
<td>POLS 124</td>
<td>American National Government</td>
<td>3</td>
</tr>
<tr>
<td>POLS 126</td>
<td>State and Local Government</td>
<td>3</td>
</tr>
<tr>
<td>POLS 132</td>
<td>Introduction to Comparative Government</td>
<td>3</td>
</tr>
<tr>
<td>POLS 135</td>
<td>International Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

### D. Psychology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 121</td>
<td>Applied Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 130</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

### E. Sociology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 122</td>
<td>Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 125</td>
<td>Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC 131</td>
<td>Marriage and the Family</td>
<td>3</td>
</tr>
<tr>
<td>SOC 160</td>
<td>Social Power: Motivation and Action</td>
<td>3</td>
</tr>
</tbody>
</table>

### IV. Science and/or Mathematics – 9 hours

Must include one course from a lab science and one from mathematics.

#### A. Life Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 122/3</td>
<td>Principles of Biology/Lab</td>
<td>3/1</td>
</tr>
<tr>
<td>BIOL 124</td>
<td>Oceanus</td>
<td>3</td>
</tr>
</tbody>
</table>

#### B. Physical Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 122</td>
<td>Astronomy</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 120/1</td>
<td>The World of Chemistry/Lab</td>
<td>3/1</td>
</tr>
<tr>
<td>CHEM 122</td>
<td>Principles of Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 124/5</td>
<td>General Chemistry I/Lab</td>
<td>4/1</td>
</tr>
<tr>
<td>CHEM 131/2</td>
<td>General Chemistry II/Lab</td>
<td>4/1</td>
</tr>
<tr>
<td>CHEM 140</td>
<td>Principles of Organic Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 227</td>
<td>Introduction to Quantitative Analysis</td>
<td>5</td>
</tr>
<tr>
<td>GEOS 130</td>
<td>General Geology</td>
<td>5</td>
</tr>
<tr>
<td>GEOS 132</td>
<td>Historical Geology</td>
<td>5</td>
</tr>
<tr>
<td>GEOS 140/1</td>
<td>Physical Geography/Lab</td>
<td>3/2</td>
</tr>
<tr>
<td>IDSP 175</td>
<td>Global Resources from Geologic and Economic Viewpoints</td>
<td>3</td>
</tr>
</tbody>
</table>

#### IDSP 175 | Global Resources from Geologic and Economic Viewpoints | 3/2 |
C. Mathematics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 165</td>
<td>Finite Math: A Cultural Approach</td>
<td>3</td>
</tr>
<tr>
<td>MATH 171</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 172</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 173</td>
<td>Precalculus</td>
<td>5</td>
</tr>
<tr>
<td>MATH 175</td>
<td>Discrete Math and Its Applications</td>
<td>3</td>
</tr>
<tr>
<td>MATH 181</td>
<td>Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 231</td>
<td>Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 232</td>
<td>Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 241</td>
<td>AG/Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH 242</td>
<td>AG/Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>MATH 243</td>
<td>AG/Calculus III</td>
<td>5</td>
</tr>
<tr>
<td>MATH 244</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
</tbody>
</table>

V. Health and/or Physical Education – 1 hour

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPER Any Activity Course</td>
<td>1</td>
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<tr>
<td>EMS 121 CPR I – Basic Rescuer</td>
<td>1</td>
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<tr>
<td>HLT 260 Lifetime Wellness</td>
<td>3</td>
<td></td>
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<tr>
<td>HMEC 151 Nutrition and Meal Planning</td>
<td>3</td>
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</tr>
<tr>
<td>HPER 192 Wellness for Life</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>HPER 200 First Aid/CPR</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>HPER 202 Personal/Community Health</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>HPER 205 Individual Lifetime Sports</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>HPER 210 Fundamentals of Athletics</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>HPER 240 Lifetime Fitness</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>HPER 255 Introduction to Physical Education</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

VI. Electives (33 hours)

| Note: The associate of arts degree is designed as a transfer curriculum. You also should refer to the transfer program sheets in the Counseling Center. The following is an example of a first-year program plan if you are an undecided transfer student. If you are interested in a specific major or degree, you should talk with a JCCC counselor. |

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition I</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Math/Natural Science Elective</td>
<td>3-5</td>
<td></td>
</tr>
<tr>
<td>Humanities Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>General Elective</td>
<td></td>
<td>3</td>
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</tbody>
</table>

**TOTAL CREDIT HOURS:** 15-17

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition II</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Oral Communication Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Math/Natural Science Elective</td>
<td>3-5</td>
<td></td>
</tr>
<tr>
<td>Social Science/Humanities Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>General Elective</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDIT HOURS:** 15-17

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**Transfer Programs**

Johnson County Community College is fully accredited by the North Central Association of Colleges. Credits are therefore accepted by most colleges and universities in the United States. Even though most courses at JCCC transfer to most colleges and universities, you should consult with a JCCC counselor to be sure the courses you take are applicable to the degree you are seeking. Counselors will provide the latest information that is available. It is ultimately the student's responsibility to check with the institution where credits are being transferred.

JCCC offers the first two years of most college baccalaureate degree programs. You can attend JCCC for your first two years, earn an associate of arts degree and then transfer to a four-year institution without loss of time or credit. You can do this by following a transfer program. There are three types of transfer programs: the Individual Transfer Program, the University Transfer Program for Undecided Students and the University Transfer Program.

**Individual Transfer Program**

If you plan to attend a four-year college or university that is not local or if you choose a major not listed under local university transfer programs, you may work with a counselor to develop your own individual transfer program.

**University Transfer Program for Undecided Students**

If you are planning to transfer but have not decided upon a major or chosen a four-year school, you should select courses from the general education requirement areas and under the associate of arts degree requirements. Generally, a total of 124 to 128 hours are required for most four-year degrees.

If you are still undecided about a major in your second year, you should work closely with a counselor in making a decision that will enable you to transfer without loss of time or credit.

**University Transfer Programs for Specific Majors**

Copies of university transfer programs are available in the Counseling Center for the following majors:

- Accounting
- Architecture
- Art
- Business Administration
- Clothing and Textiles
- Computer Science
- Construction Science
- Dietetics
Education
Elementary
Secondary
Music
Electronics Technology
Engineering
Aerospace
Chemical
Civil
Computer
Electrical
Engineering Management
Engineering Mechanics
Industrial
Mechanical
Metallurgical
Mining
Nuclear
Petroleum
Engineering Technology
Forestry
Hotel and Restaurant Management
Information Systems
Interior Design
Journalism
Liberal Arts and Sciences
Anthropology
Astronomy
Biological Sciences
Chemistry
Computer Science
Economics
English
Foreign Language
Geography
Geology
German
History
Humanities
Mathematics
Philosophy
Physics
Political Science
Psychology
Sociology
Spanish
Speech
Theater
Medical Technology
Music
Nursing
Occupational Therapy
Pharmacy
Physical Education

Physical Therapy
Pre-chiropractic
Pre-medicine
Pre-veterinary
Respiratory Care
Social Welfare
Visual Communications

General education requirements for area four-year colleges and universities also are available in the Counseling Center.
Programs are updated and approved annually by these four-year colleges and universities:
Avila College
Baker University
Central Missouri State University
Cleveland Chiropractic College
Emporia State University
Gallaudet University
Kansas City Art Institute
Kansas State University
MidAmerica Nazarene College
Missouri Western College
Ottawa University
Park College
Pittsburg State University
Rockhurst College
Southwest Missouri State University
St. Mary College
University of Kansas
University of Missouri-Columbia
University of Missouri-Kansas City
University of Missouri-Rolla
Washburn University
Webster University
Wichita State University
William Jewell College

Since the four-year schools occasionally change degree requirements, you are encouraged to check for updates periodically in the Counseling Center. You should realize that not all majors are available at all colleges.
Transfer Information

The JCCC Counseling Center is your resource if you are planning to transfer. Counselors are available to work with you in planning your academic program and assisting you in making decisions for a successful transfer. You can find the following information in the Counseling Center:

- Transfer programs for different majors at area colleges - you should check these sheets periodically for updates
- General information about tuition, financial aid and housing
- Course equivalencies between some four-year colleges and JCCC
- University and college catalogs
- Admissions guides
- Applications to some four-year colleges
- Undergraduate and graduate studies guides
- Financial aid and scholarship catalogs
- Transfer information bulletin board
- Dates of visits from college admissions representatives
- Dates of visits for JCCC transfer students to four-year colleges
- Transfer scholarships available for JCCC students

Career Programs

JCCC's career programs provide the opportunity for you to study specific careers and enter the job market directly. Each program has been designed with the assistance of a community advisory committee of men and women currently working in the field who are well aware of the requirements - and job potential - in today's market. Although career curricula usually are not intended to be transfer programs, some of the courses will transfer to four-year colleges and universities. Specific information on course transferability can be found in the Counseling Center. Several of the career programs enable you to gain valuable work experience in the community while taking the career program courses.

If you are interested in a career program, you should contact a JCCC counselor for more information. Counselors can assist you with entrance requirements, course selection and sequence and job possibilities. Careful planning and course selection can be just as important in a career program as dedication in the classroom.

Most of JCCC's career programs can be completed in two years or less; however, some may require a longer period of time. The career programs now offered are:

- Accounting, A.A.S.
- Administration of Justice, A.A.
  - Corrections Option
  - Law Enforcement Option
  - A utomotive Technology, A.A.S.
  - Aviation Maintenance Technology, A.A.S.
  - Airframe Option
  - Powerplant Option
- Business Administration, A.A.S.
- Business Entrepreneurship, A.A.S.
- Chef Apprenticeship, A.A.S.
- Civil Engineering Technology, A.A.S.
- Communications Design, A.A.S.
- Computer Information Systems, A.A.S.
- Cosmetology
- Dental Hygiene, A.S.
- Drafting Technology, A.S.
  - Civil Option
  - Machine Option
- Early Childhood Education, A.S.
- Electrical Technology, A.A.S.
- Electronics Technology, A.S.
  - Communications Option
  - General Electronics Option
  - Industrial Controls Option
  - Medical Electronics Option
- Microcomputer Maintenance Option
- Emergency Medical Science, A.S., A.A.S.
- Fashion Merchandising, A.A.S.
- Fire Services Administration, A.A.
- Grounds and Turf Management, A.A.S.
- Health Information Technology, A.A.S.
- Heating, Ventilation and Air Conditioning Technology, A.A.S.
- Hospitality Management, A.A.S.
  - Food and Beverage Management
  - Hotel/Motel Management
- Information Technology, A.A.S.
- Interior Merchandising, A.A.S.
- Interpreter Training, A.A.S.
- Marketing and Management, A.A.S.
- Metal Fabrication Technology, A.A.S.
- Nursing, A.S.
- Occupational Therapy Assistant, A.A.S.
- Office Systems Technology, A.A.S.
  - Administrative Office Management Option
  - Legal Office Specialist Option
  - Medical Office Specialist Option
- Paralegal, A.A.
- Physical Therapy Assistant, A.A.S.
- Radiologic Technology, A.A.S.
Railroad Operations, A.S.
Conductor Option
Dispatcher Option
General Option
Industrial Technology
Mechanical Option
Respiratory Care, A.S.
Science Technology, A.S., A.A.S.
Chemical Specialty Option
Surgical Technology Vocational Certificate*
Travel and Tourism Management, A.A.S.*
Veterinary Technology, A.A.S.*
* Cooperative program

The degrees obtained in most JCCC career programs are the associate of science and the associate of applied science. An approved associate of science or associate of applied science program is one recommended by the faculty and approved by the board of trustees to meet your educational objectives and needs. The general education distribution requirements for each of these degrees are as follows.

**Associate of Science Degree**

(available for career programs only)

The 64 hours of credit necessary to complete the associate of science degree shall include the following general education distribution requirements plus the courses listed for the specific career program:

**Communications**.................................6 hours
**Humanities**........................................3 hours
**Social Science and/or Economics**..........3 hours
**Science and Mathematics**....................12 hours
**Health and/or Physical Education**........1 hour

Specific courses that meet the associate of science degree requirements are:

I. Communications - 6 hours
   A. ENGL 121 Composition I ....................3
   or
   COM 125 Oral and Written
   Communications **..................6

**Satisfies both Composition I and Oral Communication requirements.

B. Communications Elective - 3 hours
   (one of the following)
   ENGL 122 Composition II........................3
   ENGL 123 Technical Writing....................3
   BUS 150 Business Communications ............3
   SPD 120 Interpersonal Communications .3
   SPD 121 Public Speaking........................3
   SPD 125 Personal Communication ..........3

II. Humanities - 3 hours
   One course from any of the following categories
   may count toward the three required hours.

A. Literature/Th eater

**Note:** This course has a prerequisite of ENGL 121.
ENGL 130 Introduction to Literature.........3

**Note:** These courses have a prerequisite of ENGL 122.
ENGL 230 Introduction to Fiction ............3
ENGL 231 American Prose.......................3
ENGL 235 Drama as Literature................3
ENGL 241 British Writers........................3
ENGL 250 World Masterpieces................3
ENGL 254 Masterpieces of the Cinema........3
ENGL 256 American Poetry....................3
THEA 120 Introduction to Theater............3

B. Foreign Language

**Note:** These courses have prerequisites.
FL 178 Intermediate Russian I ...............3
FL 179 Intermediate Russian II................3
FL 190 Intermediate Japanese I ................3
FL 191 Intermediate Japanese II ...............3
FL 220 Intermediate German I ..................3
FL 221 Intermediate German II ................3
FL 230 Intermediate Spanish I ................3
FL 231 Intermediate Spanish II ...............3
FL 240 Intermediate French I ..................3
FL 241 Intermediate French II ...............3

C. History

HIST 124 Community Life/Values ............3
HIST 125 Western Civilization................3
HIST 126 Western Civilization II ...........3
HIST 130 European History from 1750........3
HIST 135 Eastern Civilization.................3
HIST 140 U.S. History to 1877 ...............3
HIST 141 U.S. History Since 1877 ...........3
HIST 151 World History I:
   The Traditional World.......................3
HIST 152 World History II:
   The Modern World...........................3
HIST 160 Modern Russian History.............3
HIST 162 Modern Latin America..............3

D. Humanities

ART 180 Art History: Ancient/Renaissance 3
ART 182 Art History: Renaissance/Modern 3
HUM 122 Introduction to Humanities.........3
HUM 136 The Human Experience .............3
HUM 145 World Humanities I ..................3
HUM 146 World Humanities II ...............3
HUM 164 Civilization..........................3
MUS 121 Introduction to Music Listening...3
MUS 125 Introduction to Jazz Listening...3
PHOT 140 History of Photography ...........3
PHOT 141 Issues of Contemporary
   Photography..................................3
REL 120 Exploring World Religions...........3
E. Philosophy
PHIL 121 Introduction to Philosophy........3
PHIL 124 Logic and Critical Thinking........3
PHIL 143 Ethics........................................3
PHIL 154 History of Ancient Philosophy.....3
PHIL 176 Philosophy of Religion............3

III. Social Science and/or Economics – 3 hours
One course from any of the following categories
may count toward the three required hours.
A. Anthropology
ANTH 125 Cultural Anthropology ............3
ANTH 126 Physical Anthropology...............3
ANTH 130 World Cultures..........................3
ANTH 210 Peoples of the World ............3

B. Economics
ECON 130 Basic Economics.....................3
ECON 132 Survey of Economics................3
ECON 230 Economics I ............................3
ECON 231 Economics II...........................3
IDSP 175 Global Resources from Geologic
and Economic Viewpoints ..................3

C. Political Science
POLS 122 Political Science.....................3
POLS 124 American National Government ..3
POLS 126 State and Local Government ....3
POLS 132 Introduction to Comparative
Government....................................3
POLS 135 International Relations.............3

D. Psychology
PSYC 121 Applied Psychology...............3
PSYC 130 Introduction to Psychology.......3

E. Sociology
SOC 122 Sociology..................................3
SOC 125 Social Problems..........................3
SOC 131 Marriage and the Family............3
SOC 160 Social Power: Motivation and Action 3

IV. Science and Mathematics – 12 hours
Must include at least one course in mathematics
and at least one in a lab science.
A. Mathematics
The mathematics requirement will be satisfied
by any mathematics course except Fundamentals
of Mathematics and Introduction to Algebra.

B. Science
The laboratory science requirement will be
satisfied by any of the following:
1. Life Science
BIOL 122/3 Principles of Biology/Lab...3/1
BIOL 124 Oceanus: The Marine Environment........3
BIOL 125 General Botany......................5
BIOL 127 General Zoology.....................5
BIOL 130/1 Environmental Science/Lab....3/1
BIOL 140 Human Anatomy...................4
BIOL 144 Human Anatomy/Physiology ..5
BIOL 150 Biology of Organisms..............5
BIOL 225 Human Physiology................4
BIOL 230/1 Microbiology/Lab..............3/2

2. Physical Science
ASTR 122 Astronomy............................4
CHEM 120/1 The World of Chemistry/Lab.3/1
CHEM 122 Principles of Chemistry .........5
CHEM 124/5 General Chemistry I/Lab...4/1
CHEM 131/2 General Chemistry II/Lab..4/1
CHEM 140 Principles of Organic
Chemistry..................................5
CHEM 227 Introduction to Quantitative
Analysis..................................5
GEOS 130 General Geology..................5
GEOS 132 Historical Geology................5
GEOS 140/1 Physical Geography/Lab..3/2
IDSP 175 Global Resources from
Geologic and Economic
Viewpoints (Nonlab science)........3

PHYS 125 Technical Physics I ...............4
PHYS 126 Technical Physics II...............3
PHYS 130 General Physics I..................5
PHYS 131 General Physics II.................5
PHYS 220 Engineering Physics I............5
PHYS 221 Engineering Physics II...........5
PSCI 120 Physical Science...................4

Any remaining hours for this requirement beyond the
one math and one lab science requirement may be satis-
fied by taking additional courses from the approved
math and lab science courses with the addition of
Pathophysiology and General Nutrition or Energy
Alternatives (a technology option).

V. Health and/or Physical Education – 1 hour
HPER Any Activity Course......................1
EMS 121 CPR – Basic Rescuer...................1
HLT 260 Lifetime Wellness....................3
HEMEC 151 Nutrition and Meal Planning ....3
HPER 192 Wellness for Life...................1
HPER 200 First Aid/CPR...........................2
HPER 202 Personal/Community Health ....3
HPER 205 Individual Lifetime Sports ........2
HPER 240 Lifetime Fitness....................1
HPER 255 Introduction to Physical Education ....3

Additional programs may offer the associate of science
degree in the future. You should consult a counselor with
questions about degree requirements for particular programs.
Associate of Applied Science Degree
(available for career programs only)

The 64 hours of credit necessary to complete the associate of applied science degree shall include the following general education distribution requirements plus the courses listed for the specific career program:

Communications ...................................................3 hours
Humanities ............................................................3 hours
Social Science and/or Economics..........................3 hours
Science and/or Mathematics.................................3 hours
Health and/or Physical Education......................1 hour

Specific courses that meet the associate of applied science degree requirements are:

I. Communications – 3 hours
   A. ENGL 121 Composition I.......................3
   or
   COM 125 Oral and Written Communications * .........6
   * Satisfies both the Composition I and Oral Communication requirements.
   B. Communications Elective – 3 hours
      (one of the following)
      ENGL 122 Composition II ......................3
      ENGL 123 Technical Writing .................3
      BUS 150 Business Communications ..........3
      SPD 120 Interpersonal Communications ....3
      SPD 121 Public Speaking ....................3
      SPD 125 Personal Communication ..........3

II. Humanities – 3 hours
    One course from any of the following categories may count toward the three required hours.
    A. Literature/Theater
       Note: This course has a prerequisite of ENGL 121.
       ENGL 130 Introduction to Literature..........3
       Note: These courses have a prerequisite of ENGL 122.
       ENGL 230 Introduction to Fiction ...........3
       ENGL 231 American Prose ....................3
       ENGL 235 Drama as Literature ..............3
       ENGL 241 British Writers ....................3
       ENGL 250 World Masterpieces ...............3
       ENGL 254 Masterpieces of the Cinema ....3
       ENGL 256 American Poetry ..................3
       THEA 120 Introduction to Theater ..........3
    B. Foreign Language
       Note: These courses have prerequisites.
       FL 178 Intermediate Russian I ...........3
       FL 179 Intermediate Russian II ..........3
       FL 190 Intermediate Japanese I ..........3
       FL 191 Intermediate Japanese II .......3
       FL 220 Intermediate German I ............3
       FL 221 Intermediate German II ...........3
       FL 230 Intermediate Spanish I ............3

C. History
   HIST 124 Community Life/Values ..........3
   HIST 125 Western Civilization I ...........3
   HIST 126 Western Civilization II ...........3
   HIST 130 European History from 1750 ....3
   HIST 135 Eastern Civilization ...............3
   HIST 140 U.S. History to 1877 ..............3
   HIST 141 U.S. History Since 1877 ...........3
   HIST 151 World History I: The Traditional World ..........3
   HIST 152 World History II: The Modern World ..........3
   HIST 160 Modern Russian History ..........3
   HIST 162 Modern Latin America ..........3

D. Humanities
   ART 180 Art History: Ancient/Renaissance ....3
   ART 182 Art History: Renaissance/Modern ....3
   HUM 122 Introduction to Humanities ..........3
   HUM 136 The Human Experience ...............3
   HUM 145 World Humanities I .................3
   HUM 146 World Humanities II ..........3
   HUM 164 Civilization .........................3
   MUS 121 Introduction to Music ................3
      Listening ........................................3
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   PHOT 140 History of Photography ..........3
   PHOT 141 Issues of Contemporary Photography ..........3
   REL 120 Exploring World Religions ..........3

E. Philosophy
   PHIL 121 Introduction to Philosophy .......3
   PHIL 124 Logic and Critical Thinking .......3
   PHIL 143 Ethics ................................3
   PHIL 154 History of Ancient Philosophy ....3
   PHIL 176 Philosophy of Religion ..........3

III. Social Science and/or Economics – 3 hours
    One course from any of the following categories may count toward the three required hours.
    A. Anthropology
       ANTH 125 Cultural Anthropology ..........3
       ANTH 126 Physical Anthropology ..........3
       ANTH 130 World Cultures ..................3
       ANTH 210 Peoples of the World ..........3
    B. Economics
       ECON 130 Basic Economics ..................3
       ECON 132 Survey of Economics ..........3
       ECON 230 Economics I ......................3
       ECON 231 Economics II ..................3
       IDSP 175 Global Resources from Geologic and Economic Viewpoints ..........3
C. Political Science
  POLS 122 Political Science ...................3
  POLS 124 American National Government ..........3
  POLS 126 State and Local Government ........3
  POLS 132 Introduction to Comparative Government ..........3
  POLS 135 International Relations ............3

D. Psychology
  PSYC 121 Applied Psychology ................3
  PSYC 130 Introduction to Psychology ..........3

E. Sociology
  SOC 122 Sociology ..........................................3
  SOC 125 Social Problems ............................3
  SOC 131 Marriage and the Family ............3
  SOC 160 Social Power: Motivation and Action .....3

IV. Science and Mathematics – 3 hours
  Any mathematics course except Fundamentals of Mathematics or Introduction to Algebra will satisfy this requirement, or the requirement can be satisfied by any of the following courses.

A. Life Science
  BIOL 122/3 Principles of Biology/Lab ........3/1
  BIOL 124 Oceanus: The Marine Environment ..........3
  BIOL 125 General Botany ......................5
  BIOL 127 General Zoology ........................5
  BIOL 130/1 Environmental Science/Lab ................3/1
  BIOL 140 Human Anatomy ..........................4
  BIOL 144 Human Anatomy/Physiology ............5
  BIOL 150 Biology of Organisms ..................5
  BIOL 230/1 Microbiology/Lab ..........................3/2

B. Physical Science
  ASTR 122 Astronomy ..................................4
  CHEM 120/1 The World of Chemistry/Lab ........3/1
  CHEM 122 Principles of Chemistry ..........5
  CHEM 124/5 General Chemistry I/Lab ..........4/1
  CHEM 131/2 General Chemistry II/Lab ..........4/1
  CHEM 140 Principles of Organic Chemistry ..........5
  CHEM 227 Introduction to Quantitative Analysis ..........5
  GEOS 130 General Geology ....................5
  GEOS 132 Historical Geology ..........5
  GEOS 140/1 Physical Geography/Lab ........3/2
  IDSP 175 Global Resources from Geologic and Economic Viewpoints (Non-lab science) ..........3
  PHYS 125 Technical Physics I .............4
  PHYS 126 Technical Physics II ................3
  PHYS 130 General Physics I ..................5
  PHYS 131 General Physics II ..................5
  PHYS 220 Engineering Physics I ............5
  PHYS 221 Engineering Physics II ...........5
  PSCI 120 Physical Science ..................4

V. Health and/or Physical Education – 1 hour
  HPER Any Activity Course ..................1
  EMS 121 CPR I - Basic Rescuer ..................1
  HLT 260 Lifetime Wellness ......................3
  HMEC 151 Nutrition and Meal Planning ........3
  HPER 192 Wellness for Life ..................1
  HPER 200 First Aid/CPR ......................2
  HPER 202 Personal and Community Health ..........3
  HPER 205 Individual Lifetime Sports ..........2
  HPER 240 Lifetime Fitness ...................1
  HPER 255 Introduction to Physical Education ..........3
Certificate of Completion

To earn a certificate of completion at Johnson County Community College, you must have demonstrated the basic skills competencies as outlined. In addition, you must have successfully completed an approved certificate program with a cumulative grade point average of 2.0 or better. You must complete a minimum of 50 percent of the required coursework at JCCC. Exceptions to this policy may be authorized by the dean of student services. All appeals must be in writing. You must be enrolled at the college during the time you anticipate completing certificate requirements. An application to complete certificate requirements must be filed in the Admissions and Records Office by the following dates:

- Nov. 1 for spring graduation
- April 1 for summer graduation
- June 1 for fall graduation

Requests for deadline extensions may be made to the director of Admissions and Records in the form of a written appeal.

Certificates will be issued at the end of each semester or term. Commencement exercises will be held once a year, at the completion of the spring semester. Students who have completed the requirements for a certificate in prior semesters will be invited to participate in commencement exercises. Specific course completion certificates will be awarded as appropriate and as specified in the college catalog.

Approved certificate programs are:

- Administration of Justice
- Emergency Services Dispatcher Postsecondary Certificate*
- Automotive Technology
- Automotive Technology Vocational Certificate
- Business Entrepreneurship
- Business Entrepreneurship Vocational Certificate
- The Business Plan Vocational Certificate
- Civil Engineering Technology
- Construction Management Vocational Certificate
- Communication Design
- Interactive Media Vocational Certificate
- Computer Information Systems
  - A S/400 Operations Vocational Certificate
  - Mainframe Programmer/Analyst Vocational Certificate
  - Microcomputer Programmer/Analyst Vocational Certificate
- Desktop Publishing Applications Specialist Vocational Certificate
- Advanced Data Processing Vocational Certificate
- Personal Computer Support Vocational Certificate
- Personal Computer Applications Specialist Certificate
- Cosmetology
- Cosmetology Vocational Certificate
- Esthetics Vocational Certificate
- Nail Technology Vocational Certificate
- Drafting
  - Computer-Aided Drafting (CAD) Vocational Certificate
- Electrical Technology
  - Electrical Technology Vocational Certificate
- Electronics
  - Industrial Controls Vocational Certificate
  - Medical Electronics Vocational Certificate
  - Communications Electronics Vocational Certificate
- Emergency Medical
  - Emergency Medical Technician Vocational Certificate
  - MICT Vocational Certificate
- Health Occupations
  - Certified Nurse Aide
  - Certified Medicated Aide
  - Home Health Aide
  - Certified Medication Aide Update
  - I.V. Therapy
- Heating, Ventilation and Air Conditioning
  - HVAC Postsecondary Certificate
  - HVAC Vocational Certificate
- Information Technology
  - Local Area Network Administrator Vocational Certificate
  - Local Area Network Technology Specialist Vocational Certificate
- Marketing and Management
  - Sales and Customer Relations Vocational Certificate
  - Teleservice Representative Vocational Certificate
  - TeleTrac Vocational Certificate
- Metal Fabrication
  - Metal Fabrication Vocational Certificate
  - Nursing-Practical Nursing Vocational Certificate
- Office Systems Technology
  - Office Careers Vocational Certificate
  - Administrative Support Specialist Vocational Certificate
- Marketing and Management
  - Office Automation Skills Vocational Certificate
  - Medical Office Assistant Vocational Certificate
- Paralegal
  - Paralegal Postsecondary Certificate
  - Legal Nurse Consultant Vocational Certificate
- Railroad Electronics
  - Railroad Electronics Vocational Certificate
- Railroad Industrial Technology
  - Railroad Carman Welding Vocational Certificate
  - Railroad Machinist Welding Vocational Certificate
- Structural Welding Vocational Certificate
- Supervisors Welding Vocational Certificate
- Track Welding Vocational Certificate
- Welding Postsecondary Certificate
- Respiratory Care
  - Respiratory Care Postsecondary Certificate Program
  - Certified Respiratory Therapy Technician (CR TT)
- Transition Postsecondary Certificate
- Surgical Technology Vocational Certificate*
- *Cooperative program
## Career and Certificate Programs

<table>
<thead>
<tr>
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<th>Heating, Ventilation and Air Conditioning Technology</th>
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<tbody>
<tr>
<td>Administration of Justice/Law Enforcement</td>
<td>Hospitality Management</td>
</tr>
<tr>
<td>Automotive Technology</td>
<td>Food and Beverage Management</td>
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<td>Aviation Maintenance Technology</td>
<td>Hotel/Motel Management</td>
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<td>Business Administration</td>
<td>Information Technology</td>
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<td>Business Entrepreneurship</td>
<td>Interior Merchandising</td>
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<td>Chef Apprenticeship</td>
<td>Interpreter Training</td>
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<td>Civil Engineering Technology</td>
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<td>Communication Design</td>
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<td>Physical Therapist Assistant</td>
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<td>Radiologic Technology</td>
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<td>Electronics Technology</td>
<td>Railroad Operations</td>
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<td>Emergency Medical Science</td>
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<td>Fashion Merchandising</td>
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<td>Fire Services Administration</td>
<td>Surgical Technology</td>
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<td>Grounds and Turf Management</td>
<td>Travel and Tourism Management</td>
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<td>Health Information Technology</td>
<td>Veterinary Technology</td>
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<td>Health Occupations</td>
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</table>
Career Program Descriptions

Career programs are described in detail in this section and in the career brochures available in the Counseling Center. You are encouraged to see a counselor before enrolling.

Accounting

Accounting is a crucial part of every business operation. The job outlook in accounting, according to the U.S. Bureau of Labor Statistics, is better than average. Two-year graduates may find jobs as bookkeepers and accounting clerks.

If you have no plans to transfer to a four-year institution, the associate of applied science degree program is designed for you. The program focuses on practical skills often required for entry-level paraprofessional positions. It features field study courses in which you gain on-the-job experience working in an approved business.

If you are interested in transferring to a four-year institution in an accounting program or beginning the associate of applied science degree program, you should contact a JCCC counselor.

Associate of Applied Science Degree

**First Semester**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>ENGL 121</td>
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<tr>
<td>ACCT 121</td>
<td>Accounting I</td>
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<td>MATH 120</td>
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<td>OST 101</td>
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<td>BUS 150</td>
<td>Business Communication</td>
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<td>ACCT 222</td>
<td>Managerial Accounting</td>
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<td>CPMA 105</td>
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<td>ACCT 278</td>
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<td>BUS 225</td>
<td>Human Relations</td>
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<td>CPMA 110</td>
<td>Spreadsheets on Microcomputers</td>
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<td>PHIL 138</td>
<td>Business Ethics</td>
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<td>HIST 141</td>
<td>U.S. History Since 1877</td>
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<td>ACCT 232</td>
<td>Intermediate Accounting II</td>
<td>3</td>
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<tr>
<td>ACCT 115</td>
<td>Accounting for Nonprofit Organizations</td>
<td>3</td>
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<tr>
<td>ACCT 131</td>
<td>Federal Income Taxes I</td>
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<td>ACCT 135</td>
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<td>ACCT 285</td>
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<td>CPMA 114</td>
<td>Databases on Microcomputers</td>
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Note: Business electives are any course with the “BUS” or “BUSE” prefix.

Administration of Justice/ Law Enforcement

More than 1 million people are employed in the administration of justice/law enforcement fields in the United States. Employment opportunities are expected to grow as fast or slightly faster than average for all occupations in the field through the 1990s.

JCCC’s Administration of Justice/Law Enforcement program provides you the opportunity to specialize in law enforcement, corrections or investigations. Successful completion of 64 hours of credit in this two-year program leads to an associate of arts degree. You should contact a counselor when developing a program plan.

Associate of Arts Degree

**First Semester**

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<td>ENGL 121</td>
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<td>Social Science and/or Economics</td>
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<td>Elective</td>
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**Second Semester**

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<td>ENGL 122</td>
<td>Composition II</td>
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<tr>
<td>Social Science Course</td>
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<tr>
<td>ADMJ 121</td>
<td>Introduction to Administration of Justice ***</td>
<td>3</td>
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<tr>
<td>ADMJ 124</td>
<td>Criminal Justice System</td>
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<td>ADMJ 127</td>
<td>Criminology</td>
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**Third Semester**

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<td>Introduction to Administration of Justice ***</td>
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<td>ADMJ 133</td>
<td>Juvenile Delinquency</td>
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<td>ADMJ 136</td>
<td>Police and the Public</td>
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<td>ADMJ 140</td>
<td>Constitutional Case Law</td>
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**Third Semester**

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<td>ADMJ 154</td>
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<td>PHIL 143</td>
<td>Ethics</td>
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<td>ADMJ 141</td>
<td>Criminal Law ***</td>
<td>3</td>
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<td>SPD 120</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Science and/or Mathematics Elective **</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>TOTAL CREDIT HOURS</td>
<td>18</td>
</tr>
</tbody>
</table>

**Fourth Semester**

- Humanities Course .................................. 3
- (Cannot be a philosophy course)
- Science and/or Mathematics Elective ** 3
- Health and/or Physical Education Elective 1
- ADMJ Program Electives .................................... 9
- TOTAL CREDIT HOURS .................................. 16
- TOTAL PROGRAM CREDIT HOURS ........................... 64

**Required Program Electives** (9 hours - any three courses)

- ADMJ 130 Crime Prevention .......................... 3
- ADMJ 145 Fundamentals of Private Security ....... 3
- ADMJ 146 Retail Security .................................. 3
- ADMJ 148 Family Violence and Sexual Abuse ....... 3
- ADMJ 157 Patrol Procedures .......................... 3
- ADMJ 164 Supervisory Techniques ..................... 3
- ADMJ 166 Police Organization and Management ....... 3
- ADMJ 221 Introduction to Criminalistics ........... 3
- ADMJ 225 Defensive Tactics for Police *** ............ 3
- ADMJ 281 Readings in Police Science ................... 3

* You must take two courses from the following list, but not more than one course from each group may count toward the required six hours:

** Group 1:**
- American National Government
- State and Local Government

** Group 2:**
- Introduction to Psychology

** Group 3:**
- Social Problems or Sociology

** You must complete a minimum of nine hours in math and science. See Associate of Arts general education requirements, page 56, section IV.

** *** If you are certified under the Kansas Law Enforcement Training Act, you are eligible to receive assessment of prior learning credit for some or all of these courses.

**Correctional Services Option**

Offered at Longview Community College

Through a cooperative agreement with Longview Community College, you may take all or some of your nine program elective credits in Correctional Services. The following courses are taught at Longview Community College. You should contact a JCCC counselor for information about enrolling.

- KADJ 185 Principles of Correction ..................... 3
- KADJ 186 Correctional Psychology .......................... 3
- KADJ 188 Principles of Residential Youth Care ....... 3
- KADJ 191 Corrections in the Community ................. 3
- KADJ 192 Correctional Administration ..................... 3
- KADJ 193 Communications and Management Techniques with Children and Youth ....... 3
- KADJ 194 Human Services Practicum I ..................... 3
- KADJ 261 Human Services Practicum II ................. 3

**Emergency Services Dispatcher**

**Postsecondary Certificate**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| ADMJ 124 | Criminal Justice System .......................... 3
| ADMJ 136 | Police and the Public ............................ 3
| ADMJ 157 | Patrol Procedures .................................. 3
| ADMJ 271 | Emergency Dispatcher Field Study .............. 3
| ENGL 121 | Composition I ........................................ 3
| ENGL 122 | Composition II ........................................ 3
| PSYC 130 | Introduction to Psychology ....................... 3
| OST 105  | Keyboarding/Formatting I * ........................ 3
| OST 125  | Document Formatting .................................. 1
| OST 150  | Records Management .................................... 3
|          | Math Elective (MATH 115 or higher) ............. 3
|          | TOTAL CREDIT HOURS                           ......... 31

* If you can demonstrate a proficiency of 35 w.p.m. corrected, you may substitute another course.

**Automotive Technology**

Automotive technicians generally begin their careers in service repair shops, with continually expanding industrial and service career advancement opportunities. Technicians work with experienced professionals and have frequent contact with the public. This field requires good mechanical aptitude and manual dexterity skills.

The two-year associate of applied science degree, which is certified by the ASE, covers all major areas, including diagnosis and tune-up, chassis, electrical/electronic and hydraulic systems, automatic transmissions, engines and emissions. Students work on developing the skills needed to advance to a supervisory position, such as customer relations, estimating materials and labor costs, and managing the work of others.

**Associate of Applied Science Degree**

Prior to admission to the Automotive Technology associate of applied science degree program, the student must have:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>
| AUTO 125 | Introduction to Automotive Shop Practices ........ 3
|          | or Approval of division administrator........... 3

71
### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 163</td>
<td>Automotive Steering and Suspension</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 234</td>
<td>Automotive Electrical Systems</td>
<td>4</td>
</tr>
<tr>
<td>INDT 125</td>
<td>Industrial Safety</td>
<td>1</td>
</tr>
<tr>
<td>MATH 120</td>
<td>Business Math</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 121</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social Science and/or Economics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
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<td></td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
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### Second Semester

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<tbody>
<tr>
<td>AUTO 165</td>
<td>Automotive Engine Repair</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 167</td>
<td>Automotive Brake Systems</td>
<td>2</td>
</tr>
<tr>
<td>AUTO 168</td>
<td>Automotive Manual Drivetrain and Axles</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 123</td>
<td>Technical Writing I</td>
<td>3</td>
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<td>Technical/Related Electives</td>
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<tr>
<td></td>
<td>Health and/or Physical Education Elective 1</td>
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### Third Semester

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<th>Course Title</th>
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<tbody>
<tr>
<td>AUTO 250</td>
<td>Automatic Transmissions and Transaxles</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 254</td>
<td>Automotive Engine Performance</td>
<td>5</td>
</tr>
<tr>
<td>MFAB 121</td>
<td>Introduction to Welding</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Humanities Elective</td>
<td>3</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
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### Fourth Semester

<table>
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<tr>
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<tbody>
<tr>
<td>AUTO 230</td>
<td>Automotive Heating and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 260</td>
<td>Automotive Service Management</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 261</td>
<td>Automotive Service Techniques</td>
<td>3</td>
</tr>
<tr>
<td>BUS 140</td>
<td>Principles of Supervision</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Technical/Related Electives</td>
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</tr>
<tr>
<td></td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
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<tr>
<td></td>
<td><strong>TOTAL PROGRAM CREDIT HOURS</strong></td>
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</table>

### Technical/Related Electives

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>AUTO 121</td>
<td>Small Engine Service</td>
<td>3</td>
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<tr>
<td>AUTO 122</td>
<td>Introduction to Auto Glass</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 123</td>
<td>Motorcycle Maintenance and Repair</td>
<td>2</td>
</tr>
<tr>
<td>AUTO 128</td>
<td>Automotive Parts Specialist</td>
<td>2</td>
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<tr>
<td>AUTO 130</td>
<td>Diesel Fundamentals</td>
<td>2</td>
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<tr>
<td>AUTO 201</td>
<td>ASE Certification Seminar</td>
<td>1</td>
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<tr>
<td>AUTO 210</td>
<td>Advanced Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 271</td>
<td>Automotive Technology Internship</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 291</td>
<td>Independent Study</td>
<td>1</td>
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<tr>
<td>MATH 133</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 125</td>
<td>Technical Physics I</td>
<td>4</td>
</tr>
<tr>
<td>BUSE 138</td>
<td>FastTrac Business Plan</td>
<td>3</td>
</tr>
<tr>
<td>BUSE 140</td>
<td>FastTrac Feasibility Plan</td>
<td>2</td>
</tr>
<tr>
<td>CPC 105</td>
<td>Introduction to Personal Computing: IBM</td>
<td>1</td>
</tr>
<tr>
<td>DP 124</td>
<td>Introduction to Computing Concepts and Applications</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 120</td>
<td>Introduction to Electronics</td>
<td>3</td>
</tr>
<tr>
<td>RRT 165</td>
<td>Railroad Safety, Quality and Environment</td>
<td>3</td>
</tr>
</tbody>
</table>

### Automotive Technology Vocational Certificate

The Automotive Technology Certificate program is designed to meet the needs of today's beginning and experienced auto technicians. With the completion of the certificate program, the student will have a well-rounded background in the repair required for dealership and independent service personnel. Completion of courses should assist students in preparing for ASE certification tests.

Most automotive trades expect applicants to pass one or more of the ASE tests, which will enable them to qualify for technical positions in service repair.

Prior to admission to the Automotive Technology Vocational Certificate program, the student must have:

- AUTO 125 Introduction to Auto Shop Practices...3
  or
  Approval of division administrator

### Required Courses

<table>
<thead>
<tr>
<th>CR</th>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td></td>
<td>125</td>
<td>Introduction to Auto Shop Practices</td>
</tr>
<tr>
<td></td>
<td>126</td>
<td>Automotive Engine Repair</td>
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<tr>
<td></td>
<td>163</td>
<td>Automotive Steering and Suspension</td>
</tr>
<tr>
<td></td>
<td>165</td>
<td>Automotive Wheel Repair</td>
</tr>
<tr>
<td></td>
<td>167</td>
<td>Automotive Brake Systems</td>
</tr>
<tr>
<td></td>
<td>168</td>
<td>Automotive Manual Drivetrain and Axles</td>
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<td></td>
<td>201</td>
<td>ASE Certification Seminar</td>
</tr>
<tr>
<td></td>
<td>234</td>
<td>Automotive Electrical Systems</td>
</tr>
<tr>
<td></td>
<td>235</td>
<td>Automotive Heating and Air Conditioning</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>Automatic Transmissions and Transaxles</td>
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<td>254</td>
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<tr>
<td></td>
<td>254</td>
<td>Automotive Engine Performance</td>
</tr>
</tbody>
</table>

### Aviation Maintenance Technology

The Aviation Maintenance Technology program is approved by the Federal Aviation Administration and prepares the student to sit for the FAA Airframe Mechanic Examination, the FAA Powerplant Mechanic Examination or both. The program is not intended to prepare students for transfer to a four-year institution.

JCCC's Aviation Maintenance Technology program is offered in cooperation with Maple Woods Community College. Enrollment in this program is limited; students must apply and be accepted into the program by both JCCC and Maple Woods. There are 1,160 clock hours each for the powerplant and airframe sequences, if taken separately, and 1,920 if both are taken. Completion of either option entitles the student to the associate of applied science degree and to sit for the appropriate Federal Aviation Administration Examination.

Because the program content is determined by the FAA, program courses and credit hours are subject to change because of requirement changes at the degree-granting...
institution. Contact Maple Woods Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

Full-time Aviation Maintenance Program
The full-time Aviation Maintenance program is organized into six 14-week semesters, with three semesters scheduled each year. Students should enroll in all of the aviation courses scheduled in each block of courses, as described below. If the student is seeking only the powerplant license, the two semesters of airframe will be omitted. In addition, the student will be advised when to take KAV 115 Introduction to Aviation Maintenance I, which is required for the certificate. If the student wishes to complete a degree, sections of the appropriate general education requirements will be scheduled and the student will be advised accordingly.

Associate of Applied Science Degree
Degree granted by Maple Woods Community College

<table>
<thead>
<tr>
<th>First Semester (General Aviation I)</th>
<th>CR</th>
<th>TOTAL CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAV 100 Introduction to Aviation Maintenance I</td>
<td>14</td>
<td>11.5</td>
</tr>
<tr>
<td>KAV 110 Technical Mathematics/AVMT</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ENGL 121 Composition I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>17.5</strong></td>
<td>**</td>
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<table>
<thead>
<tr>
<th>Second Semester (General Aviation II)</th>
<th>TOTAL CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAV 111 Introduction to Aviation Maintenance II</td>
<td>4.5</td>
</tr>
<tr>
<td>KAV 108 Aircraft Electrical Systems</td>
<td>5.5</td>
</tr>
<tr>
<td>KAV 203 Electrical Generator/Alternator</td>
<td>5.5</td>
</tr>
<tr>
<td>SPD 121 Public Speaking</td>
<td>3</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
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<table>
<thead>
<tr>
<th>Third Semester (Airframe I)</th>
<th>TOTAL CREDIT HOURS</th>
</tr>
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<tbody>
<tr>
<td>KAV 102 Wood and Fabric</td>
<td>3</td>
</tr>
<tr>
<td>KAV 104 Assembly and Rigging</td>
<td>5</td>
</tr>
<tr>
<td>KAV 200 Sheet Metal Structures</td>
<td>4</td>
</tr>
<tr>
<td>KAV 202 Fuel and Fire Protection Systems</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
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<table>
<thead>
<tr>
<th>Fourth Semester (Airframe II)</th>
<th>TOTAL CREDIT HOURS</th>
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<tbody>
<tr>
<td>KAV 106 Hydraulic and Pneumatic Systems</td>
<td>7</td>
</tr>
<tr>
<td>KAV 204 Communication and Navigation Systems</td>
<td>6</td>
</tr>
<tr>
<td>KAV 206 Airframe Inspection and Welding</td>
<td>5.5</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>18.5</strong></td>
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<table>
<thead>
<tr>
<th>Fifth Semester (Powerplant I)</th>
<th>TOTAL CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAV 101 Carburetion and Lubrication</td>
<td>7</td>
</tr>
<tr>
<td>KAV 103 Aircraft Reciprocating Powerplant</td>
<td>6</td>
</tr>
<tr>
<td>KAV 107 Jet Propulsion Powerplant</td>
<td>5</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
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<table>
<thead>
<tr>
<th>Sixth Semester (Powerplant II)</th>
<th>TOTAL CREDIT HOURS</th>
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<tbody>
<tr>
<td>KAV 105 Propellers</td>
<td>5</td>
</tr>
<tr>
<td>KAV 109 Ignition and Starting Systems</td>
<td>6</td>
</tr>
<tr>
<td>KAV 201 Powerplant Testing</td>
<td>2.5</td>
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<tr>
<td>KAV 205 Fire Protection Systems</td>
<td>5.5</td>
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<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>22</strong></td>
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</table>

| American Institutions Option* | **3** |
| **TOTAL CREDIT HOURS** | **22** |
| **TOTAL PROGRAM CREDIT HOURS** | **114** |
| **TOTAL POWERPLANT CREDIT HOURS** | **79.5** |

* All graduates from Maple Woods Community College must meet the American Institutions requirements. See a JCCC counselor about the course.

Part-time Aviation Maintenance Program
The part-time Aviation Maintenance program is organized into nine 14-week semesters, with three semesters scheduled each year. Students should enroll in all of the aviation courses scheduled in each block of courses, as described below. If the student is seeking only the powerplant license, the three semesters of airframe will be omitted. In addition, the student will be advised when to take KAV 115 Introduction to Aviation Maintenance I, which is required for the certificate. If the student wishes to complete a degree, sections of the appropriate general education requirements will be scheduled and the student will be advised accordingly.

Associate of Applied Science Degree
Degree granted by Maple Woods Community College

<table>
<thead>
<tr>
<th>First Semester (General Aviation I-N)</th>
<th>CR</th>
<th>TOTAL CREDIT HOURS</th>
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<tbody>
<tr>
<td>KAV 100 Introduction to Aviation Maintenance I</td>
<td>14</td>
<td>11.5</td>
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<tr>
<td>ENGL 121 Composition I</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
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<table>
<thead>
<tr>
<th>Second Semester (General Aviation II-N)</th>
<th>TOTAL CREDIT HOURS</th>
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<tr>
<td>KAV 111 Introduction to Aviation Maintenance II</td>
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<tr>
<td>KAV 110 Technical Mathematics/AVMT</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 101 Composition/Reading I</td>
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<table>
<thead>
<tr>
<th>Third Semester (General Aviation III-N)</th>
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<tbody>
<tr>
<td>KAV 108 Aircraft Electrical Systems</td>
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<td>KAV 203 Electrical Generator/Alternator</td>
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<td>SPD 121 Public Speaking</td>
<td>3</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
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<table>
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<tr>
<th>Fourth Semester (Airframe I-N)</th>
<th>TOTAL CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>KAV 200 Sheet Metal Structures</td>
<td>4</td>
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<tr>
<td>KAV 102 Wood and Fabric</td>
<td>3</td>
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<td>KAV 202 Fuel and Fire Protection Systems</td>
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<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
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<table>
<thead>
<tr>
<th>Fifth Semester (Airframe II-N)</th>
<th>TOTAL CREDIT HOURS</th>
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<tbody>
<tr>
<td>KAV 104 Assembly and Rigging</td>
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<td>KAV 106 Hydraulic and Pneumatic Systems</td>
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<tr>
<th>Sixth Semester (Airframe III-N)</th>
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<td>KAV 204 Communication and Navigation Systems</td>
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<tr>
<td>KAV 206 Airframe Inspection and Welding</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>11.5</strong></td>
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73
Seventh Semester (Powerplant I-N)
KAV 103 Aircraft Reciprocating Powerplant ..........6
KAV 107 Jet Propulsion Powerplant..................5
TOTAL CREDIT HOURS .......................11

Eighth Semester (Powerplant II-N)
KAV 101 Carburetion and Lubrication ............7
KAV 105 Propellers..................................5
TOTAL CREDIT HOURS ......................12

Ninth Semester (Powerplant III-N)
KAV 201 Powerplant Testing..........................2.5
KAV 205 Fire Protection Systems...................5.5
KAV 109 Ignition and Starting Systems...........6
American Institutions Option* ...................3
TOTAL CREDIT HOURS ..................17
TOTAL PROGRAM CREDIT HOURS.................82.5

* All graduates from Maple Woods Community College must meet the American Institutions requirements. See a JCCC counselor about the course.

Business Administration
JCCC's Business Administration Career program offers training in the many skills required to manage a wide variety of businesses.
Focusing on the development of decision-making, organizational and supervisory skills, the program offers professional courses in management, marketing, economics, accounting, human resource management, communications, business law and business data processing. These are combined with a core of basic study courses to ensure that you receive a well-rounded curriculum.
Program graduates have career opportunities in entry-level management and supervisory positions in a wide variety of businesses. Johnson County's continued growth as the business center for the Kansas City area means job opportunities will be available locally.

Associate of Applied Science Degree

First Semester
ENGL 121 Composition I...............................3
MATH 120 Business Math or higher..................3
BUS 121 Introduction to Business .................3
BUS 225 Human Relations............................3
DP 124 Introduction to Computing Concepts and Applications........3
CPCA or CDTP Choose 1 credit hour from CPCA or CDTP course selections higher than CPCA 105 and 106 or
TOTAL CREDIT HOURS .......................16

Second Semester
ACCT 121 Accounting I..............................3
BUS 141 Principles of Management................3
or
BUS 145 Small Business Management.............3
BUS 150 Business Communications................3
ECON 230 Economics I..................................3
HIST 141 U.S. History Since 1877.................3
TOTAL CREDIT HOURS .....................16

Third Semester
ACCT 122 Accounting II............................3
PHIL 138 Business Ethics............................1
ECON 231 Economics II...............................3
BUS 230 Marketing....................................3
BUS 261 Business Law I..............................3
HUM 122 Introduction to Humanities................3
TOTAL CREDIT HOURS .....................16

Fourth Semester
ACCT 222 Managerial Accounting...............3
BUS 123 Personal Finance............................3
or
BUS 215 Savings and Investments..................3
or
BUS 250 Introduction to Corporate Finance......3
BUS 263 Business Law II.............................3
BUS 243 Human Resource Management.............3
or
BUS 235 Introduction to International Business....3
BIOL 130 Environmental Science....................3
or
IDSP 175 Global Resources from Geologic and Economic Viewpoints......................3
Elective (if needed)............................1
TOTAL CREDIT HOURS .....................16

TOTAL PROGRAM CREDIT HOURS ...............64

Recommended Electives
BUS 120 Management Attitudes and Motivation ..3
BUS 140 Principles of Supervision................3
BUS 271 Management Seminar .....................3
Business Entrepreneurship

The small business sector is one of the fastest growing in the nation's economy. With one in eight adults today self-employed, many residents in Johnson County either work for a small business or plan to start their own. JCCC's Business Entrepreneurship program can help prospective entrepreneurs launch new ventures. If you are an entrepreneur who already has your business established, you can strengthen your managerial and business skills.

You will learn the fundamentals of starting and operating your own business. The program includes basic business skills as well as specific courses in starting and managing a small business. Course work covers preparing a business plan, obtaining financing, planning advertising and sales promotions, marketing a product or service and developing an accurate accounting system.

You also will complete an internship in a small business. You can apply what you learn in the classroom to your job and take your work experiences back to the classroom for analysis. The program's one-hour mini-courses are ideal if you are already running your own business and want to strengthen your skills.

Associate of Applied Science Degree

First Semester

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Recommended Electives

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<tr>
<td>SPD 121</td>
<td>Public Speaking</td>
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Business Entrepreneurship

Vocational Certificate Program

Students in Business Entrepreneurship certificate programs learn the fundamentals of starting and operating their own businesses. These certificates include courses in starting and managing a small business. Coursework includes preparing a business plan, obtaining financing, financial management, marketing research, marketing a product or service and developing an accurate accounting system.
### First Semester

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<td>BUSE 160</td>
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<td>DP 124</td>
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**Total Credit Hours:** 16

* These courses may be substituted for DP 124:
- CPCA 105 Introduction to Personal Computing: IBM 1
- CPCA 108 Word Processing on Microcomputers I 1

### Second Semester

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**Total Credit Hours:** 14

**Total Program Credit Hours:** 30

### The Business Plan Vocational Certificate Program

The Business Plan Vocational Certificate program focuses on business startup and concludes with writing a business plan. The program also includes additional business skills needed to manage a successful entrepreneurial enterprise.

**First Semester**

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<td>Basic Food Preparation</td>
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<td>Business Math or higher</td>
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<tr>
<td>CPCA 105</td>
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<td>or</td>
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<td>HMGT 281</td>
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**Total Credit Hours:** 12

### Summer

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**Total Credit Hours:** 6

### Third Semester

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<td>Seminar in Hospitality Management: Purchasing</td>
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<td>HMGT 145</td>
<td>Food Production Specialties</td>
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**Total Credit Hours:** 11

### Fourth Semester

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<td>HMGT 223</td>
<td>Fundamentals of Baking</td>
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**Total Credit Hours:** 11

### Fifth Semester

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<td>HMGT 279</td>
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<td>Applied Psychology</td>
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### Chef Apprenticeship

The Chef Apprenticeship program at the college is sponsored by the American Culinary Federation and the U.S. Department of Labor. The three-year program has special admission requirements. You must be 18 years old and have a high school diploma or the equivalent. You must successfully complete all entry-level examinations as prescribed by the Apprenticeship Committee of the American Culinary Federation Education Institute. Special consideration will be given if you have had food-service training in high school or on-the-job training.

The career program features formal coursework along with the opportunity to actually practice such skills as baking, menu planning, food purchasing, beverage control and food preparation. After job placement, you join the American Culinary Federation Educational Institute for registered apprentice membership. Likewise, you register with the Department of Labor and will be officially indentured to supervising chefs and the sponsoring American Culinary Federation affiliate chapter for 6,000 hours. The program consists of 74 credit hours and leads to an associate of applied science degree.

### Associate of Applied Science Degree

#### First Semester

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**Total Credit Hours:** 12

#### Second Semester

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<td>HMEC 151</td>
<td>Nutrition and Meal Planning</td>
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**Total Credit Hours:** 11

#### Summer

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<td>Oral Communications</td>
<td>3</td>
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**Total Credit Hours:** 6

#### Third Semester

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HMGT 130</td>
<td>Hospitality Law</td>
<td>3</td>
</tr>
<tr>
<td>HMGT 271</td>
<td>Seminar in Hospitality Management: Purchasing</td>
<td>3</td>
</tr>
<tr>
<td>HMGT 145</td>
<td>Food Production Specialties</td>
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</tr>
<tr>
<td>HMGT 285</td>
<td>Culinary Practicum III</td>
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**Total Credit Hours:** 11

#### Fourth Semester

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<tbody>
<tr>
<td>HMGT 226</td>
<td>Garde-manger</td>
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<tr>
<td>HMGT 223</td>
<td>Fundamentals of Baking</td>
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<td>HMGT 277</td>
<td>Seminar in Hospitality Management: Menu Planning</td>
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<td>HMGT 286</td>
<td>Culinary Practicum IV</td>
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**Total Credit Hours:** 11

#### Fifth Semester

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<tr>
<td>HMGT 231</td>
<td>Advanced Food Preparation</td>
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<tr>
<td>HMGT 279</td>
<td>Beverage Control</td>
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<tr>
<td>PSYC 121</td>
<td>Applied Psychology</td>
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76
### Sixth Semester

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<td>HMG 106</td>
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<td>HMG 128</td>
<td>Advanced Hospitality Management</td>
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<td>HMG 288</td>
<td>Culinary Practicum VI</td>
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<td>HMG 388</td>
<td>Human Sciences and/or Art Elective</td>
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### Fourth Semester

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<tr>
<td>CET 127</td>
<td>Construction Estimating</td>
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</tr>
<tr>
<td>CET 129</td>
<td>Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 124</td>
<td>Technical Drafting</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 160</td>
<td>Process Piping</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 231</td>
<td>Computer-aided Drafting 3-D</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 232</td>
<td>Computer-aided Drafting Applications</td>
<td>3</td>
</tr>
<tr>
<td>MATH 242</td>
<td>Analytic Geometry - Calculus II</td>
<td>5</td>
</tr>
<tr>
<td>ELEC 200</td>
<td>Introduction to GPS</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 140/1</td>
<td>Physical Geography/Lab</td>
<td>3/2</td>
</tr>
<tr>
<td>GEOS 130</td>
<td>General Geology</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 150</td>
<td>Introduction to Geographic</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 121</td>
<td>Engineering Physics II</td>
<td>5</td>
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### Approved Technical Electives

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<tr>
<td>BIOL 130/1</td>
<td>Environmental Science/Lab</td>
<td>3/1</td>
</tr>
<tr>
<td>CET 129</td>
<td>Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>CET 129</td>
<td>Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 124</td>
<td>Technical Drafting</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 160</td>
<td>Process Piping</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 231</td>
<td>Computer-aided Drafting 3-D</td>
<td>3</td>
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<tr>
<td>DRAF 232</td>
<td>Computer-aided Drafting Applications</td>
<td>3</td>
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<tr>
<td>MATH 242</td>
<td>Analytic Geometry - Calculus II</td>
<td>5</td>
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<tr>
<td>ELEC 200</td>
<td>Introduction to GPS</td>
<td>3</td>
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<tr>
<td>GEOS 140/1</td>
<td>Physical Geography/Lab</td>
<td>3/2</td>
</tr>
<tr>
<td>GEOS 130</td>
<td>General Geology</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 150</td>
<td>Introduction to Geographic</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 121</td>
<td>Engineering Physics II</td>
<td>5</td>
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<td>TOTAL CREDIT HOURS</td>
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<tr>
<td>TOTAL PROGRAM</td>
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</table>

### Construction Management Vocational Certificate

The construction management certificate is a two-semester program designed to address the management training needs of supervisors in the construction industry. Necessary management skills include construction methods, estimating and management; personnel supervision; business management; and financial and data management. Construction management practices are directed toward those encountered by small- to medium-sized contractors.

### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DRAF 129</td>
<td>Interpreting Architectural Drawings</td>
<td>2</td>
</tr>
<tr>
<td>ENGR 131</td>
<td>Engineering Graphics I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 173</td>
<td>Precalculus (College Algebra and Trigonometry)</td>
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<tr>
<td>ENGL 121</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>CET 127</td>
<td>Construction Estimating</td>
<td>3</td>
</tr>
<tr>
<td>CET 129</td>
<td>Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 124</td>
<td>Technical Drafting</td>
<td>3</td>
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<tr>
<td>DRAF 160</td>
<td>Process Piping</td>
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<tr>
<td>DRAF 231</td>
<td>Computer-aided Drafting 3-D</td>
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<tr>
<td>DRAF 232</td>
<td>Computer-aided Drafting Applications</td>
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</tr>
<tr>
<td>MATH 242</td>
<td>Analytic Geometry - Calculus II</td>
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<tr>
<td>ELEC 200</td>
<td>Introduction to GPS</td>
<td>3</td>
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<tr>
<td>GEOS 140/1</td>
<td>Physical Geography/Lab</td>
<td>3/2</td>
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<tr>
<td>GEOS 130</td>
<td>General Geology</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 150</td>
<td>Introduction to Geographic</td>
<td>3</td>
</tr>
<tr>
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### Second Semester

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<tbody>
<tr>
<td>DRAF 129</td>
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<tr>
<td>CET 129</td>
<td>Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 111</td>
<td>Small Business Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 121</td>
<td>Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 140</td>
<td>Principles of Supervision</td>
<td>3</td>
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<tr>
<td>MATH 120</td>
<td>Business Math or higher</td>
<td>3</td>
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<tr>
<td>TOTAL CREDIT HOURS</td>
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</table>
Communication Design

The communication design field is highly competitive for both salaried and freelance positions. There is a demand for artists with above-average talents and graphic art skills. Opportunities in the field range from entry-level layout and production to art director positions.

Demonstrated abilities are most often the key to obtaining a position in the communication design field. JCCC has structured its communication design program to help the student develop a comprehensive portfolio. The student's work will be critiqued by a team of professionals every semester. These professionals working in the field, along with the faculty, will help develop the student's skills in creative problem solving and in the use of materials, processes, tools and equipment.

Outstanding studio and computer facilities are available for working on class projects. The two-year curriculum consisting of 69 credit hours leads to an associate of applied science degree.

Associate of Applied Science Degree

Transformation Semester (summer, fall and/or spring — prior to fall start of first semester)

| ART | 124 Design 2-D........................................3 |
| CD  | 120 Introduction to Communication Design ..........3 |
| CDT P| 131 Desktop Publishing I: QuarkXPress.............1 |

| TOTAL CREDIT HOURS | 7 |

First Semester (fall)

| ART | 129 Design Color....................................3 |
| CD  | 130 Representational Drawing I......................3 |

| TOTAL PROGRAM | CREDIT HOURS | 15 |

Approved Management Electives

| BUS | 141 Principles of Management..........................3 |
| BUS | 145 Small Business Management..........................3 |
| BUS | 243 Personnel Management................................3 |
| BUS | 261 Business Law I......................................1 |
| BUS | 131 Financial Management/Small Business.............2 |
| BUS | 160 Legal Issues for Small Business..................2 |

| TOTAL PROGRAM | CREDIT HOURS | 29 |

Approved Computer Electives

| CPCA | 105 Introduction to Personal Computing: IBM........1 |
| CPCA | 108 Word Processing on Microcomputers I.............1 |
| CPCA | 110 Spreadsheets on Microcomputers I.................1 |
| CPCA | 114 Databases on Microcomputers I......................1 |
| CPCA | 121 Introduction to Project Management..............1 |
| CPCA | 128 Personal Computer Applications....................3 |
| CPCA | 135 M/S DOS.............................................1 |
| CPCA | 137 M/S DOS Intermediate................................1 |
| CPCA | 138 Windows for Microsystems..........................1 |

| TOTAL PROGRAM | CREDIT HOURS | 3 |

Second Semester (spring)

| ART | 127 Design 3-D.........................................3 |
| CD  | 131 Representational Drawing II......................3 |
| CD  | 134 Layout Design.......................................3 |
| CD  | 140 Technical Processes................................3 |

| TOTAL PROGRAM | CREDIT HOURS | 15 |

| CD  | 132 Typography........................................3 |
| PHOT| 121 Fundamentals of Photography.....................3 |
| ENGL| 121 Composition I .....................................3 |

| TOTAL PROGRAM | CREDIT HOURS | 15 |

Third Semester (fall)

| ART | 123 Commercial Photography...........................3 |
| CD  | 230 Illustration Techniques..........................3 |
| CD  | 231 Advanced Typography................................3 |
| CD  | 235 Production Methods................................3 |
| CD  | 272 Professional Preparation**......................3 |
| CD  | 236 Electronic Production................................3 |
| CD  | 244 Communication Systems............................3 |
| CD  | 245 Advanced Design Practice..........................3 |
| CD  | 272 Professional Preparation**......................3 |
| CD  | 236 Electronic Production................................3 |
| CD  | 244 Communication Systems............................3 |
| CD  | 245 Advanced Design Practice..........................3 |
| CD  | 272 Professional Preparation**......................3 |
| CD  | 236 Electronic Production................................3 |
| CD  | 244 Communication Systems............................3 |
| CD  | 245 Advanced Design Practice..........................3 |
| CD  | 272 Professional Preparation**......................3 |

| TOTAL PROGRAM | CREDIT HOURS | 16 |

| PHOT| 122 Fine Art Photography................................3 |
| PHOT| 127 Color Photography..................................3 |
| PHOT| 128 Fine Art Photography................................3 |
| PHOT| 127 Color Photography..................................3 |

| TOTAL PROGRAM | CREDIT HOURS | 16 |

Fourth Semester (spring)

| CD  | 235 Production Methods................................3 |
| CD  | 272 Professional Preparation**......................3 |
| CD  | 236 Electronic Production................................3 |
| CD  | 244 Communication Systems............................3 |
| CD  | 245 Advanced Design Practice..........................3 |
| CD  | 272 Professional Preparation**......................3 |
| CD  | 236 Electronic Production................................3 |
| CD  | 244 Communication Systems............................3 |
| CD  | 245 Advanced Design Practice..........................3 |
| CD  | 272 Professional Preparation**......................3 |

| TOTAL PROGRAM | CREDIT HOURS | 16 |

** The student must have completed all required studio courses in the CD program prior to the semester for which he or she is enrolling in CD 272, or be co-enrolled in all fourth-semester studio courses.

Technical/Studio Electives

| CDT P| 151 Desktop Publishing II: QuarkXPress.............1 |
| CDT P| 171 Desktop Publishing III: QuarkXPress............1 |
| CDT P| 135 Desktop Manipulation: Photoshop.................1 |
| CDT P| 145 Desktop Illustration: Illustrator...............1 |
| CPCA | 123 Presentation Graphics.............................1 |
| PHOT | 122 Fine Art Photography................................3 |
| PHOT | 127 Color Photography..................................3 |
| PHOT | 128 Fine Art Photography................................3 |
| PHOT | 127 Color Photography..................................3 |
| CIM  | 135 Electronic Photography/Digital Video............3 |
| ART  | 135 Painting I............................................3 |
| ART  | 136 Painting II...........................................3 |
| ART  | 172 Watercolor Painting...............................3 |
| ART  | 231 Life Drawing I.......................................3 |
| ART  | 232 Life Drawing II.....................................3 |
| CD   | 275 Communication Design Internship*...............1 |

| TOTAL PROGRAM | CREDIT HOURS | 69 |

* A communication design major may apply to this internship course if he or she is also enrolled in or has completed all fourth-semester studio courses.
Part-time Students

Students who wish to enroll on a part-time basis (fewer than 12 hours) should enroll in the following courses in the sequence listed or consult the academic director, the career program facilitator or a JCCC counselor.

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<thead>
<tr>
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<tr>
<td>ART 124</td>
<td>Design 2-D</td>
<td>3</td>
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<tr>
<td>CDTP 131</td>
<td>Desktop Publishing: QuarkXPress</td>
<td>1</td>
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<tr>
<td>ENGL 121</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ART 129</td>
<td>Design Color</td>
<td>3</td>
</tr>
<tr>
<td>ART 127</td>
<td>Design 3-D</td>
<td>3</td>
</tr>
<tr>
<td>CD 132</td>
<td>Typography</td>
<td>3</td>
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<tr>
<td>CD 130</td>
<td>Representational Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>PHOT 121</td>
<td>Fundamentals of Photography</td>
<td>3</td>
</tr>
<tr>
<td>CD 131</td>
<td>Representational Drawing II</td>
<td>3</td>
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<tr>
<td>CD 134</td>
<td>Layout Design</td>
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<td>CD 140</td>
<td>Technical Processes</td>
<td>3</td>
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<td>CD 230</td>
<td>Illustration Techniques</td>
<td>3</td>
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<td>CD 231</td>
<td>A dvanced Typography</td>
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<td>PHOT 123</td>
<td>Commercial Photography</td>
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<td>CD 235</td>
<td>Production Methods</td>
<td>3</td>
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<td>CD 236</td>
<td>Electronic Production</td>
<td>3</td>
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<td>CD 244</td>
<td>Communication Systems</td>
<td>3</td>
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<td>CD 245</td>
<td>A dvanced Design Practice</td>
<td>3</td>
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<tr>
<td>CD 272</td>
<td>Professional Preparation **</td>
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</table>

** The student must have completed all required studio courses in the CD program prior to the semester for which he or she is enrolling in CD 272. OR be co-enrolled in all fourth-semester studio courses.

Computer Interactive Media Vocational Certificate

The certificate in Interactive Media provides instruction in: the development process for different types of interactive media (screen, CD-ROM, Web, kiosk, etc.), acquiring and managing assets (text, images, sound, video), the history and theory of communication forms, authoring for interactive media and interface design. This certificate is designed to build a common experience and allow the student to elect asset and authoring courses that would best serve his/her individual needs. It is assumed that each student enrolled will already have an area of media or programming specialization, either through education and/or work experience, in one of the related fields. Depending on the background of the student, completers should be prepared for employment in a variety of positions within the interactive media field (writer/editor/researcher, graphics professional, music/sound professional, video professional, animator, programmer, information designer and/or interface designer).

CR

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
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<td>Interactive Media Concepts</td>
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<tr>
<td>CIM 140</td>
<td>Interactive Media Assets</td>
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<tr>
<td>CIM 200</td>
<td>Interactive Communication Forms</td>
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<tr>
<td>CIM 230</td>
<td>Interactive Media Development</td>
<td>4</td>
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<td>CIM 250</td>
<td>Interface Design</td>
<td>4</td>
</tr>
<tr>
<td>CIM 270</td>
<td>Interactive Media Project</td>
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<td>CIM</td>
<td>Authoring Elective</td>
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<td>CIM</td>
<td>Asset Elective</td>
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** TOTAL PROGRAM CREDIT HOURS **.................30-31

Authoring Elective

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<th>Course Title</th>
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<td>Interactive Authoring I: Authorware</td>
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<td>CIM 154</td>
<td>Interactive Authoring I: Director I</td>
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Asset Electives

<table>
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<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
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<td>MUS 156</td>
<td>MIDI Music Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MUS 157</td>
<td>MIDI Music Composition II</td>
<td>3</td>
</tr>
<tr>
<td>CIM 135</td>
<td>Electronic Photography/Digital Video</td>
<td>3</td>
</tr>
</tbody>
</table>

Computer Information Systems

Employment opportunities for programmer analysts will continue to grow as the need for sophisticated information systems increases in the business environment. Increased demand will focus on the areas of object-oriented programming, database management and client-server applications.

JCCC’s Information Systems program focuses on developing the skills needed for entry-level programmer analysts and related positions. The associate of applied science degree in information systems offers an integrated program of study designed to prepare professionals with skills that are equally applicable to the different hardware platforms – microcomputer, mainframe computer or minicomputer. With its emphasis on practical experience and on currency in the areas of software and curriculum, the program has much to offer the information systems professional who wishes to upgrade or broaden his/her knowledge of the field.

The associate of applied science degree is awarded for successful completion of 66 or 67 credit hours.

Associate of Applied Science Degree

Prior to admission to the Information Systems program, the student must take the following prerequisite or have taken an equivalent transfer course:

<table>
<thead>
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<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>DP 134</td>
<td>Programming Fundamentals</td>
<td>4</td>
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<td>Required Courses</td>
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<tr>
<td>CS</td>
<td>200</td>
<td>Concepts of Programming Algorithms (C++)</td>
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<td>DP</td>
<td>148</td>
<td>Cobol I</td>
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<td>DP</td>
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<td>ACCT</td>
<td>121</td>
<td>Accounting I</td>
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<tr>
<td>ENGL</td>
<td>121</td>
<td>Composition I</td>
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<tr>
<td>MATH</td>
<td>116</td>
<td>Intermediate Algebra</td>
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</tr>
<tr>
<td>Intermediate Programming Language</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CS</td>
<td>210</td>
<td>Discrete Structures I</td>
</tr>
<tr>
<td>DP</td>
<td>162</td>
<td>Database Programming</td>
</tr>
<tr>
<td>SPD</td>
<td>125</td>
<td>Personal Communication</td>
</tr>
<tr>
<td>or</td>
<td>ENGL</td>
<td>123</td>
</tr>
<tr>
<td>TOTAL CREDIT HOURS</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced Programming Language</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>DP</td>
<td>242</td>
<td>System Analysis and Design</td>
</tr>
<tr>
<td>or</td>
<td>DP</td>
<td>243</td>
</tr>
<tr>
<td>IS Elective</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Social Science and/or Economic Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Health and/or Physical Education Elective</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>TOTAL CREDIT HOURS</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DP</td>
<td>258</td>
<td>Operating Systems</td>
</tr>
<tr>
<td>DP</td>
<td>264</td>
<td>Application Development and Programming</td>
</tr>
<tr>
<td>CPCA</td>
<td>121</td>
<td>Introduction to Project Management</td>
</tr>
<tr>
<td>DP</td>
<td>260</td>
<td>Database Management</td>
</tr>
<tr>
<td>IS Elective</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>TOTAL CREDIT HOURS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL PROGRAM CREDIT HOURS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each student should select one option area from the following list. Both the intermediate programming language course and the advanced programming language course must be from the same option-area.

<table>
<thead>
<tr>
<th>Intermediate Programming Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select from one of the following option areas</td>
</tr>
<tr>
<td><strong>Microcomputer</strong></td>
</tr>
<tr>
<td>DP</td>
</tr>
<tr>
<td>or</td>
</tr>
<tr>
<td><strong>Mainframe</strong></td>
</tr>
<tr>
<td>DP</td>
</tr>
<tr>
<td><strong>Client/Server</strong></td>
</tr>
<tr>
<td>DP</td>
</tr>
<tr>
<td><strong>Application Integration</strong></td>
</tr>
<tr>
<td>DP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advanced Programming Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select from one of the option areas listed below:</td>
</tr>
<tr>
<td><strong>Microcomputer</strong></td>
</tr>
<tr>
<td>DP</td>
</tr>
<tr>
<td>or</td>
</tr>
<tr>
<td><strong>Mainframe</strong></td>
</tr>
<tr>
<td>DP</td>
</tr>
<tr>
<td><strong>Client/Server</strong></td>
</tr>
<tr>
<td>DP</td>
</tr>
<tr>
<td><strong>Application Integration</strong></td>
</tr>
<tr>
<td>DP</td>
</tr>
</tbody>
</table>

*Students electing the Microcomputer option area must complete both CS 250 and DP 235. One of these courses will count as an IS elective.

<table>
<thead>
<tr>
<th>Technical Electives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eight hours of Information Systems electives are to be selected from the following list:</td>
</tr>
<tr>
<td>CS</td>
</tr>
<tr>
<td>CS</td>
</tr>
<tr>
<td>DP</td>
</tr>
<tr>
<td>DP</td>
</tr>
<tr>
<td>DP</td>
</tr>
<tr>
<td>DP</td>
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<td>DP</td>
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<tr>
<td>DP</td>
</tr>
<tr>
<td>DP</td>
</tr>
<tr>
<td>DP</td>
</tr>
<tr>
<td>DP</td>
</tr>
</tbody>
</table>
Mainframe Programmer/Analyst Vocational Certificate
Prior to admission in the Mainframe Programmer/Analyst vocational certificate program, the student must take the following prerequisite or have taken an equivalent transfer course:
DP 134 Programming Fundamentals.................4

Required Courses
First Semester                                      CR
DP 140 Editor .......................................................1
DP 148 COBOL I.................................................4
TOTAL CREDIT HOURS..........................5

Second Semester
CS 200 Concepts of Programming Algorithms (C++) ............................................4
DP 242 Introduction to System Design and Analysis............................................3
DP 248 COBOL II................................................4
TOTAL CREDIT HOURS..........................11

Third Semester
DP 253 Customer Information Control System Command Level COBOL .................4
DP 258 Operating Systems.....................................3
DP 260 Database Management...............................4
CPCA 121 Introduction to Project Management .............................................1
TOTAL CREDIT HOURS..........................12
TOTAL PROGRAM CREDIT HOURS..................28

AS/400 Operations Vocational Certificate
Prior to admission in the AS/400 Operations vocational certificate program, the student must take the following prerequisite or have taken an equivalent transfer course:
DP 134 Programming Fundamentals.................4

Required Courses
First Semester                                      CR
DP 140 Editor for RPG ........................................1
DP 157 RPG III Beginning.....................................4
IT 200 Introduction to Information Technology .....3
TOTAL CREDIT HOURS..........................8

Second Semester
DP 178 AS/400 CL Programming.................................4
DP 242 Introduction to System Design and Analysis............................................3
DP 257 RPG III Advanced.....................................4
TOTAL CREDIT HOURS.....................11

Third Semester
DP 180 AS/400 Utilities.........................................4
CPCA 121 Introduction to Project Management .............................................1
TOTAL CREDIT HOURS..........................5
TOTAL PROGRAM CREDIT HOURS..................24

Microcomputer Programmer/Analyst Vocational Certificate
Prior to admission in the Microcomputer Programmer/Analyst vocational certificate program, the student must take the following prerequisite or have taken an equivalent transfer course:
DP 134 Programming Fundamentals.................4

Required Courses
First Semester                                      CR
CS 200 Concepts of Programming Algorithms (C++) ............................................4
CS 210 Discrete Structures ..................................3
DP 162 Database Programming...............................4
TOTAL CREDIT HOURS.....................11

Second Semester
DP 235 Object-Oriented Programming Using C++ 4
or
CS 250 Basic Programming Structures Using C++ ....4
DP 242 Introduction to System Design and Analysis............................................3
or
DP 243 Object-Oriented Analysis and Design ........4
DP 204 UNIX Operating System...............................3
TOTAL CREDIT HOURS.....................10-11

Third Semester
CR
DP 269 GUI Programming.................................4
or
DP 240 JAVA I .....................................................4
CPCA 121 Introduction to Project Management .............................................1
DP 260 Database Management...............................4
TOTAL CREDIT HOURS..........................9
TOTAL PROGRAM CREDIT HOURS..................30-31

Desktop Publishing Applications Specialist Vocational Certificate
Individuals with or without a college degree whose goal is to acquire or improve their personal desktop computer application skills will accomplish that goal in this program. Emphasis is on acquiring results-oriented career business and industry skills. The program is intended for those seeking entry-level positions as well as those currently
employed who desire to enhance their job skills. It provides current employers or prospective employers with tangible evidence of computer competency. Application courses for the certificate are based on a combination of the Windows or Macintosh operating environments. Students will be encouraged to develop a "cross-platform" mastery.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPCA 105</td>
<td>Introduction to Personal Computing: IBM</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 106</td>
<td>Introduction to Personal Computing: Mac</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 108</td>
<td>Word Processing on Microcomputers I</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 134</td>
<td>Managing Your Macintosh</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 138</td>
<td>Windows for Microcomputers</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 123</td>
<td>Presentation Graphics: PowerPoint</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 135</td>
<td>Desktop Photo Manipulations: Photoshop</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 145</td>
<td>Desktop Illustration I: Illustrator</td>
<td>1</td>
</tr>
</tbody>
</table>

Select four courses of the following six:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDTP 130</td>
<td>Desktop Publishing I: PageMaker</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 131</td>
<td>Desktop Publishing I: QuarkXPress</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 150</td>
<td>Desktop Publishing II: PageMaker</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 151</td>
<td>Desktop Publishing II: QuarkXPress</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 170</td>
<td>Desktop Publishing III: PageMaker</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 171</td>
<td>Desktop Publishing III: QuarkXPress</td>
<td>1</td>
</tr>
</tbody>
</table>

Select one course of the following 12:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPCA 125</td>
<td>Word Processing on Microcomputers II</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 134</td>
<td>Managing Your Macintosh</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 138</td>
<td>Windows for Microcomputers</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 150</td>
<td>Desktop Publishing II: PageMaker</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 151</td>
<td>Desktop Publishing II: QuarkXPress</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 170</td>
<td>Desktop Publishing III: PageMaker</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 171</td>
<td>Desktop Publishing III: QuarkXPress</td>
<td>1</td>
</tr>
<tr>
<td>CDTP 165</td>
<td>Desktop Illustration II: Illustrator</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 118</td>
<td>Electronic Mail/Calendar Systems</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 121</td>
<td>Introduction to Project Management</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 141</td>
<td>Internet I</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 151</td>
<td>Internet II</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 161</td>
<td>Introduction to Web Pages</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total Program Credit Hours:** 12

---

**Advanced Data Processing Vocational Certificate**

Students in the Advanced Data Processing certificate program learn a broad range of skills applicable to the current job market. The program is designed to meet the needs of professionals seeking to enhance their expertise and workers who have been out of the field and who plan to return to a data processing position. Emphasis is placed on keeping the program current with changes in the field.

**Prerequisite**

Proficiency with computers is required before starting this program. You must complete the following courses or equivalent work experience before enrolling in the certificate program.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP 134</td>
<td>Programming Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>DP 148</td>
<td>COBOL I</td>
<td>4</td>
</tr>
<tr>
<td>DP 248</td>
<td>COBOL II</td>
<td>4</td>
</tr>
<tr>
<td>DP 150</td>
<td>Assembler Language I</td>
<td>4</td>
</tr>
<tr>
<td>or CS 200</td>
<td>Concepts of Programming Algorithms Using C++</td>
<td>4</td>
</tr>
</tbody>
</table>

Select five of the following courses, one of which must be a language course, must be completed:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP 174</td>
<td>Teleprocessing</td>
<td>3</td>
</tr>
<tr>
<td>DP 235</td>
<td>Object-Oriented Programming Using C++</td>
<td>4</td>
</tr>
<tr>
<td>DP 238</td>
<td>Visual Basic Intermediate Topics</td>
<td>4</td>
</tr>
<tr>
<td>DP 242</td>
<td>Introduction to System Design and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>DP 250</td>
<td>Assembly Language II</td>
<td>4</td>
</tr>
<tr>
<td>DP 253</td>
<td>Customer Information Control System Command Level COBOL</td>
<td>4</td>
</tr>
<tr>
<td>DP 258</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>DP 260</td>
<td>Database Management</td>
<td>4</td>
</tr>
<tr>
<td>DP 272</td>
<td>Intermediate PowerBuilder Enterprise</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Program Credit Hours:** 17-21

---

**Personal Computer Support Vocational Certificate**

This certificate is designed to provide technical background for individuals who will support stand-alone or networked personal computers. This group of courses will provide opportunities for instruction in diverse areas ranging from communication skills to hands-on training with hardware configuration issues, operating systems, applications software, PC communications, and network creativity.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPCA 112</td>
<td>PC Communications</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 128</td>
<td>Personal Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>CPCA 135</td>
<td>MS/DOS</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 137</td>
<td>MS/DOS Intermediate</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 138</td>
<td>Windows for Microcomputers</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 141</td>
<td>Internet I</td>
<td>1</td>
</tr>
<tr>
<td>ELEC 124</td>
<td>Microcomputer Hardware</td>
<td>3</td>
</tr>
<tr>
<td>IT 160</td>
<td>Local Area Network Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>SPD 120</td>
<td>Interpersonal Communications</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Program Credit Hours:** 15

---

**Personal Computer Applications Specialist Vocational Certificate**

Individuals with or without a college degree whose goal is to acquire or improve their personal computer application skills will accomplish their goals in this program. Emphasis is on acquiring results-oriented career business and industry skills. This program is intended for those seeking entry-level positions as well as those currently employed who desire to enhance their job skills. It provides employers and current or prospective employees with tangible evidence of computer competency.
Application courses for the certificate are based on either the Windows or Macintosh operating environments.

Required Courses

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPCA 128</td>
<td>Personal Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>or the following four courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPCA 105</td>
<td>Introduction to Personal Computing: IBM</td>
<td>1</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPCA 106</td>
<td>Introduction to Personal Computing: Mac</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 108</td>
<td>Word Processing on Microcomputers I</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 110</td>
<td>Spreadsheets on Microcomputers I</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 114</td>
<td>Databases on Microcomputers I</td>
<td>1</td>
</tr>
</tbody>
</table>

Second Semester (may be taken during the first semester if schedule allows)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPCA 112</td>
<td>PC Communications</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 123</td>
<td>Presentation Graphics</td>
<td>1</td>
</tr>
</tbody>
</table>

**TOTAL CREDIT HOURS** .................. **5-6**

Construction Management
(See Civil Engineering Technology, page 77.)

Cosmetology

The field of cosmetology relies on creative people who use their ability to visualize shapes and forms for hair design and personal care. Cosmetologists need manual dexterity, an understanding of chemistry and superior client communication skills. This program provides theory and skill development in shampooing, cutting, shaping, curling and coloring hair, as well as manicuring and esthetics.

Employment opportunities are available in beauty salons, department stores, health care and hotel facilities. Entrepreneurship opportunities are also available for cosmetologists who choose to pursue this pathway. Additional employment choices include nail artist, complexion care, cosmetic or beauty supply sales and services, manufacturing technician and color chemist.

Three options are available in the cosmetology program: nail technologist, cosmetologist and esthetician. Enrollment is limited in these programs. A registration requires an interview, testing and a physical examination. Contact the AVS office at 469-8500, ext. 4139, for additional information.

**Nail Technology Vocational Certificate**

350 contact hours

AVCO 102 Nail Technology

**Esthetics Vocational Certificate**

650 contact hours

AVCO 118 Esthetics

Data Processing
(See Computer Information Systems, page 79.)

Dental Hygiene

The dental hygienist is a preventive health professional, a member of the dental health team, and is qualified to provide services needed to obtain and maintain total wellness. These preventive services are provided in a variety of health care settings: hospitals, school systems, specialized institutions and private dental offices.

A growing concern for oral health and the availability of prepaid dental plans are generating an increased demand for dental care. That makes the employment outlook for dental hygienists better than average for the next several years. Dental hygienists earn a competitive salary and enjoy flexible work hours.

A preventive professional may function in many roles. These include working in a school system as a preventive educator, conducting oral screening in nursing homes, writing textbooks, working in sales for dental suppliers or providing preventive services in a private dental office.

As a JCCC dental hygiene student, you gain valuable practical experience in the college’s dental hygiene clinic located on campus. You work under the supervision of a licensed dentist and registered dental hygienists, developing efficiency in preventive dental hygiene techniques. This challenging program is demanding and rewarding and requires full-time involvement. Enrollment in this program is limited; the deadline for fall semester applications is Feb. 1. If you are interested, contact the Admissions and Records Office for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

The Dental Hygiene program at JCCC is committed to quality education. Fully accredited by the American Dental Association’s Commission on Dental Accreditation and designed with the assistance of a community advisory committee, the program comprises six semesters and a summer session, totaling 80 credit hours, leading to an associate of science degree.
**Associate of Science Degree**

Before beginning clinical courses

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 122 Principles of Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>ENGL 121 Composition I</td>
<td>3</td>
</tr>
<tr>
<td>SOC 122 Sociology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 130 Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 230 Microbiology*</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

* Prerequisite: CHEM 122

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHYG 121 Clinical Dental Hygiene I</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 146 General/Head and Neck Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>DHYG 125 Developmental Dentistry</td>
<td>2</td>
</tr>
<tr>
<td>DHYG 135 Dental Materials</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHYG 140 Clinical Dental Hygiene II</td>
<td>4</td>
</tr>
<tr>
<td>DHYG 142 Dental Radiology</td>
<td>2</td>
</tr>
<tr>
<td>BIOL 225 Human Physiology**</td>
<td>4</td>
</tr>
<tr>
<td>DHYG 136 Dental Materials Lab</td>
<td>1</td>
</tr>
<tr>
<td>DHYG 146 Periodontics</td>
<td>3</td>
</tr>
<tr>
<td>DHYG 148 Dental Health Education</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Summer**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 235 General Nutrition***</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Math Elective (MATH 116 or higher)</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

*** Corequisite: BIOL 225

**Third Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHYG 221 Clinical Dental Hygiene III</td>
<td>6</td>
</tr>
<tr>
<td>DHYG 225 Pathology</td>
<td>3</td>
</tr>
<tr>
<td>DHYG 230 Dental Therapeutics</td>
<td>3</td>
</tr>
<tr>
<td>DHYG 240 Community Dental Health</td>
<td>2</td>
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<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>14</strong></td>
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</table>

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
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</thead>
<tbody>
<tr>
<td>DHYG 250 Clinical Dental Hygiene IV</td>
<td>6</td>
</tr>
<tr>
<td>DHYG 245 Nitrous Oxide Analgesia</td>
<td>1</td>
</tr>
<tr>
<td>SPD 120 Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SPD 121 Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>SPD 125 Personal Communication Health and/or Physical Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
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</tr>
<tr>
<td><strong>TOTAL PROGRAM CREDIT HOURS</strong></td>
<td><strong>80</strong></td>
</tr>
</tbody>
</table>

---

**Drafting Technology**

Drafting technicians are engineering communication specialists who apply mathematics, computer applications and manual skills to develop specifications and drawings for the manufacture and construction of virtually everything made in industry. JCCC's two-year curriculum enables students to use the latest computer-aided design (CAD) equipment. Students choose one of two options: the civil option or the machine option.

A technician in the civil option does detailed drawings, land plats and erection drawings for civil engineering projects and designs for commercial buildings and site construction. An associate of science degree is awarded upon successful completion of 65 credit hours.

A technician in the machine option produces detailed drawings and designs of components, assemblies and systems used in manufacturing products. An associate of science degree is awarded upon the successful completion of 65 credit hours.

**Prerequisites**

Before admission to the associate of science degree program in Drafting Technology, the student must satisfy the following prerequisites.

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAF 120 Introduction to Drafting</td>
<td>4</td>
</tr>
<tr>
<td>OST 101 Computerized Keyboarding</td>
<td>1</td>
</tr>
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</table>

**Associate of Science Degree – Civil Option**

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
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</thead>
<tbody>
<tr>
<td>DRAF 124 Technical Drafting</td>
<td>4</td>
</tr>
<tr>
<td>DRAF 130 Introduction to CAD Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CPCA 105 Introduction to Personal Computing: IBM</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 138 Windows for Microcomputers</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 121 Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 133 Technical Mathematics I</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>DRAF 129 Interpreting Architectural Drawings</td>
<td>2</td>
</tr>
<tr>
<td>DRAF 230 Intermediate CAD 2-D</td>
<td>3</td>
</tr>
<tr>
<td>CET 105 Construction Methods</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 123 Technical Writing I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 134 Technical Math II</td>
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**Third Semester**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>DRAF 225 Civil Drafting</td>
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<tr>
<td>DRAF 231 Computer-aided Drafting 3-D</td>
<td>3</td>
</tr>
<tr>
<td>CET 211 Technical Statics and Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 125 Technical Physics I</td>
<td>4</td>
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<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
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### Fourth Semester

<table>
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<td>Electrical Drafting</td>
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<tr>
<td>DRAF 180</td>
<td>Structural Drafting</td>
<td>3</td>
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<tr>
<td></td>
<td>Social Science and/or Economics elective</td>
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<tr>
<td></td>
<td>Humanities Elective</td>
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<tr>
<td></td>
<td>Health and/or Physical Education Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Technical Elective</td>
<td>3</td>
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<td></td>
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<td>TOTAL PROGRAM</td>
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### Technical Electives (Civil Option)

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<tr>
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<td>Construction Estimating</td>
<td>3</td>
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<tr>
<td>CET 129</td>
<td>Construction Management</td>
<td>3</td>
</tr>
<tr>
<td>CET 258</td>
<td>Structural Design</td>
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<tr>
<td>CET 270</td>
<td>Fluid Mechanics</td>
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<tr>
<td>DRAF 140</td>
<td>Topics in CAD I</td>
<td>2</td>
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<tr>
<td>DRAF 232</td>
<td>CAD Applications</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 242</td>
<td>Topics in CAD II</td>
<td>2</td>
</tr>
<tr>
<td>DRAF 271</td>
<td>Drafting Internship I</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 272</td>
<td>Drafting Internship II</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 180</td>
<td>Engineering Land Surveying</td>
<td>3</td>
</tr>
<tr>
<td>MFA B</td>
<td>Introduction to Welding</td>
<td>3</td>
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### Technical Electives (Machine Option)

<table>
<thead>
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</thead>
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<td>DRAF 140</td>
<td>Topics in CAD I</td>
<td>2</td>
</tr>
<tr>
<td>DRAF 225</td>
<td>Civil Drafting</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 232</td>
<td>CAD Applications</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 242</td>
<td>Topics in CAD II</td>
<td>2</td>
</tr>
<tr>
<td>DRAF 271</td>
<td>Drafting Internship I</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 272</td>
<td>Drafting Internship II</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 180</td>
<td>Engineering Land Surveying</td>
<td>3</td>
</tr>
<tr>
<td>MFA B</td>
<td>Introduction to Welding</td>
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</tr>
<tr>
<td>MFA B</td>
<td>Metalurgy</td>
<td>1</td>
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### Any of the Following Programming Courses

<table>
<thead>
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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>CS 200</td>
<td>Concepts of Programming Algorithms</td>
<td>4</td>
</tr>
<tr>
<td>DP 134</td>
<td>Programming Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>ENGR 171</td>
<td>Programming for Engineering and Science</td>
<td>3</td>
</tr>
</tbody>
</table>

### Computer-aided Drafting (CAD) Vocational Certificate

This certificate makes it possible for those students who already have a drafting or engineering degree, or those who have sufficient work experience, to obtain certification in CAD.

### Prerequisites

Prior to the certificate being awarded, the student must have completed an associate's or bachelor's degree in drafting, engineering or a related discipline; or the student must have two years of drafting work experience.

### Sequence of Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR</th>
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</thead>
<tbody>
<tr>
<td>CPCA 105</td>
<td>Introduction to Personal Computing: IBM</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 135</td>
<td>M/S DOS</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 138</td>
<td>Windows for Microcomputers</td>
<td>1</td>
</tr>
<tr>
<td>DRAF 130</td>
<td>Introduction to CAD Concepts</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 231</td>
<td>Computer-aided Drafting 3-D</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 232</td>
<td>CAD Applications</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 242</td>
<td>Topics in CAD II</td>
<td>2</td>
</tr>
<tr>
<td>DRAF 271</td>
<td>Drafting Internship I</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 272</td>
<td>Drafting Internship II</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 120</td>
<td>Introduction to Electronics</td>
<td>3</td>
</tr>
<tr>
<td>MFA B</td>
<td>Introduction to Welding</td>
<td>3</td>
</tr>
<tr>
<td>MFA B</td>
<td>Metalurgy</td>
<td>1</td>
</tr>
</tbody>
</table>
Early Childhood Education

The Early Childhood Education associate degree program is for those students who currently are employed or aspire to work in early childhood care and education programs. Completion of JCCC's associate of science degree program provides students the credentials to advance in quality early childhood care and education settings. The program has three areas of specialization – administration, care and education of young children with special needs, and infant/toddler care and education. Credits will transfer to most Kansas universities. Excellent practical education opportunities are available to students in the program.

Associate of Science Degree

Prerequisite

Students must meet the requirements for employment in early childhood care and education centers in Kansas (stated in the Kansas Licensing Regulations for Preschools and Child Care Centers).

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
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<tbody>
<tr>
<td>EDUC 130</td>
<td>Foundations of Early Childhood Education</td>
</tr>
<tr>
<td>ENGL 121</td>
<td>Composition I</td>
</tr>
<tr>
<td>Math*</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 130</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>SPD 121</td>
<td>Public Speaking</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>15</strong></td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
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</thead>
<tbody>
<tr>
<td>EDUC 131</td>
<td>Early Childhood Curriculum I</td>
</tr>
<tr>
<td>EDUC 250</td>
<td>Child Health, Safety, Nutrition</td>
</tr>
<tr>
<td>Health and/or Physical Education**</td>
<td>1-2</td>
</tr>
<tr>
<td>Science course with Lab***</td>
<td>4-5</td>
</tr>
<tr>
<td>PSYC 215</td>
<td>Child Development</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>PSYC 218</td>
<td>Human Development</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>14-16</strong></td>
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Summer

<table>
<thead>
<tr>
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<tr>
<td>ENGL 122</td>
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<td>Humanities and/or Arts elective</td>
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<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
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Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
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</thead>
<tbody>
<tr>
<td>EDUC 231</td>
<td>Early Childhood Curriculum II</td>
</tr>
<tr>
<td>EDUC 210</td>
<td>Creative Experiences for Young Children</td>
</tr>
<tr>
<td>EDUC 260</td>
<td>Observing and Interacting with Young Children</td>
</tr>
<tr>
<td>ANTH 130</td>
<td>World Cultures</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>ANTH 125</td>
<td>Cultural Anthropology</td>
</tr>
<tr>
<td>Science or Math</td>
<td>3-5</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>15-17</strong></td>
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Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>EDUC 235</td>
<td>Parenting</td>
</tr>
<tr>
<td>EDUC 285</td>
<td>Internship</td>
</tr>
<tr>
<td>Humanities and/or Arts elective</td>
<td>3</td>
</tr>
<tr>
<td>Specialization courses</td>
<td>6</td>
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<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
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<tr>
<td><strong>TOTAL PROGRAM CREDIT HOURS</strong></td>
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</table>

Area of Specialization (select one)

Child Care Administration

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
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</thead>
<tbody>
<tr>
<td>ACCT 121</td>
<td>Accounting I</td>
</tr>
<tr>
<td>EDUC 280</td>
<td>Administration of Early Childhood Programs</td>
</tr>
</tbody>
</table>

Children with Special Needs

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
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</thead>
<tbody>
<tr>
<td>EDUC 220</td>
<td>Survey of the Exceptional Child</td>
</tr>
<tr>
<td>EDUC 215</td>
<td>Young Children with Special Needs</td>
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</tbody>
</table>

Infant and Toddler Care and Education

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
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</thead>
<tbody>
<tr>
<td>EDUC 270</td>
<td>Early Childhood Development</td>
</tr>
<tr>
<td>EDUC 225</td>
<td>Infant and Toddler Education and Care</td>
</tr>
</tbody>
</table>

Recommended Courses

* The mathematics requirement will be satisfied by any mathematics course except MATH 111 Fundamentals of Mathematics and MATH 115 Introduction to Algebra.

** Recommended if the student is not certified in CPR: HPER 200 First Aid/CPR | 2 |

*** Recommended

Life Science

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
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<tbody>
<tr>
<td>BIOL 122/123</td>
<td>Principles of Biology/Lab</td>
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<tr>
<td>BIOL 130/131</td>
<td>Environmental Science/Lab</td>
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Physical Science

<table>
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<tr>
<th>Course</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 122</td>
<td>Astronomy</td>
</tr>
<tr>
<td>GEOS 130</td>
<td>General Geology</td>
</tr>
<tr>
<td>GEOS 140/141</td>
<td>Physical Geography/Lab</td>
</tr>
<tr>
<td>PSCI 120</td>
<td>Physical Science</td>
</tr>
</tbody>
</table>

Electrical Technology

The use of electrical technology in residential, commercial and industrial applications continues to grow rapidly. Electricians install and maintain electrical systems for a variety of purposes, including lighting, appliances, climate control, security and communications.

JCCC offers a 64-credit-hour associate of applied science degree program and a 26-credit-hour vocational certificate program. Both programs emphasize hands-on training integrated with a knowledge of theory and study of the National Electrical Code that prepares students to take a national licensure exam.

The associate of applied science degree program prepares students to enter the electrical trade in four types of elec-
Electrical occupations: residential, commercial, industrial and maintenance. The program also prepares students for continued education in electrical contracting/management, electrical design and industrial/electronic controls.

**Associate of Applied Science Degree**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>DRAF</td>
<td>120 Introduction to Drafting</td>
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<tr>
<td>ENGL</td>
<td>123 Technical Writing I</td>
<td>3</td>
</tr>
<tr>
<td>ELEC</td>
<td>131 Introduction to Sensors and Actuators</td>
<td>3</td>
</tr>
<tr>
<td>ET 105</td>
<td>Construction Methods</td>
<td>3</td>
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<tr>
<td>CET 105</td>
<td>Construction Methods</td>
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</tr>
<tr>
<td>MATH</td>
<td>133 Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>CPC A</td>
<td>105 Introduction to Personal Computing: IBM</td>
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<tr>
<td>ELTE</td>
<td>125 Residential Wiring</td>
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<tr>
<td>HVAC</td>
<td>123 Electromechanical Systems</td>
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</tr>
<tr>
<td>INDT</td>
<td>125 Industrial Safety</td>
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**Second Semester**

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<th>Course Title</th>
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<tr>
<td>ELTE</td>
<td>200 Commercial Wiring</td>
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<tr>
<td>ELTE</td>
<td>210 Code Certification Review</td>
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<tr>
<td>ELTE</td>
<td>271 Electrical Internship I</td>
<td>3</td>
</tr>
<tr>
<td>HPER</td>
<td>200 First Aid/CPR</td>
<td>2</td>
</tr>
<tr>
<td>MATH</td>
<td>133 Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>CPC A</td>
<td>105 Introduction to Personal Computing: IBM</td>
<td>1</td>
</tr>
<tr>
<td>DRAF</td>
<td>129 Interpreting Architectural Drawings</td>
<td>2</td>
</tr>
<tr>
<td>ET 105</td>
<td>Construction Methods</td>
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<tr>
<td>CET 105</td>
<td>Construction Methods</td>
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**Third Semester**

<table>
<thead>
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<th>Course Title</th>
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<tbody>
<tr>
<td>DRAF</td>
<td>129 Interpreting Architectural Drawings</td>
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<tr>
<td>ELTE</td>
<td>200 Commercial Wiring</td>
<td>4</td>
</tr>
<tr>
<td>ELTE</td>
<td>210 Code Certification Review</td>
<td>3</td>
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<tr>
<td>ELTE</td>
<td>271 Electrical Internship I</td>
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<tr>
<td>ELTE</td>
<td>271 Electrical Internship I</td>
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</tr>
<tr>
<td>CET 105</td>
<td>Construction Methods</td>
<td>3</td>
</tr>
<tr>
<td>DRAF</td>
<td>129 Interpreting Architectural Drawings</td>
<td>2</td>
</tr>
<tr>
<td>ELEC</td>
<td>124 Microcomputer Hardware</td>
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<tr>
<td>ELEC</td>
<td>125 Digital Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>ELTE</td>
<td>125 Residential Wiring Methods</td>
<td>4</td>
</tr>
<tr>
<td>CPC A</td>
<td>121 Basic Principles of HVAC</td>
<td>4</td>
</tr>
<tr>
<td>MFA B</td>
<td>121 Introduction to Welding</td>
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<table>
<thead>
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BUS</td>
<td>140 Principles of Supervision</td>
<td>3</td>
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<tr>
<td>BUS</td>
<td>145 Small Business Management</td>
<td>3</td>
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<tr>
<td>BU SE</td>
<td>138 Fast Trac Business Plan</td>
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</tr>
<tr>
<td>BU SE</td>
<td>140 Fast Trac Feasibility Plan</td>
<td>2</td>
</tr>
<tr>
<td>PHYS</td>
<td>125 Technical Physics</td>
<td>4</td>
</tr>
<tr>
<td>RRT</td>
<td>165 Railroad Safety, Quality and Environment</td>
<td>3</td>
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</table>

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR</th>
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<tbody>
<tr>
<td>ELTE</td>
<td>205 Industrial Electrical Wiring</td>
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<tr>
<td>ELTE</td>
<td>272 Electrical Internship II</td>
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<tr>
<td>ELTE</td>
<td>291 Independent Study</td>
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<tr>
<td>CET 105</td>
<td>Construction Methods</td>
<td>3</td>
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<tr>
<td>DRAF</td>
<td>120 Introduction to Drafting</td>
<td>2</td>
</tr>
<tr>
<td>DRAF</td>
<td>129 Interpreting Architectural Drawings</td>
<td>2</td>
</tr>
<tr>
<td>ELEC</td>
<td>120 Introduction to Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ELEC</td>
<td>124 Microcomputer Hardware</td>
<td>3</td>
</tr>
<tr>
<td>ELEC</td>
<td>125 Digital Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>ELEC</td>
<td>131 Introduction to Sensors and Actuators</td>
<td>3</td>
</tr>
<tr>
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<tr>
<td>ELEC</td>
<td>165 Advanced Programmable Controllers</td>
<td>3</td>
</tr>
<tr>
<td>CPC A</td>
<td>121 Basic Principles of HVAC</td>
<td>4</td>
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<tr>
<td>MFA B</td>
<td>121 Introduction to Welding</td>
<td>4</td>
</tr>
<tr>
<td>BUS</td>
<td>140 Principles of Supervision</td>
<td>3</td>
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<tr>
<td>BUS</td>
<td>145 Small Business Management</td>
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<td>BU SE</td>
<td>138 Fast Trac Business Plan</td>
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</tr>
<tr>
<td>RRT</td>
<td>165 Railroad Safety, Quality and Environment</td>
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</tr>
</tbody>
</table>

**Technical Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>ELEC</td>
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<tr>
<td>BI</td>
<td>125 Basic Principles of HVAC</td>
<td>4</td>
</tr>
<tr>
<td>MFAB</td>
<td>121 Introduction to Welding</td>
<td>4</td>
</tr>
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</table>

**Industrial Maintenance Vocational Certificate**

The certificate is designed for students who want to enter the field of industrial maintenance and those individuals employed in industrial maintenance who need to upgrade their skills.

**Related Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAF</td>
<td>123 Interpreting Machine Drawings</td>
<td>2</td>
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<tr>
<td>ELEC</td>
<td>147 Fluid Power Systems</td>
<td>2</td>
</tr>
<tr>
<td>HVAC</td>
<td>123 Electromechanical Systems</td>
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<tr>
<td>INDT</td>
<td>125 Industrial Safety</td>
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<td>MFA B</td>
<td>121 Introduction to Welding</td>
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<th>Course Code</th>
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<tbody>
<tr>
<td>ELTE</td>
<td>200 Commercial Wiring Methods</td>
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</tr>
<tr>
<td>ELTE</td>
<td>210 Code Certification Review</td>
<td>3</td>
</tr>
<tr>
<td>ELTE</td>
<td>271 Electrical Internship I</td>
<td>3</td>
</tr>
<tr>
<td>CET 105</td>
<td>Construction Methods</td>
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<tr>
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<td>4</td>
</tr>
</tbody>
</table>
Electronics Technology

Electronics technology influences almost every aspect of modern life. Skilled electronics technicians are needed to support growth in this industry. These technicians must be able to fabricate, test, install, operate and maintain highly technical systems such as communications systems networks, medical delivery systems, computers and computer networks and industrial process control systems. The Electronics Technology program is designed to prepare students to meet the demanding needs of today's electronics industry. The program focuses on the underlying principles of electronic devices, circuit analysis and digital electronics and will provide a broad systems view of electronics.

The program requires 67 credit hours and leads to an associate of science degree. Students are provided a flexible curriculum which may reflect their individual interests and needs. Students may choose one of five options within the electronics program. These options are general electronics, microcomputer maintenance, communications, industrial controls and medical electronics. Students in the Electronics Technology program will work with outstanding facilities and the latest laboratory equipment. Graduates of the program will have the opportunity for employment in one of today's most challenging and exciting career fields.

Program graduates also have the opportunity to pursue a baccalaureate degree (B.S.E.E.T.) in electronics engineering technology through the transfer of JCCC Electronics Technology and other courses to participating four-year institutions. Students contemplating this option should seek early counseling and prepare a program plan with specific course selections in anticipation of four-year institution requirements. Students should be prepared to enroll in higher-level math and physics courses when compared to current Electronics Technology program requirements. Examples of alternative courses include

<table>
<thead>
<tr>
<th>Technical Electives</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>ELEC 120 Introduction to Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 133 Programmable Controllers</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 165 Advanced Programmable Controllers</td>
<td>3</td>
</tr>
<tr>
<td>ELTE 122 National Electrical Code</td>
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</tr>
<tr>
<td>ELTE 200 Commercial Wiring Methods</td>
<td>4</td>
</tr>
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<td>ELTE 205 Industrial Wiring Methods</td>
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<td>HVA C 121 Basic Principles of HVAC</td>
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<tr>
<td>CET 105 Construction Methods</td>
<td>3</td>
</tr>
<tr>
<td>MFA B 125 Advanced Gas and Arc Welding</td>
<td>4</td>
</tr>
<tr>
<td>MFA B 170 Basic Machine Tool Processes</td>
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<tr>
<td>MFA B 240 Metallurgy</td>
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**TOTAL PROGRAM CREDIT HOURS**...............24

**Technical Electives**

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<thead>
<tr>
<th>Course</th>
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<tr>
<td>ELEC 130 Electronic Devices I</td>
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<td>ELEC 125 Digital Electronics I</td>
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<tr>
<td>CPCA 105 Introduction to Personal Computing: IBM</td>
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<td>MATH 134 Technical Mathematics II</td>
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**TOTAL CREDIT HOURS**..................15

**Second Semester**

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<tr>
<td>ELEC 140 Circuit Analysis II</td>
<td>3</td>
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<tr>
<td>ELEC 225 Digital Electronics II</td>
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<tr>
<td>ENGL 121 Composition I</td>
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<tr>
<td>ELEC 130 Electronic Devices I</td>
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<tr>
<td>Programming Elective</td>
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**TOTAL CREDIT HOURS**..................16

**Third Semester**

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<tr>
<td>ELEC 230 Electronic Devices II</td>
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<tr>
<td>ELEC 245 Microprocessors</td>
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<tr>
<td>PHYS 125 Technical Physics I</td>
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**TOTAL CREDIT HOURS**..................16

**Fourth Semester**

<table>
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<tr>
<td>ENGL 123 Technical Writing I</td>
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<tr>
<td>Social Science and/or Economics Elective</td>
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<tr>
<td>Technical Electives</td>
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<tr>
<td>Humanities Elective</td>
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<tr>
<td>Health and/or Physical Education Elective</td>
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</table>

**TOTAL PROGRAM CREDIT HOURS**.........67

**General Electronics Option**

This degree option will be awarded to those completing the Electronics Technology curriculum and nine credit hours from the following list of approved technical electives:
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ELEC 131</td>
<td>Introduction to Sensors and Actuators</td>
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<td>ELEC 133</td>
<td>Programmable Controllers</td>
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</tr>
<tr>
<td>ELEC 165</td>
<td>Advanced Programmable Controllers</td>
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<td>ELEC 175</td>
<td>Telecommunications</td>
<td>3</td>
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<tr>
<td>ELEC 200</td>
<td>Introduction to GPS</td>
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<tr>
<td>ELEC 210</td>
<td>Medical Electronics Principles</td>
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<tr>
<td>ELEC 211</td>
<td>Medical Electronics Applications</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 240</td>
<td>Electronic Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 250</td>
<td>Microcomputer Maintenance</td>
<td>3</td>
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<tr>
<td>ELEC 271</td>
<td>Electronics Internship I</td>
<td>1-3</td>
</tr>
<tr>
<td>ELEC 272</td>
<td>Electronics Internship II</td>
<td>1-3</td>
</tr>
<tr>
<td>CPC 135</td>
<td>M/S DOS</td>
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<tr>
<td>CPC 137</td>
<td>M/S DOS Intermediate</td>
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<tr>
<td>IT 160</td>
<td>Local Area Network Fundamentals</td>
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</tr>
<tr>
<td>IT 210</td>
<td>Local Area Networking Systems</td>
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</tr>
</tbody>
</table>

**Microcomputer Maintenance Option**

This degree option will be awarded to those completing the Electronics Technology curriculum and the following technical electives:

- ELEC 250 Microcomputer Maintenance (3)

And a minimum of 6 hours from the following:

- ELEC 271 Electronics Internship I (1-3)
- ELEC 272 Electronics Internship II (1-3)
- CPC 135 M/S DOS (1)
- CPC 137 M/S DOS Intermediate (1)
- IT 160 Local Area Network Fundamentals (1)
- IT 210 Local Area Networking Systems (4)

**Communications Option**

This degree option will be awarded to those completing the Electronics Technology curriculum and the following technical electives:

- ELEC 175 Telecommunications (3)
- ELEC 240 Electronic Communications Systems (3)

And a minimum of 3 hours from the following:

- ELEC 200 Introduction to GPS (3)
- ELEC 250 Microcomputer Maintenance (3)
- ELEC 271 Electronics Internship I (1-3)
- ELEC 272 Electronics Internship II (1-3)

**Industrial Controls Option**

This degree option will be awarded to those completing the Electronics Technology curriculum and the following technical electives:

- ELEC 133 Programmable Controllers (3)
- ELEC 165 Advanced Programmable Controllers (3)

And a minimum of 3 hours from the following:

- ELEC 131 Introduction to Sensors and Actuators (3)
- ELEC 250 Microcomputer Maintenance (3)
- ELEC 271 Electronics Internship I (1-3)
- ELEC 272 Electronics Internship II (1-3)

**Medical Electronics Option**

This degree option will be awarded to those completing the Electronics Technology curriculum and the following technical electives:

- ELEC 210 Medical Electronics Principles (3)
- ELEC 211 Medical Electronics Applications (3)

And a minimum of 2 hours from the following:

- ELEC 250 Microcomputer Maintenance (3)
- ELEC 271 Electronics Internship I (1-3)
- ELEC 272 Electronics Internship II (1-3)

**Approved Programming Electives**

- CS 200 Concepts of Programming Algorithms Using C++ (4)
- DP 134 Programming Fundamentals (4)
- DP 138 Visual Basic for Windows (4)
- ENGR 171 Programming for Engineering and Science (3)

**Industrial Controls Vocational Certificate**

This certificate is designed to focus on programmable logic controllers and a variety of input and output devices. The certificate is a 9-credit-hour, three-course sequence involving both the hardware and programming aspects of controllers used in industrial processes. Lectures provide a theoretical basis, and laboratory projects offer experience in controller program planning, documentation and troubleshooting.

**Required Courses**

- ELEC 131 Introduction to Sensors and Actuators (3)
- ELEC 133 Programmable Controllers (3)
- ELEC 165 Advanced Programmable Controllers (3)

**TOTAL PROGRAM CREDIT HOURS**

9

**Medical Electronics Vocational Certificate**

This vocational certificate program is designed for individuals already possessing a background in electronics technology and want to obtain a credential in medical electronics. In addition, individuals currently working in this field may find the preparation provided by this program of value in preparing for the national AAMI certification examination. An associate's degree in electronics or current employment in medical electronics or the necessary course prerequisites are required.

**Required Courses**

- BIOL 144 Human Anatomy and Physiology (5)
- LC 130 Medical Terminology (3)
- ELEC 210 Medical Electronics Principles (3)
- ELEC 211 Medical Electronics Applications (3)

**TOTAL PROGRAM CREDIT HOURS**

14
Communications Electronics Vocational Certificate

This certificate is designed for those students who already have an electronics degree or have completed the necessary prerequisite courses. The courses that are required cover the core skills necessary for someone seeking to upgrade their job skills as a communication technician and become more knowledgeable in communications systems.

Prerequisites

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC 125</td>
<td>Digital Electronics I or equivalent electronics</td>
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</tr>
<tr>
<td></td>
<td>background</td>
<td></td>
</tr>
<tr>
<td>ELEC 230</td>
<td>Electronic Devices II or equivalent electronics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>background</td>
<td></td>
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<tr>
<td>MATH 133</td>
<td>Technical Mathematics I</td>
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<tr>
<td>MATH 134</td>
<td>Technical Mathematics II</td>
<td>5</td>
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<tr>
<td>MATH 171</td>
<td>College Algebra</td>
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</tr>
<tr>
<td>MATH 172</td>
<td>Trigonometry</td>
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</table>

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC 150</td>
<td>Introduction to Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 175</td>
<td>Introduction to Global Positioning Systems</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 240</td>
<td>Electronics Communications Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL PROGRAM CREDIT HOURS: 12

Emergency Medical Science

People who work in the field of Emergency Medical Science (EMS) often enter people's lives during critical times of illness and injury. Their ability to act knowledgeably, compassionately, quickly and calmly can stabilize chaotic, frightening situations.

JCCC offers three progressively intensive options for learning the skills of emergency medical science. All three options prepare you for state certification examinations.

JCCC's financial aid program includes scholarships, grants and loans if you are eligible. Financial aid is particularly important in the MICT program, since long hours usually prohibit you from holding a full-time job.

EMS First Responder Course

EMS First Responder students receive classroom and skills training in cardiopulmonary resuscitation (CPR), patient assessment and fracture and airway management. This class is recommended for:

- people without a medical background who wish to enter the EMT program;
- anyone who wishes to learn basics of emergency medical care;
- firefighters, police officers, lifeguards and others from agencies involved in public safety;
- employees involved in company safety programs.

Students successfully completing this course will be allowed to sit for the certification examination administered by the Kansas Board of Emergency Medical Services.

The EMS First Responder class is offered as the need arises, generally once each semester.

EMS 128 EMS First Responder.................. 5
TOTAL CREDIT HOURS.......................... 5

Emergency Medical Technician Course

This program is designed for individuals interested in providing medical care to patients in the pre-hospital setting. It will provide the participants with opportunities to gain information, skills and attitudes necessary for certification and practice as an emergency medical technician (EMT) in the state of Kansas.

This program has been approved by the Kansas Board of Emergency Medical Services. It addresses information and techniques currently considered to be the responsibility of the EMT according to the United States Department of Transportation, National Standard Curriculum. The program consists of lecture instruction, practical skill training and clinical experience.

Classroom instruction includes anatomy, physiology, recognition and care of actual medical emergencies and trauma-related injuries. Skills in performing CPR, bandaging, splinting, childbirth techniques and other emergency care procedures are taught. An extrication session will give students hands-on experience with auto accident situations and provide the opportunity to observe an air evacuation of a patient. Upon instructor recommendation, students will participate in a 10-hour clinical observation in a hospital setting. Additionally, students will arrange to participate as an observer with a local EMS service. Students participate in seven hours of lecture and four hours of lab a week. Students are also required to attend approximately four Saturday classes lasting between four and eight hours each. Saturday dates and times will be announced during the first class session.

Students successfully completing this course will be allowed to sit for the certification examinations administered by the Kansas Board of Emergency Medical Services.

Prerequisites

EMS 128 or equivalent, or be an active member in a health-related occupation (firefighter, rescue, ambulance, law enforcement, industrial first aid personnel or
other health-related field), or attained the minimum of an associate's degree
EM S 130 Emergency Medical Technician Course.......................9
TOTAL PROGRAM CREDIT HOURS..............................9

Mobile Intensive Care Technician Program
This advanced emergency medical care program consists of four courses, including a clinical rotation in a hospital setting and a field internship with an ambulance service. You learn emergency procedures such as cardiac monitoring and the administration of medications, IV fluids and defibrillation. By the end of the program, you become a skilled paramedic, able to provide sophisticated life support and advanced prehospital care.

JCCC's MICT program is fully accredited by the Joint Review Committee on Educational Programs for the EMT-Paramedic. Our graduates score exceptionally high in certification examinations, and most have been professionally employed shortly after graduation.

To apply for the MICT program, you must have completed EMT training, as well as a college-level course in anatomy or physiology. This is a selective admission program with limited enrollment. If you are interested, contact the Admissions Office for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria. If you are accepted into the program, you take classes in the spring, summer and fall, completing the program in December. You may continue your studies to earn an associate's degree.

Students successfully completing this program will be allowed to sit for the certification examinations administered by the Kansas Board of Emergency Medical Services.

MICT Vocational Certificate
Prerequisites
Certified as Emergency Medical Technician. College-level anatomy/physiology, human anatomy or human physiology course.

Spring Semester CR
EM S 220 MICT I ..................................................10
EM S 225 MICT II ..................................................10
TOTAL CREDIT HOURS ..............................20

Summer Session
EM S 230 MICT III (clinicals).....................................12

Fall Semester
EM S 271 MICT IV (field internship).........................15
TOTAL PROGRAM CREDIT HOURS.........................47

Associate of Science Degree
Prior to beginning professional courses
Certification as an emergency medical technician is required as a prerequisite to the MICT courses, or you may enter in special cases with the approval of the division administrator.
BIOL 140 Human Anatomy........................................4
BIOL 225 Human Physiology....................................4
CHEM 222 Principles of Chemistry................................5
TOTAL CREDIT HOURS..........................13

First Semester (Spring) CR
EM S 220 MICT I ..................................................10
EM S 225 MICT II ..................................................10
TOTAL CREDIT HOURS ..............................20

Summer
EM S 230 MICT III (clinicals).....................................12

Second Semester (Fall)
EM S 271 MICT IV (Field Internship)........................15

Third Semester
ENGL 121 Composition I...........................................3
SPD 121 Public Speaking.........................................3
SOC 125 Social Problems........................................3
PHIL 143 Ethics......................................................3
TOTAL CREDIT HOURS ..............................12

Fourth Semester
Mathematics Elective
(MATH 116 or higher)........................................3
HPER 134 Weight Training and Physical Fitness........1
or
Health and/or Physical Education Elective..............1
TOTAL CREDIT HOURS..........................4
TOTAL PROGRAM CREDIT HOURS.........................76

Associate of Applied Science Degree
Prior to beginning professional courses
Certification as an emergency medical technician is required as a prerequisite to the MICT courses, or you may enter in special cases with the approval of the division administrator.
BIOL 140 Human Anatomy........................................4
BIOL 225 Human Physiology....................................4

First Semester (Spring) CR
EM S 220 MICT I ..................................................10
EM S 225 MICT II ..................................................10
TOTAL CREDIT HOURS..............................20

Second Semester (Summer)
EM S 230 MICT III (clinicals).....................................12
Fashion Merchandising

Rome, Paris, New York, and Hong Kong are centers of the fashion world. But in today's fast-paced fashion market, these cities aren't that far ahead of your local shopping mall. As never before, fashion merchandising is on the move - in New York, Paris and Johnson County.

JCCC's Fashion Merchandising program can open a wide range of challenging and rewarding career opportunities. Fashion merchandising graduates enter exciting fields such as retail management, retail sales, promotion, display, illustration, apparel and textile design, or as a manufacturer's representative.

You are offered a solid grounding in important basic subjects such as business math, English, economics and marketing. The program also includes professional courses in merchandising, management, visual merchandising, creative selling and merchandise evaluation.

And it requires a series of thought-provoking seminars in human relations, supervisory development, career options and industry topics. These seminars include on-the-job training in the fashion business of your choice.

Associate of Applied Science Degree

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>FA SH 277</td>
<td>Seminar: Career Options</td>
<td>2</td>
</tr>
<tr>
<td>FA SH 283</td>
<td>Fashion Internship I</td>
<td>1</td>
</tr>
<tr>
<td>FA SH 121</td>
<td>Fashion Fundamentals I</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 220</td>
<td>CAD Apparel Design</td>
<td>3</td>
</tr>
<tr>
<td>M KT</td>
<td>Creative Retail Selling</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 121</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 135</td>
<td>Image Management</td>
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**Total Credit Hours**: 16

**Second Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>FA SH 284</td>
<td>Fashion Internship II</td>
<td>1</td>
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<tr>
<td>FA SH 132</td>
<td>Marketing Communications</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 120</td>
<td>Business Math or higher</td>
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<tr>
<td>FA SH 150</td>
<td>Textiles</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 125</td>
<td>Visual Merchandising</td>
<td>3</td>
</tr>
<tr>
<td>BUS 140</td>
<td>Principles of Supervision</td>
<td>3</td>
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**Total Credit Hours**: 17

**Third Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BUS 225</td>
<td>Human Relations</td>
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<tr>
<td>FA SH 285</td>
<td>Fashion Internship III</td>
<td>1</td>
</tr>
<tr>
<td>FA SH 231</td>
<td>Merchandising Planning and Control</td>
<td>3</td>
</tr>
<tr>
<td>M KT</td>
<td>Retail Management</td>
<td>3</td>
</tr>
<tr>
<td>ECON 130</td>
<td>Basic Economic Issues</td>
<td>3</td>
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<tr>
<td>ECON 230</td>
<td>Economics I</td>
<td>3</td>
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**Total Credit Hours**: 16

**Fourth Semester**

<table>
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<tbody>
<tr>
<td>FA SH 286</td>
<td>Fashion Internship IV</td>
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<tr>
<td>FA SH 242</td>
<td>Consumer Product Evaluation</td>
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</tr>
<tr>
<td>BUS 230</td>
<td>Marketing</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 280</td>
<td>Capstone: Industry Topics</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 140</td>
<td>Garment Design</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 143</td>
<td>Apparel Construction III</td>
<td>4</td>
</tr>
<tr>
<td>FA SH 224</td>
<td>History of Costume</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 230</td>
<td>Fashion Illustration II</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 268</td>
<td>Field Study: The Market Center</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credit Hours**: 15

**Recommended Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BUS 235</td>
<td>Introduction to International Business</td>
<td>3</td>
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<tr>
<td>FA SH 123</td>
<td>Apparel Construction I</td>
<td>4</td>
</tr>
<tr>
<td>FA SH 124</td>
<td>Apparel Construction II</td>
<td>4</td>
</tr>
<tr>
<td>FA SH 127</td>
<td>CAD: Pattern Design I</td>
<td>4</td>
</tr>
<tr>
<td>FA SH 128</td>
<td>CAD: Pattern Design II</td>
<td>4</td>
</tr>
<tr>
<td>FA SH 130</td>
<td>Fashion Illustration I</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 140</td>
<td>Garment Design</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 143</td>
<td>Apparel Construction III</td>
<td>4</td>
</tr>
<tr>
<td>FA SH 224</td>
<td>History of Costume</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 230</td>
<td>Fashion Illustration II</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 268</td>
<td>Field Study: The Market Center</td>
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</table>

**Total Credit Hours**: 64

**Suggested Sequence of Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>FA SH 121</td>
<td>Fashion Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 277</td>
<td>Seminar: Career Options</td>
<td>2</td>
</tr>
<tr>
<td>FA SH 283</td>
<td>Fashion Internship I</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 121</td>
<td>Composition I</td>
<td>3</td>
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<tr>
<td>FA SH 220</td>
<td>CAD Apparel Design</td>
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<tr>
<td>M KT</td>
<td>Creative Retail Selling</td>
<td>3</td>
</tr>
<tr>
<td>FA SH 135</td>
<td>Image Management</td>
<td>1</td>
</tr>
<tr>
<td>FA SH 284</td>
<td>Fashion Internship II</td>
<td>1</td>
</tr>
<tr>
<td>FA SH 125</td>
<td>Visual Merchandising</td>
<td>3</td>
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</tbody>
</table>
Fire Services Administration

The Fire Science program at JCCC, in close cooperation with the Johnson County Fire Chiefs Association and the University of Kansas Fire Service Training Program, has developed a degree program leading to the Associate of Arts in Fire Services Administration. This degree prepares you for advancement in the fire service, and for further study toward the baccalaureate degree at a four-year institution should you elect to pursue your educational goals beyond the associate level.

The program emphasizes general education in addition to technical instruction, and is built around a core of fire science courses carefully selected by the chiefs and the training officers to prepare you for career growth. Technical electives may also be pursued through courses available under a continuing cooperative agreement between area fire science programs, subject to the policies of the participating colleges and programs governing the application of transfer credit.

Self-directed study mechanisms have been developed to complement core courses in the fire science curriculum to compensate for the impact of shift assignments for working fire and rescue personnel, and generally include weekly self-study modules and expanded office availability of instructors for review and guidance. A maximum of one-third of the scheduled meetings for these selected sections (the greatest number of which could be affected by work schedule conflicts) may be engaged in this fashion, subject to documentation of work schedule. Many of the general education courses required by the revised curriculum are also available in formats such as self-paced study and telecourses to further ease progress through the program.

**Associate of Arts Degree**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>CR</th>
<th>Second Semester</th>
<th>CR</th>
<th>Third Semester</th>
<th>CR</th>
<th>Fourth Semester</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 121 Composition I</td>
<td>3</td>
<td>ENGL 122 Composition II</td>
<td>3</td>
<td>FIRE 220 Fire Administration</td>
<td>3</td>
<td>FIRE 135 Building and Fire Codes</td>
<td>3</td>
</tr>
<tr>
<td>BUS 140 Principles of Supervision</td>
<td>3</td>
<td>BUS 141 Principles of Management</td>
<td>3</td>
<td>FIRE 222 Fire Law</td>
<td>3</td>
<td>FIRE 250 Instructional Methods</td>
<td>3</td>
</tr>
<tr>
<td>MATH 171 College Algebra (equivalent or higher)</td>
<td>3</td>
<td>FIRE 224 Incident Command Systems</td>
<td>3</td>
<td>Technical Electives*</td>
<td>4</td>
<td>Technical Electives*</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 162 Fire Tactics and Strategy</td>
<td>3</td>
<td>Humanities Elective</td>
<td>3</td>
<td>Oral Communication</td>
<td>3</td>
<td>Humanities Elective</td>
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<tr>
<td>Social Science Elective</td>
<td>3</td>
<td>Science and/or Math Elective</td>
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<td>Social Science Elective</td>
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<td>TOTAL CREDIT HOURS</td>
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</tr>
<tr>
<td>Health and/or Physical Education Elective</td>
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<td>16</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>TOTAL CREDIT HOURS</td>
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<td></td>
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</tr>
</tbody>
</table>

* If you complete the JCCC pre-employment certificate program (XNF 700 Essentials of Firefighting; XNF 701, XNF 702; XNF 703 Hazardous Material First Responder Operations; and EMS 128 EMS First Responder), you may fulfill technical elective requirements through the advanced standing credit process. (See page 33.)

**Technical Electives**

- FIRE 121 Fundamentals of Fire Prevention: 3
- FIRE 125 Building Construction for Fire Service: 3
- FIRE 130 Fire Investigation: 3
- FIRE 132 Arson Investigation: 3
- FIRE 137 Extinguishing, Detection and Alarm Systems: 3
- FIRE 150 Introduction to Fire Science: 3
- FIRE 159 Fire Service Hydraulics: 4
- FIRE 160 Fire Apparatus and Equipment: 3
- FIRE 169 Rescue Techniques: 4
- FIRE 170 Sprinkler and Standpipe Systems: 3
Grounds and Turf Management
The Grounds and Turf Management program is a cooperative program with Longview Community College leading to a certificate and/or an associate of applied science degree. The degree is granted by Longview Community College. The program offers training in professional grounds management and golf course management, providing a study of soils, fertilizers, grasses, trees and pesticide application procedures. The program also prepares grounds professionals to take the state of Kansas pesticide applicator's exam.
You must be formally accepted by both JCCC and Longview to be admitted to this program.
Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact Longview Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria. It is your responsibility to check with a JCCC counselor before enrollment.

Health Information Technology
A health information technician has the technical skills needed to maintain the components of health information systems consistent with the medical, administrative, ethical, legal, accreditation and regulatory requirements of the health care delivery system. Area hospitals and a variety of other health facilities in the community offer field experience in all procedures performed by the health information technician. This is a cooperative program between JCCC and Penn Valley Community College. You must be formally accepted by both JCCC and Penn Valley to be admitted to this program.

When the 69-credit-hour program has been completed and the associate of applied science degree obtained, you will be eligible to take the accreditation examination of the American Association of Health Information Management. Contact Penn Valley Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.
Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. It is your responsibility to check with a JCCC counselor before enrollment.

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAGB</td>
<td>129</td>
<td>Deciduous Trees and Shrubs</td>
</tr>
<tr>
<td>KAGB</td>
<td>106</td>
<td>Landscape Design and Maintenance</td>
</tr>
<tr>
<td>KAGB</td>
<td>145</td>
<td>Irrigation/Installation</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
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Fifth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH</td>
<td>120</td>
<td>Business Math</td>
</tr>
<tr>
<td>AGRU</td>
<td>115</td>
<td>Turf and Ornamental Plants: Pest Management</td>
</tr>
<tr>
<td>AGRU</td>
<td>109</td>
<td>Turfgrass Management II</td>
</tr>
<tr>
<td><strong>Health and/or Physical Education Elective</strong></td>
<td><strong>1</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>10</strong></td>
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</table>

Sixth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>CR</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAGB</td>
<td>115</td>
<td>Soil Fertility and Fertilizers</td>
</tr>
<tr>
<td>BIOL</td>
<td>250</td>
<td>Ecology</td>
</tr>
<tr>
<td>KAGB</td>
<td>206</td>
<td>Advanced Landscape Design</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>10</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Program Credit Hours** | **62**

Food and Beverage Management
(See Hospitality Management, page 97.)
These courses, taken in sequence, provide a career ladder for experience and training in health occupations. Most health occupations require continuing education following completion of basic programs. A advancement opportunities and certification in many careers depend on additional training. The certified medication aide update and an intravenous therapy training course at JCCC/AVS provide support for competency and safety through continuing education.

Certified Nurse Aide
96 contact hours

Certified Medication Aide
80 hours of instruction

Home Health Aide
21.5 contact hours

Certified Medication Aide Update
10 contact hours

I.V. Therapy for Licensed Practical Nurses
48 contact hours

Heating, Ventilation and Air Conditioning Technology
Modern residential, commercial, institutional and manufacturing operations depend on carefully monitored temperature conditions and well-trained installation and service technicians. Government researchers say graduates of training programs that emphasize hands-on experience will have a definite advantage when seeking employment in heating, ventilation and air conditioning technology. JCCC provides you the opportunity to work on actual equipment while pursuing a degree or certificate program. The 64-credit-hour, associate of applied science degree program focuses on developing an awareness of basic mathematical and scientific principles. The curriculum is concerned with the manner by which these principles affect the control of temperature and the quality of air, design, testing, installation and development of heating and cooling systems. Special emphasis is on energy conservation through computer management. The theory of operation as well as installation, service and repair of gas and electric furnaces, heat pumps, rooftop air conditioners, cooling towers and steam boilers are part of the curriculum.

Health Occupations
The field of health care continues to grow as the average age of the population increases. According to the Department of Labor, employment opportunities in health are among the fastest-growing occupations in the nation.

The Health Occupations programs include training for employment as a certified nurse aide, certified medication aide or home health aide. All programs satisfy requirements for training and certification in Kansas.

<table>
<thead>
<tr>
<th>KMRT 160</th>
<th>Introduction to Medical Records Profession</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>KMRT 161</td>
<td>Health Record Systems Analysis and Controls</td>
<td>3.5</td>
</tr>
<tr>
<td>KMRT 151</td>
<td>Medical Terminology for Medical Records</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDIT HOURS: 16.5**

**Second Semester**

| BIOL 210 | Pathophysiology | 4 |
| ENGL 121 | Composition I | 3 |
| KMRT 162 | Health Care Statistics | 3 |
| KMRT 184 | Introduction to Medical Transcription | 3 |
| KMRT 169 | Legal Aspects of Medical Records | 2 |
| KMRT 166 | Directed Practice I | 2.5 |

**TOTAL CREDIT HOURS: 17.5**

**Summer**

| SPD 121 | Public Speaking | 3 |
| KMRT 200 | Introduction to Classification Systems | 3 |

**American Institutions Requirements**: 3

**TOTAL CREDIT HOURS: 7**

**Third Semester**

| KMRT 164 | Quality Management | 3 |
| KMRT 163 | Classification, Nom., Ind. and Reg. I | 4 |
| KMRT 167 | Directed Practice II | 2 |
| KMRT 210 | Classification Systems and Nomenclatures for Ambulatory Care | 3 |
| OST 155 | Word Processing Applications I | 3 |

**TOTAL CREDIT HOURS: 15**

**Fourth Semester**

| BUS 243 | Human Resource Management | 3 |
| KMRT 175 | Specialized Health Record Systems | 2 |
| KMRT 180 | Classification, Nom., Ind. and Reg. II | 3 |
| KMRT 168 | Directed Practice III | 2 |
| PSYC 130 | Introduction to Psychology | 3 |

**TOTAL CREDIT HOURS: 13**

**TOTAL PROGRAM CREDIT HOURS: 69**

You may be a full-time or part-time student. The sequencing given above is required in order to complete the program in four semesters.

* All graduates from Penn Valley must meet the American Institutions requirements. See a JCCC counselor about courses.
### Associate of Applied Science Degree

#### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>CR</th>
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</thead>
<tbody>
<tr>
<td>HVAC 121</td>
<td>Basic Principles of HVAC</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 123</td>
<td>Electromechanical Systems</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 125</td>
<td>Energy Alternatives</td>
<td>2</td>
</tr>
<tr>
<td>HVAC 143</td>
<td>Reading Blueprint and Ladder Diagrams</td>
<td>2</td>
</tr>
<tr>
<td>MATH 133</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
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#### Second Semester

<table>
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<tr>
<td>HVAC 126</td>
<td>Residential HVAC Systems</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 150</td>
<td>Refrigerant Management</td>
<td>1</td>
</tr>
<tr>
<td>INDT 125</td>
<td>Industrial Safety</td>
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<tr>
<td>ENGL 121</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 125</td>
<td>Technical Physics I</td>
<td>4</td>
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<tr>
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#### Third Semester

<table>
<thead>
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<th>Course Name</th>
<th>CR</th>
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<tbody>
<tr>
<td>HVAC 124</td>
<td>Equipment Selection and Duct Design</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 205</td>
<td>Pneumatic Control Systems</td>
<td>2</td>
</tr>
<tr>
<td>HVAC 218</td>
<td>Electronic Control Systems</td>
<td>2</td>
</tr>
<tr>
<td>HVAC 223</td>
<td>Commercial Systems: Heating</td>
<td>4</td>
</tr>
<tr>
<td>CPC A 105</td>
<td>Introduction to Personal Computing: IBM</td>
<td>3</td>
</tr>
<tr>
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#### Fourth Semester

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<td>HVAC 167</td>
<td>Sheet Metal Layout and Fabrication</td>
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<td>HVAC 224</td>
<td>Diagnosis and Service Procedures</td>
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<tr>
<td>HVAC 228</td>
<td>DDC and Microprocessor-based Controls</td>
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#### Technical Electives

<table>
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<td>AUTO 125</td>
<td>Introduction to Automotive Shop Practices</td>
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<td>AUTO 230</td>
<td>Automotive Heating and Air Conditioning</td>
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<td>BUS 121</td>
<td>Introduction to Business</td>
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<td>BUS 145</td>
<td>Small Business Management</td>
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<td>BUS 138</td>
<td>Fast Trac Business Plan</td>
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<td>BUS 140</td>
<td>Fast Trac Feasibility Plan</td>
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<td>DRA F 120</td>
<td>Introduction to Drafting</td>
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<td>DRA F 129</td>
<td>Interpreting Architectural Drawings</td>
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<tr>
<td>DRA F 130</td>
<td>Introduction to CAD Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 120</td>
<td>Introduction to Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 131</td>
<td>Introduction to Sensors and Actuators</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 133</td>
<td>Programmable Controllers</td>
<td>3</td>
</tr>
<tr>
<td>ELTE 122</td>
<td>National Electrical Code I</td>
<td>4</td>
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<tr>
<td>ELTE 125</td>
<td>Residential Wiring Methods</td>
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<td>ENGR 131</td>
<td>Engineering Graphics I</td>
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<td>HVAC 271</td>
<td>HVAC Internship</td>
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<td>HVAC 291</td>
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<td>RRT 165</td>
<td>Railroad Safety, Quality and Environment</td>
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</table>

#### Postsecondary Certificate Program

The postsecondary certificate program is designed to prepare you for the basic job skills needed to service residential and commercial heating and air conditioning equipment. Students who elect the certificate option learn the theory of operation and how to install, service and repair gas furnaces, heat pumps, rooftop air conditioners, chilled water systems and steam boilers. This knowledge is reinforced by working on actual equipment in the laboratory. Completion of this program will allow the student to seek employment as a maintenance and service technician in the heating/air conditioning trade.

#### Required Courses

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<thead>
<tr>
<th>Course Code</th>
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<td>Basic Principles of HVAC</td>
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<td>HVAC 123</td>
<td>Electromechanical Systems</td>
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<tr>
<td>HVAC 124</td>
<td>Equipment Selection and Duct Design</td>
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<td>HVAC 126</td>
<td>Residential HVAC Systems</td>
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<tr>
<td>INDT 125</td>
<td>Industrial Safety</td>
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<tr>
<td>MATH 115</td>
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<td>MATH 121</td>
<td>Composition I</td>
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<td>ENGR 131</td>
<td>Engineering Graphics I</td>
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<td>Pneumatic Control Systems</td>
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<td>HVAC 218</td>
<td>Electronic Control Systems</td>
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<td>HVAC 223</td>
<td>Commercial Systems: Heating</td>
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<td>Diagnosis and Service Procedures</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
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Eight credit hours from the following courses must be completed in addition to the courses listed above.

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<tbody>
<tr>
<td>HVAC 167</td>
<td>Sheet Metal Layout and Fabrication</td>
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<td>HVAC 205</td>
<td>Pneumatic Control Systems</td>
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<td>HVAC 218</td>
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<td>HVAC 221</td>
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<td>HVAC 224</td>
<td>Diagnosis and Service Procedures</td>
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#### Technical Electives

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<tr>
<td>AUTO 125</td>
<td>Introduction to Automotive Shop Practices</td>
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<td>BUS 121</td>
<td>Introduction to Business</td>
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<td>BUS 145</td>
<td>Small Business Management</td>
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<tr>
<td>BUS 138</td>
<td>Fast Trac Business Plan</td>
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<tr>
<td>BUS 140</td>
<td>Fast Trac Feasibility Plan</td>
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<tr>
<td>DRA F 120</td>
<td>Introduction to Drafting</td>
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<td>DRA F 129</td>
<td>Interpreting Architectural Drawings</td>
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<tr>
<td>DRA F 130</td>
<td>Introduction to CAD Concepts</td>
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<td>ELEC 120</td>
<td>Introduction to Electronics</td>
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<td>ELEC 131</td>
<td>Introduction to Sensors and Actuators</td>
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<td>ELEC 133</td>
<td>Programmable Controllers</td>
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<td>ELTE 122</td>
<td>National Electrical Code I</td>
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<td>ELTE 125</td>
<td>Residential Wiring Methods</td>
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<td>ENGR 131</td>
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</tr>
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<td>HVAC Internship</td>
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Vocational Certificate Program

The Heating, Ventilation and Air Conditioning Vocational Certificate program is a one-year program that you can complete in two semesters. The program is designed as a fast track to employment for both new entrants into the job market and those who have been displaced from their jobs due to changes in the employment market. Through a large variety of course offerings, the program can be tailored to meet the requirements of a diverse number of HVAC occupations. Upon successful completion of the program, you will be equipped with the technical skills necessary to enter the job market as a service or maintenance technician in the heating and air conditioning trade.

Required Courses

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>HVAC 121 Basic Principles of HVAC</td>
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<td>HVAC 123 Electromechanical Systems</td>
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<td>INDT 125 Industrial Safety</td>
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<td>TOTAL CREDIT HOURS</td>
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Twelve credit hours from the following courses must be completed in addition to the courses listed above.

HVAC 124 Equipment Selection and Duct Design
HVAC 126 Residential HVAC Systems
HVAC 167 Sheet Metal Layout and Fabrication
HVAC 205 Pneumatic Control Systems
HVAC 218 Electronic Control Systems
HVAC 221 Commercial Systems: Heating
HVAC 223 Commercial Systems: Heating
HVAC 224 Diagnosis and Service Procedures
HVAC 228 DDC and Microprocessor-based Controls

TOTAL CREDIT HOURS: 12

TOTAL PROGRAM CREDIT HOURS: 25

Technical Electives

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<td>BUS 121 Introduction to Business</td>
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<td>BUS 145 Small Business Management</td>
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<td>DRAF 129 Interpreting Architectural Drawings</td>
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Hospitality Management

The Hospitality Management program at JCCC is a comprehensive study of the food service and public lodging industries. The program is accredited by the American Culinary Federation Educational Institute Accrediting Commission.

Associate of Applied Science Degree

Food and Beverage Management

The JCCC Food and Beverage Management program prepares graduates to enter restaurant, club or food service management as a trainee or assistant manager. Courses in the 65-credit-hour program include supervisory management, hospitality accounting, hospitality law, food management, design techniques and advanced hospitality management. In addition, students learn food preparation skills through courses in basic and intermediate food preparation, menu planning, purchasing, nutrition and beverage control. Individuals considering this field should enjoy a very active environment and a lot of contact with people.

First Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
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<tr>
<td>HMGT 123 Basic Food Preparation</td>
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<tr>
<td>ENGL 121 Composition I</td>
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<td>HMGT 271 Seminar: Purchasing</td>
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Second Semester

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<td>HMGT 273 Seminar: Accounting</td>
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<tr>
<td>PSYC 130</td>
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<td>HMEC 151</td>
<td>Nutrition and Meal Planning</td>
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<td><strong>Summer</strong></td>
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<td><strong>Third Semester</strong></td>
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<tr>
<td>HMGT 277</td>
<td>Seminar: Menu Planning</td>
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<tr>
<td>HMGT 145</td>
<td>Food Production Specialties</td>
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<td>HMGT 221</td>
<td>Design Techniques</td>
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<td>HMGT 279</td>
<td>Beverage Control</td>
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<td>HMGT 130</td>
<td>Hospitality Law</td>
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<td>HMGT 250</td>
<td>Introduction to Catering</td>
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<td>HMGT 123</td>
<td>Basic Food Preparation</td>
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<td>HMGT 128</td>
<td>Supervisory Management</td>
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<td><strong>TOTAL PROGRAM CREDIT HOURS</strong></td>
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</table>

**Information Systems**

(See Computer Information Systems, page 79.)

**Information Technology**

Information Technology connects people, departments and companies for communication purposes. The technology of local area networks gives employees the ability to share and retrieve information at the group level. Combining local area networks with the Internet and telecommunications resources gives employees unlimited

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<td>HMGT 230</td>
<td>Intermediate Food Preparation</td>
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<td>HMGT 265</td>
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<td>Food Production Specialties</td>
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</table>
intranet access to information throughout the company and beyond. The associate of applied science degree in Information Technology provides students with a foundation in designing, installing and implementing computer networking resources. Course requirements include local area network operations and product-specific requirements using Netware, Windows NT and Unix.

**Associate of Applied Science Degree**

**Prerequisites**

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<td>CPCA 135</td>
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**First Semester**

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<td>ENGL 121</td>
<td>Composition I</td>
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<tr>
<td></td>
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<td></td>
<td><strong>TOTAL CREDIT HOURS</strong></td>
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**Second Semester**

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<tbody>
<tr>
<td>IT 210</td>
<td>Local Area Networking Systems</td>
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<tr>
<td>ELEC 120</td>
<td>Introduction to Electronics</td>
<td>3</td>
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<tr>
<td>MATH 171</td>
<td>College Algebra</td>
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<td>Composition II</td>
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<td>Technical Writing</td>
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<td></td>
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<td></td>
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**Third Semester**

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<tbody>
<tr>
<td>IT 211</td>
<td>Advanced Local Area Networking Systems</td>
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<tr>
<td>IT 217</td>
<td>Local Area Networking Components</td>
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<tr>
<td>DP 134</td>
<td>Programming Fundamentals</td>
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<tr>
<td>SPD</td>
<td>Any 100 level Speech course</td>
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**Fourth Semester**

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<tr>
<td>IT 248</td>
<td>Network Specifications and Contracting</td>
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<tr>
<td>IT 250</td>
<td>Network Design and Implementation</td>
<td>3</td>
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<tr>
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<td>Social Science and/or</td>
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<tr>
<td></td>
<td>Economics Elective</td>
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<td>Humanities Elective</td>
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<td></td>
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**Technical Electives**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>IT 213</td>
<td>Local Area Network Supervisor</td>
<td>1</td>
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<tr>
<td>IT 212</td>
<td>Local Area Network Applications</td>
<td>1</td>
</tr>
<tr>
<td>IT 219</td>
<td>Network Connectivity</td>
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<tr>
<td>CPCA 108</td>
<td>Word Processing on Microcomputers</td>
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<td>CPCA 110</td>
<td>Spreadsheets on Microcomputers I</td>
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<tr>
<td>CPCA 111</td>
<td>Spreadsheets on Microcomputers II</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 112</td>
<td>PC Communications</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 114</td>
<td>Databases on Microcomputers I</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 115</td>
<td>Databases on Microcomputers II</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 118</td>
<td>Electronic Mail/Calendar Systems</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 121</td>
<td>Introduction to Project Management</td>
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<tr>
<td>CPCA 123</td>
<td>Presentation Graphics</td>
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<tr>
<td>CPCA 128</td>
<td>Personal Computer Applications</td>
<td>3</td>
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<td></td>
<td>(Student may not get credit for CPCA 128 and CPCA 108, 110 and 114)</td>
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<tr>
<td>CPCA 139</td>
<td>UNIX</td>
<td>1</td>
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<tr>
<td>CPCA 141</td>
<td>Internet I</td>
<td>1</td>
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<td>CPCA 148</td>
<td>Financial Applications - Business</td>
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<td>CPCA 180</td>
<td>OS/2</td>
<td>1</td>
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<tr>
<td>CDTP 130</td>
<td>Desktop Publishing I: PageMaker</td>
<td>1</td>
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<tr>
<td>CDTP 131</td>
<td>Desktop Publishing I: QuarkXPress</td>
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<tr>
<td>CS 200</td>
<td>Concepts in Programming Algorithms</td>
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<tr>
<td>DP 138</td>
<td>Visual Basic for Windows</td>
<td>4</td>
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<tr>
<td>DP 162</td>
<td>Database Programming</td>
<td>4</td>
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<tr>
<td>DP 204</td>
<td>UNIX Operating System</td>
<td>3</td>
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<tr>
<td>DRAF 115</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 130</td>
<td>Introduction to CAD Concepts</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 120</td>
<td>Introduction to Electronics</td>
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<tr>
<td>ELEC 150</td>
<td>Introduction to Telecommunications</td>
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<td>ENGR 131</td>
<td>Engineering Graphics</td>
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<tr>
<td>ENGR 171</td>
<td>Programming for Engineering and Science</td>
<td>3</td>
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<tr>
<td>ACCT 121</td>
<td>Accounting I</td>
<td>3</td>
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<tr>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>ACCT 111</td>
<td>Small Business Accounting</td>
<td>3</td>
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<tr>
<td>ACCT 122</td>
<td>Accounting II</td>
<td>3</td>
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<tr>
<td>ACCT 135</td>
<td>Computer Accounting Applications</td>
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**Local Area Network Administrator**

**Vocational Certificate**

This certificate is designed to cover the duties of a local area network administrator in a business environment. It is directed toward the nontechnical individual who has other primary job responsibilities but also must support the network. It provides instruction in specific products such as NetWare and Windows NT, as well as hands-on investigation of utilities and tools not permissible in a production environment.

**Prerequisites**

Prerequisites may be satisfied by course work, examination or work experience.

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>CPCA 105</td>
<td>Introduction to Personal Computing: IBM</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 135</td>
<td>MS/DOS</td>
<td>1</td>
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</table>
Required Courses

IT 200 Introduction to Information Technology...3
CPCA 137 M/S/DOS Intermediate..................1
CPCA 138 Windows for Micros.....................1
ELEC 124 Microcomputer Hardware.................3
IT 210 Local Area Networking Systems............4
   (using NetWare 3.12, 4.0, WinNT)
CPCA Technical Electives.................3

TOTAL PROGRAM
CREDIT HOURS................................15

Technical Electives

CPCA 108 Word Processing on Microcomputers.....1
CPCA 110 Spreadsheets on Microcomputers........1
CPCA 111 Spreadsheets on Microcomputers II......1
CPCA 112 PC Communications........................1
CPCA 114 Databases on Computers I..............1
CPCA 115 Databases on Microcomputers II........1
CPCA 118 Electronic Mail/Calendar Systems....1
CPCA 121 Introduction to Project Management....1
CPCA 123 Presentation Graphics..................1
CPCA 128 Personal Computer Applications.........1
   (student may not get credit for CPCA 128
   and CPCA 108, CPCA 110 and CPCA 114)
CPCA 141 Introduction to Internet................1
CPCA 148 Financial Applications - Business......1
CFTP 130 Desktop Publishing II: PageMaker......1
CPCA 180 OS/2.................................................1
CPCA 139 UNIX Operating Systems...............1

Local Area Network Technology Specialist
Vocational Certificate

This certificate is designed to provide a group of courses
that focus on the technical support needs of a user or con-
tactor involved in designing, installing and implement-
ing a local area network. Training in requirement plan-
ing, standards for commercial building cabling systems
and testing and certification of systems will be covered.

Prerequisites

Prerequisites may be satisfied by course work, examina-
tion or work experience.

CPCA 105 Introduction to Personal Computing: IBM .1
CPCA 135 M/S/DOS..............................................1

Required Courses

IT 200 Introduction to Information Technology...3
CPCA 137 M/S/DOS Intermediate..................1
CPCA 138 Windows for Micros.....................1
ELEC 124 Microcomputer Hardware.................3
IT 210 Local Area Networking Systems............4
   (using NetWare 3.12, 4.0, WinNT)
IT 211 Advanced Local Area Networking Systems 3
IT 217 Local Area Network Components............2
IT 248 Local Area Network Specifications
   and Contracting.................................2

IT 250 Network Design and Implementation .......3
   Technical Electives..............................6

TOTAL PROGRAM
CREDIT HOURS.................................28

Technical Electives

IT 205 Local Area Network Supervisor...........1
IT 207 Local Area Network Applications...........1
IT 219 Network Connectivity........................1
CPCA 108 Word Processing on Microcomputers.....1
CPCA 110 Spreadsheets on Microcomputers........1
CPCA 111 Spreadsheets on Microcomputers II......1
CPCA 112 PC Communications........................1
CPCA 114 Databases on Microcomputers I.........1
CPCA 115 Databases on Microcomputers II.........2
CPCA 118 Electronic Mail/Calendar Systems....1
CPCA 121 Introduction to Project Management....1
CPCA 123 Presentation Graphics..................1
CPCA 128 Personal Computer Applications.........1
   (student may not get credit for CPCA 128
   and CPCA 108, CPCA 110 and CPCA 114)
CPCA 141 Introduction to Internet................1
CPCA 148 Financial Applications - Business......1
CFTP 130 Desktop Publishing I: PageMaker......1
CPCA 180 OS/2.................................................1
CPCA 139 UNIX Operating System................1
CS 200 Concepts in Programming Algorithms....4
DP 162 dBase Programming...........................4
DRAF 115 Computer Graphics........................3
DRAF 130 Introduction to CAD Concepts..........3
ELEC 120 Introduction to Electronics..............3
ELEC 150 Introduction to Telecommunications....3
ENGR 131 Engineering Graphics I..................4
ENGR 171 Programming for Engineering and Science.3
ACCT 121 Acounting I.................................3
or
ACCT 111 Small Business Accountancy............3

Information/Word Processing
(See Office Systems Technology, page 107.)

Interior Merchandising

Career opportunities as interior design assistant, manufac-
turer’s representative, store display person or entrepreneur
are open to the Interior Merchandising graduate at JCCC.

Courses in interior products, creative retail selling, busi-
ness management, drafting and product presentation are
solidly meshed with a basic curriculum of business math,
marketing, English and history.

Seminars in business practices and procedures, budgeting
and estimating, as well as two required work-study
practicums, help develop technical, creative and merchandising skills needed to be competitive in the interior products industry.

An associate of applied science degree is awarded after successful completion of the two-year, 67-credit-hour curriculum.

**Associate of Applied Science Degree**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ITMD 133</td>
<td>Furniture and Ornamentation/Antiquity to Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>ITMD 121</td>
<td>Interior Design I</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 261</td>
<td>Graphic Communications I for Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>MATH 120</td>
<td>Business Math or higher</td>
<td>3</td>
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<tr>
<td>ITMD 125</td>
<td>Interior Textiles</td>
<td>3</td>
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<tr>
<td>ENGL 121</td>
<td>Composition I</td>
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**Second Semester**

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<tr>
<td>DRAF 264</td>
<td>CAD: Interior Design</td>
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<tr>
<td>ITMD 122</td>
<td>Interior Design II</td>
<td>3</td>
</tr>
<tr>
<td>ITMD 132</td>
<td>Interior Products</td>
<td>3</td>
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<tr>
<td>MKT 134</td>
<td>Creative Retail Selling</td>
<td>3</td>
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<tr>
<td>ITMD 231</td>
<td>Furniture and Ornamentation/Renaissance to 20th Century</td>
<td>3</td>
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<tr>
<td>BUS 150</td>
<td>Business Communications</td>
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**Third Semester**

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<tr>
<td>ITMD 223</td>
<td>Contract Design</td>
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<tr>
<td>ITMD 275</td>
<td>Seminar: Budgeting and Estimating</td>
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</tr>
<tr>
<td>ITMD 282</td>
<td>Interior Merchandising Practicum I</td>
<td>1</td>
</tr>
<tr>
<td>ART 180</td>
<td>Introduction to Art History</td>
<td>3</td>
</tr>
<tr>
<td>ECON 130</td>
<td>Basic Economic Issues</td>
<td>3</td>
</tr>
<tr>
<td>or ECON 230</td>
<td>Economics I</td>
<td>3</td>
</tr>
<tr>
<td>ITMD 140</td>
<td>Draperies, Treatment and Construction</td>
<td>1</td>
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<tr>
<td>ITMD 145</td>
<td>Upholstery Construction</td>
<td>1</td>
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<tr>
<td>ITMD 147</td>
<td>Lighting Design and Planning</td>
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**Fourth Semester**

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<tr>
<td>ITMD 234</td>
<td>Kitchen and Bath: Planning and Design</td>
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<tr>
<td>ITMD 273</td>
<td>Seminar: Business Practices and Procedures</td>
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<tr>
<td>ITMD 284</td>
<td>Interior Merchandising Practicum II</td>
<td>1</td>
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<tr>
<td>ITMD 148</td>
<td>Furniture and Ornamentation/Oriental</td>
<td>1</td>
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<tr>
<td>DRAF 266</td>
<td>Graphic Communications II for Interior Design</td>
<td>3</td>
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<tr>
<td>ITMD 239</td>
<td>Capstone: Portfolio and Presentation</td>
<td>2</td>
</tr>
<tr>
<td>FA SH 135</td>
<td>Image M management</td>
<td>1</td>
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<tr>
<td>or Health and/or Physical Education Elective</td>
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**TOTAL CREDIT HOURS** | | 67 |

**Suggested Sequence of Required Courses**

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<tbody>
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<td>ITMD 121</td>
<td>Interior Design I</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 261</td>
<td>Graphic Communications I for Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>ITMD 125</td>
<td>Interior Textiles</td>
<td>3</td>
</tr>
<tr>
<td>ITMD 133</td>
<td>Furniture and Ornamentation/Antiquity to Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>MATH 120</td>
<td>Business Math or higher</td>
<td>3</td>
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<tr>
<td>ENGL 121</td>
<td>Composition I</td>
<td>3</td>
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<tr>
<td>ITMD 122</td>
<td>Interior Design II</td>
<td>3</td>
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<tr>
<td>MKT 134</td>
<td>Creative Retail Selling</td>
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<tr>
<td>ITMD 132</td>
<td>Interior Products</td>
<td>3</td>
</tr>
<tr>
<td>BUS 150</td>
<td>Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>ITMD 223</td>
<td>Contract Design</td>
<td>3</td>
</tr>
<tr>
<td>DRAF 264</td>
<td>Graphic Communications for Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>ITMD 275</td>
<td>Seminar: Budgeting and Estimating</td>
<td>2</td>
</tr>
<tr>
<td>ART 180</td>
<td>Introduction to Art History</td>
<td>3</td>
</tr>
<tr>
<td>ITMD 282</td>
<td>Interior Merchandising Practicum I</td>
<td>1</td>
</tr>
<tr>
<td>ITMD 140</td>
<td>Draperies, Treatments and Construction</td>
<td>1</td>
</tr>
<tr>
<td>ITMD 145</td>
<td>Upholstery Construction</td>
<td>1</td>
</tr>
<tr>
<td>ITMD 147</td>
<td>Lighting Design and Planning</td>
<td>1</td>
</tr>
<tr>
<td>ITMD 148</td>
<td>Furniture and Ornamentation/Oriental</td>
<td>3</td>
</tr>
<tr>
<td>ECON 130</td>
<td>Basic Economic Issues</td>
<td>3</td>
</tr>
<tr>
<td>or ECON 230</td>
<td>Economics I</td>
<td>3</td>
</tr>
<tr>
<td>ITMD 234</td>
<td>Kitchen and Bath: Planning and Design</td>
<td>3</td>
</tr>
<tr>
<td>ITMD 273</td>
<td>Seminar: Business Practices and Procedures</td>
<td>2</td>
</tr>
<tr>
<td>ITMD 284</td>
<td>Interior Merchandising Practicum II</td>
<td>1</td>
</tr>
<tr>
<td>ITMD 239</td>
<td>Capstone: Portfolio and Presentation</td>
<td>2</td>
</tr>
<tr>
<td>FA SH 135</td>
<td>Image M management</td>
<td>1</td>
</tr>
<tr>
<td>or Health and/or Physical Education Elective</td>
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</table>

**Interpreter Training**

The employment outlook for sign language interpreters is promising. As the population grows, so will the number of deaf and hard-of-hearing people who need interpreters. A number factor in the predicted increase in employment opportunities is the effort many social service agencies, school systems, medical services and industries are making to provide interpreter services.

JCCC’s program concentrates on developing skills in American Sign Language, deaf culture and fingerspelling, leading to interpretation and transliteration. During the last semester of the program, you participate in a practicum class in which you interpret under supervision in a variety of situations at JCCC and in the community. Successful completion of this 64-credit-hour program leads to an associate of applied science degree.
This is a selective admission program with limited enrollment. The deadline for fall semester applications is Feb. 15. If you are interested, contact the Admissions office for an application packet, which includes prerequisites, deadlines, admission requirements and academic criteria.

**Associate of Applied Science Degree**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>INTR 125</td>
<td>American Sign Language I</td>
<td>5</td>
</tr>
<tr>
<td>INTR 130</td>
<td>Orientation to Interpreting</td>
<td>3</td>
</tr>
<tr>
<td>INTR 145</td>
<td>Deaf Culture</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 122</td>
<td>Composition II</td>
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TOTAL CREDIT HOURS: 15

**Second Semester**

<table>
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<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>INTR 132</td>
<td>American Sign Language II</td>
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</tr>
<tr>
<td>INTR 135</td>
<td>American Sign Language Theory</td>
<td>3</td>
</tr>
<tr>
<td>INTR 142</td>
<td>Fingerspelling I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 111</td>
<td>Small Business Accounting</td>
<td>3</td>
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</table>

TOTAL CREDIT HOURS: 17

**Third Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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</thead>
<tbody>
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<td>INTR 140</td>
<td>American Sign Language III</td>
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<tr>
<td>INTR 250</td>
<td>Interpreting I</td>
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<td>INTR 225</td>
<td>Physical and Psychological Aspects of Interpreting</td>
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<td>INTR 242</td>
<td>Fingerspelling II</td>
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<td>INTR 181</td>
<td>Interpreter Practicum I</td>
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TOTAL CREDIT HOURS: 16

**Fourth Semester**

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<tbody>
<tr>
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<td>INTR 281</td>
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<tr>
<td>HUM 122</td>
<td>Introduction to Humanities</td>
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</table>

TOTAL CREDIT HOURS: 16

**TOTAL PROGRAM CREDIT HOURS: 64**

**Marketing and Management**

Merchandising, marketing and management-related fields have recently experienced tremendous growth and expansion in Johnson County. Surveys indicate that few other areas offer greater opportunity to qualified people. In fact, employment of people in this field is expected to increase faster than the average for all occupations nationwide.

JCCC’s marketing and management program prepares you for jobs in this field. Graduates of JCCC’s program are ready for entry-level management or sales positions in retail, wholesale or manufacturing and in marketing services.

Through marketing and management courses and in the case studies capstone course, you learn the latest in business trends. You also learn the importance of good customer service and the skills needed to deliver that service. The curriculum reflects current industry standards, including an emphasis on personal computer use, interpersonal communications and human relations.

Because all marketing and management students work at least 15 hours a week each semester in a store or business, you apply what you learn in the classroom to your job. You also can take your work experiences back to the classroom for analysis and a greater understanding of the problems businesses face. You acquire basic merchandising information and learn how to work with people. By integrating course work and on-the-job experience, you are given the knowledge, skills and attitudes necessary to reach your career objectives.

**Associate of Applied Science Degree**

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BUS 121</td>
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<td>BUS 225</td>
<td>Human Relations</td>
<td>3</td>
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<tr>
<td>MKT 133</td>
<td>Salesmanship</td>
<td>3</td>
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<tr>
<td>MKT 134</td>
<td>Creative Retail Selling</td>
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TOTAL CREDIT HOURS: 16

**Second Semester**

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<td>Business Communications</td>
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<td>BUS 230</td>
<td>Marketing</td>
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<td>MKT 121</td>
<td>Retail Management</td>
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<td>ACCT 121</td>
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TOTAL CREDIT HOURS: 16

**Third Semester**

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<tr>
<td>PHIL 138</td>
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TOTAL CREDIT HOURS: 18
### Fourth Semester
- **MKT 234** Services Marketing .................................. 3
- **HIST 141** U. S. History Since 1877 .......................... 3
- **BUS 261** Business Law I.......................................... 3
- **LC 150** Job Search Skills...................................... 1
- **MKT 289** Marketing and Management Internship IV .1
- **MKT 290** Capstone: Marketing and Management Case Studies ...................................... 3

**TOTAL CREDIT HOURS** ........................................... 14

**TOTAL PROGRAM CREDIT HOURS** .............................. 65

### Sales and Customer Relations

#### Vocational Certificate Program

JCCC's Sales and Customer Relations program is designed for people employed in sales who wish to refine their skills, or people who are contemplating a career in sales. The program focuses on the steps involved in the selling process and the delivery of effective customer service. Students who complete the program may find careers in sales (retail, wholesale or manufacturing) or in customer service departments of stores, businesses and manufacturers.

Overall employment in the selling field is expected to increase significantly through the year 2005.

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td><strong>MKT 134</strong> Creative Retail Selling .........................</td>
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<tr>
<td>or</td>
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<tr>
<td><strong>MKT 133</strong> Salesmanship .....................................</td>
<td>3</td>
</tr>
<tr>
<td><strong>BUS 230</strong> Marketing .........................................</td>
<td>3</td>
</tr>
<tr>
<td><strong>MATH 120</strong> Business Math or higher ........................</td>
<td>3</td>
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<tr>
<td><strong>BUS 215</strong> Business Communications ........................</td>
<td>3</td>
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<tr>
<td><strong>MKT 121</strong> Retail Management ................................</td>
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<td><strong>MKT 284</strong> Marketing and Management Internship I .1</td>
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**TOTAL CREDIT HOURS** ........................................... 16

#### Second Semester

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td><strong>BUS 225</strong> Human Relations ...................................</td>
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<td><strong>MKT 202</strong> Consumer Behavior ..................................</td>
<td>3</td>
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<tr>
<td><strong>MKT 221</strong> Sales Management ...................................</td>
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<tr>
<td><strong>DP 124</strong> Introduction to Computing Concepts and Applications ...............</td>
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**TOTAL CREDIT HOURS** ........................................... 16

### Other Recommended Courses

- **BUS 120** Management Attitudes and Motivation .................. 3
- **BUS 121** Introduction to Business ................................ | 3 |
- **BUS 235** Introduction to International Business .............. | 3 |
- **FA SH 121** Fashion Fundamentals ................................ | 3 |
- **FA SH 125** Visual Merchandising ................................ | 3 |
- **FA SH 150** Textiles ............................................ | 3 |
- **FA SH 242** Consumer Product Evaluation ........................ | 3 |
- **IT MD 121** Interior Design I .................................... | 3 |
- **IT MD 125** Interior Textiles .................................... | 3 |
- **IT MD 132** Interior Products .................................... | 3 |

### Teleservice Representative

#### Vocational Certificate Program

The Teleservice Representative certificate program at JCCC was developed in conjunction with the Kansas City Area Call Center Managers Users Group with the objective of providing students with business and practical skills that will help make them successful in the teleservice industry. Twenty-four of the 33 credit hours required for the Teleservice Representative certificate apply toward JCCC's 65-credit-hour Marketing and Management associate of applied science degree.

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td><strong>BUS 121</strong> Introduction to Business .........................</td>
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<tr>
<td><strong>BUS 150</strong> Business Communications ........................</td>
<td>3</td>
</tr>
<tr>
<td><strong>BUS 230</strong> Marketing .........................................</td>
<td>3</td>
</tr>
<tr>
<td><strong>MKT 140</strong> Teleservice Communication Skills ................</td>
<td>3</td>
</tr>
<tr>
<td><strong>MATH 120</strong> Business Math or higher ........................</td>
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</tr>
<tr>
<td><strong>MKT 284</strong> Marketing and Management Internship I .1</td>
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</table>

**TOTAL CREDIT HOURS** ........................................... 16

#### Second Semester

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td><strong>BUS 123</strong> Personal Finance ....................................</td>
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</tr>
<tr>
<td><strong>MKT 202</strong> Consumer Behavior ...................................</td>
<td>3</td>
</tr>
<tr>
<td><strong>MKT 234</strong> Services Marketing ..................................</td>
<td>3</td>
</tr>
<tr>
<td><strong>OST 130</strong> Office Systems Concepts ............................</td>
<td>3</td>
</tr>
<tr>
<td><strong>DP 124</strong> Introduction to Computing Concepts and Applications* ........................</td>
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</tbody>
</table>
and

CPCA or CDTP:
Choose one 1-credit-hour course from CPCA or CDTP selections higher than CPCA 105 or CPCA 106

or

CPCA and/or CDTP:
Choose four 1-credit-hour courses from CPCA or CDTP selections higher than CPCA 105 or CPCA 106

MKT 286 Marketing and Management Internship II

TOTAL CREDIT HOURS...................17

*Recommended for students who intend to transfer to a baccalaureate degree program

TeleTrac Vocational Certificate Program
This certificate program meets the core competencies outlined by the Call Center User's Group, a group of area business leaders in the teleservice industry. This certificate program includes one internship during which students will learn through hands-on industry experience. All 14 credit hours in this certificate can be applied toward the 33-credit-hour teleservice representative certificate program.

BUS 121 Introduction to Business
MKT 140 Teleservice Communication Skills
MKT 202 Consumer Behavior
MATH 120 Business Math
OST 101 Computerized Keyboarding
MKT 284 Marketing and Mgmt. Internship I

TOTAL PROGRAM CREDIT HOURS..................14

Metal Fabrication
The Metal Fabrication Technology program provides students the opportunity to learn practical knowledge and skill competencies associated with welding, metal fabrication and related processes. Opportunities for those who wish to become welders, cutters and machine operators should be good through the year 2005, as the number of qualified (certified) welders graduating from technical schools and community colleges is expected to be in balance with the number of job openings.

JCCC provides well-equipped laboratories that enable students to receive instruction in oxyacetylene welding and cutting, shielded metal arc welding (SMAW), gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), basic machining, metallurgy and allied processes. The program is accredited as an American Welding Society Participating Organization in the Training and Testing of Entry Level Welders. Eligible students may elect to test under AWS QC10 certification guidelines and, if successful, be listed in the AWS National Registry of Entry Level Welders.

Associate of Applied Science Degree

First Semester

<table>
<thead>
<tr>
<th>CR</th>
<th>Course Name</th>
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<tr>
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<td>Introduction to Welding</td>
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<tr>
<td>123</td>
<td>Basic Welding</td>
<td>3</td>
</tr>
<tr>
<td>123</td>
<td>Technical Writing I</td>
<td>3</td>
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<tr>
<td>125</td>
<td>Technical Physics I</td>
<td>4</td>
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<tr>
<td>123</td>
<td>Interpreting Machine Drawings</td>
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<td>152</td>
<td>Manufacturing Materials and Processes</td>
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Second Semester

<table>
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<tbody>
<tr>
<td>120</td>
<td>Gas Metal Arc Welding I</td>
<td>4</td>
</tr>
<tr>
<td>120</td>
<td>Basic Machine Tool Processes</td>
<td>4</td>
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<tr>
<td>140</td>
<td>Principles of Supervision</td>
<td>3</td>
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<td>140</td>
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Third Semester

<table>
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<th>CR</th>
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<tbody>
<tr>
<td>120</td>
<td>Gas Metal Arc Welding I</td>
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<tr>
<td>120</td>
<td>Basic Machine Tool Processes</td>
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Fourth Semester

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<tr>
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<td>Gas Tungsten Arc Welding</td>
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<td>Management Attitudes and Motivation</td>
<td>3</td>
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<tr>
<td>145</td>
<td>Small Business Management</td>
<td>3</td>
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<tr>
<td>138</td>
<td>FastTrac Business Plan</td>
<td>4</td>
</tr>
<tr>
<td>140</td>
<td>FastTrac Feasibility Plan</td>
<td>2</td>
</tr>
<tr>
<td>105</td>
<td>Construction Methods</td>
<td>2</td>
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<tr>
<td>115</td>
<td>Introduction to Computer Graphics Systems</td>
<td>3</td>
</tr>
<tr>
<td>124</td>
<td>Introduction to Computing Concepts and Applications</td>
<td>3</td>
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<tr>
<td>131</td>
<td>Introduction to Sensors and Actuators</td>
<td>3</td>
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TOTAL PROGRAM CREDIT HOURS..................64

Related Electives

<table>
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<tr>
<td>121</td>
<td>Small Engine Service</td>
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<tr>
<td>120</td>
<td>Management Attitudes and Motivation</td>
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<td>145</td>
<td>Small Business Management</td>
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<td>FastTrac Business Plan</td>
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<td>140</td>
<td>FastTrac Feasibility Plan</td>
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<td>Construction Methods</td>
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<td>115</td>
<td>Introduction to Computer Graphics Systems</td>
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<tr>
<td>131</td>
<td>Introduction to Sensors and Actuators</td>
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</tbody>
</table>
Vocational Certificate Program

The Metal Fabrication vocational certificate program teaches welding skills in the areas of shielded metal arc welding, gas metal arc welding, flux cored arc welding, gas tungsten arc welding, plasma arc cutting and oxy-acetylene cutting and welding. In addition, the student will receive training in safety and basic blueprint reading. This should give the student the skills needed to successfully enter the field of welding.

Prior to admission to the Metal Fabrication vocational certificate program, the student must have had MATH 111 Fundamentals of Math or an appropriate score on the math assessment test.

Required Courses

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<td>M F A B</td>
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TOTAL PROGRAM CREDIT HOURS: 21-23

Nursing – Practical Nursing

Vocational Certificate Program

Prerequisites

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<tr>
<td>M A T H</td>
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<tr>
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TOTAL PROGRAM CREDIT HOURS: 1,100

Nursing – Registered Nurse

Associate of Science Degree

Prior to enrolling in NURS 121

<table>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
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Prerequisite

Mathematics Elective (MATH 116 or higher) 3

TOTAL CREDIT HOURS: 8
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<td>BIOL 140</td>
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<td>PSYC 130</td>
<td>Fundamentals of Psychology</td>
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<td>Nursing Fundamentals</td>
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<td><strong>Third Semester</strong></td>
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<tr>
<td>NURS 221</td>
<td>Nursing Across the Life Span - Part II</td>
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<tr>
<td>SOC C 125</td>
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<td>Communications Elective</td>
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<tr>
<td>NURS 222</td>
<td>Managing Client Care</td>
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<tr>
<td>Humanities Elective</td>
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<td><strong>TOTAL PROGRAM CREDIT HOURS</strong></td>
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</tr>
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</table>

**Occupational Therapy Assistant**

The occupational therapy assistant assists the registered occupational therapist, helping people with emotional and developmental limitations achieve more functional lives. The two-year Occupational Therapy Assistant program is offered in cooperation with Penn Valley Community College. The support courses are held at JCCC and the clinical courses at Penn Valley and affiliated clinical agencies. You must be formally accepted by both JCCC and Penn Valley. Course registration is at JCCC. Upon graduation, you are eligible to sit for the American Occupational Therapy Certification Board's national certification examination. Consult a JCCC counselor for additional information.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact Penn Valley Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

The Occupational Therapy Assistant program is accredited by the Accreditation Council for Occupational Therapy Education, located at 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1220. AOTA's phone number is (301) 652-AOTA.

**Associate of Science Degree**

PN to RN Transition

**Prerequisites**

- BIOL 140 Human Anatomy
- CHEM 122 Principles of Chemistry
- BIOL 225 Human Physiology
- ENGL 121 Composition I
- PSYC 130 Introduction to Psychology
- PSYC 218 Human Development
- Mathematics Elective (MATH 116 or higher)

**CREDIT HOURS**

- 20

**Summer**

- NURS 123 PN-RN Transition course
- **CREDIT HOURS**

- 6

**Third Semester**

- NURS 221 Nursing Across the Life Span - Part II
- SOC C 122 Sociology
- or
- SOC C 125 Social Problems
- Communications Elective

**CREDIT HOURS**

- 15

**Fall I Semester**

- KOT 102 Basic Emergency Patient Care
- BIOL 140 Human Anatomy
- **CREDIT HOURS**

- 7
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<td>KOT 106</td>
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<td>PSYC 130</td>
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<td>SOC 122</td>
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<td>KOT 204</td>
<td>Therapeutic Media and Fabrication Techniques</td>
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<td>CPCA 124</td>
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<td>BUS 121</td>
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<td>1</td>
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<tr>
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<td>PC Communications*</td>
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</table>

** All graduates from Penn Valley must meet the American Institutions requirement. See a JCCC counselor about courses.

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### Office Systems Technology

Technological innovations are revolutionizing the office. Specialists contribute to the efficient management of offices worldwide and play a pivotal role in a knowledge-based economy. Understanding and using new technology are requirements for job placement and advancement.

Essential skills and knowledge include computer literacy, word processing, desktop publishing, databases, spreadsheets, electronic mail, networking, teleconferencing, information systems, organizing and training.

Our program prepares students for both entry-level and advanced positions, future learning and productive employment in this rapidly changing environment. The number of jobs easily exceeds the number of qualified applicants. The best jobs will continue to go to the well-trained specialist with a solid business and general education background.

The Office Systems Technology program offers options in A administrative Office Management, Legal Office Specialist, Medical Office Specialist, A dministrative Support Services Certificate, Office Careers Certificate, Office Automation Certificate and Medical Office Assistant Certificate.

**Prerequisite**

Prior to admission to the Office Systems Technology Vocational Certificate programs or associate of applied science degree, you must have completed OST 105 Keyboarding (Formatting 1).

**Associate of Applied Science Degree**

**Administrative Office Management**

This program prepares students for positions as supervisors and managers in automated office environments. Emphasis is on the development of communications, decision-making, organizational and management skills; and knowledge of software options, hardware components, applications and concepts. This program is designed to prepare you to function in the electronic office by using a mix of vocational, technical and academic training.

**First Semester**

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<tr>
<td>OST 125</td>
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<td>OST 130</td>
<td>Office Systems Concepts</td>
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<tr>
<td>BUS 225</td>
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<td>CPCA 114</td>
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**Second Semester**

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**Third Semester**

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<td>CPCA 118</td>
<td>Electronic Mail/Calendar Systems*</td>
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<tr>
<td>CPCA 112</td>
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</table>
BUS 140 Principles of Supervision .......................3
or
BUS 141 Principles of Management.......................3
OST 255 Word Processing Applications II ................2
BUS 150 Business Communications*.....................3
    Humanities Elective ....................................3
    OST Elective ...........................................1
    TOTAL CREDIT HOURS ..................................17

Fourth Semester
ECON 130 Basic Economic Issues ................................3
or
ECON 230 Economics I .............................................3
OST 275 Office Internship I* ..................................3
    Human Resource Management..........................3
    OST 265 Computerized Office Applications* .......3
    OST 270 Office Automation Implementation* ......3
    OST 260 Desktop Publishing for the Office* .......3
    TOTAL CREDIT HOURS ..................................16
    TOTAL PROGRAM CREDIT HOURS ......................65

Associate of Applied Science Degree
Medical Office Specialist
The Medical Office Specialist prepares students to pursue
an administrative career in the medical profession. The
program combines training in the latest technical and
computer skills with specialized coursework unique to the
medical profession. Beginning students and employed
medical personnel will find this program invaluable for
career advancement.

First Semester
    CR
    LC 130 Medical Terminology...............................3
    ENGL 121 Composition I..................................3
    OST 110 Skillbuilding I* ..................................1
    OST 125 Document Formatting*............................1
    OST 130 Office Systems Concepts........................3
    CPCA 138 Windows for Micros* ............................1
    CPCA 118 Electronic Mail/Calendar Systems* .......1
    CPCA 114 Databases on Microcomputers I* ..........1
        Health and/or Physical Education Elective .......1
        OST Elective ...........................................1
        TOTAL CREDIT HOURS ..............................16

Second Semester
    OST 170 Medical Coding and Billing* ....................3
    OST 150 Records Management............................3
    OST 155 Word Processing Applications I* ............2
    MATH 120 Business Math ..................................3
    BUS 225 Human Relations................................3
    OST 115 Electronic Calculators........................1
        OST Elective ...........................................1
        TOTAL CREDIT HOURS ..............................16

Third Semester
    CR
    ACCT 111 Small Business Accounting* ....................3
    or
    ACCT 121 Accounting I ....................................3
    BUS 122 Introduction to Law .............................3
    BUS 150 Business Communications*....................3
    OST 255 Word Processing Applications II* ...........2
    CPCA 110 Spreadsheets on Microcomputers I* .......1
    CPCA 112 PC Communications............................1
        Humanities Elective ....................................3
        TOTAL CREDIT HOURS ..............................16

Fourth Semester
ECON 130 Basic Economic Issues ................................3
or
ECON 230 Economics I .............................................3
OST 165 Medical Transcription* ............................3
OST 265 Computerized Office Applications* ............3
OST 275 Office Internship I* ...............................1
BUS 140 Principles of Supervision .......................3
or
BUS 141 Principles of Management.......................3
OST Elective .............................................3
    TOTAL CREDIT HOURS ..............................16
    TOTAL PROGRAM CREDIT HOURS ......................64

* Courses with prerequisites/corequisites

Associate of Applied Science Degree
Legal Office Specialist
The Legal Office Specialist program prepares students for
administrative duties in the law office and other legal
settings. The program combines training in the latest
technical and computer skills with specialized coursework
unique to the legal profession, including exposure to legal
practices, preparation and practical application of docu-
ments and terminology used in the legal office.

First Semester
    CR
    BUS 122 Introduction to Law .............................3
    OST 110 Skillbuilding I* ..................................1
    OST 130 Office Systems Concepts........................3
    OST 125 Document Formatting*............................1
    ENGL 121 Composition I..................................3
    CPCA 138 Windows for Micros............................1
    CPCA 114 Databases on Microcomputers I* ..........1
        Health and/or Physical Education Elective .......1
        OST Elective ...........................................1
        TOTAL CREDIT HOURS ..............................16

Second Semester
    OST 150 Records Management............................3
    MATH 120 Business Math ..................................3
    ACCT 111 Small Business Accounting....................3
    or
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<td>3</td>
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<td></td>
<td>OST Elective</td>
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**Third Semester**

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<td>BUS 225</td>
<td>Human Relations</td>
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<tr>
<td>OST 255</td>
<td>Word Processing Applications II*</td>
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<td>CPCA 112</td>
<td>PC Communications*</td>
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<td>CPCA 110</td>
<td>Spreadsheets on Microcomputers I*</td>
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**Fourth Semester**

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<th>Course Code</th>
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<tr>
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<tr>
<td>or</td>
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<td>3</td>
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<td></td>
<td>Principles of Management</td>
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<td>Humanities Elective</td>
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<td>General Electives</td>
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<td>TOTAL CREDIT HOURS</td>
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**Office Careers Vocational Certificate**

At the completion of this 13-credit-hour certificate, students demonstrate proficiency in office skills, including computer and word processing knowledge. This certificate program prepares students to enter an office career in a minimal time period.

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<tr>
<td>OST 125</td>
<td>Document Formatting*</td>
<td>1</td>
</tr>
<tr>
<td>OST 130</td>
<td>Office Systems Concepts</td>
<td>3</td>
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<tr>
<td>OST 155</td>
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<td>OST 115</td>
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<tr>
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<td>TOTAL CREDIT HOURS</td>
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**Administrative Support Specialist Vocational Certificate Program**

The Administrative Support Specialist Vocational Certificate program prepares students for executive and/or administrative assistant duties in the office. The program provides training in the latest technical, computer and software skills.

<table>
<thead>
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<td>CPCA 114</td>
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<td>OST 115</td>
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<td>1</td>
</tr>
<tr>
<td>OST 120</td>
<td>Machine Transcription*</td>
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<td>Electronic Mail/Calendar Systems*</td>
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<tr>
<td>CPCA 112</td>
<td>PC Communications*</td>
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<td>OST 255</td>
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**Office Automation Skills Vocational Certificate**

The 12-hour certificate is designed to quickly teach the basic and intermediate concepts of word processing and desktop publishing. In addition, students are given an overview of the field of office automation and how it will affect their future.

**Prerequisite**

Prior to admission to the Office Automation Skills Vocational Certificate program, you must be able to type at least 35 words a minute.

<table>
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<tbody>
<tr>
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<tr>
<td>OST 260</td>
<td>Desktop Publishing for the Office*</td>
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**Office Automation Technology Vocational Certificate**

The Office Automation Technology Certificate program was developed in response to the demand in the workplace for people skilled in office automation. This program offers college graduates or others with appropriate educational or work experience the opportunity to acquire state-of-the-art knowledge and skills in this rapidly changing field.

**Prerequisite**

Prior to admission to the Office Automation Technology Vocational Certificate program, students must be able to type at least 35 words a minute.
First Semester

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<td>CPCA 105 Introduction to Personal Computing: IBM</td>
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<td>DRAF 115 Introduction to Computer Graphics Systems</td>
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Second Semester

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<td>CPCA 110 Spreadsheets on Microcomputers</td>
<td>1</td>
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<tr>
<td></td>
<td>CPCA 114 Databases on Microcomputers</td>
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<td>CPCA 138 Windows for Micros</td>
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<td>CPCA 112 PC Communications</td>
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<td>OST 260 Desktop Publishing for the Office</td>
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<td>OST 270 Office Automation Implementation</td>
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</table>

TOTAL PROGRAM CREDIT HOURS: 28

Medical Office Assistant Vocational Certificate

This certificate program is designed for students desiring to work in doctors' offices and hospital offices. This program will provide training for students going into entry-level positions or those upgrading existing skills.

Required Courses

<table>
<thead>
<tr>
<th>Cr</th>
<th>Course Title</th>
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<tbody>
<tr>
<td></td>
<td>LC 130 Medical Terminology</td>
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<tr>
<td></td>
<td>OST 102 Business English</td>
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<tr>
<td></td>
<td>OST 110 Skillbuilding I</td>
<td>1</td>
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<tr>
<td></td>
<td>OST 125 Document Formatting</td>
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<td>OST 155 Word Processing Application</td>
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<td>OST 165 Medical Transcription</td>
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<td>OST 170 Medical Billing and Coding</td>
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OST Electives

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<td>OST 102 Business English</td>
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<td>OST 118 Skillbuilding II</td>
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<td>OST 175 Conflict in the Workplace</td>
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<td></td>
<td>OST 180 Business Spreadsheet Applications</td>
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<td>OST 185 Business Database Applications</td>
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<td></td>
<td>OST 205 Professional Image Development</td>
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</tr>
<tr>
<td></td>
<td>OST 210 Working in Teams</td>
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Paralegal

The expanding role of the legal assistant in the delivery of legal services has created increased opportunities for paralegals. The private law firm continues to be the largest employer of legal assistants, but opportunities also are available in other organizations and institutions such as corporate legal departments, insurance companies, real estate and title firms, banks and government agencies.

If you are interested in entering this career field, you should be aware that while the number of jobs for trained paralegals is steadily rising, competition for these positions also is rapidly increasing. Moreover, the paralegal curriculum is a challenging one. The law is a complex subject, and comprehension of legal theories and concepts demands a high degree of analytical reasoning ability. You must possess excellent communication skills, analytical ability and a high level of motivation in order to successfully complete the program.

The Paralegal program at JCCC is approved by the American Bar Association. Selective admission to the program is based on various academic and testing criteria. This is a selective admission program with limited enrollment. If you are interested, contact the Admissions Office for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

Paralegal Postsecondary Certificate

You must have completed a two-year degree or a four-year degree and have satisfied JCCC general education requirements prior to admission.

The following courses must be completed with a minimum G.P.A. of 2.0 prior to application for admission to the Paralegal program.

<table>
<thead>
<tr>
<th>Cr</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td>PL 121 Introduction to Law</td>
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First Semester

<table>
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<th>Course Title</th>
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<tr>
<td></td>
<td>CPCA 128 Integrated Software</td>
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</tr>
<tr>
<td></td>
<td>DP 124 Introduction to Computing Concepts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or DP 124 Introduction to Computing Concepts and A</td>
<td>3</td>
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<tr>
<td></td>
<td>applications</td>
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<td></td>
<td>and CPCA 110 Spreadsheets on Microcomputers</td>
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<tr>
<td></td>
<td>and CPCA 114 Databases on Microcomputers</td>
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Second Semester

Following admission to the Paralegal program

<table>
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<th>Cr</th>
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<tr>
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<td>Paralegal Electives</td>
<td>132 Civil Litigation</td>
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<table>
<thead>
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<th>Third Semester</th>
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<tbody>
<tr>
<td>PL 205 Legal Writing</td>
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<tr>
<td>PL 271 Legal Ethics, Interviewing and Investigation</td>
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<tr>
<td>Paralegal Electives</td>
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| **TOTAL PROGRAM CREDIT HOURS** | 33 |

<table>
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<tr>
<th>Paralegal Electives</th>
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<tbody>
<tr>
<td>PL 148 Criminal Litigation</td>
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<tr>
<td>PL 140 Alternative Dispute Resolution</td>
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<tr>
<td>PL 142 Torts</td>
</tr>
<tr>
<td>PL 152 Real Estate Law</td>
</tr>
<tr>
<td>PL 155 Special Topics in Real Estate</td>
</tr>
<tr>
<td>PL 162 Family Law</td>
</tr>
<tr>
<td>PL 165 Special Topics in Family Law</td>
</tr>
<tr>
<td>PL 171 Law Office Management</td>
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<tr>
<td>PL 212 Business Organizations</td>
</tr>
<tr>
<td>PL 220 Computer-assisted Legal Research</td>
</tr>
<tr>
<td>PL 223 Computer Applications in the Law Office</td>
</tr>
<tr>
<td>PL 225 Advanced Computer-assisted Legal Research</td>
</tr>
<tr>
<td>PL 241 Will, Trusts and Probate Administration</td>
</tr>
<tr>
<td>PL 245 Elder Law</td>
</tr>
<tr>
<td>PL 264 Workers' Compensation</td>
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<tr>
<td>PL 266 Employment Law</td>
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<tr>
<td>PL 268 Bankruptcy</td>
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<tr>
<td>PL 275 Paralegal Internship I</td>
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<td>PL 276 Paralegal Internship II</td>
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<table>
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<tbody>
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<td>ENGL 122 Composition II</td>
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<td>PL 131 Legal Research</td>
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<td>PL 132 Civil Litigation</td>
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<tr>
<td>CPCA 128 Integrated Software</td>
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<tr>
<td>DP 124 Introduction to Computing Concepts and Applications</td>
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<td>or the following three:</td>
</tr>
<tr>
<td>CPCA 108 Word Processing on Microcomputers I</td>
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<tr>
<td>and</td>
</tr>
<tr>
<td>CPCA 110 Spreadsheets on Microcomputers I</td>
</tr>
<tr>
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<tr>
<td>CPCA 114 Databases on Microcomputers I</td>
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<td>Social Science and/or Economics Elective</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
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<table>
<thead>
<tr>
<th>Third Semester</th>
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</thead>
<tbody>
<tr>
<td>PL 205 Legal Writing</td>
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<tr>
<td>Paralegal Electives</td>
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<tr>
<td>Health and/or Physical Education Elective</td>
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<tr>
<td>Humanities Elective</td>
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<tr>
<td>Science and Mathematics Elective</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
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<table>
<thead>
<tr>
<th>Fourth Semester</th>
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</thead>
<tbody>
<tr>
<td>PL 271 Legal Ethics, Interviewing and Investigation</td>
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<tr>
<td>Paralegal Electives</td>
</tr>
<tr>
<td>Science and Mathematics Elective</td>
</tr>
<tr>
<td>Social Science and/or Economics Elective</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
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| **TOTAL PROGRAM CREDIT HOURS** | 64 |

<table>
<thead>
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<th>Paralegal Electives</th>
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<tbody>
<tr>
<td>PL 148 Criminal Litigation</td>
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<tr>
<td>PL 140 Alternative Dispute Resolution</td>
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<tr>
<td>PL 142 Torts</td>
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<tr>
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<td>PL 171 Law Office Management</td>
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<td>PL 241 Will, Trusts and Probate Administration</td>
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<tr>
<td>PL 245 Elder Law</td>
</tr>
<tr>
<td>PL 264 Workers' Compensation</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
</tr>
</tbody>
</table>
Legal Nurse Consultant Vocational Certificate

A legal nurse consultant (LNC) is a registered nurse who possesses both medical and legal knowledge. The LNC assists members of the legal profession with medical malpractice, personal injury and workers’ compensation cases. The LNC functions in two roles: a consulting expert and a testifying expert.

Prior to admission, an applicant must possess a registered nurse degree; possess a current state license to practice nursing; and have completed 2,500 hours of clinical work as a registered nurse.

LNC 220 Legal Nurse Consultant ..........3
LNC 230 Foundations of Law ..................3
LNC 240 Legal/Medical Research .............3
LNC 250 Legal/Medical Writing ..............3
LNC 260 Personal Injury Law .................3
LNC 270 Administrative Law .................3

TOTAL PROGRAM
CREDIT HOURS ...................18

Physical Therapist Assistant

The physical therapist assistant, under the supervision of a licensed physical therapist, performs direct patient care. The therapist uses physical agents such as heat, light, sound, water, cold, massage, exercise and rehabilitation techniques as prescribed by a physician. JCCC offers a cooperative program with Penn Valley Community College. The Physical Therapy Assistant program at Penn Valley is accredited by the Commission on Accreditation in Physical Therapy Education. The support courses are held at JCCC and the clinical courses at Penn Valley and affiliated clinical agencies. You must be accepted into the program and must complete registration at both JCCC and Penn Valley. Contact Penn Valley Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. It is your responsibility to check with a JCCC counselor before enrollment.

Associate of Applied Science Degree

Degree granted by Penn Valley Community College

Prerequisites

CHEM 122 Principles of Chemistry ..............5
BIOL 140 Human Anatomy ....................4
LC 130 Medical Terminology ..................3

KPT 151 Introduction to Physical Therapy ......2

Fall Semester

KPT 152 Fundamentals of Modalities I ........3
PSYC 130 Introduction to Psychology ..........3
ENGL 121 Composition I .......................3
BIOL 225 Human Physiology .................4
American Institutions * .......................3
TOTAL CREDIT HOURS ..................16

Spring Semester

KPT 153 Kinesiology .........................4
KPT 152 Basic Emergency Patient Care ....1
KPT 161 Fundamentals of Modalities II ....4
SPD 121 Public Speaking ........................3
KPT 159 Orthopedic Pathology ...............2
KPT 154 Applied Neurology ..................2
TOTAL CREDIT HOURS ..................16

Summer

KPT 160 Medical Diseases .....................2
KPT 162 Clinical Experience I .................2
TOTAL CREDIT HOURS ..................14

Fall Semester

KPT 164 Pediatrics and Gerontology ..........2
KPT 155 Rehabilitation ........................4
KPT 158 Therapeutic Exercise ................4
KPT 170 Clinical Experience II ...............2
KPT 171 Clinical Seminar .....................2
TOTAL CREDIT HOURS ..................14

Spring Semester

KPT 172 Clinical Experience III ..............8
TOTAL CREDIT HOURS ..................8

TOTAL PROGRAM
CREDIT HOURS ..................71

* All graduates from Penn Valley must meet the American Institutions requirement. The course must be taken at Penn Valley. See a JCCC counselor about courses.

Radiologic Technology

The Radiologic Technology curriculum (X-ray technology) is a cooperative program between JCCC and Penn Valley Community College and consists of a continuous 24-month period of study. You must be formally accepted into the program by Penn Valley and must complete registration at both Penn Valley and JCCC. A review of study are radiographic exposure, positioning and anatomy, and the use of imaging equipment.

Related courses are taken at JCCC with lab and clinical courses held at Penn Valley or at a cooperating health facility. The Radiologic Technology program at PVCC is accredited by the Joint Review Committee on Education in Radiologic Technology.
Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact Penn Valley Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria. It is your responsibility to check with a JCCC counselor before enrollment.

Admission requirement: College general biology/human anatomy with laboratory (4-5 credit hours) or one year of high school biology with a minimum grade of "C" in the last five years and MATH 115 or higher level college math course or two semesters of high school algebra with a minimum grade of "C" within the last five years.

Associate of Applied Science Degree
Degree granted by Penn Valley Community College

Summer Semester
KRAD 160 Introduction to Radiologic Technology (beginning the second Monday in July) 4
TOTAL CREDIT HOURS  4

Fall Semester
BIOL 144 Human Anatomy and Physiology 5
KRAD 165 Patient Care 3
KRAD 170 Radiation Biology and Protection 3
KRAD 172 Radiographic Positioning I 3
KRAD 173 Clinical Training I 3
TOTAL CREDIT HOURS  17

Spring Semester
LC 130 Medical Terminology 3
ENGL 121 Composition I 3
KRAD 171 Radiographic Exposures I 3
KRAD 175 Clinical Training II 4
KRAD 176 Radiographic Positioning II 3
TOTAL CREDIT HOURS  18

Summer
KRAD 178 Clinical Training III 4
TOTAL CREDIT HOURS  4

Fall Semester
PSYC 130 Introduction to Psychology 3
KRAD 174 Radiographic Exposures II 3
KRAD 279 Radiographic Positioning III 2
KRAD 280 Clinical Training IV 4
KRAD 281 Radiation Physics 3
KRAD 285 Special Procedures 2
TOTAL CREDIT HOURS  17

Spring Semester
American Institutions 3
KRAD 278 Imaging Modalities and Pathology 3
KRAD 282 Clinical Training V 4
SPD 121 Public Speaking 3

KRAD 283 Final Seminar 2
TOTAL CREDIT HOURS  15
TOTAL PROGRAM CREDIT HOURS  75

Electives
KRAD 201 Mammography 3
KRAD 288 Specialty Training 9

* All graduates from Penn Valley must meet the American Institutions requirement. See a JCCC counselor about courses.

Railroad Electronics
Vocational Certificate
This certificate is a comprehensive program of study that covers the fundamental electronic principles used by railroad signal control systems technicians. Upon successful completion of this program, the student should be able to apply basic digital and analog theory required in the maintenance of right-of-way crossing and train control systems.

Enrollment in the program is subject to the approval of the Burlington Northern training director and JCCC division administrator.

ELEC 180 Introduction to Railroad Electronics 1
ELEC 181 Circuit Analysis DC/AC 6
ELEC 182 Semiconductor Devices and Circuits 6
ELEC 183 Digital Techniques 6
ELEC 284 Electronic Communications 6
ELEC 285 Microprocessor Techniques 6
TOTAL PROGRAM CREDIT HOURS 31

Railroad Industrial Technology
JCCC’s Railroad Industrial Technology certificate program prepares workers to use the latest equipment and technology to keep the nation’s rail system in top condition. Railroad companies are facing increased pressure to improve efficiency and on-time performance; employers must recruit and rely upon employees who possess the knowledge and skills necessary to maintain the system with a minimum of service interruption.

Enrollment is subject to the approval of the Burlington Northern Santa Fe training director and JCCC division administrator.

Maintenance of Way Welding
Postsecondary Certificate Program
This certificate is a comprehensive course of study addressing those skills associated with maintenance and repair of railway fixed facilities. Upon successful completion of this program, the student should be able to perform basic and
advanced welding operations, complete specialized welding procedures involving maintenance and repair of railway track, perform structural welding applications involving code-quality work according to AWS D1.5, and perform tasks associated with most aspects of welding in maintenance of way applications.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>RRIT 115</td>
<td>Introduction to Algebra</td>
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<td>ENGL 115</td>
<td>Technical Electives</td>
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<td>MATH 115</td>
<td>Mathematical Concepts</td>
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<td>MATH 121</td>
<td>Composition I</td>
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<tr>
<td>RRIT 122</td>
<td>Elements of Welding</td>
<td>3</td>
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<tr>
<td>RRIT 123</td>
<td>Basic Welding</td>
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<td>RRIT 127</td>
<td>Elements of Welding</td>
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<td>RRIT 137</td>
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<td>RRIT 138</td>
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<tr>
<td>RRIT 139</td>
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<td>RRIT 140</td>
<td>Structural Quality GMA W</td>
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<td>RRIT 141</td>
<td>Structural Quality SMA W</td>
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<td>RRIT 143</td>
<td>Thermite Welding for Supervisors</td>
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<tr>
<td>RRIT 144</td>
<td>Component Welding for Supervisors</td>
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<tr>
<td>MFAB 130</td>
<td>Gas Metal Arc Welding</td>
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<tr>
<td>RRIT 150</td>
<td>Switch Point Repair</td>
<td>2</td>
</tr>
<tr>
<td>RRIT 155</td>
<td>Railroad Welding Review</td>
<td>2</td>
</tr>
<tr>
<td>RRIT 165</td>
<td>Railroad Safety, Quality and Environment</td>
<td>3</td>
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<tr>
<td>MFAB 160</td>
<td>Gas Tungsten Arc Welding</td>
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<tr>
<td>MFAB 240</td>
<td>Metalurgy</td>
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<tr>
<td>DRAF 120</td>
<td>Introduction to Drafting</td>
<td>2</td>
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<tr>
<td>HVAC 145</td>
<td>Servicing HVAC Equipment</td>
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Technical Electives

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<td>Gas Metal Arc Welding</td>
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<tr>
<td>MFAB 160</td>
<td>Gas Tungsten Arc Welding</td>
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<tr>
<td>MFAB 240</td>
<td>Metalurgy</td>
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</tr>
<tr>
<td>HVAC 145</td>
<td>Servicing HVAC Equipment</td>
<td>2</td>
</tr>
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</table>

Track Welding Vocational Certificate Program

This certificate is designed to provide a concentrated program for industry-specific training in track maintenance and repairs. Upon successful completion of the program, you should have the ability to safely operate track welding equipment, perform basic and advanced welding operations, and complete specialized procedures as needed to perform the job of railway track welder.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>RRIT 122</td>
<td>Elements of Welding</td>
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<tr>
<td>RRIT 123</td>
<td>Basic Welding</td>
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<td>RRIT 132</td>
<td>Thermite Welding</td>
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<td>RRIT 135</td>
<td>Component Welding</td>
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<tr>
<td>RRIT 145</td>
<td>Frog Welding</td>
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</tr>
</tbody>
</table>

TOTAL CREDIT HOURS: 32

Structural Welding Vocational Certificate Program

This certificate is designed to address the training needs for railway structural welders. Upon successful completion of the program, you should be able to demonstrate safe operation procedures for welding applications, perform skill competencies involving a variety of processes and positions, pass code welding requirements according to AWS D1.5 and perform welding operations as needed.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>RRIT 122</td>
<td>Elements of Welding</td>
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<tr>
<td>RRIT 123</td>
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<tr>
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<td>RRIT 138</td>
<td>Structural Welding FCAW</td>
<td>3</td>
</tr>
<tr>
<td>RRIT 139</td>
<td>Structural Welding Pipe</td>
<td>3</td>
</tr>
<tr>
<td>RRIT 147</td>
<td>Component Welding for Supervisors</td>
<td>2</td>
</tr>
<tr>
<td>RRIT 143</td>
<td>Thermite Welding for Supervisors</td>
<td>2</td>
</tr>
</tbody>
</table>

TOTAL CREDIT HOURS: 6

Supervisors Welding Vocational Certificate Program

This certificate is a program of study for supervisors of maintenance-of-way personnel. After completion of this program, you should be able to demonstrate safe welding procedures and identify basic aspects associated with track welding.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRIT 127</td>
<td>Welding Processes</td>
<td>2</td>
</tr>
<tr>
<td>RRIT 127</td>
<td>Structural Quality SM AW</td>
<td>3</td>
</tr>
<tr>
<td>RRIT 141</td>
<td>Structural Quality GMA W</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL PROGRAM CREDIT HOURS: 8

Railroad Carman Welding Vocational Certificate Program

The railroad carman welding vocational certificate is designed to provide students with training in welding and cutting operations used by carmen employed in the railroad industry. Students completing the program should be able to demonstrate safe operating procedures for welding and cutting applications and perform skill competencies involving oxyacetylene cutting, shielded metal arc welding, gas metal arc welding and flux cored arc welding. Students should also be able to complete qualification tests according to industry standards.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRIT 127</td>
<td>Welding Processes</td>
<td>2</td>
</tr>
<tr>
<td>RRIT 140</td>
<td>Structural Quality SM AW</td>
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</tr>
<tr>
<td>RRIT 141</td>
<td>Structural Quality GMA W</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL PROGRAM CREDIT HOURS: 5
**Railroad Operations**

JCCC's associate degree program in railroad operations can prepare you for an exciting and well-paying career. The more than 500 companies that make up the United States railroad industry provide the country's freight and passenger transportation service on a network of some 300,000 route-miles of track. Railroads employ a substantial work force to service, maintain and manage this extensive transportation network. JCCC's program offers five options. The general option requires 65 credit hours, the conductor option 69 credit hours, the dispatcher option 70 credit hours, the mechanical option 64 credit hours and the maintenance of way welding option 64 credit hours.

**Associate of Science Degree**

**General Option**

This option is designed to provide the student with general knowledge and skills for entry-level employment in the railroad industry. The student is introduced to the history of railroading and the various railroad crafts. Railroad operations, safety, environment and quality are also covered. The student will choose from a list of business and technical electives in order to provide a basis for possible employment and further post-employment training.

**First Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CPCA 105</td>
<td>Introduction to Personal Computing: IBM</td>
<td>3</td>
</tr>
<tr>
<td>CPCA 108</td>
<td>Word Processing on Microcomputers</td>
<td>1</td>
</tr>
<tr>
<td>CPCA 110</td>
<td>Spreadsheets on Microcomputers</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 121</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 133</td>
<td>Technical Mathematics I</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 124</td>
<td>Logic and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>RRT 120</td>
<td>History of Railroading</td>
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**Second Semester**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENGL 123</td>
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</tr>
<tr>
<td>MATH 134</td>
<td>Technical Math II</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 125</td>
<td>Technical Physics I</td>
<td>4</td>
</tr>
<tr>
<td>RRT 121</td>
<td>Railroad Technical Careers</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Health and Physical Education Elective</td>
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**Third Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BUS 121</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ECON 130</td>
<td>Basic Economic Issues</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 138</td>
<td>Business Ethics</td>
<td>1</td>
</tr>
<tr>
<td>RRT 150</td>
<td>Railroad Operations</td>
<td>3</td>
</tr>
<tr>
<td>RRT 165</td>
<td>Railroad Safety, Quality and Environment</td>
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</tr>
<tr>
<td>SPD 125</td>
<td>Personal Communication</td>
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**Fourth Semester**

<table>
<thead>
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<tr>
<td>INDT 140</td>
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</tr>
<tr>
<td></td>
<td>Business/Related Electives</td>
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</table>
six weeks of full-time training provided in cooperation with the National Academy of Railroad Sciences on the campus of JCCC, plus 18 weeks of on-the-job training after securing employment with a railroad. Selective admission to the program is based on various criteria. Interested students should meet with a JCCC counselor as early as possible.

First Semester
CPCA 105 Introduction to Personal Computing: IBM 1
CPCA 108 Word Processing on Microcomputers I 1
CPCA 110 Spreadsheets on Microcomputers I 1
ENGL 121 Composition I 3
MATH 133 Technical Mathematics I 4
PHIL 124 Logic and Critical Thinking 3
RRT 120 History of Railroading 3
TOTAL CREDIT HOURS 16

Second Semester
ENGL 123 Technical Writing I 3
MATH 134 Technical Math II 5
PHYS 125 Technical Physics I 4
RRT 121 Railroad Technical Careers 3
PHIL 138 Business Ethics 3
ECON 130 Basic Economic Issues 3
RRT 120 History of Railroading 3
TOTAL CREDIT HOURS 16

Third Semester
BUS 121 Introduction to Business 3
ECON 130 Basic Economic Issues 3
PHIL 138 Business Ethics 1
RRT 165 Railroad Safety, Quality and Environment 3
SPD 125 Personal Communication 3
TOTAL CREDIT HOURS 16

Fourth Semester
RRTC 175 Conductor Mechanical Operations 2
RRTC 261 Conductor Service 2
RRTC 263 General Code of Operating Rules 4
RRTC 265 Conductor Field Application 9
TOTAL CREDIT HOURS 21
TOTAL PROGRAM CREDIT HOURS 69

Associate of Science Degree

Dispatch Option
Railroad dispatchers control and ensure the safe and efficient movement of trains, on-track equipment and employees. The final phase of this program consists of 4 weeks of hands-on training provided in cooperation with the National Academy of Railroad Sciences. Selective admission to the program is based on various criteria. Interested students should meet with a JCCC counselor as early as possible.

First Semester
CPCA 105 Introduction to Personal Computing: IBM 1
CPCA 108 Word Processing on Microcomputers I 1
CPCA 110 Spreadsheets on Microcomputers I 1
ENGL 121 Composition I 3
MATH 133 Technical Mathematics I 4
PHIL 124 Logic and Critical Thinking 3
TOTAL PROGRAM CREDIT HOURS 69

Associate of Science Degree

Maintenance of Way Welding Option
Maintenance of way welding involves the maintenance and repair of rail and track components. The final phase of the program consists of course work provided in cooperation with the National Academy of Railroad Sciences. Selective admission to the program is based on various criteria. Interested students should meet with a JCCC counselor as early as possible.

First Semester
CPCA 105 Introduction to Personal Computing: IBM 1
CPCA 108 Word Processing on Microcomputers I 1
CPCA 110 Spreadsheets on Microcomputers I 1
ENGL 121 Composition I 3
MATH 133 Technical Mathematics I 4
PHIL 124 Logic and Critical Thinking 3
TOTAL PROGRAM CREDIT HOURS 69
Associate of Science Degree

Mechanical Option

Mechanical services include a variety of responsibilities for the maintenance, service and repair of locomotives, freight cars and other rolling stock. Skills include diesel engine repair, electrical and electronic system repair, freight car repair and inspection and welding processes. The final phase of the program consists of training provided in cooperation with the National Academy of Railroad Sciences. Selective admission to the program is based upon various criteria. Interested students should meet with a JCCC counselor as early as possible.

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CPC A</td>
<td>105 Introduction to Personal Computing: IBM</td>
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</tr>
<tr>
<td>CPC A</td>
<td>108 Word Processing on Microcomputers I</td>
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<tr>
<td>CPC A</td>
<td>110 Spreadsheets on Microcomputers I</td>
<td>1</td>
</tr>
<tr>
<td>ENGL</td>
<td>121 Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>133 Technical Mathematics I</td>
<td>4</td>
</tr>
<tr>
<td>PHIL</td>
<td>124 Logic and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>RRT</td>
<td>120 History of Railroading</td>
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**TOTAL CREDIT HOURS** 16

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ENGL</td>
<td>123 Technical Writing I</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>134 Technical Mathematics II</td>
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<tr>
<td>PHYS</td>
<td>125 Technical Physics I</td>
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<tr>
<td>RRT</td>
<td>121 Railroad Technical Careers</td>
<td>3</td>
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<tr>
<td>SPD</td>
<td>125 Personal Communication</td>
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</table>

**CREDIT HOURS** 16

**TOTAL CREDIT HOURS** 16

Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS</td>
<td>121 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ECON</td>
<td>130 Basic Economic Issues</td>
<td>3</td>
</tr>
<tr>
<td>PHIL</td>
<td>138 Business Ethics</td>
<td>1</td>
</tr>
<tr>
<td>RRT</td>
<td>150 Railroad Operations</td>
<td>3</td>
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<tr>
<td>SPD</td>
<td>125 Personal Communication</td>
<td>3</td>
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</table>

**TOTAL CREDIT HOURS** 16

**TOTAL PROGRAM CREDIT HOURS** 64-65

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFAB</td>
<td>121 Introduction to Welding</td>
<td>4</td>
</tr>
<tr>
<td>RRT</td>
<td>122 Elements of Welding</td>
<td>3</td>
</tr>
<tr>
<td>RRTM</td>
<td>124 Orientation to the Railroad</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDIT HOURS** 16

**TOTAL PROGRAM CREDIT HOURS** 64-65

Respiratory Care

The respiratory care practitioner is involved in a variety of life-saving and life-supporting situations. As a member of the health care team, he or she treats patients ranging in age from newborns to senior citizens. Respiratory care offers unique challenges in prevention, treatment, management and rehabilitation of patients with lung problems. The employment outlook is expected to be good because of new developments in diagnostic and treatment procedures. The health care needs of an aging population also will play a role in the future of the respiratory therapist.

JCCC’s program is designed to meet the requirements specified by the Joint Review Committee for Respiratory Care Education. Following completion of at least the prerequisite courses, you spend a 12-month clinic year attending didactic course activities at JCCC and direct clinic activities at several Kansas City area hospitals for eight hours a day, five days a week.

You must apply for admission to the Respiratory Care program by Oct. 15 before the clinic year you plan to enter. Successful completion of the program, which
includes satisfactory completion of a comprehensive program final examination, can lead to an associate of science degree or a certificate of completion, depending on the general education requirements completed. You will be eligible for the National Board for Respiratory Care examinations after graduation. You will first earn the Certified Respiratory Therapy Technician (CRTT) credential and ultimately the Registered Respiratory Therapist (RRT) credential.

This is a selective admission program with limited enrollment. If you are interested, contact the Admissions Office for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

**Associate of Science Degree**

**Summer**

<table>
<thead>
<tr>
<th>CR</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM</td>
<td>122 Principles of Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>ENGL</td>
<td>121 Composition I</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL CREDIT HOURS** 8

**First Semester**

| BIOL | 140 Human Anatomy                               | 4     |
| MATH | 116 Intermediate Algebra (or Math Elective 171 or higher)* | 3 |
| PSCI | 120 Physical Science (or a Physics course with lab) * | 4 |
|      | Social Science and/or Economics Elective        | 3     |

**TOTAL CREDIT HOURS** 14

* Indicates prerequisite courses that must be completed before the clinic year.

**Second Semester**

| BIOL | 225 Human Physiology                            | 4     |
| BIOL | 230 Microbiology                                | 3     |
| BIOL | 231 Microbiology Lab (or Math Elective 171 or higher)* | 2 |
| PSCI | 120 Physical Science (or a Physics course with lab) * | 4 |
|      | Communications Elective                         | 3     |
|      | Humanities Elective                             | 3     |

**TOTAL CREDIT HOURS** 15

**Third Semester**

| RC   | 220 Clinical Cardiopulmonary Physiology          | 2     |
| RC   | 271 Clinical Practice I                          | 4     |
| RC   | 230 Clinical Topics and Procedures I             | 4     |
| RC   | 235 Cardiopulmonary Medicine II                  | 2     |
| RC   | 240 Respiratory Pharmacology                     | 2     |

**TOTAL CREDIT HOURS** 14

**Fourth Semester**

| RC   | 272 Clinical Practice II                         | 4     |
| RC   | 231 Clinical Topics and Procedures II            | 4     |

**TOTAL PROGRAM CREDIT HOURS** 73

**Respiratory Care Postsecondary Certificate Program**

If you successfully complete the required prerequisites, the clinic core and the comprehensive program final examination, you may receive a certificate of completion in lieu of the associate of science degree. You will technically meet the requirements of the respiratory therapy registry examination process, which will allow you to become a registered respiratory therapist. You are encouraged, however, to pursue the associate of science degree, especially if you plan to continue your education. The difference between the postsecondary certificate curriculum and the associate of science degree is the nine hours of electives required for the associate of science degree.

**First Semester**

<table>
<thead>
<tr>
<th>CR</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM</td>
<td>122 Principles of Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>ENGL</td>
<td>121 Composition I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL</td>
<td>140 Human Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>MATH</td>
<td>116 Intermediate Algebra (or Math Elective 171 or higher)*</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL CREDIT HOURS** 15

* Indicates prerequisite courses that must be completed before the clinic year.

**Second Semester**

| BIOL | 225 Human Physiology                            | 4     |
| BIOL | 230 Microbiology                                | 3     |
| BIOL | 231 Microbiology Lab                             | 2     |
| PSCI | 120 Physical Science (or a Physics course with lab) * | 4 |
|      | Communications Elective                         | 3     |
|      | Humanities Elective                             | 3     |

**TOTAL CREDIT HOURS** 13

**Summer (clinic year)**

| RC   | 125 Beginning Principles of Respiratory Care    | 4     |
| RC   | 130 Respiratory Care Equipment                   | 4     |
| RC   | 135 Cardiopulmonary Medicine I                   | 1     |
| EMS  | 121 CPR I Basic Rescuer                          | 1     |

**TOTAL CREDIT HOURS** 10

**Third Semester**

| RC   | 220 Clinical Cardiopulmonary Physiology          | 2     |
| RC   | 271 Clinical Practice I                          | 4     |
| RC   | 230 Clinical Topics and Procedures I             | 4     |
| RC   | 235 Cardiopulmonary Medicine II                  | 2     |
| RC   | 240 Cardiopulmonary Pharmacology                 | 2     |

**TOTAL CREDIT HOURS** 14

**Fourth Semester**

| RC   | 272 Clinical Practice II                         | 4     |
| RC   | 231 Clinical Topics and Procedures II            | 4     |
Certified Respiratory Therapy Technician (CRTT) Transition

This curriculum is designed to meet the educational needs of respiratory care practitioners who seek to become registry eligible, but are unable to enter a traditional respiratory therapy program. If you are a candidate for this curriculum, you should have a minimum of one year full-time clinical experience post-NBRC certification as a certified respiratory therapy technician (CRTT). If you do not meet this requirement, you should consider the traditional respiratory therapy program curriculum.

You must apply and be accepted into the transition curriculum through a selective admission process. This includes putting together a mini-portfolio with the assistance of the JCCC Testing/Assessment Center to gain credit for prior learning and experience.

Successful completion of the transition curriculum, including satisfactory completion of a comprehensive program final, will lead to an associate of science degree. Graduates will be eligible for the National Board for Respiratory Care registry examination. Contact a JCCC counselor or program personnel for additional information.

Associate of Science Degree

Advanced Standing Credit

The following advanced standing credit may be granted if you are accepted into the CRTT-RRT transition process based on your previous training and clinical experience. You will need to work with the JCCC Testing/Assessment Center to develop a mini-portfolio for evaluation of this previous learning. You should note that if you wish to transfer these credits at a future time, you should check with that college for transferability of advanced standing credits. The process for seeking these credits is described in the admission packet for this program.

Additional Associate of Science Degree Requirements

- Social Science and/or Economics Elective 3
- Communications Elective 3
- Humanities Elective 3

Note: These additional degree requirements are not necessary to sit for the Registry Examinations of the National Board for Respiratory Care, but are required for the associate of science degree from JCCC and most advanced degrees at other colleges. A postsecondary certificate is granted at completion in lieu of the associate of science degree if these nine hours have not been completed.

Respiratory Care Course Requirements

Note: If you are a transition student, you will have a maximum of four consecutive regular semesters to complete the respiratory care (RESP) course requirements. If you fail a respiratory course or are unable to complete it in the established time, you may still be considered for entry into the traditional respiratory therapy program curriculum.

Postsecondary Certificate

With receipt of the advanced standing credit and completion of the required prerequisites, the respiratory therapy requirements and the comprehensive program final examination, you may receive a certificate of completion in lieu of the associate of science degree. The difference between the postsecondary certificate for the CRTT transition curriculum and the associate of science degree for the CRTT transition curriculum is the nine hours of electives required for the associate of science degree.
Science Technology
Greater Kansas City and specifically Johnson County have numerous biological-, pharmaceutical- and chemical-related formulating, manufacturing, research and testing companies. Many of these facilities employ scientific technicians to support the endeavors of their professional scientists and engineers.

JCCC’s Science Technology program is designed to develop scientific support personnel for the metropolitan area. This program offers specific knowledge and training designed to provide you with entry-level skills for employment as a technician. It also provides the breadth of background sufficient to encourage change and flexibility. If you complete the 65-credit-hour curriculum, you are awarded an associate of science degree.

Associate of Science Degree
Chemical Specialty
First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 123</td>
<td>6</td>
</tr>
<tr>
<td>BIOL 122</td>
<td>3</td>
</tr>
<tr>
<td>MATH 171</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 121</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>15</strong></td>
</tr>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 143</td>
<td>6</td>
</tr>
<tr>
<td>PHYS 125</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 135</td>
<td>1</td>
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<tr>
<td>MATH 172</td>
<td>3</td>
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<td>DP 132</td>
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<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
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Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 223</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 126</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 136</td>
<td>2</td>
</tr>
<tr>
<td>ENGL 123</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Health and/or Physical Education Elective</td>
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</tr>
<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>15</strong></td>
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</table>

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 243</td>
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<tr>
<td>SPD 125</td>
<td>3</td>
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<tr>
<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

**TOTAL PROGRAM CREDIT HOURS** | **65**

Associate of Applied Science Degree
Chemical Specialty
First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CHEM 123</td>
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<td>MATH 133</td>
<td>4</td>
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<td>ENGL 121</td>
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<td><strong>17</strong></td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 143</td>
<td>6</td>
</tr>
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<tr>
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Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 223</td>
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<tr>
<td>PHYS 126</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 136</td>
<td>2</td>
</tr>
<tr>
<td>ENGL 123</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
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Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>CHEM 243</td>
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<tr>
<td>SPD 125</td>
<td>3</td>
</tr>
<tr>
<td>SPD 128</td>
<td>3</td>
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<tr>
<td>PSYC 121</td>
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<td>ECON 130</td>
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<td><strong>TOTAL CREDIT HOURS</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

**TOTAL PROGRAM CREDIT HOURS** | **64**

* It is recommended that you take this course in the summer before you start the program.
Surgical Technology

This certificate program is designed to produce competent operating room technicians for immediate entry-level employment. Students are required to meet minimum entrance requirements on academic assessment and HOBE examinations.

Surgical Technology Vocational Certificate

Certificate granted by Penn Valley Community College

First Semester

<table>
<thead>
<tr>
<th>CR</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>KSUR 100</td>
<td>Introduction to Surgical Technology</td>
<td>2</td>
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<tr>
<td>KSUR 102</td>
<td>Fundamentals of Operating Room Techniques</td>
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<tr>
<td>KSUR 104</td>
<td>Body Structure and Function</td>
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<tr>
<td>KSUR 106</td>
<td>Aseptic Technique for the Surgical Technologist</td>
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TOTAL CREDIT HOURS 17

Second Semester

<table>
<thead>
<tr>
<th>CR</th>
<th>Course Title</th>
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<tbody>
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<td>Pharmacology for the Surgical Technologist</td>
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<td>KSUR 109</td>
<td>Principles of Surgical Procedures I</td>
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<tr>
<td>KSUR 110</td>
<td>Principles of Surgical Procedures II</td>
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TOTAL CREDIT HOURS 17

Third Semester

<table>
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<th>Course Title</th>
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<tr>
<td>KSUR 111</td>
<td>Career Development for the Surgical Technologist</td>
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<tr>
<td>KSUR 114</td>
<td>Principles of Surgical Procedures III</td>
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</table>

TOTAL CREDIT HOURS 9

TOTAL PROGRAM CREDIT HOURS 43

Travel and Tourism Management

This program is designed to provide the knowledge and skills you need to obtain an entry-level position in the travel industry. The focus is on quality and professionalism. You will be trained in subjects from ticketing and tariffs to planning and costing trips for group travel. Practical application and current procedures are emphasized and integrated into each subject.

JCCC’s Travel and Tourism Management program is offered in cooperation with Maple Woods Community College. You must apply and be accepted by both JCCC and Maple Woods. The support courses are held at JCCC and the travel courses at Maple Woods. Program requirements and credit hours are subject to change because of requirements changes at the degree-granting institution. Contact Maple Woods Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

Associate of Applied Science Degree

Degree granted by Maple Woods Community College

First Semester

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
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<td>MATH 120 Business Math</td>
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<tr>
<td>ENGL 121 Composition I</td>
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<tr>
<td>BUS 145 Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>KTT 101 Introduction to the Travel Industry</td>
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<td>KTT 102 Destination Geography</td>
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TOTAL CREDIT HOURS 15

Second Semester

<table>
<thead>
<tr>
<th>Course Title</th>
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<tr>
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<tr>
<td>BUS 140 Principles of Supervision</td>
<td>3</td>
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<tr>
<td>American History Elective</td>
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<tr>
<td>KTT 103 Travel Sales and Reservations</td>
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<td>KTT 127 Management Internship I</td>
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TOTAL CREDIT HOURS 15

Summer Semester

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<td>ACCT 121 Accounting I</td>
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TOTAL PROGRAM CREDIT HOURS 3

Third Semester

<table>
<thead>
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<td>BUS 140 Principles of Supervision</td>
<td>3</td>
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<tr>
<td>American History Elective</td>
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</tr>
<tr>
<td>KTT 104 Travel Agency Operations</td>
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TOTAL CREDIT HOURS 15

Fourth Semester

<table>
<thead>
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<td>KTT 105 Computer Reservations Systems</td>
<td>4</td>
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<td>KTT 129 Management Internship III</td>
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</table>

TOTAL CREDIT HOURS 16

TOTAL PROGRAM CREDIT HOURS 64

Veterinary Technology

A person with a background in veterinary technology can expect to find employment opportunities with veterinarians, assisting them in providing professional services and performing veterinary-related tasks. Opportunities are also available with pharmaceutical companies in technical services or laboratory animal care. JCCC’s Veterinary Technology program is offered in cooperation with the Veterinary Technology program at Maple Woods Community College. Students study sanitation and animal care, the preparation of animals for surgery and anesthesia management, as well as laboratory techniques and radiology. The program features supervised intensive clinical study under the direction of a licensed veterinarian and is fully accredited by the American Veterinary Medical Association. You must be
accepted into the program by both JCCC and Maple Woods Community College.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact Maple Woods Community College for an application packet, which includes deadlines, program prerequisites and admission requirements.

**Associate of Applied Science Degree**
Degree granted by Maple Woods Community College

Prior to the beginning of the fall semester, the student must have successfully completed:

- **Biology**
  - BIOL 127 General Zoology ......................................5
  - or
  - BIOL 122/123 Biology with lab ....................................3/1

First Semester

<table>
<thead>
<tr>
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<th>Course Name</th>
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<td>KSAH 100</td>
<td>Introduction to Veterinary Technology</td>
<td>2</td>
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<tr>
<td>KSAH 101</td>
<td>Principles of Animal Science</td>
<td>3</td>
</tr>
<tr>
<td>KSAH 120</td>
<td>Veterinary Office and Computer Skills</td>
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<tr>
<td>ENGL 121</td>
<td>Composition I</td>
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<td>KSAH 108</td>
<td>Clinical Mathematics</td>
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<td>SPD 121</td>
<td>Public Speaking</td>
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**TOTAL CREDIT HOURS** ..................................15

Second Semester

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<td>Principles of Animal Science II</td>
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</tr>
<tr>
<td>KSAH 111</td>
<td>Sanitation and Animal Care</td>
<td>2</td>
</tr>
<tr>
<td>KSAH 120</td>
<td>Clinical Pathology Technology I</td>
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</tr>
<tr>
<td>CHEM 122</td>
<td>Principles of Chemistry</td>
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**TOTAL CREDIT HOURS** ..................................17

Summer

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<tr>
<td>KSAH 214</td>
<td>Veterinary Technician Internship</td>
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Third Semester

<table>
<thead>
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<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>KSAH 200</td>
<td>Veterinary Hospital Technology I</td>
<td>3</td>
</tr>
<tr>
<td>KSAH 202</td>
<td>Veterinary Technology Anatomy</td>
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</tr>
<tr>
<td>KSAH 212</td>
<td>Large Animal Technology</td>
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</tr>
<tr>
<td>BIOL 230</td>
<td>Microbiology</td>
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<tr>
<td>BIOL 231</td>
<td>Microbiology Lab</td>
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**TOTAL CREDIT HOURS** ..................................17

Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>KSAH 203</td>
<td>Laboratory Animal Technology</td>
<td>2</td>
</tr>
<tr>
<td>KSAH 209</td>
<td>Equine Medicine and Management</td>
<td>3</td>
</tr>
<tr>
<td>KSAH 210</td>
<td>Veterinary Hospital Technology II</td>
<td>3</td>
</tr>
<tr>
<td>KSAH 211</td>
<td>Clinical Pathology Technology II</td>
<td>5</td>
</tr>
<tr>
<td>KSAH 213</td>
<td>Radiology and Electronic Procedures</td>
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</table>

**TOTAL CREDIT HOURS** ..................................15

**TOTAL PROGRAM CREDIT HOURS** ..........................75

* All graduates from Maple Woods must meet the American Institutions requirement. If you are a JCCC student, see a counselor about courses.
## Nontraditional Programs of Study

<table>
<thead>
<tr>
<th>Honors Program</th>
<th>International Education</th>
</tr>
</thead>
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<tr>
<td>Admission</td>
<td>Study Abroad</td>
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<tr>
<td>Honors Forum</td>
<td>Semester Programs</td>
</tr>
<tr>
<td>Honors Contracts</td>
<td>Travel Courses</td>
</tr>
<tr>
<td>Interdisciplinary Courses</td>
<td>Television Courses</td>
</tr>
<tr>
<td>Community Service</td>
<td></td>
</tr>
<tr>
<td>Graduation from the Honors Program</td>
<td></td>
</tr>
<tr>
<td>Scholarships</td>
<td></td>
</tr>
</tbody>
</table>

**Distance Learning**
Honors Program

The Honors Program curriculum is designed to stimulate and challenge academically talented students. If you have the talent and motivation, enrolling in the Honors Program will help you develop your intellectual potential as a college student and as a member of the academic community.

Admission

Proof of academic excellence is the first step to acceptance in the Honors Program. You must submit an official transcript or have one on file showing proof of having a 3.5 high school G.P.A. or a 3.5 college G.P.A. for your most recent year of college. Other proofs of academic excellence may be a 25 composite on the ACT test, a 1110 composite on the SAT or an equivalent score on other standardized tests taken within the last three years. You may also provide evidence that indicates the ability to do honors work. Such evidence, to be evaluated by the coordinator of the Honors Program and a faculty member, may include written, research or artistic work as shown in a portfolio.

You may enter the JCCC Honors Program at the beginning of any semester. You must maintain at least a 3.5 G.P.A. to remain in the program.

Honors Forum

The Honors Forum focuses on a current issue that affects the local, national and global communities. It will complement other courses in the curriculum by combining an emphasis on both specific content and skill development in interaction, analysis, synthesis and conflict resolution. The process of reflecting, researching, analyzing and evaluating will be as important as the content. As you develop points of view concerning the issue, you must articulate and defend those points as they are challenged by others and make judgments among alternative options.

Honors Contracts

Each academic division at JCCC offers Honors contracts developed by individual faculty members for selected courses. The contracts, offered for one hour of additional credit, are designed as extensions to the regularly scheduled courses. In order to complete the contract, you are required to meet on a regularly scheduled basis with the instructor offering the contact for mentor-student tutorial sessions. The work in the contract may include additional reading and writing assignments, expanded field or laboratory work and writing term papers and other suitable assignments.

Interdisciplinary Courses

These courses cover a broad area of knowledge and emphasize inquiry, discovery, critical thinking and discussion methods that stress student participation. You will be asked to read primary and secondary sources, take initiative in course-related activities, use analytical and evaluative skills and complete an Honors term project.

Service Learning

If you plan to graduate from the Honors Program, you will be expected to perform some volunteer community service. This will be done as part of the Honors Forum course.

Graduation from the Honors Program

You may elect to participate in any part of the Honors Program; however, if you plan to graduate from the program, you must:

- Meet all requirements for a two-year degree with a 3.5 G.P.A.
- Complete four Honors contracts.
- Complete one Honors Forum class.
- Complete one interdisciplinary class.
- Perform specified service learning.

If you plan to graduate from the program, you should complete an Honors graduation completion form.

Scholarships

General guidelines

1. The purpose of the Honors Program scholarship is to encourage students to complete the requirements to graduate from the Honors Program. The intent of the scholarship is to help cover tuition, fees and books.

2. Scholarship amounts, with increments of $60 a credit hour, are based on a minimum enrollment of six credit hours and a maximum enrollment of 15 credit hours. Scholarship recipients may enroll in more than 15 credit hours, but the maximum scholarship per semester will be $900. The scholarship is awarded on a semester basis.

3. Scholarship recipients will be funded for succeeding semesters if they meet all of the requirements and have completed all of the course work attempted. The scholarship can cover a maximum of 52 attempted semester hours or until the requirements for the Honors Program are completed, whichever comes first. All scholarship recipients who drop a course are required to reapply for the scholarship for the following semester.

4. The number of new scholarships awarded each semester is determined by the funds available.

Requirements

To apply for an Honors Program scholarship, you must meet the following requirements:
1. Complete a minimum of 12 semester hours of course work at JCCC before applying.
2. Be working on the requirements to graduate from the Honors Program.
3. Have a minimum G.P.A. of 3.5 at JCCC.

Preference is given to students who have taken course work in the Honors Program, i.e., Honors contracts, Honors Forum or one of the interdisciplinary courses.

How to Apply

If you meet the requirements, you may pick up application forms in the Honors Office, 237 GEB.

The application process includes these steps:
1. Complete an application form.
2. Submit at least two letters of recommendation from instructors of your JCCC classes.
3. Write an essay describing your educational and career goals.
4. If you are a finalist, interview with the Honors scholarship committee.

Application deadlines are Oct. 15 for the spring semester and March 15 for the fall semester.

Distance Learning

JCCC offers distance learning courses that are conducted via personal computer and modem from your home or office through the Internet. No prior knowledge of data communications is necessary. The communication software is provided. You will need a PC or Mac, a modem and your own Internet provider. Successful distance learning students are highly motivated, goal-oriented and willing to study independently. Each distance learning class is equivalent to the on-campus sections of the same course in terms of objectives, content and transferability.

International Education

International education at JCCC spans the entire range of college activities from credit and continuing education courses to student clubs and special events. The college curriculum includes seven foreign languages and such courses as Eastern Civilization, International Relations, Global Resources, Cultural Anthropology, Introduction to International Business, Intercultural Communications, World Cultures and Russian, European, Latin American and World History. In addition, international and intercultural approaches are evident in many courses in the humanities, social sciences and communications classes. JCCC maintains strong relationships with universities in China, Russia and the United Kingdom and has an active exchange program that brings faculty and students from other countries to the JCCC classrooms.

Study Abroad

Semester Programs

Through the College Consortium for International Studies, JCCC students have an opportunity to study in any one of 22 countries for a semester or a year. Programs exist in countries in Europe, Latin America, the Middle East and Asia that focus on liberal arts, language and culture, business, performing and visual arts. Through the Partnership for Service Learning, students can both study and perform community service in several nations. Eligibility and fees vary with the country. Many participants qualify for financial aid awards that allow them to participate. The application deadline for the spring semester is in October. For the fall semester, applications are due in April.

Travel Courses

JCCC offers short-term travel courses to various countries around the world. These courses usually run from one to three weeks, and the travel is carefully planned and supervised by instructors. Opportunities are available for credit or through the community education program. For additional information about all study abroad, contact the International Education office.

Television Courses

Each semester, JCCC offers telecourses that make it possible to earn college credit in the home. Noncredit telecourses are also offered. Each lesson is shown several times a week – you pick the most convenient time. If you miss a lesson, you can view it on a videotape in the JCCC library or check out videotape cassettes (VHS only) to view at home.

You need not come to campus except for a few scheduled class meetings and for exams administered in the Testing/Assessment Center.

You may apply college credits earned through telecourses to the associate degree program. In most cases, these credits will transfer to other colleges. You may be either full- or part-time. There is no limit to the number of telecourses that you may take.

It is only natural to be apprehensive about learning out of the classroom. But if you are self-disciplined and have the ability to learn without supervision, there should be no problems. If you have questions during the semester, a JCCC instructor is just a phone call away.
<table>
<thead>
<tr>
<th>Course Prefix</th>
<th>Listing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
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<td>Administration of Justice</td>
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<td>Aviation</td>
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<td>Banking and Finance</td>
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<td>Health, Physical Education and</td>
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<td>Recreation</td>
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<td>Hearing Impaired</td>
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Courses by Division
Listing

Business and Technology Division
Accounting
Automotive Technology
Aviation Maintenance
Business Administration
Business Entrepreneurship
Drafting Technology
Economics
Electrical Technology
Electronics Technology
Engineering
Fashion Merchandising
Heating, Ventilation and Air Conditioning
Home Economics
Hospitality Management
Industrial Technology
Information Technology
Interior Merchandising
Legal Nurse Consultant
Marketing and Management
Metal Fabrication
Office Systems Technology
Paralegal
Railroad Operations
Travel and Tourism Management

Computer Instruction
and Media Resources Division
Communication Design
Computer Information Systems
Computer Interactive Media
Computers: Personal Computer Applications
Computer Science
Library

Liberal Arts Division
Academic Achievement Center
Administration of Justice
Art
Art
Correctional Services
Early Childhood Education
Education
English
Fire Services Administration
Foreign Language
G rounds and Turf Management

History
Honors
Humanities
Interpreter Training
Journalism
Learning Strategies
Music
Philosophy
Photography
Political Science
Religion
Sociology
Speech and Debate

Physical Education Division
Physical Education

Science, Health Care and Math Division
Astronomy
Biology
Chemistry
Dental Hygiene
Emergency Medical Science
Geoscience
Health Information Technology
Health Occupations
Horticulture
Mathematics
Nursing
Occupational Therapy Assistant
Physical Science
Physical Therapist Assistant
Physics
Radiologic Technology
Respiratory Care
Surgical Technology
Veterinary Technology

Student Development Division
Hearing Impaired

Continuing Education
Cosmetology
Academic Offerings

JCCC Course Listings
Academic Achievement Center

DEVELOPMENTAL COURSES
The following courses are designed to help students develop and enhance the skills necessary for successful completion of college-level requirements. Study skills, reading comprehension and other basic needs will be addressed through individualized instruction, small classes or self-paced programs. These courses do not fulfill degree requirements. Note: Students enrolled in LC prefix classes that indicate the time is to be arranged (TBA) should report to the center during the first week of the semester or within one week of enrollment.

LC 100
STUDY SKILLS (1CR)
This course is designed for students who wish to improve their college study skills. Students will take a survey test to determine strengths and potential problem areas and will receive an individualized program of study that will utilize textbooks, computer software and videos. Previewing academic reading, note taking from text and lecture, time management and test preparation techniques, along with related concepts will be included. By arrangement.

LC 101
STUDY SKILLS MINI-COURSE (1CR)
This class will focus on test-taking skills, taking notes, using a textbook, critical reading and memory recall, effective listening and classroom strategies, and support services. The format will include reading, discussion and practice exercises. 3 hrs./wk. for 5 wks.

LC 104
READING COMPREHENSION (1CR)
This course is designed for students who wish to improve their understanding of written language. Students will take a survey test to establish a baseline reading comprehension level and will receive an individualized program of study that will utilize textbooks, computer software and videos. Students will learn techniques for increasing comprehension, such as previewing, questioning, careful reading with note taking, reciting and reviewing. By arrangement.

LC 105
READING RATE (1CR)
This course is designed for students who wish to improve the rate at which they process written language. Students will take a pretest to determine a baseline reading efficiency rate and will receive an individualized program of study that will utilize textbooks, computer software and handouts. Students will learn techniques for increasing reading rate and improving skimming and scanning levels. By arrangement.

LC 106
VOCABULARY DEVELOPMENT (1CR)
This course is designed for students who wish to expand their vocabulary levels. Students will take a placement test to determine an appropriate instructional level and will receive an individualized program of study that will utilize textbooks, computer software and handouts. A variety of approaches will be used to acquire and utilize a powerful, up-to-date vocabulary. By arrangement.

LC 107
SPELLING IMPROVEMENT (1CR)
This course is designed for students who wish to improve their level of spelling mastery. Students will take a placement test to determine the appropriate instructional level and will receive an individualized program of study that will utilize textbooks and computer software. Students will master a variety of spelling concepts and will monitor and correct misspellings that occur in their own writings. By arrangement.

LC 110
POWER SPelling (3CR)
Prerequisite: Appropriate score on the placement test
This course is designed for students who wish to improve their spelling but have not been successful in traditional spelling programs. This course provides a highly structured approach to spelling improvement through mastery of morphographs (units of meaning) and guidelines for combining morphographs in order to correctly spell hundreds of words. By arrangement.

LC 112
BASIC MATH REVIEW (1CR)
This course is designed for students who need to review or learn the basic mathematical concepts. Students will take a placement test to determine an appropriate instructional level and will receive an individualized program of study that will utilize textbooks, computer software and videos. Students will learn basic math concepts (whole numbers, fractions, decimals, etc.) and will learn to apply these concepts to solve problems. By arrangement.

LC 113
ALGEBRA PREPARATION (1CR)
This course is designed for students who wish to review or learn the basic concepts of algebra in order
LC 127  
**FUNDAMENTALS OF READING (3CR)**  
*Prerequisite: LC 124 or appropriate assessment score*  
This course is the first in a mandatory sequence of reading courses. It is designed for students who need to improve their understanding of written expression. The focus of the course is on vocabulary, dictionary usage, literal comprehension and written communication. 3 hrs/wk.

LC 126  
**READING SKILLS IMPROVEMENT (3CR)**  
*Prerequisite: LC 125 or appropriate assessment score*  
This intermediate reading course is the second in a mandatory sequence, designed for students who need to improve their understanding of written expression. The focus of the course is on higher-level comprehension and vocabulary skills. Students use Time magazine to apply and practice skills learned in the class and to provide a background for written assignments. 3 hrs/wk.

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**LC 114**  
**CHEMISTRY PREPARATION (1CR)**  
This course is designed for students who wish to learn or review the basic chemistry concepts. Students will take a pretest to determine an appropriate instructional level and will receive an individualized program of study. Students will master a variety of concepts, including the terminology of mathematics and algebra, simplifying open expressions, solving linear equations, etc. By arrangement.

**LC 115**  
**COLLEGE SKILLS DEVELOPMENT (1CR)**  
Students will focus on becoming more aware of their personal values, their life plans and their career plans. Topics will include learning styles, techniques of time management, test taking, study skills and available college support services and resources. 3 hrs/wk. for 5 wks.

**LC 120**  
**INDIVIDUALIZED STUDY (1CR)**
**LC 121**  
**INDIVIDUALIZED STUDY (2CR)**
**LC 122**  
**INDIVIDUALIZED STUDY (3CR)**  
This course is designed for students who wish to improve in any of these areas: study skills, reading comprehension, reading rate, vocabulary, spelling, basic math, algebra or chemistry preparation. Students will take placement tests to determine appropriate levels of instruction and will receive an individualized program of study for specific areas that will utilize textbooks, computer software, handouts and videos. By arrangement.

**LC 124**  
**BASIC VOCABULARY AND READING SKILLS (3CR)**  
*Prerequisite: Appropriate assessment score*  
This reading course is the first in a mandatory sequence of reading courses. It focuses on techniques for building a functional vocabulary and for increasing comprehension on the sentence, paragraph and multi-paragraph levels. The course is designed for those students who have difficulty understanding English in print. 3 hrs/wk.

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**LC 125**  
**FUNDAMENTALS OF READING (3CR)**  
*Prerequisite: LC 124 or appropriate assessment score*  
This course is the second in a mandatory sequence of reading courses. It is designed for students who need to improve their understanding of written expression. The focus of the course is on vocabulary, dictionary usage, literal comprehension and written communication. 3 hrs/wk.

**LC 126**  
**READING SKILLS IMPROVEMENT (3CR)**  
*Prerequisite: LC 125 or appropriate assessment score*  
This intermediate reading course is the third in a mandatory sequence, designed for students who need to improve their understanding of written expression. The focus of the course is on higher-level comprehension and vocabulary skills. Students use Time magazine to apply and practice skills learned in the class and to provide a background for written assignments. 3 hrs/wk.

**LC 127**  
**COLLEGE READING SKILLS (3CR)**  
*Prerequisite: LC 126 or appropriate assessment score*  
This advanced reading course is designed for students who wish to improve their ability to process written expression. The focus of the course is on critical and interpretive reading skills, developing reading techniques appropriate to material and purpose, increasing vocabulary level, improving written expression and increasing reading rate. Students use National Geographic and Atlantic Monthly to apply and practice skills learned in the class and to provide a background for written assignments. 3 hrs/wk.

**LC 130**  
**MEDICAL TERMINOLOGY (3CR)**  
This self-instructional course is designed for students who want to learn a systematic format for acquiring a medical vocabulary. The course begins with a study of prefixes, combining forms and suffixes, along with guidelines for building medical words. This is followed by a study of each of the body systems. Computer software is available to support the textbooks. Students planning a career in any facet of the health care industry will find this course beneficial. By arrangement.
LC 135
CAREER/LIFE PLANNING (3CR)
This is a systematic approach to career and life planning. Students will focus on a process for making occupational decisions at any point in their lives. 3 hrs./wk.

LC 150
JOB SEARCH SKILLS (1CR)
Job-hunting techniques will be explored in this class. The class will consist of lecture, assignments and role playing. In class, students will develop a résumé, complete job applications and practice interviewing. 1 hr./wk.

ABLE: Academic Bridges to Learning Effectiveness
ABLE is an award-winning program that teaches students with learning disabilities or brain injury how to become independent learners. A B LE students take courses and attend study sessions and weekly support group meetings to build a firm foundation for college, vocational programs or the workplace. Students should contact Longview Community College at 672-2053 for information regarding enrollment and courses available.

Accounting

ACCT 111
SMALL BUSINESS ACCOUNTING (3CR)
This course will introduce the basic accounting procedures needed to maintain daily records for a small business and the use of such records in the decision-making process. Upon successful completion of the course, the student will be able to maintain a set of financial records with the occasional help of an outside accountant. This course does not prepare the student for Accounting II. 3 hrs./wk.

ACCT 115
ACCOUNTING FOR NONPROFIT ORGANIZATIONS (3CR)
Prerequisite: ACCT 121
This course is a three-hour survey course of not-for-profit accounting and its primary users: federal, state and local governments, hospitals and schools. Upon successful completion of the course, the student should be able to effectively deal with the primary funds and accounting groups, assist in the budget process, and practice variances among the major nonprofit organizations according to their authoritative pronouncements. 3 hrs./wk.

ACCT 121
ACCOUNTING I (3CR)
This course is an introduction to accounting fundamentals. Upon successful completion of this course, a student should be able to analyze transactions, use various journals and ledgers, prepare financial statements and summarize results at the close of the fiscal period for the sole proprietorship. 3 hrs./wk.

ACCT 122
ACCOUNTING II (3CR)
Prerequisite: ACCT 121
This course is a continuation of ACCT 121. Upon successful completion of this course, the student should be able to prepare and use financial statements with increased emphasis on interpretation and use of accounting data peculiar to partnerships, corporations and manufacturing firms. 3 hrs./wk.

ACCT 131
FEDERAL INCOME TAXES I (3CR)
This course teaches the student federal income tax rules and the procedures for reporting federal income tax. Upon completion of this course, the student should be able to do short- and long-range tax planning and keep records that will provide appropriate information for use in preparing federal income tax. The student should also be able to prepare the standard individual federal income tax return. 3 hrs./wk.

ACCT 135
COMPUTERIZED ACCOUNTING APPLICATIONS (3CR)
Prerequisites: ACCT 121
Corequisite: CPCA 105
This course will provide a hands-on approach to learning how computerized integrated accounting systems function. Upon successful completion of the course, students should be able to use a microcomputer to create charts of accounts, accounts receivable and payable subsidiary ledgers, transaction journals, general ledgers, financial statements, reports and forecasts. 3 hrs./wk.

ACCT 221
COST ACCOUNTING (3CR)
Prerequisite: ACCT 122
Upon completion of this course, the student should be able to use accounting information to plan and control operations, value inventory, determine income in a manufacturing environment and evaluate subsequent results. 3 hrs./wk.
ACCT 222
MANAGERIAL ACCOUNTING (3CR)
Prerequisite: ACCT 122
Upon completion of this course, the student should be able to develop and use accounting information as an instrument of management control. Material covered includes financial statement analysis, cost application and budgeting reports to management. 3 hrs./wk.

ACCT 231
INTERMEDIATE ACCOUNTING I (3CR)
Prerequisite: ACCT 122
The course will present the use of accounting theory in the preparation of financial reports. Upon successful completion of this course, the student should be able to solve problems that arise in the presentation of cash, receivables, inventories, tangible and intangible assets on the statement of financial position, and their related effect on the statement of income. 3 hrs./wk. This course will not be offered every semester. Fall.

ACCT 232
INTERMEDIATE ACCOUNTING II (3CR)
Prerequisite: ACCT 122
Accounting theory learned through the study of accounting concepts and technical procedures will be presented in this course. Upon completion, the student should be able to solve problems in the presentation of capital structures, long-term investments, debts, leases, pensions, the analysis of financial statements, and price-level and fair value accounting and reporting. 3 hrs./wk. This course will not be offered every semester. Spring.

ACCT 278
ACCOUNTING INTERNSHIP I (1CR)
Prerequisite: ACCT 121
This internship is designed to enable students to use skills learned in accounting courses. Students will work in an approved training situation under instructional supervision. There will be a minimum of 15 hours each week of on-the-job training.

ACCT 285
ACCOUNTING CAPSTONE I (3CR)
Prerequisites or corequisites: ACCT 122, 15 hours of accounting courses and permission of the division administrator
This course is designed to serve as a capstone experience prior to entering the workplace. Students will maintain a complete set of books and related financial statements, both manually and electronically, through an accounting cycle. Students will use previously prepared financial statements to make informed judgments and solve problems, identify and apply ethical positions and effectively communicate this information to others, orally and in writing. 3 hrs. lecture/wk. This course will not be offered every semester. Spring.

Administration of Justice

ADMJ 121
INTRODUCTION TO ADMINISTRATION OF JUSTICE (3CR)
Emphasis will be on the historical and philosophical development of the criminal justice system. This course includes participation in the field as well as classroom experience. 3 hrs./wk.

ADMJ 124
CRIMINAL JUSTICE SYSTEM (3CR)
Subsystems of the criminal justice system will be analyzed and identified. 3 hrs./wk.

ADMJ 127
CRIMINOLOGY (3CR)
This class will explore theories of criminal behavior, treatment, correction, crime prevention and control. Contemporary trends will be highlighted. 3 hrs./wk.

ADMJ 130
CRIME PREVENTION (3CR)
Topics of special interest include the techniques public service agencies use to operate crime-prevention programs and to provide technically accurate, cost-effective security recommendations to the community. 3 hrs./wk.

ADMJ 133
JUVENILE DELINQUENCY (3CR)
This class will provide an analysis of detention procedures, disposition, custody and treatment of juvenile offenders throughout the United States with a specific interest in area systems. The origin and development of juvenile agencies, as well as the organization, functions and jurisdiction of juvenile courts, will be studied. 3 hrs./wk.

ADMJ 136
POLICE AND THE PUBLIC (3CR)
This course will identify and analyze conflict that arises between police and the communities they serve. 3 hrs./wk.

ADMJ 140
CONSTITUTIONAL CASE LAW (3CR)
Students will study Supreme Court decisions that have had significant impact on law enforcement techniques and procedures. 3 hrs./wk.
ADMJ 141
CRIMINAL LAW (3CR)
Prerequisite: ADMJ 124 or PL 121
The Kansas Criminal Code will be the focus of this class, which emphasizes elements of crimes and criminal procedure. 3 hrs/wk.

ADMJ 145
FUNDAMENTALS OF PRIVATE SECURITY (3CR)
This overview of the private security field will include a look at how industry, business, government and institutions handle security. 3 hrs/wk.

ADMJ 146
RETAIL SECURITY (3CR)
This is a study of retail security supervision and management. Topics will include employment practices, employee dishonesty, controlling shoplifters and building and perimeter protection. 3 hrs/wk.

ADMJ 148
FAMILY VIOLENCE AND SEXUAL ABUSE (3CR)
A description and causal analysis of the different physical, psychological and sexual abuse acts that may occur within the primary family unit will be provided in this course. The study will include possible causative factors; psychological and social impact on the various family members; psychological, social and legal implications; treatments; and the relationship between abuse and crime. 3 hrs/wk.

ADMJ 154
FUNDAMENTALS OF CRIMINAL INVESTIGATION (3CR)
Prerequisite: ADMJ 124
Topics covered in this course will include crime-scene search techniques, collection and preservation of evidence, interviewing, and logical reconstruction of the crime. 3 hrs/wk.

ADMJ 157
PATROL PROCEDURES (3CR)
Prerequisite: ADMJ 124
This course will cover basic police patrol functions including report writing, traffic law enforcement, arrest, search and seizure, patrol and peacekeeping. 3 hrs/wk.

ADMJ 164
SUPERVISORY TECHNIQUES FOR POLICE (3CR)
Prerequisite: ADMJ 124 or approval of the program director
Current theory and practice of the supervisor's role in the police service will be discussed. 3 hrs/wk.

ADMJ 166
POLICE ORGANIZATION AND MANAGEMENT (3CR)
Prerequisite: ADMJ 124 or approval of the program director
The organization of a police department will be the focus of this class. Emphasis will be on achieving departmental objectives through the management of people, money and materials. 3 hrs/wk.

ADMJ 221
INTRODUCTION TO CRIMINALISTICS (3CR)
Prerequisite: ADMJ 154 or approval of the program director
This course will provide training in the techniques and methods used to establish the identity and individualization of persons and things in a criminalistic laboratory. 3 hrs/wk.

ADMJ 225
DEFENSIVE TACTICS FOR POLICE (3CR)
Prerequisite: ADMJ 124 and ADMJ 136
Subjects covered in this class will include the use of the baton and service revolver and constitutional limitations on the use of force. Students will be required to furnish ammunition for the service revolver. 3 hrs/wk.

ADMJ 265
ADVANCED POLICE TRAINING (12CR)
Prerequisite: Open only to currently employed, full-time police officers attending the Police Academy under sponsorship of a law enforcement agency
This course consists of 180 clock hours of law enforcement training provided in addition to the 320 hours required by the Kansas Minimum Standards Training Act for recruits attending the Police Academy. While the required 320-hour curriculum is provided without fee, enrollment in advanced training is required of all those attending the academy. The curriculum covers law, criminal investigations, patrol procedures, defensive tactics, report writing and specialized training required by local law enforcement agencies.

ADMJ 271
EMERGENCY DISPATCHER FIELD STUDY (3CR)
Prerequisite: Only students in appropriate programs will be accepted. Approval of the program director is required.
Students will gain on-the-job training under the supervision of a qualified dispatcher in law enforcement, fire protection or emergency medical services. The field study will be conducted at an approved dispatching station and arranged by the JCCC program coordinator. By arrangement.
ADMJ 281
READINGS IN POLICE SCIENCE (3CR)
Prerequisite: 15 credit hours in ADMJ courses
The class will consist of selected readings in police science on topics such as police administration, criminal investigation, criminology, corrections, juvenile problems and evidence. By arrangement.

Agribusiness
(Also see Grounds and Turf Management, page 188.)

AGRI 107
TURFGRASS MANAGEMENT I (3CR)
This course is designed to familiarize students with all of the major cool- and warm-season turfgrasses and to familiarize students with the adaptation and tolerances, cultural management and major disease and insect pests of each major category of turfgrass. Upon successful completion of this course, students should be able to demonstrate the ability to properly identify the major categories of turfgrass and to establish a turfgrass based on their knowledge of seeding, sodding, sprigging, plugging and past establishment procedures. Students should also be able to develop a pest and disease control program for each major category of turfgrass. 3 hrs./wk.

AGRI 109
TURFGRASS MANAGEMENT II (3CR)
Prerequisite: AGRI 107
This course provides more specific information on turfgrass management. Topics include green construction, topdressing, sprayer calibration, management programs (setting up a lawn-care program) and the influence environment has on turfgrass growth. 3 hrs./wk.

AGRI 115
TURF AND ORNAMENTAL PLANTS: PEST MANAGEMENT (3CR)
This course will explore the concepts of turf and ornamental plant identification, description, establishment, growth, care, maintenance and pest control in the local area. The student will become familiar with federal and state regulations pertaining to horticulture chemical application. Upon successful completion of this course, the student will be prepared to take the Kansas or Missouri licensing examination to become a certified applicator of restricted horticulture pesticides and herbicides. 3 hrs./wk.

AGRI 120
INTRODUCTION TO URBAN AGROBUSINESS (3CR)
This is a general survey course for students who wish to learn more about the broad field of agribusiness. Particular emphasis is on the many facets of landscape and grounds management. Career areas that will be covered are interior landscaping, greenhouse management, pesticide applicators’ positions and golf course management. 3 hrs. lecture/wk.

Anthropology

ANTH 125
CULTURAL ANTHROPOLOGY (3CR)
The political, economic, religious, family and social aspects of major groups of people around the world will be examined. Hunters, tribesmen, peasants and industrial populations also will be studied. 3 hrs./wk.

ANTH 126
PHYSICAL ANTHROPOLOGY (3CR)
This study of physical anthropology will include archaeology, human variation, physical evolution, primate societies and the emergence of human society. Cross-disciplinary topics of interest will be included. 3 hrs./wk.

ANTH 130
WORLD CULTURES (3CR)
This ethnographic course in anthropology will examine a representative group of societies from each major environmental region of the world. Hunters and gatherers such as the pygmy and the Eskimo, tribal farmers from the Pacific Islands and the Americas, chiefdoms such as the Swazi and the Tahitians, state structures from Africa and Southeast Asia, and folk societies such as the peasants of Ireland and China will be studied holistically. 3 hrs./wk.

ANTH 134
NATIVE AMERICANS (3CR)
This ethnographic course in cultural anthropology seeks understanding of the prehistory, history and contemporary setting of the first nations of North, Central and South America. It examines the ecological framework in which these diverse societies have developed and their relationships with each other. It then analyzes the past and present status, legal and social, of a representative group of North American cultures. Finally, it describes the significant role that Native Americans will play in the national life of the United States in the 21st century. 3 hrs. lecture/wk.
ANTH 140
ARCHAEOLOGY (3CR)
This introductory course is designed to give students a systematic study of cultural humanity of the past. Ancient technologies and human behavior, social organization and religious beliefs will be examined from a sampling of a few well-known sites from New and Old World archaeology. 3 hrs./wk.

ANTH 210
PEOPLES OF THE WORLD (3CR)
Prerequisites: POLS 130 and SOC 160. Available to noncore students with the program director’s permission. This interdisciplinary course will draw on economics, psychology, sociology and anthropology to help students better understand the increasing global connections between peoples and societies. Students will investigate the cultural basis of values, beliefs and behavior and learn how this affects their relationships both within their communities and across cultural boundaries. Specific topics will include the individual in North America today, the North American’s relationship to the peoples of Earth, Earth as an economic system, views of work in the United States and other countries, comparative political participation, and cross-cultural value systems. 3 hrs./wk.

Architecture

ARCH 120
INTRODUCTION TO ARCHITECTURE (3CR)
This course is an introduction to the profession of architecture through a study of its history, vocabulary, theories and practices. The facets that make up the total architectural curriculum as well as the various professional roles that architects can be expected to perform will be covered. A architectural study is seen as both an art and a science. The interdisciplinary character of architectural practice is emphasized. 3 hrs. lecture/wk.

ARCH 130
ARCHITECTURAL GRAPHICS I (3CR)
This course is designed to build a conceptual and manual foundation for further professional architectural education. Students will learn to apply a variety of media and drawing systems such as freehand drawing and architectural lettering; equipment usage; applied geometry; line, tone, texture and color studies; and multiview, paraline, axonometric and oblique drawings as they relate to architectural forms. Emphasis will be on learning to think in spatial terms as well as developing graphic presentation skills using standard graphic conventions. 6 hrs. integrated lecture, studio/wk.

ARCH 131
ARCHITECTURAL GRAPHICS II (3CR)
Prerequisite: ARCH 130
This course builds upon the conceptual and manual skills acquired in Architectural Graphics I. Students will expand their ability by learning to apply a variety of media and advanced drawing systems such as design drawing techniques, model building, graphic diagramming, grid perspective drawing, projection perspective drawing and shade and shadow studies. Emphasis will continue to be on learning to think in spatial terms as well as developing a new repertoire of graphic presentation skills. 6 hrs. integrated lecture, studio/wk.

ARCH 140
ARCHITECTURAL DESIGN (3CR)
Prerequisite: ARCH 130
This course introduces the student to the process and vocabulary of design. The purpose of the content is to develop the ability to solve two- and three-dimensional design problems with basic methods, vocabulary and media appropriate to the architectural profession. 6 hrs. integrated lecture, studio/wk.

Art

ART 123
ELEMENTARY ART METHODS (3CR)
This is an exploration of art activities for children from preschool through sixth grade. 6 hrs./wk.

ART 124
DESIGN 2-D (3CR)
This is an introductory study of the principles of visual perception, two-dimensional space organization and the visual elements of line, shape, value and texture. Concepts, materials and processes necessary to an understanding of two-dimensional form are explored using traditional and digital tools and techniques. 6 hrs./wk.

ART 127
DESIGN 3-D (3CR)
Prerequisite: ART 124
This is a study of the function of three-dimensional organization in the development of visual ideas. Concepts, materials and processes necessary to an understanding of the three-dimensional relationships of space, form, form evolution and the dynamics of structure are explored. 6 hrs./wk.
ART 129
DESIGN, COLOR (3CR)
This is a study of the nature of color, its physical properties and visual qualities. Basic theories, phenomena and their applications will be explored using pigment, colored paper and digital color systems. 6 hrs./wk.

ART 130
DRAWING I (3CR)
This is an introductory course with an emphasis on the development of fundamental drawing skills, increased power of observation and an awareness of the personally expressive and compositional aspects of drawing. 6 hrs./wk.

ART 131
DRAWING II (3CR)
Prerequisite: ART 130
Advanced problems with an emphasis on conceptual and mixed media drawing will be explored. 6 hrs./wk.

ART 135
PAINTING I (3CR)
This is an introductory course with emphasis on the development of visual perception and creative response through studies of still life, landscape and human form. 6 hrs./wk.

ART 136
PAINTING II (3CR)
Prerequisite: ART 135
This course will offer a stronger emphasis on the perceptual and conceptual problems in painting and the development of an individual direction. 6 hrs./wk.

ART 138
DIGITAL IMAGING FOR ARTISTS (3CR)
In this introductory course in the use of the computer as a medium for making fine art, emphasis will be on developing the student's skill in making expressive visual statements utilizing computer technology. 6 hrs./lecture, studio/wk.

ART 142
CERAMICS I (3CR)
This course is designed to build a conceptual and manual foundation for future ceramics education. Students will study the properties of clay, its preparation, hand and wheel techniques, surface design, firing methods, fundamental ceramic terms, principles of design, introductory ceramic history and orientation to safe practices for the ceramic artist. Emphasis will be on developing skills appropriate to the beginning student for the purpose of creative and technical expression. 6 hrs./wk.

ART 143
CERAMICS II (3CR)
Prerequisite: ART 142
This course will deal with more advanced methods and studio experiences in ceramic wheel techniques, creative expression and glaze formulation. Emphasis will be on development of a sense of thrown form and creative decoration. 6 hrs./wk.

ART 145
SCULPTURE I (3CR)
Students will explore and study natural and synthetic sculptural forms as they create work using traditional or contemporary media and techniques. 6 hrs./wk.

ART 146
SCULPTURE II (3CR)
Prerequisite: ART 145
This continuation of ART 145 will focus on advanced methods and techniques with emphasis on materials, forms and the student's selection of an individual direction. 6 hrs./wk.

ART 148
METAL AND SILVERSMITHING I (3CR)
The metalsmithing techniques of casting and constructing using brass, copper and silver will be studied along with buffing, sawing, filing and soldering processes. 6 hrs./wk.

ART 149
METAL AND SILVERSMITHING II (3CR)
Prerequisite: ART 148
Students will study advanced metalsmithing techniques of casting, constructing and etching using copper, brass, bronze, silver and other materials. 6 hrs./wk.

ART 166
RAKU CERAMICS (3CR)
This course will deal with the oriental process of making and firing Raku pottery – a spontaneous, low-fire approach to a finished product involving the rapid firing and cooling of the pottery. Hand-formed (pinched and slab) as well as wheel-thrown forms will be researched. Emphasis will be on nonwheel manipulations of form. Students will be encouraged to develop a personal philosophical basis for their creative process and product. 6 hrs./wk.

ART 172
WATERCOLOR PAINTING (3CR)
This is an introductory course in transparent water media with emphasis on fundamental painting skills: color, value and composition; increased visual perception; and an awareness of personal expression. 6 hrs./wk.
ART 180
ART HISTORY: ANCIENT/RENAISSANCE (3CR)
This course will acquaint students with the arts and ideas of world civilizations from the prehistoric period to the beginning of the Italian Renaissance. The course will examine the aesthetic elements that mark the styles of major periods in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs./wk.

ART 182
ART HISTORY: RENAISSANCE/MODERN (3CR)
This course will acquaint students with the arts and ideas of western cultures from the beginning of the Italian Renaissance to the present. The course will examine the aesthetic elements that mark the styles of major periods in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs./wk.

ART 184
ART HISTORY: TWENTIETH CENTURY (3CR)
This course introduces the student to the arts and ideas of western Europe and the United States from the late 19th century to the present. The course will examine the aesthetic elements which mark the styles of major movements in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs. lecture/wk.

ART 186
ART HISTORY: INTRODUCTION TO ASIAN ART (3CR)
This course introduces students to the architecture, sculpture and painting of India, China and Japan. The course will examine those elements that mark the styles of major regions and time periods within the cultures to be studied. The course will focus on the interrelationships between artistic forms and their various cultural, social and historical contexts. Special attention will be given to the role of religion, especially Buddhism, in that it is the primary thread that interconnects the cultures of India, China and Japan. 3 hrs. lecture/wk.

ART 232
LIFE DRAWING II (3CR)
Prerequisite: ART 231
This course will offer advanced figure drawing with emphasis on varying figure form interpretations. 6 hrs/wk.

ART 235
STUDIO WORKSHOP I (3CR)
Prerequisite: ART 131 or ART 136
Emphasis will be on individual studio activity in painting or drawing. The student will decide the course content under a faculty member’s supervision. 6 hrs/wk.

ART 236
STUDIO WORKSHOP II (3CR)
Prerequisite: ART 235
Emphasis will be on individual studio activity. The student will decide the course content under the supervision of a faculty member. 6 hrs/wk.

ART 244
CERAMICS WORKSHOP I (3CR)
Prerequisites: ART 143 and permission of the program director
Students will have the opportunity to pursue advanced individual research under the direction of the instructor. Emphasis will be on creative expression as well as on the development of technical skills. 6 hrs/wk.

Astronomy
ASTR 122
ASTRONOMY (4CR)
This is a study of the universe, from the moon, planets and stars as seen in the night sky to the most distant galaxies. Topics will include quasars, black holes, the origin of the universe and the possibility of life on other planets. 3 hrs. lecture, 2 hrs. lab/wk., 5 night-time telescope sessions are required.

Automotive Technology
AUTO 121
SMALL ENGINE SERVICE (3CR)
Upon successful completion of this course, the student should be able to examine areas in class on two- and four-stroke cycle engines. The student should be able to understand lubricating, cooling, fuel and governor systems; troubleshooting engine problems; inspection of engine
components; and servicing the fuel, cooling and exhaust systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

AUTO 122
INTRODUCTION TO AUTO GLASS (3CR)
Upon successful completion of this course, the student should be able to diagnose, service and repair various automotive glass problems, provide professional service to customers, manage and supervise jobs and employees. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

AUTO 123
MOTORCYCLE MAINTENANCE AND REPAIR (2CR)
Upon successful completion of this course, the student should be able to demonstrate the proper use of tools and equipment used in servicing motorcycles. Two- and four-stroke cycle designs will be studied. Overhaul procedures will be demonstrated. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

AUTO 125
INTRODUCTION TO AUTOMOTIVE SHOP PRACTICES (3CR)
Upon successful completion of this course, the student should be able to develop shop safety habits and become proficient in tire, battery, cooling system, lubrication service and minor electrical diagnosis. This course is an introductory course required for all students in the Automotive Technology program. Emphasis will be placed on learning basic skills needed to enter advanced automotive classes. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

AUTO 128
AUTOMOTIVE PARTS SPECIALIST (2CR)
Upon successful completion of this course, the student should be able to demonstrate good communication and basic math skills. Ordering and maintaining correct inventory, as well as displaying and selling automotive parts for a fair profit, will be studied. 2 hrs. lecture/wk.

AUTO 130
DIESEL FUNDAMENTALS (2CR)
Corequisite: AUTO 125
Upon successful completion of this course, the student should be able to identify diesel component design differences from gasoline engines. The student will also be required to troubleshoot and service all external components with emphasis on glow plugs, injectors and injector pumps. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

AUTO 163
AUTOMOTIVE STEERING AND SUSPENSION (3CR)
Corequisite: AUTO 125
Upon successful completion of this course, the student should be able to describe manual and power steering component operation, summarize construction and operation of front and rear suspension systems, perform four-wheel alignment on current vehicles and service steering and suspension components. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk. Spring.

AUTO 165
AUTOMOTIVE ENGINE REPAIR (4CR)
Corequisite: AUTO 125
Upon successful completion of this course, the student should be able to demonstrate an understanding of the four-stroke-cycle internal combustion engine, calculating compression ratio, piston displacement, horsepower and torque, and correcting internal engine malfunctions. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 6 hrs. lab/wk.

AUTO 167
AUTOMOTIVE BRAKE SYSTEMS (2CR)
Corequisite: AUTO 125
Upon successful completion of this course, the student should be able to summarize disc and drum brake construction and operation, service all brake system components and describe anti-lock brake system services. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

AUTO 168
AUTOMOTIVE MANUAL DRIVETRAIN AND AXLES (3CR)
Corequisite: AUTO 125
Upon successful completion of this course, the student should be able to work safely in the shop, service the typical manual transmission/transaxle, service typical transfer cases, inspect, adjust and replace all clutch components, disassemble, reassemble and set up a differential...
and service all front- and rear-wheel drive shaft components. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

**AUTO 201**

**ASE CERTIFICATION SEMINAR (1CR)**

This course should prepare an experienced automotive technician to take four of the eight basic National Institute for Automotive Service Excellence (ASE) automotive certification tests, or the Advanced Engine Performance Specialist (L1) test, or the three ASE Engine Machinist tests. 1 hr. lecture/wk.

**AUTO 210**

**ADVANCED ENGINE REPAIR (3CR)**

**Prerequisite: AUTO 165**

Upon successful completion of this course, the student should be able to plan, design, and build a performance engine. The student will also demonstrate knowledge of the relationships between displacement, horsepower and torque; regulations governing performance engines; and current trends in engine modification. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

**AUTO 230**

**AUTOMOTIVE HEATING AND AIR CONDITIONING (3CR)**

**Corequisite: AUTO 125**

Upon successful completion of this course, the student should be able to operate, service and diagnose automotive heating, ventilation and air conditioning systems. The course will cover the theory and operation of these systems, major components, testing, recycling and other service procedures. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

**AUTO 234**

**AUTOMOTIVE ELECTRICAL SYSTEMS (4CR)**

**Corequisite: AUTO 125**

Upon successful completion of this course, the student should be able to service starting and charging system components; describe the operation and construction of starters, alternators and controlling devices; describe various lighting systems used in current automotive vehicles; and repair electrical lighting and accessory systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

**AUTO 250**

**AUTOMATIC TRANSMISSIONS AND TRANSAXLES (4CR)**

**Corequisite: AUTO 125**

Upon completion of this course, the student should be able to diagnose, service and repair various automatic transmissions and progress to automatic transaxles, including computer-controlled systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture-demonstration, 3 hrs. lab/wk.

**AUTO 254**

**AUTOMOTIVE ENGINE PERFORMANCE (5CR)**

**Prerequisite: AUTO 165 and AUTO 234**

Upon successful completion of this course, the student should be able to describe the operation and construction of automotive fuel system components such as carburetors, pumps, injectors and controlling devices. The student should also be able to describe the operation and construction of ignition circuits to include computer-controlled systems. Finally, students should be able to service all performance systems on the automobile. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 6 hrs. lab/wk.

**AUTO 260**

**AUTOMOTIVE SERVICE MANAGEMENT (3CR)**

**Corequisite: AUTO 254**

Upon successful completion of this course, the student should understand the automotive service manager's job. The manager's job includes: planning for inevitable change, maintaining flexibility, site planning, customer satisfaction, employee practices, meeting financial goals and managing time, conflict and stress. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

**AUTO 261**

**AUTOMOTIVE SERVICE TECHNIQUES (3CR)**

**Corequisite: AUTO 254**

Upon successful completion of this course, the student should become proficient in ordering of parts, writing repair orders, presenting work orders to customers, questioning customers about automobile service problems, answering the telephone and supervising work loads. Students will also diagnose and perform service work on student and staff vehicles. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.
AUTO 271
AUTOMOTIVE TECHNOLOGY INTERNSHIP (3CR)
Prerequisite: Division administrator approval
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student’s career goals. 1 hr. lecture, 15 hrs. work min./wk.

Aviation

KAV 100
INTRODUCTION TO AVIATION MAINTENANCE I (14CR)
General aviation practices will be introduced. Also addressed will be theory and practical application in basic electricity, drafting, fluid lines and fittings, materials and processes, ground operation and servicing, publications, and the mechanic’s privileges and limitations. 19.7 hrs. lecture, 11.9 hrs. lab/wk.

KAV 101
CARBURATION AND LUBRICATION (7CR)
Prerequisites: KAV 100 and KAV 111
This class will present the theory and practical application of engine lubricating systems, engine fuel systems, fuel metering systems and induction systems. 9.6 hrs. lecture, 4.8 hrs. lab/wk.

KAV 102
WOOD AND FABRIC (3CR)
Prerequisites: KAV 100 and KAV 111
The fundamentals of wood structures, aircraft covering and aircraft finishes will be introduced. 4.5 hrs. lecture, 2.7 hrs. lab/wk.

KAV 103
AIRCRAFT RECIPROCATING POWERPLANT (6CR)
Prerequisites: KAV 100 and KAV 111
Aircraft reciprocating powerplants will be introduced along with the theory and practical application of reciprocating engines and engine exhaust systems. 8.4 hrs. lecture, 4.8 hrs. lab/wk.

KAV 104
ASSEMBLY AND RIGGING (5CR)
Prerequisites: KAV 100 and KAV 111
Students will focus on the theory and practical application of aircraft assembly and rigging and airframe assembly inspection. 8.4 hrs. lecture, 4.8 hrs. lab/wk.

KAV 105
PROPELLERS (5CR)
Prerequisites: KAV 100 and KAV 111
The theory and practical application of a wide range of propeller types will be introduced as well as engine cooling systems. 6 hrs. lecture, 3.6 hrs. lab/wk.

KAV 106
HYDRAULIC AND PNEUMATIC SYSTEMS (7CR)
Prerequisites: KAV 100 and KAV 111
Areas covered will include inspection, checking, servicing and troubleshooting hydraulic and pneumatic power systems and air conditioning, pressurization and oxygen systems. 9.6 hrs. lecture, 4.8 hrs. lab/wk.

KAV 107
JET PROPULSION POWERPLANT (5CR)
Prerequisites: KAV 100 and KAV 111
This course will present operating principles of gas turbine engines, their application to present-day aircraft, and theory and practical application in inspection, servicing and troubleshooting. 6 hrs. lecture, 2.4 hrs. lab/wk.

KAV 108
AIRCRAFT ELECTRICAL AND RELATED SYSTEMS (5.5CR)
Prerequisites: KAV 100 and KAV 111
This course will examine theory and practical application in aircraft electrical, position and warning, and ice and rain control systems. 7.2 hrs. lecture, 3.6 hrs. lab/wk.

KAV 109
AIRCRAFT IGNITION AND STARTING SYSTEMS (6CR)
Prerequisites: KAV 100 and KAV 111
The principles of aircraft ignition and starting systems will be introduced with emphasis on the practical application of ignition timing and magneto disassembly and repair. 5.4 hrs. lecture, 3 hrs. lab/wk.

KAV 110
TECHNICAL MATHEMATICS (4CR)
Students will learn algebraic functions, factoring, linear equations, quadratic equations, systems of equations, exponents and radicals. Also covered will be trigonometric functions, solutions of right triangles, functions of the general angle, and graphs of trigonometric functions. Laboratory emphasis will be on elementary physics related to aircraft. 4 hrs./wk.

KAV 111
INTRODUCTION TO AVIATION MAINTENANCE II (4.5CR)
This course will present general aviation practices and theory and practical applications in basic electricity. 6.2 hrs. lecture, 3.2 hrs. lab/wk.
KAV 115
ENGLISH (3CR)
This is an English course for aviation majors only. Methods of rhetorical organization, sentence and paragraph development, and diction will be stressed. Students will write and read essays of various types. 3 hrs./wk.

KAV 200
SHEET METAL STRUCTURES (4CR)
Prerequisites: KAV 100 and KAV 111
Gas welding, sheet metal fabrication, and methods and application of aircraft structural repair will be presented. 10.2 hrs. lecture, 7.8 hrs. lab/wk.

KAV 201
POWERPLANT TESTING (2.5CR)
Prerequisites: KAV 100 and KAV 111
This course will address reciprocating engine and engine system theory and inspection and theory and practical application in the removal, installation, run-up and troubleshooting of aircraft reciprocating engines. 2.4 hrs. lecture, 4.8 hrs. lab/wk.

KAV 202
AIRCRAFT FUEL AND FIRE PROTECTION SYSTEMS (4CR)
Prerequisites: KAV 100 and KAV 111
Aircraft fuel systems and fire protection systems will be addressed. Topics will include inspection, checking, servicing and troubleshooting. 3 hrs. lecture, 1.4 hrs. lab/wk.

KAV 203
ELECTRICITY, GENERATOR – ALTERNATOR (5.5CR)
Prerequisites: KAV 100 and KAV 111
This course will present the theory of aircraft engine electrical systems, practical applications of generating power, and electrical control systems. 7.2 hrs. lecture, 3.6 hrs. lab/wk.

KAV 204
AIRCRAFT COMMUNICATIONS/NAVIGATION SYSTEMS (6CR)
Prerequisites: KAV 100 and KAV 111
This course will focus on the theory and practical application of auto pilot and approach systems and inspection and repair of antenna and equipment installations. 6.9 hrs. lecture, 3.3 hrs. lab/wk.

KAV 205
FIRE PROTECTION SYSTEMS (5.5CR)
Prerequisites: KAV 100 and KAV 111
This course will review engine systems through analysis of related instruments and control systems. Engine fire protection also will be covered. 7.2 hrs. lecture, 3.6 hrs. lab/wk.

KAV 206
AIRFRAME INSPECTION AND WELDING (5.5CR)
Prerequisites: KAV 100 and KAV 111
In this review of airframe theory courses, the emphasis will be on areas of difficulty. 7.2 hrs. lecture, 3.6 hrs. lab/wk.

Banking and Finance

AIB 101
PRINCIPLES OF BANKING (3CR)
Upon successful completion of this course, the student should be able to identify aspects of banking from the fundamentals of negotiable instruments to contemporary issues and developments within the industry. In addition, the student should be able to demonstrate an understanding of the competitive and regulatory environments; bank regulations and examination; bank loans and investments; and the importance of full-service commercial banking. 3 hrs./wk.

AIB 104
TRUST OPERATIONS (3CR)
Upon successful completion of this course, the student should be able to define and explain basic trust terminology, the nature and complexities of the investment process and the purpose of investments. In addition, the student should be able to list the trust services available; explain economic forecasting principles and illustrate their applications; describe the techniques of valuing stocks and other securities; and explain the concepts of portfolio management. This course is comprehensive and focuses on the theory and practice of trust department investment services. 3 hrs./wk.

AIB 107
LAW AND BANKING: PRINCIPLES (3CR)
Upon successful completion of this course, the student should be able to identify the laws, regulations and legal processes directly related to banking. In addition, the student should be able to outline the serious legal problems that occur in routine banking operations if the principles and concepts are not followed. This course places emphasis on the Uniform Commercial Code and legal terminology related to banking and commercial transactions. 3 hrs./wk.

AIB 109
MARKETING FOR BANKERS (3CR)
Upon successful completion of this course, the student should be able to define marketing and explain why the marketing concept is essential for banks in today's competitive economic environment. In addition, the stu-
dent should be able to describe the factors that motivate customers to purchase financial services and be able to prepare a marketing plan. The course also requires the student to outline and explain how a bank should integrate its public relations, advertising, sales promotion, selling and service distribution functions. 3 hrs./wk.

AIB 124
COMMERCIAL LENDING (3CR)
Prerequisite: ACCT 121 or ACCT 122
Upon successful completion of this course, the student should be able to define, analyze and evaluate how the commercial lending business is organized, how it contributes to bank profitability and the total commercial lending process. This comprehensive treatment of commercial lending is designed for entry-level commercial loan officers and anyone who wants to know more about the role of commercial lending in the banking industry and collective economy. This course will give the student a conceptual framework for the study of commercial lending. 3 hrs./wk.

Biology

BIOL 110
NUTRITION FOR LIFE (2CR)
Designed for students who wish to apply nutrition information to their lives, this course explores how food selection affects body size, body composition, performance, disease resistance and longevity. Students will analyze the composition of their diets and develop a plan of action to improve their eating behaviors. 2 hrs. lecture/wk.

BIOL 115
NATURAL HISTORY OF KANSAS (3CR)
This course describes the physical and biological processes that have led to the present Kansas landscape. Physical science topics include geology, climate patterns and soil formation; biological science topics include ecology and a survey of plants and animals of Kansas. The relationship of the physical and biological environment to past and present land and resource use will be explored. 3 hrs. lecture/wk. 2 Saturday 7-hr. labs required.

BIOL 122
PRINCIPLES OF BIOLOGY (3CR)
Students will explore selected concepts and principles important to an understanding of how biological systems operate. They also will examine the world of both plants and animals. This course is not open to students who have taken BIOL 120 Life Science. 3 hrs./wk.

BIOL 123
PRINCIPLES OF BIOLOGY LAB (1CR)
Prerequisite or corequisite: BIOL 122 or the equivalent
This introductory lab will focus on the structures and functions of plants and animals. 2 hrs./wk.

BIOL 124
OCEANUS: THE MARINE ENVIRONMENT (3CR)
This course will focus on the marine environment as a unique feature of the planet Earth and investigate areas of intense scientific and public concern: the physical size and diversity of contained life forms; the marine environment's contribution to the physical and historical development of man; its impact on geopolitical and economic matters; the impact of oceanic pollutants; and the potential exploitation of marine resources. 3 hrs. lecture/wk.

BIOL 125
GENERAL BOTANY (5CR)
This is a survey of the life, structure and growth of plants. Divisions of the plant kingdom will be presented with emphasis on the life cycles, anatomy, physiology and ecology of major groups. 3 hrs. lecture, 4 hrs. lab/wk.

BIOL 127
GENERAL ZOOLOGY (5CR)
This is a survey of the life, structure and growth of animals. Students will concentrate on identifying animals by their structural characteristics and will look at the role adaptation plays in anatomical and physiological features. 3 hrs. lecture, 4 hrs. lab/wk.

BIOL 130
ENVIRONMENTAL SCIENCE (3CR)
Students will study the human population's impact on the environment. Topics will include population, air and water pollution, hazardous wastes, land use and energy. 3 hrs./wk.

BIOL 131
ENVIRONMENTAL SCIENCE LAB (1CR)
Prerequisite or corequisite: BIOL 130
Students will sample the local environment for air, water and noise pollution. Field trips will include visits to a local industry to observe pollution control and to a sewage treatment plant. 2 hrs. lab/wk. plus up to three field trips.

BIOL 135
PRINCIPLES OF CELL AND MOLECULAR BIOLOGY (4CR)
This course is an integrated lecture and laboratory course for biology majors and students planning to take additional courses in biology. Basic biochemistry, cell structure and function, molecular biology, genetics,
physiology, and development of plants and animals will be studied. 3 hrs. lecture, 2 hrs. lab/wk.

BIOL 140
HUMAN ANATOMY (4CR)
Students will study gross and microscopic aspects of cells, tissues and organ systems of the human body. They will concentrate on a detailed analysis of the structure of each body system. 3 hrs. lecture, 3 hrs. lab/wk.

BIOL 144
HUMAN ANATOMY AND PHYSIOLOGY (5CR)
Students will study the relationship of structure to function in the organ systems of the human body. Emphasis will be on the location of anatomical features and their functions. 3 hrs. lecture, 4 hrs. lab/wk.

BIOL 145
HUMAN ANATOMY/PHYSIOLOGY DISSECTION (1CR)
Prerequisites: BIOL 144 and approval of the division administrator
Students will dissect the fetal pig and study the organ systems and their functions. The bovine uterus, heart and brain and the porcine testis and kidney will also be dissected. Students will compare and contrast these structures and functions with the human body. 2 hrs. lab/wk.

BIOL 146
GENERAL/HEAD AND NECK ANATOMY (4CR)
Prerequisites: Admission to the Dental Hygiene Program and CHEM 122, ENGL 121 and SOC 122 (with a minimum 2.0 G.P.A.)
The cells, tissues and organ systems of the body will be examined with emphasis on the head and neck. Students will discuss and analyze each system of the body and the embryology of the head and neck. 3 hrs. lecture, 3 hrs. lab/wk.

BIOL 150
BIOLOGY OF ORGANISMS (5CR)
Prerequisites: BIOL 122 and BIOL 123
Phyla of protista, plant and animal kingdoms will be presented with emphasis on the life cycles, anatomy, physiology and ecology of the major groups. 4 hrs. lecture, 3 hrs. lab/wk.

BIOL 210
PATHOPHYSIOLOGY (4CR)
Prerequisites: BIOL 144 or BIOL 140 and BIOL 225
This introduction to the physiology of disease will cover common disorders of the body from the cellular level to the systemic level. Topics will include causes, symptoms, diagnostic tests and treatment of disease. 4 hrs./wk. Spring.

BIOL 225
HUMAN PHYSIOLOGY (4CR)
Prerequisites: BIOL 140 or BIOL 146 and CHEM 122
The physical and chemical processes of human cells, tissues, organs and systems will be studied. Living organisms and physiological tools will be used to demonstrate the principles of general physiology. 3 hrs. lecture, 3 hrs. lab/wk.

BIOL 230
MICROBIOLOGY (3CR)
Prerequisite: CHEM 122 or one year of high school chemistry
The cell structure, physiology, antimicrobial agents, immunology and host-parasite relationships of microorganisms will be studied. 3 hrs./wk.

BIOL 231
MICROBIOLOGY LAB (2CR)
Prerequisite or corequisite: BIOL 230
Students will grow and identify microorganisms and perform experiments to test the organisms’ response to various environmental conditions. 4 hrs./wk.

BIOL 235
GENERAL NUTRITION (3CR)
Corequisite: BIOL 225 or the equivalent
Students will study the source and purpose of essential nutrients, evaluate various diets and explore the role diet plays in preventing disease. 3 hrs./wk.

BIOL 240
GENERAL PHARMACOLOGY (3CR)
Prerequisite: BIOL 225
This is a study of drugs – how they work, what they do, what effects they cause. 3 hrs./wk. Spring.

BIOL 250
ECOLOGY (4CR)
Prerequisites: BIOL 122, BIOL 123, or BIOL 130 and BIOL 131 or approval of the division administrator
This course will teach continuing science students basic ecological theories that are accepted and used by the professional ecological community. Laboratory exercises will test ecological theories by having students
develop hypotheses, design experiments, collect and analyze data by using statistics that include T-tests and Kruskal-Wallis tests, and write scientifically formatted reports. 3 hrs. lecture, 3 hrs. lab/wk.

**BIOL 298**
**SPECIAL TOPICS IN BIOLOGY: SOUTHWESTERN FIELD COURSE (4CR)**
Students will travel through the varied environments of the Southwestern United States to observe and study the field biology of each area. The course will include pretrip lectures in addition to the two-week field trip.

**BIOL 299**
**YUCATAN FIELD COURSE: NATURAL HISTORY (3CR)**
This travel-for-credit course consists of on-campus seminars followed by two weeks in Mexico. The class is an introduction to the natural history, flora and fauna of selected geographical locations of the Yucatan Peninsula. The course will include pretrip lectures in addition to the two-week trip.

**Business Administration**

**BUS 120**
**MANAGEMENT ATTITUDES AND MOTIVATION (3CR)**
Upon successful completion of this course, the student should be able to assess personal strengths and weaknesses and set goals for personal and professional life; define communication and listening skills; analyze human relations problems; apply problem-solving strategies to human relations issues in the workplace; and define and compare management styles. Class meets for 48 hrs.

**BUS 121**
**INTRODUCTION TO BUSINESS (3CR)**
Upon successful completion of this course, the student should be able to explain the basic principles of the American free enterprise economic system. In addition, the student should be able to explain the fundamentals of starting a business and the interrelationship among the four functional areas: accounting, finance, management and marketing. 3 hrs/wk.

**BUS 123**
**PERSONAL FINANCE (3CR)**
Upon successful completion of this course, the student should be able to define the role of a consumer in the economy; develop a basic financial plan; apply budgeting procedures in a daily and monthly spending plan; calculate principal and interest; define the types of consumer credit; identify the types of housing mortgages; and explain the important considerations in buying, selling and renting. In addition, the student should be able to calculate individual insurance needs in the areas of life insurance, health insurance, property and liability insurance, automobile insurance and other types of special insurance, and be able to explain employee and retirement benefits, including tax-sheltered plans. 3 hrs/wk.

**BUS 122**
**INTRODUCTION TO LAW (3CR)**
Upon successful completion of this course, the student should be able to explain the major substantive and procedural aspects of law. This course is available to students with a general interest in the law, and is required for students seeking admission to the Paralegal Program. 3 hrs/wk.

**BUS 126**
**TRANSPORTATION RATES I (3CR)**
**Prerequisite: Permission of the division administrator***
Upon successful completion of this course, the student should be able to identify and explain motor carrier rates. 3 hrs/wk.

**BUS 127**
**TRANSPORTATION RATES II (3CR)**
**Prerequisite: Permission of the division administrator***
Upon successful completion of this course, the student should be able to identify and explain Middlewest Freight Bureau Tariff 125 and MWB 226 (commodities). 3 hrs/wk.

**BUS 128**
**TRANSPORTATION RATES III (3CR)**
**Prerequisite: Permission of the division administrator***
Upon successful completion of this course, the student should be able to identify and explain Middlewest Motor Freight Bureau Tariff 129 (rule for discounts and allowances), MWB 600 local distribution and Rocky Mountain Motor 303 (class and commodity rates). 3 hrs/wk.

**BUS 140**
**PRINCIPLES OF SUPERVISION (3CR)**
Upon successful completion of this course, the student should be able to define the supervisor's role within a company and identify the skills necessary to successfully fulfill that role. In addition, the student should be able to determine the supervisor's role in supervising employees on an individual basis and as a group. The student should also be able to apply the principles of supervision in simulated work situations. 3 hrs/wk.
BUS 141
PRINCIPLES OF MANAGEMENT (3CR)
Upon successful completion of this course, the student should be able to state the basic functions of management, explain the nature of organizations and organizational theories and types, explain the importance of effective communication within the organizational structure, develop and define the techniques for directing and motivating employees, explain the effects of change on an organization and develop techniques for coping with those effects. In addition, the student should be able to explain and discuss the application of business ethics in managerial decision making. 3 hrs/wk.

BUS 145
SMALL BUSINESS MANAGEMENT (3CR)
Upon successful completion of this course, the student should be able to demonstrate an understanding of management techniques vital to small business. In addition, the student should be able to apply decision-making skills in the areas of business start-up – choosing the form of ownership, marketing, financial planning and managing the small business. 3 hrs/wk.

BUS 147
INTRODUCTION TO CREDIT MANAGEMENT (3CR)
Prerequisite: ACCT 121
Upon successful completion of this course, the student should be able to explain the role and types of commercial credit in a business environment and the determination and development of a credit policy. In addition, the student should be able to analyze a company's financial statements to determine credit worthiness and use applicable law and credit regulations governing commercial credit policies. The student should also be able to describe and use basic collection principles. 3 hrs lecture/wk.

BUS 148
INTERMEDIATE CREDIT MANAGEMENT (3CR)
Prerequisite: BUS 147
Upon successful completion of this course, the student should be able to apply credit management procedures to the diagnosis and solution of credit problems. In addition, the student should be able to explain risk analysis, credit management controls and procedures, the role of the credit auditor, the role of credit insurance and calculate ratios and a trend analysis based on data in financial statements. 3 hrs lecture/wk.

BUS 150
BUSINESS COMMUNICATIONS (3CR)
Prerequisite: ENGL 121
Upon successful completion of this course, the student should be able to demonstrate efficient summarizing and outlining, demonstrate listening skills that help improve retention rate, write correspondence and memos using the principles of correct writing style and format, explain the basic rules of report writing and apply those principles to a short report, and prepare an effective oral business presentation. 3 hrs/wk.

BUS 215
SAVINGS AND INVESTMENTS (3CR)
Upon successful completion of this course, the student should be able to define, analyze and evaluate types of savings instruments and other investments. In addition, the student should be able to determine which instruments are desirable for a personal financial plan. The student should also be able to demonstrate an understanding of basic financial-planning concepts and tax-planning procedures. 3 hrs/wk.

BUS 221
PRINCIPLES OF INSURANCE (3CR)
Upon successful completion of this course, the student should be able to state the objectives of and the steps involved in the risk management process; explain the life, health, property and liability exposures for a family; determine the property and liability needs and expenses for a business; explain the needs for both private and social insurance; state the factors included in insurance costs; and analyze current issues in insurance. 3 hrs/wk.

BUS 225
HUMAN RELATIONS (3CR)
Upon successful completion of this course, the student should be able to evaluate the impact of human relations as it relates to the social system, technical system and administrative system of a work environment. In addition, the student should be able to analyze these systems and their effect on individual, group and organizational performance. 3 hrs/wk.

BUS 230
MARKETING (3CR)
Upon successful completion of this course, the student should be able to explain the concepts of production, consumption and distribution in relation to a free-enterprise economy; list the basic channels of distribution available to the manufacturer of consumer and industrial products; explain and compare the distribution functions of the manufacturer, wholesaler and retailer; and state the procedures necessary to develop a total marketing plan for a given product, service or product line. In addition, the student should be able to discuss the fundamental principles of consumer behavior in the buying process and apply those principles to target market strategies. 3 hrs/wk.
BUS 235
INTRODUCTION TO INTERNATIONAL BUSINESS (3CR)
Upon successful completion of this course, the student should be able to explain the foreign economic, political and socio-cultural environments relevant to international trade and finance. In addition, the student should be able to explain the basic functions of a firm engaged in international trade (management, marketing and finance) and the international monetary system and foreign exchange. 3 hrs/wk.

BUS 243
HUMAN RESOURCE MANAGEMENT (3CR)
Upon successful completion of this course, the student should be able to state the principles of human resource management; describe the human resource function as an integral part of management; differentiate between roles of the personnel and line manager in the management of personnel; define and evaluate strategic planning, recruitment, selection and training; define the primary methods of human resource development; employ methods of employer appraisal; and state the major components and coverages of the Equal Employment Opportunity Act and other personnel/human resources-related laws. 3 hrs/wk.

BUS 250
INTRODUCTION TO CORPORATE FINANCE (3CR)
Upon successful completion of this course, the student should be able to explain the nature and role of finance in the United States economy; describe the processes of business financing and management; identify sources of government financing, consumer financing, agricultural financing and financing for international trade and foreign investment; and discuss the application of monetary, fiscal and debt management policies. 3 hrs lecture/wk.

BUS 261
BUSINESS LAW I (3CR)
Upon successful completion of this course, the student should be able to: describe the American legal system and identify and describe the basic principles of law as applied to business crimes, torts, contracts, sales and negotiable instruments. In addition, the student should be able to apply basic principles of law to cases involving daily business operations. 3 hrs/wk.

BUS 263
BUSINESS LAW II (3CR)
Prerequisite: BUS 261
Upon successful completion of this course, the student should be able to describe the basic principles of law as applied to real and personal property, bailments, estates and trusts, secured transactions, bankruptcy, and agency and business organizations. In addition, the student should be able to apply basic principles of law to cases involving daily business operations. 3 hrs/wk.

BUS 271
MANAGEMENT SEMINAR (3CR)
Prerequisite: BUS 141
Upon successful completion of this course, the student should be able to apply management decision-making principles to simulated management problems. In addition, the student should be able to explain the theory and practice of the management process. 3 hrs/wk.

BUS 298
BUSINESS IN JAPAN (3CR)
In this travel-for-credit course, students will take part in seminars on campus before traveling to Japan where they will visit Japanese factories and other business-related agencies. 52 lecture hours.

Business Entrepreneurship

BUSE 131
FINANCIAL MANAGEMENT FOR SMALL BUSINESS (2CR)
Prerequisite: ACCT 111 or ACCT 121
Upon successful completion of this course, the student should be able to identify and evaluate the various sources available for funding a small business; demonstrate an understanding of financial terminology; read, prepare and analyze a financial statement; prepare a cash-flow statement; and write a loan proposal. In addition, the student should be able to explain the importance of working capital and cash management. The student should also be able to identify financing needs, establish credit policies, prepare sales forecasts and determine borrowing needs for a small business. 2 hrs/wk.

BUSE 138
FASTTRAC BUSINESS PLAN (3CR)
Upon successful completion of this course, the student should be able to write a sound business plan. Students should be able to assess strengths and weaknesses of their businesses; collect, analyze and organize market research data into a marketing plan; and prepare the financial projections for their business ideas. In addition, students should be able to identify and evaluate various resources available for funding small businesses. 3 hrs lecture/wk.

BUSE 140
FASTTRAC FEASIBILITY PLAN (2CR)
Upon successful completion of this course, the student should be able to prepare a feasibility plan for a business.
In addition, the student will conduct market research on the business and prepare a financial feasibility analysis. This course is designed for participants who are in the concept or very early start-up stage of business development. 2 hrs. lecture/wk.

**BUSE 160**
**LEGAL ISSUES FOR SMALL BUSINESS (2CR)**

Upon successful completion of this course, the student should be able to identify the forms of business ownership and the legal and tax implications for each. In addition, the student should be able to explain laws concerning legal issues such as personnel, contracts and protection of intellectual property. The student should also be able to explain the reporting requirements for local, state and federal agencies. 2 hrs./wk.

**BUSE 180**
**ENTREPRENEURSHIP SEMINAR: THE SMALL BUSINESS ENVIRONMENT (2CR)**

**Prerequisites:** ECON 130 or ECON 230, BUS 230

Upon successful completion of this course, the student should be able to assess the current economic, social and political climate for small business. In addition, the student should be able to explain how demographic, technological and social changes create opportunities for small business ventures. 2 hrs./wk.

**BUSE 190**
**ENTREPRENEURSHIP SEMINAR: SMALL BUSINESS ANALYSIS (2CR)**

**Prerequisite:** BUSE 131, BUSE 138, BUSE 160, BUS 145, BUS 230 or permission of division administrator

Upon successful completion of this course, the student should be able to identify problems that frequently arise in small business and utilize problem-solving skills to formulate solutions. In addition, the student should be able to apply the knowledge of business concepts and techniques in the analysis of cases and actual business situations. 2 hrs./wk.

**BUSE 210**
**ENTREPRENEURSHIP INTERNSHIP I (1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. A minimum of 15 hours each week on-the-job training is required.

**BUSE 215**
**ENTREPRENEURSHIP INTERNSHIP II (1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. A minimum of 15 hours each week on-the-job training is required.

**Chemistry**

**CHEM 120**
**THE WORLD OF CHEMISTRY (3CR)**

This course is for students who will benefit from an understanding of the concepts of chemistry without emphasis on mathematical problem solving. Historical foundations of chemistry, application to industrial processes and current research topics will be covered. Demonstrations and computer graphics will illustrate and model accepted theories. 3 hrs. lecture/wk. Fall

**CHEM 121**
**THE WORLD OF CHEMISTRY LAB (1CR)**

Corequisite: CHEM 120

This optional laboratory course is designed to accompany CHEM 120. The course includes the careful observation and recording of data, both qualitatively and quantitatively. Results are interpreted in terms of current models for chemical systems. The experiments are selected to illustrate chemical principles. 3 hrs. lab/wk.

**CHEM 122**
**PRINCIPLES OF CHEMISTRY (5CR)**

This is an introduction to the fundamentals of chemistry. It will cover the general concepts of inorganic chemistry with some organic chemistry and biochemistry. 4 hrs. lecture, 3 hrs. lab/wk.

**CHEM 123**
**PRINCIPLES OF TECHNICAL CHEMISTRY (6CR)**

Corequisite: MATH 133

This introduction to the fundamental concepts of chemistry will emphasize the general concepts of inorganic chemistry with sufficient study of organic chemistry to introduce the student to biochemistry. Labs will introduce students to the processes and expectations of an industrial laboratory. 4 hrs. lecture, 6 hrs. lab/wk.

**CHEM 124**
**GENERAL CHEMISTRY I LECTURE (4CR)**

Corequisites: CHEM 125 and MATH 171

Students will relate atomic structure to chemical systems, calculate the amount of material used in chemical reactions, use the periodic table as an aid to understanding chemical systems and interpret chemical reactions. 5 hrs./wk.

**CHEM 125**
**GENERAL CHEMISTRY I LAB (1CR)**

Corequisite: CHEM 124

Experiments of a qualitative and quantitative nature that support topics from General Chemistry I Lecture will be carried out. 3 hrs./wk.
CHEM 131
GENERAL CHEMISTRY II LECTURE (4CR)
Prerequisites: CHEM 124 and CHEM 125
Corequisite: CHEM 132
In this continuation of CHEM 124, topics will include kinetics, acid-base chemistry, equilibrium, chemical thermodynamics and electro-chemistry. 4 hrs./wk.

CHEM 132
GENERAL CHEMISTRY II LAB (1CR)
Prerequisite: CHEM 124 and CHEM 125
Corequisite: CHEM 131
The laboratory consists of qualitative and quantitative experiments designed to parallel and support General Chemistry II Lecture. 3 hrs./wk.

CHEM 140
PRINCIPLES OF ORGANIC CHEMISTRY (5CR)
Prerequisite: CHEM 122 or CHEM 131 and CHEM 132
Nomenclature, theory and applications of basic organic chemistry will be covered. Functional group reactions will lead into a study of carbohydrates, proteins, lipids and other biochemical topics. 4 hrs. lecture, 3 hrs. lab/wk.

CHEM 143
PRINCIPLES OF TECHNICAL ORGANIC CHEMISTRY (6CR)
Prerequisite: CHEM 123
This course is a continuation of the study of organic and biochemistry initiated in CHEM 123. Biologically important concepts will be introduced in the study of basic functional group chemistry and extended into traditional biochemical topics such as carbohydrates, enzymes, lipids and proteins. The labs will emphasize the synthesis, separation, identification and characterization techniques common to the technician’s role. 4 hrs. lecture, 6 hrs. lab/wk.

CHEM 220
ORGANIC CHEMISTRY I (5CR)
Prerequisites: CHEM 131 and CHEM 132
Electronic theories and reaction mechanisms of organic compounds will be the major focus of this course. Students will work on techniques in the lab and will prepare representative compounds. 3 hrs. lecture, 6 hrs. lab/wk.

CHEM 221
ORGANIC CHEMISTRY II (5CR)
Prerequisite: CHEM 220
In this continuation of Organic Chemistry I, organic qualitative analysis will be introduced. 3 hrs. lecture, 6 hrs. lab/wk.

CHEM 223
TECHNICAL ANALYTICAL CHEMISTRY (4 CR)
Prerequisites: CHEM 143, PHYS 135 and MATH 134 or MATH 171
This course will introduce students to the fundamentals of modern wet quantitative chemical analysis. The topics of data analysis, quality control, gravimetric, titrimetric and potentiometric analysis will be related to the industrial environment through extensive supportive labs. 3 hrs. lecture, 5 hrs. lab/wk.

CHEM 227
INTRODUCTION TO QUANTITATIVE ANALYSIS (5CR)
Prerequisites: CHEM 131 and CHEM 132
This is an introduction to the concepts of acid-base, chromatography, coulometry, equilibrium, oxidation-reduction and spectrophotometry as they apply to quantitative chemical analysis. The lab will introduce modern quantitative experimental techniques. 3 hrs. lecture, 6 hrs. lab/wk.

CHEM 243
TECHNICAL INSTRUMENTAL CHEMISTRY (5CR)
Prerequisites: CHEM 223, PHYS 136 and MATH 134 or MATH 172
This course will introduce students to the fundamentals of modern instrumental quantitative analysis. The topics of spectrophotometry, fluorometry, chromatography and polarography will be related to the technician’s role in the industrial environment through intensive supportive labs. 3 hrs. lecture, 6 hrs. lab/wk. Spring.

CHEM 250
BIOCHEMISTRY (4CR)
Prerequisites: CHEM 131, CHEM 132, CHEM 140 or CHEM 220
This course is an introduction to the major topics in biochemistry. Topics include the major classes of biological molecules, such as proteins, lipids and nucleic acid; an overview of the major metabolic pathways; and developments and topics relating to molecular biology. 4 hrs. lecture/wk.

CHEM 251
BIOCHEMISTRY LABORATORY (2CR)
Prerequisites: CHEM 131, CHEM 132, CHEM 140 or CHEM 220
Corequisite: CHEM 250
The laboratory will consist of qualitative and quantitative experiments using biological molecules. Particular emphasis is on biochemistry laboratory techniques including chromatography and spectroscopy will be used. 3 hrs. lab, 1 hr. recitation/wk.
Civil Engineering Technology

CET 105
CONSTRUCTION METHODS (3CR)
Upon successful completion of this course, the student should be able to understand terminologies, methods, procedures, sequences of operation and types of construction and planning in civil and building construction. 3 hrs/wk.

CET 125
CONSTRUCTION SPECIFICATIONS (2CR)
Prerequisite: CET 105 or equivalent
Upon successful completion of this course, the student will be able to describe the phases of a project, identify the bidding requirements, explain contractual relationships between parties, categorize the drawings, write specifications, list warranties and explain contract modifications. 2 hrs. lecture/wk.

CET 127
CONSTRUCTION ESTIMATING (3CR)
Prerequisite: DRAF 129 or competence in reading building drawings
Upon successful completion of this course, the student should be able to take off quantities of materials from drawings and use reference books, tables and the C.S.I. procedures in performing estimates. Students will use industry standard software for construction estimating. 2 hrs. lecture, 2 hrs. lab/wk.

CET 129
CONSTRUCTION MANAGEMENT (3CR)
Upon successful completion of this course, the student should be able to perform many processes associated with construction projects and complete forms typically used in project management. Topics will include contract documents, shop drawings, scheduling, job costs and management issues. Project management software will be used to schedule and track project resources and progress. 3 hrs. lecture/wk.

CET 132
RAILROAD STRUCTURES LAYOUT (3CR)
Prerequisite: Approval of the railroad training administrator and the JCCC division administrator
This is a beginning course for railroad maintenance-of-way personnel working with bridge and building construction. Students will learn to read construction blueprints used in railroad projects and to perform layout work for railroad construction. Also, students will learn how to use basic surveying principles and equipment typically used at railroad construction sites. 2 hrs. lecture, 3 hrs. lab/wk.

CET 135
CONCRETE TECHNOLOGY (3CR)
Prerequisite: Approval of the railroad training administrator and the JCCC division administrator
This course contains information that will help experienced and inexperienced students understand the principles of quality concrete. The emphasis will be on allowing concrete to reach its highest level of durability through proper mix design, placing and finishing techniques and curing methods. 2 hrs. lecture, 3 hrs. lab/wk.

CET 140
CIVIL ENGINEERING MATERIALS (3CR)
Corequisite: MATH 133
Upon successful completion of this course, the student will be able to analyze materials commonly used in civil engineering construction projects. Common properties of soil, concrete and asphalt will be studied for classification as engineering materials. Students will learn to perform typical materials tests in accordance with ASTM guidelines. 2 hrs. lecture, 3 hrs. lab/wk.

CET 211
TECHNICAL STATICS AND MECHANICS (3CR)
Prerequisite: MATH 134 or MATH 172
Upon successful completion of this course, the student should be able to evaluate force systems in equilibrium, centroids, moment of inertia, trusses, frames and friction. The topics of elastic stress and strain, torsion, and beam and column behavior also will be covered. Computer applications will be included. 3 hrs. lecture/wk.

CET 258
STRUCTURAL DESIGN (3CR)
Prerequisite: CET 211 or ENGR 252
Upon successful completion of this course, the student should be able to analyze and design simple structural systems. Structural members and systems composed of steel and wood will be investigated with regard to strength and structural behavior. AISC design standards will be used. Computer analysis of structures will be introduced. 3 hrs. lecture/wk.

CET 270
FLUID MECHANICS (3CR)
Prerequisites: MATH 172 or MATH 134
Upon successful completion of this course, the student should be able to analyze fluid systems using the fundamental properties of pressure, hydrostatic force, buoyancy, flow in pipes, open channel flow and flow measuring devices. The student should also be able to solve practical problems related to engineering technology. Computer applications will be included. 3 hrs. lecture/wk.
Communication Design
(Also see Computer Interactive Media, page 159.)

CD 120
INTRODUCTION TO COMMUNICATION DESIGN (3CR)
This course is designed to acquaint the student with the various aspects of the communication design field. Topics include the ways in which visual messages are used in society, the skills needed by a communication designer and the potential areas of specialization and employment. Emphasis will be on assisting the student to make an informed decision about communication design as a career. 3 hrs. lecture/wk.

CD 130
REPRESENTATIONAL DRAWING I (3CR)
Prerequisites: ART 124, CD 120
This course will provide instruction in both theoretical and perceptual techniques and processes relating to the visual analysis of three-dimensional form and its accurate interpretation on a two-dimensional surface. Focus will be on the application of principles of linear perspective. The use of light, shade and cast shadows will emphasize the attainment of accurate linear and solid structures and accurate rendering of form. 6 hrs./wk.

CD 131
REPRESENTATIONAL DRAWING II (3CR)
Prerequisite: CD 130
This course is a continuation of Representational Drawing I with emphasis on the creative application of acquired theory, perceptual skills and techniques. Compositional problems as well as techniques used to convey emotional content will be explored. 6 hrs./wk.

CD 132
TYPOGRAPHY (3CR)
Prerequisites: ART 124, CD 120, CDTP 131
This course will provide instruction in the basic principles of contemporary typographic design. Information concerning typography, from traditional letterpress through digital type design and typesetting, will be included. The course content will emphasize effective methods of communicating to a mass audience through the printed letter, word, line and page. 6 hrs./wk.

CD 134
LAYOUT DESIGN (3CR)
Prerequisite: CD 132
This course will provide a basic study of layout elements. Students will acquire the skills necessary to produce layouts. These skills include photographic indication techniques, comp lettering, advertising and editorial grid systems and electronic page design. 6 hrs./wk.

CD 140
TECHNICAL PROCESSES (3CR)
Prerequisite: PHOT 121
This technical process course will cover basic process camera work using a variety of professional materials, including photo mechanical transfer materials and orthochromatic films. This course also will include various proofing and comping techniques, including color key and emphasis on chromatic. Digital prepress applications, scanning and color output devices will be explored. 6 hrs./wk.

CD 230
ILLUSTRATION TECHNIQUES (3CR)
Prerequisite: CA 131
This course will provide an understanding of the work of the professional illustrator. Processes involved in effective research, creative visual problem solving and image production utilizing both digital and traditional applications will be explored. 6 hrs./wk.

CD 231
ADVANCED TYPOGRAPHY (3CR)
Prerequisite: CD 134
This course is a continuation of Layout Design. Emphasis will be on typographic solutions that explore verbal/visual messages. Projects include designs for publication such as posters, brochures, packaging and graphic campaigns. Typography as a functional and experimental medium will be stressed. Design problem solving for a diverse range of specifications including audience, client needs and budget constraints are included. Traditional and digital tools will be incorporated to produce comprehensives. 6 hrs./wk.

CD 235
PRODUCTION METHODS (3CR)
Prerequisites: CD 134 and CD 140
This course will provide the fundamentals of preparing art for reproduction. Traditional camera-ready art techniques and digital prepress production methods will be emphasized. 6 hrs./wk.

CD 236
ELECTRONIC PRODUCTION (3CR)
Prerequisites: CD 230, CD 231, CD 235 and PHOT 123
This course is a continuation of the Production Methods course. It will provide experience in digital prepress and other electronic production techniques. The student will apply production skills to problems of professional scope and complexity. 6 hrs./wk.
CD 244
COMMUNICATION SYSTEMS (3CR)
Prerequisites: CD 230, CD 231, CD 235 and PHOT 123
This course will explore the scope and potential of graphic design as a vehicle for visual communication in contemporary society. Signs and symbols, as well as the communicative power of typographic, hand graphic and photographic modes, will be studied. Traditional and electronic methods will be used to develop projects. 6 hrs/wk.

CD 245
ADVANCED DESIGN PRACTICE (3CR)
Prerequisites: CD 230, CD 231, CD 235 and PHOT 123
This course will focus on the utilization of the student's total design capability and technical knowledge in solving graphic design problems of professional scope and complexity. Students will have the opportunity to work with three art directors and produce three professional projects for potential inclusion in his/her portfolio. 6 hrs/wk.

CD 272
PROFESSIONAL PREPARATION (3CR)
Prerequisites: The student must have completed all required studio courses in the Communication Design program prior to the semester for which he/she is enrolling in this course, or be co-enrolled in all fourth-semester studio courses.
This course will provide Communication Design majors instruction in the organization and presentation of his/her work in a portfolio format of professional quality. A slide portfolio and résumé will be produced. Instruction in interviewing techniques and employment searches will also be provided. 6 hrs/wk.

CD 275
COMMUNICATION DESIGN INTERNSHIP (1CR)
Prerequisites: Approval by the Communication Design faculty review committee
Students will work in an approved training situation under instructional supervision. The internship is designed to give the student the opportunity to use the skills learned in the Communication Design program. Student interns will complete a minimum of 180 hours on the job and will be compensated with at least the minimum hourly wage.

Computers:
Personal Computer Applications

CDTP 130
DESKTOP PUBLISHING I: PAGEMAKER (1CR)
Prerequisite: CPCA 105 or CPCA 106 or equivalent experience
This course covers the basic features and techniques of the PageMaker desktop publishing program. Emphasis will be on the production of text material with complex tab and indent specifications, style attributes and the grouping and distributing of multiple text blocks. Additional topics will include the use of drawing tools, working with multiple documents, drop caps, graphics and text rotation, locking items and threaded text blocks. 1 hr. lecture/wk.

CDTP 131
DESKTOP PUBLISHING I: QUARKXPRESS (1CR)
Prerequisite: CPCA 105 or CPCA 106 or equivalent experience
This course covers the basic features and techniques of the QuarkXPress desktop publishing program. Emphasis will be on the production of text materials with complex tab and indent specifications, style attributes and the grouping and distributing of multiple text blocks. Additional topics include the use of drawing tools, working with multiple documents, drop caps, graphics and text rotation, locking items and threaded text blocks. 1 hr. lecture/wk.

CDTP 135
DESKTOP PHOTO MANIPULATIONS: PHOTOSHOP (1CR)
Prerequisite: CPCA 105 or CPCA 106 or equivalent experience
This course is designed to explore the manipulation of digital photographs using a variety of techniques and tools. The application of painting and editing tools to digital images, the manipulation of selections, layers and resolution, and analyzing scanned images will be covered. 1 hr. lecture/wk.

CDTP 145
DESKTOP ILLUSTRATION I: ILLUSTRATOR (1CR)
Prerequisite: CPCA 105 or CPCA 106 or equivalent experience
This course covers the creation of computer-generated illustrations using a variety of techniques. Topics include managing multiple items, creating line drawings, creating blends with objects and typography, working with layers and creating layouts using type. 1 hr. lecture/wk.
CDTP 150
DESKTOP PUBLISHING II: PAGEMAKER (1CR)
Prerequisite: CDTP 130 or equivalent experience
This course covers the intermediate-level features and techniques of the PageMaker desktop publishing program. Topics include producing documents using typographic techniques such as layering, creating custom leaders, distributing graphic elements, working with graphics in layers, EPS manipulation and production techniques. The creation of multiple design applications with final art markup and spot color separations will be covered in greater detail. 1 hr. lecture/wk.

CDTP 151
DESKTOP PUBLISHING II: QUARKXPRESS (1CR)
Prerequisites: CDTP 131 or equivalent experience
This course covers the intermediate-level features and techniques of the QuarkXPress desktop publishing program. Topics include producing documents using typographic techniques such as layering, skewing, blending, distributing, multiple rotations, embossing, EPS manipulation and scanning. The creation of multiple design applications with final art markup and spot color separations will be covered. 1 hr. lecture/wk.

CDTP 165
DESKTOP ILLUSTRATION II: ILLUSTRATOR (1CR)
Prerequisite: CDTP 145
This course covers the creation of advanced computer-generated illustrations using a variety of techniques. Topics to be covered include using plug-in filters, creating graphs, formulating custom colors and preparing spot color separations. 1 hr. lecture/wk.

CDTP 170
DESKTOP PUBLISHING III: PAGEMAKER (1CR)
Prerequisites: CDTP 150 or equivalent experience
This course covers the advanced features and techniques of the PageMaker desktop publishing program. The production of complex documents using sophisticated typographic techniques that include wrapping text within a graphic element, distributing text, multiple rotations, embossing and EPS manipulation will be emphasized. The creation of multiple design applications with final art markup and spot color separations will be covered in greater detail. 1 hr. lecture/wk.

CDTP 171
DESKTOP PUBLISHING III: QUARKXPRESS (1CR)
Prerequisite: CDTP 151 or equivalent experience
This course covers the advanced features and techniques of the QuarkXPress desktop publishing program. The production of complex documents that include sophisticated graphic techniques such as layering, skewing, blending, distributing, multiple rotations, embossing, EPS manipulation and scanning will be emphasized. The creation of multiple design applications with final art markup and spot color separations will be covered in greater detail. 1 hr. lecture/wk.

CPCA 105
INTRODUCTION TO PERSONAL COMPUTING: IBM (1CR)
This introductory course is designed to give the beginning computer user an overview of the personal computer. The student will gain confidence in basic computer skills and concepts through a hands-on approach while becoming familiar with an IBM or compatible microcomputer system and its primary uses. Topics include computer software, hardware and terminology; introduction to microcomputer operating systems; introduction to word processing; introduction to spreadsheets; and introduction to database management. 1 hr. lecture/wk.

CPCA 106
INTRODUCTION TO PERSONAL COMPUTING: MACINTOSH (1CR)
This introductory course is designed to give the beginning computer user an overview of the Macintosh personal computer. The student should gain confidence in basic computer skills and concepts through a hands-on approach while becoming familiar with a Macintosh computer and its primary uses. Topics include computer software, hardware and terminology; introduction to the Macintosh operating system; introduction to word processing; introduction to paint; introduction to drawing; introduction to spreadsheets; and introduction to database management. 1 hr. lecture/wk.

CPCA 108
WORD PROCESSING ON MICROCOMPUTERS I (1CR)
Prerequisites: CPCA 105 or CPCA 106, using the same hardware or equivalent experience and OST 101 if typing speed is less than 35 w.p.m.
This course covers the concepts and use of word processing software. Functions such as editing, printing, merging, pagination, spelling check and centering will be included. 1 hr. lecture/wk.

CPCA 110
SPREADSHEETS ON MICROCOMPUTERS I (1CR)
Prerequisite: CPCA 105 or CPCA 106, using the same hardware; or equivalent experience
This course covers the concepts and uses of spreadsheet software on the personal computer. Business decision-making worksheet models will be created and modified.
by entering labels, functions and formulas. Various formatting techniques will be applied to enhance the appearance of printed worksheets. The graphic display of worksheet data using the charting capabilities of the software will also be covered. 1 hr. lecture/wk.

CPCA 111
SPREADSHEETS ON MICROCOMPUTERS II (1CR)
Prerequisite: CPCA 110 using the same hardware and application software or equivalent experience
This course is a continuation of CPCA 110 and will provide the student with an intermediate level of spreadsheet concepts. Using typical business scenarios, the student will perform manual and automated what-if analyses, manage data in worksheets with tables and database functions and use multiple worksheets to build consolidated statements. Basic macros will be introduced. 1 hr. lecture/wk.

CPCA 112
PC COMMUNICATIONS (1CR)
Prerequisite: CPCA 105 or equivalent experience
This course covers the description, definition and use of the terminology of PC communications. Accessing online systems to perform such operations as uploading and downloading files and sending and receiving electronic mail will also be covered. 1 hr. lecture/wk.

CPCA 114
DATABASES ON MICROCOMPUTERS I (1CR)
Prerequisite: CPCA 105 or CPCA 106 or equivalent experience
This course is an introduction to the concepts and uses of database software. Functions such as building, loading, entering, changing, deleting, sorting, calculating and reporting will be used. The use of a database to solve typical business applications will be covered. 1 hr. lecture/wk.

CPCA 115
DATABASES ON MICROCOMPUTERS II (2CR)
Prerequisite: CPCA 114 using the same software
This course covers how to design and define a relational database, create custom screens for data entry and updating, transfer files to and from the database and manipulate data with a relational database language. An introduction to object-oriented programming will be included. 2 hrs. lecture/wk.

CPCA 116
DATABASE: FILEMAKER PRO (1CR)
This course provides relatively easy access to the essential concepts of data management. It enables students to store, organize and synthesize information for effective use in the day-to-day business needs of a medium size organization. The information can also be arranged in a variety of visual formats for even more effective communication. Students will complete a series of practical projects, using either the Macintosh or Windows 95 operating system in the Mac-Win dual-platform computing laboratory. 1 hr. lecture/wk.

CPCA 118
ELECTRONIC MAIL/CALENDAR SYSTEMS (1CR)
This course is an introduction to many of the features of electronic mail/calendar systems. Topics to be covered include how to send and receive messages, reply and resend messages, store and retrieve mail and send objects using e-mail. 1 hr. lecture/wk.

CPCA 121
INTRODUCTION TO PROJECT MANAGEMENT (1CR)
Prerequisite: CPCA 105 or equivalent experience
This course covers how to effectively manage projects based on proven project management techniques and methodologies. The development and management of projects using the critical path method, program evaluation review technique charts, resource loading and leveling, sub-projects, Gantt charts and allowances for planned, changed and actual activities will be covered. 1 hr. lecture/wk.

CPCA 123
PRESENTATION GRAPHICS (1CR)
Prerequisite: CPCA 105 or CPCA 106 or equivalent experience
This course covers how to organize and produce an effective on-computer or slide-generated presentation, complete with printed speaker notes, handouts and overhead transparencies, using the basic features of a presentation graphics program. The use of master pages, template files, text formatting, color schemes, various drawing tools, the automated outline feature, animation dissolve sequences and the integration of scanned photographs will be covered. 1 hr. lecture/wk.

CPCA 125
WORD PROCESSING ON MICROCOMPUTERS II (1CR)
Prerequisite: CPCA 108 using the same application software or equivalent experience
This is an intermediate-level course covering the concepts and applications of word processing software. Topics include the use of data files, spell checking, print controls, footnotes, headers, footers, styles, table of contents, lists, indexes and graphics. 1 hr. lecture/wk.
CPCA 128
PERSONAL COMPUTER APPLICATIONS (3CR)
This course will introduce the student to the use of word processing, spreadsheet and database applications. The methods of transferring and integrating data written through these application programs will also be presented. The emphasis will be hands-on with practice projects presented. 3 hrs/wk.

CPCA 134
MANAGING YOUR MACINTOSH (1CR)
Prerequisite: CPCA 106 or equivalent practical experience
This course is designed for the student using the Macintosh. The course will focus on system management, font installation, virus protection, commercial utilities, peripherals and ShareWare/FreeWare utilities. 1 hr. lecture/wk.

CPCA 135
M/S DOS (1CR)
Prerequisite: CPCA 105 or equivalent experience
This course includes the operating system rules, functions and commands that will enable the student to manage the basic operation of a DOS-based personal computer. Emphasis is on using the DOS directory system to organize data files on storage devices and developing a strategy for preservation of that data. The course is beneficial to students taking any applications course on an IBM/compatible PC. 1 hr. lecture/wk.

CPCA 137
M/S DOS INTERMEDIATE (1CR)
Prerequisite: CPCA 135
This course is a continuation of CPCA 135 M/S DOS. System considerations, configuration files, decision-making batch files, memory management and setting the DOS environment will be among the more advanced features covered. The M/S DOS utilities for diagnosing the PC, defragmenting disks and antivirus protection will also be presented. 1 hr. lecture/wk.

CPCA 138
WINDOWS FOR MICROSOFT (1CR)
Prerequisite: CPCA 105 or equivalent experience
This course includes the functions and procedures that should enable the student to manage the operation of a Windows-based personal computer. Students will start and run multiple software applications, transfer information between applications, create folders systems and manage files. Efficient use of the Windows environment will be emphasized through construction of desktop objects and customized menus. 1 hr. lecture/wk.

CPCA 139
UNIX (1CR)
Prerequisite: CPCA 105 or equivalent experience
This course covers the major commands of the UNIX operating system. Basic file and disk management projects will be completed in this course. 1 hr. lecture/wk.

CPCA 141
INTERNET I (1CR)
Prerequisite: CPCA 105 or CPCA 106 or equivalent experience
This course will introduce the student to the commands and techniques required to effectively access the resources of the Internet. Windows applications to browse the Internet, locate and retrieve information and send and receive electronic mail will be covered. 1 hr. lecture/wk.

CPCA 148
FINANCIAL APPLICATIONS – BUSINESS (1CR)
Prerequisites: CPCA 105 and CPCA 138; or CPCA 106 and CPCA 134; or equivalent experience
This course introduces software that will perform basic financial processing using a microcomputer. Financial microcomputer applications are used to manage the financial transactions of a small business or corporate department. 1 hr. lecture/wk.

CPCA 151
INTERNET II (1CR)
Prerequisite: CPCA 141
This course will cover the commands and techniques required to effectively use various Internet application tools. The student will also use Windows and non-Windows applications to locate information, download and upload files, chat, read news and create a Web page. 1 hr. lecture/wk.

CPCA 161
INTRODUCTION TO WEB PAGES (1CR)
Prerequisite: CPCA 151
This course will cover the commands and techniques required to create and publish World Wide Web pages using HyperText Markup Language (HTML). Topics to be covered include basic text layout, background colors, formatting, ordered and unordered lists, tables, frames that include graphic images in a page and linking to other Web pages. 1 hr/wk.
Computer Information Systems

DP 110  
INTRODUCTION TO COMPUTERS (2CR)  
This television course features a survey of electronic data processing and computer hardware and software systems and developments that will provide the student with a background in information processing. 2 hrs. lecture/wk.

DP 124  
INTRODUCTION TO COMPUTING CONCEPTS AND APPLICATIONS (3CR)  
In this introductory, nontechnical computer course, students will study computer concepts, terminology, issues and uses. Extensive hands-on experience with the microcomputer is provided in word processing, spreadsheets, database and the operating system to reinforce the concepts. 3 hrs. lecture/wk.

DP 134  
PROGRAMMING FUNDAMENTALS (4CR)  
This course covers the elementary concepts of computers, including several number systems. The design, development and writing of modular programs on a microcomputer in a structured programming language using standard structured concepts will be covered. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 138  
VISUAL BASIC FOR WINDOWS (4CR)  
Prerequisite: DP 134 or the equivalent  
This course introduces the Visual Basic programming environment, with an emphasis on identifying the controls and objects available for creating Windows applications. Creating forms, drawing controls for each form, designing menu bars, setting form and control properties, writing event and general procedures and testing and debugging applications will be emphasized. Projects using multiple forms, file manipulation and the data control will be covered. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 140  
EDITOR (1CR)  
This course covers the use of an editor to create and manipulate files on a computer. Submitting a computer program for execution will also be covered. 1 hr. lecture, lab/wk.

DP 145  
ASSEMBLER LANGUAGE FOR MICROCOMPUTERS (4CR)  
Prerequisite: DP 134 or ENGR 171 or the equivalent. It is recommended that this course be taken after completion of CS 200 or an equivalent programming course beyond DP 134 or ENGR 171. Students will study the use of assembler language for a microcomputer in order to understand the basic concepts of the personal computer and its use in problem solving. Topics include the CPU, registers and memory segmentation. Practical applications will include DOS and BIOS systems services, array and bit processing and library calls. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 148  
COBOL I (4CR)  
Prerequisite: DP 134  
Corequisite: DP 140 for COBOL  
Students will study the use of the COBOL programming language to solve business-related problems. Emphasis will be on the function and use of statements in the four divisions of ANSI COBOL. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 150  
ASSEMBLER LANGUAGE I (4CR)  
Prerequisite: DP 134  
Corequisite: DP 140 for COBOL  
It is recommended that this class be taken after DP 148. Students will use assembler language in order to understand the basic concepts of the IBM mainframe. Topics include the CPU, registers and memory fetching. Practical applications include I/O, array processing and bit manipulation. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 157  
RPG III BEGINNING (4CR)  
Prerequisite: DP 134 or the equivalent  
Corequisite: DP 140 for RPG III  
Students will study the RPG III programming language. Emphasis will be on coding, testing, debugging and documenting programs with math calculations, subroutines and/or level breaks on an IBM AS/400 computer. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 162  
DATABASE PROGRAMMING (4CR)  
Prerequisite: DP 134 or the equivalent  
This course covers the use of a database language to create, maintain and manipulate databases. The use of a command level database programming language to
custom design business systems and selectively retrieve information using single or multiple databases also will be studied. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 172
INTRODUCTION TO POWERBUILDER ENTERPRISE (4CR)
Prerequisite: DP 134 or the equivalent
This course includes information and materials that will enable the student to understand the client-server paradigm, distributed data, process modeling, basic data modeling and the basic PowerBuilder tool set. Concepts involving effective GUI and object-oriented design will be discussed. The creation of basic PowerBuilder objects such as windows, data windows, controls, menus and databases and the combination of these elements into a complete and functional application that can be tested and debugged using PowerBuilder debugging tools will be covered. A distributable executable file will then be generated from the completed application. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 174
TELEPROCESSING (3CR)
Prerequisite: DP 134 or the equivalent
Teleprocessing is a form of information handling in which a data processing system utilizes communications equipment. This class will be concerned with that part of the system external to the central computer. 3 hrs. lecture/wk.

DP 178
AS/400 CL PROGRAMMING (4CR)
Prerequisite: DP 134 or the equivalent
Corequisite: DP 140 for RPG III
This course will cover the use of control language commands in programs at the command line. The course will also cover the use of variables, expressions, CL as input and output, logic control, passing control, data areas and built-in functions. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 180
AS/400 UTILITIES (4CR)
Prerequisite: DP 134 or the equivalent
Corequisite: DP 140 for RPG III
This course teaches AS/400 concepts and how to use some of the programming facilities of the system, including Program Development Manager, Source Entry Utility, Screen Design Aid, Data File Utility and Query/400. Lab exercises give the student the opportunity to use these facilities. 3 hrs. lecture, 3 hrs. lab/wk.

DP 195
INTRODUCTION TO PERL (4CR)
Prerequisites: DP 134 and CPCA 139
This course is an in-depth introduction to the Perl scripting language. Upon successful completion of this course, students should be familiar with the most common operations and language idioms used in Perl programs and should be able to produce useful basic Perl scripts. In addition, students will have been introduced to the more powerful and rich elements of the language. The lectures and laboratory projects will cover the many features of the Perl language. 3 hrs. lecture, 2 hrs. lab/wk.

DP 204
UNIX OPERATING SYSTEM (3CR)
Prerequisite: CS 200 using C++
This course will cover beginning concepts and principles of the multi-user, multi-tasking UNIX operating system. Students will complete projects in UNIX ranging in level of difficulty from simple commands to simple script files and awk. Other topics presented will be system administration and security. 3 hrs. lecture/wk.

DP 215
OS/VS JOB CONTROL LANGUAGE (3CR)
Prerequisite: DP 148 or DP 150
Students will study the use of OS/VS JCL and typical applications. Emphasis will be on rules of coding JCL, optimizing resources, use of symbolic parameters and overriding statements. An IBM mainframe will be used in the application of JCL and utilities. 3 hrs. lecture/wk.

DP 235
OBJECT-ORIENTED PROGRAMMING USING C++ (4CR)
Prerequisite: CS 200 using C++
This course will cover advanced programming topics using the C++ language. Emphasis will be on input/output facilities, data structures, bit-oriented instructions and construction of general purpose functions. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 238
VISUAL BASIC INTERMEDIATE TOPICS (4CR)
Prerequisite: DP 138
This intermediate-level course is designed to teach the creation and debugging of Windows applications using the professional edition of Visual Basic and will include instruction in the use of object variables to define and manipulate a database. Programs that respond to mouse events, use a multiple document interface, edit data entry, update and maintain a database and connect to other elements of the W indows environment will be emphasized. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.
DP 240
JAVA I (4CR)
Prerequisites: CS 250 or DP 235
Upon successful completion of this course, the student should be able to create Java applications and applets appropriate for implementation on the Internet and World Wide Web. The student will complete projects using Java's built-in features. The course will include graphics, graphical user interfaces, exception handling, multithreading and interactive media. 3 hrs. lecture, 2 hrs. lab/wk.

DP 242
INTRODUCTION TO SYSTEM DESIGN AND ANALYSIS (3CR)
Prerequisite: One semester of a computer language beyond DP 134 or ENGR 171
Students will study the basic philosophy and techniques of developing and using business information systems. The emphasis will be on the human involvement necessary in systems design and implementation. The course will address the use of specific technical approaches available in information processing. 3 hrs. lecture/wk.

DP 243
OBJECT-ORIENTED ANALYSIS AND DESIGN (4CR)
Prerequisites and/or corequisites: One programming course using an object-oriented programming language, or equivalent experience
This course includes information and materials that will introduce the student to an object-oriented analysis and design methodology suitable for designing systems that can be implemented in any object-oriented programming language. Experience in using specific techniques and tools will be gained through the completion of real-world projects. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 248
COBOL II (4CR)
Prerequisite: DP 148
In this advanced COBOL programming class, students will use ANSI COBOL to solve problems with data on a direct access device. The sort feature of COBOL and methods for building, maintaining and using files in a sequential, random and indexed manner will be covered. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 250
ASSEMBLER LANGUAGE II (4CR)
Prerequisite: DP 150
Advanced features of assembler language for the IBM 370 will be covered. Topics will include macros, subprograms, table handling, file access and a complete set of ALC instructions. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 253
CUSTOMER INFORMATION CONTROL SYSTEM COMMAND LEVEL COBOL (4CR)
Prerequisite: DP 248
This is an introduction to command level CICS using the COBOL language. The class will cover the basic CICS commands and their uses as well as CICS management modules and their functions, including program control, terminal control, basic mapping support, file control and temporary storage. Debugging on the transaction level will be discussed. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 254
UNIX SYSTEM ADMINISTRATION (4CR)
Prerequisite: DP 204
This course is designed to present the skills and provide the hands-on experience required to be a UNIX system administrator. Typical system administration duties to be covered include: installation, backup, restoration and routine maintenance, including adding/removing users, managing system resources, monitoring and optimizing system activity and automating activities. 3 hrs. lecture, 2 hrs. lab/wk.

DP 257
RPG III ADVANCED (4CR)
Prerequisite: DP 157
The advanced features of the RPG III language will be explored. Topics will include creating physical and logical files using the DDS utility, table and array methodology, subfiles, and programming an interactive computer system. An IBM AS/400 minicomputer will be used in compiling and executing programs. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 258
OPERATING SYSTEMS (3CR)
Prerequisite: DP 145 or DP 148 or DP 150 or DP 157 or CS 200
The basic concepts and principles of digital computer operating systems will be explained. Also explored through a study of typical digital computer operating systems such as MVS, OS/2, UNIX and DOS will be the relationships between hardware and software. 3 hrs. lecture/wk.

DP 260
DATABASE MANAGEMENT (4CR)
Prerequisite: DP 235 or DP 248 or CS 250 or DP 172 or DP 238
Characteristics and objectives of database management systems versus traditional file management systems are discussed. Relational, hierarchical and network models; data modeling using entity-relational model; normalization to avoid modification anomalies; and operational considerations are covered. Students will create and use
a relational DBMS (currently Oracle) and a standard structured query language (SQL). Embedded SQL will be used in programs. 3 hrs. lecture, 2 hrs. lab/wk.

**DP 264**
APPLICATION DEVELOPMENT AND PROGRAMMING (4CR)
Prerequisites: DP 242; and DP 260 or DP 162
Corequisite: DP 238 or DP 253 or DP 269 or DP 272; and CPCA 121
This capstone course is designed to allow students to apply the foundation of systems analysis and design, database design and programming to a significant data processing system. A team approach to problem analysis, the development and presentation of a proposed data processing solution, the building of a demonstrable prototype of the system and the development of a significant portion of the system will be emphasized. Periodic and timely progress reports to the class, the development of job search, written and oral communication skills will be expected. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 269**
GUI PROGRAMMING (4CR)
Prerequisites: DP 235 using C++ or CS 250 using C++
Upon completion of this course, students should be able to demonstrate applications in the Graphical User Interface programming language and use the appropriate GUI library. Techniques of object-oriented programming developed in DP 235 will be applied to problems involving user interaction. The common user access standards of GUI programming will be used throughout the course. The message queue and ordered linked lists objects used in DP 235 will be applied to problems involving user selection and updating information in a database. Students will make extensive use of the application framework for the GUI environment provided by the GUI language compiler. It is strongly recommended that students be familiar with common user programs that run under the chosen operating system (Windows, OS/2, X-Windows, Windows 95) before taking the course. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 270**
INFORMATION SYSTEMS INTERNSHIP (3CR)
Prerequisite: DP 148 or CS 200
Students will work in an approved training situation under instructional supervision. The internship is designed to give the student the opportunity to use the skills learned in information systems courses, use different information systems skills applications and an opportunity to gain experience in the field. 15 hrs. on-the-job training/wk.

**DP 272**
INTERMEDIATE POWERBUILDER ENTERPRISE (4CR)
Prerequisites: DP 172
This course includes information and materials that should enable the student to incorporate into projects the more advanced features of PowerBuilder, including embedded SQL, advanced DataWindow techniques, user objects, external and user-defined functions, the Data Pipeline, managing multiple simultaneous database connections and drag and drop functionality. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 280**
JAVA II (4 CR)
Prerequisite: DP 240
Upon successful completion of this course, the student should be able to create Java applications and applets that link to databases, and provide the security and advanced GUI features appropriate for implementation on the Internet and World Wide Web. The student will complete projects using Java's built-in features. The course will include techniques for graphics optimization, building components for graphical user interfaces, client-server database connections in Java, handling security managers, building JAR files, using Java's remote objects and linking to other applications. 3 hrs. lecture, 2 hrs. lab/wk.

### Computer Interactive Media

**CIM 130**
INTERACTIVE MEDIA CONCEPTS (4CR)
Prerequisites: CPCA 138 or CPCA 134
This course provides an introduction to the interactive media field. Topics to be covered include the definition of interactive media, the basic stages of interactive media creation, project management fundamentals, plus current and future trends in interactive media. 3 hrs. lecture, 2 hrs. lab/wk.

**CIM 135**
ELECTRONIC PHOTOGRAPHY/DIGITAL VIDEO (3CR)
Prerequisite: CPCA 105 or CPCA 106
This course provides an introduction to electronically mediated photography, including digital video. The course covers basic concepts of photographic communication and design; basic techniques of electronic photography, including operation of input devices, two-dimensional and time-based computer imaging and digital video production software programs and output devices. Recommended prior courses are Fundamentals of Photography and Introduction to Photoshop. 6 hrs. integrated lecture, lab/wk.
CIM 140
INTERACTIVE MEDIA ASSETS (4CR)
Corequisite: CIM 130
This course explores the creation, acquisition and management of assets for use in the development of interactive media. Assets to be covered include digital graphics, digital sound, digital video and computer-based animation. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 152
INTERACTIVE AUTHORING I: AUTHORWARE (4CR)
Prerequisites: CPCA 105 or CPCA 106
This course will provide a hands-on approach to authoring/programming using icon-based scripting. Upon successful completion of this course, the student should be able to produce interactive media pieces which include text, graphics, sound, movies and animation. Creating buttons, menus, hypertext and navigational strategies will be covered. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 154
INTERACTIVE AUTHORING: DIRECTOR I (4CR)
Prerequisites or Corequisites: CIM 130 and CIM 140
This course will provide a hands-on approach to authoring/programming. Upon completion of this course, the student should be able to produce a Director interactive media or Internet presentation, which includes text, graphics, sound, movies and animation. The student will have the skills needed to create both a linear presentation and an interactive presentation. Navigational strategies for CD-ROM and Internet will be discussed. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 200
INTERACTIVE COMMUNICATION FORMS (3CR)
Corequisites: CIM 130 and CIM 140
This course presents and explores the concepts and forms of human communication historically, in our current society and in our future culture. Immediate and mediated forms of communication such as lecture, telephony, television, print and computer interaction will be explored. Particular attention will be given to how communication form affects content. Emphasis will be on the integration of communication forms as demonstrated by interactive media applications. 3 hrs. lecture/wk.

CIM 230
INTERACTIVE MEDIA DEVELOPMENT (4CR)
Prerequisites: CIM 200 and approval by the CIM review committee
This course will provide a conceptual, as well as, a hands-on exploration of the development process for interactive media. Information design, interaction design and presentation design will be equally emphasized. Students will produce a series of projects starting with the use of text and graphics and building toward more complex projects employing animation and video. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 250
INTERFACE DESIGN (4CR)
Prerequisites: CIM 200 and approval by the CIM review committee
Corequisite: CIM 230
This course will specifically focus on the issues and complexity of interface design for interactive media applications. Students will be provided an in-depth study in the use of the building blocks of interface design: backgrounds, windows and panels, buttons and controls, text, images, sound, video and animation. Through readings, critiques, exercises and discussions, students will explore what makes the interface of an interactive media application successful. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 270
INTERACTIVE MEDIA PROJECT (4CR)
Prerequisites: CIM 200 and approval by the CIM review committee Corequisites: CIM 230 and CIM 250
This project course will require students to actively participate in a group interactive media project that will require each student to analyze the problem, write a project proposal, design, produce and gather assets for the project, prototype, create a project, and test and evaluate the final product. 3 hrs. lecture, 2 hrs. lab/wk.
Computer Science

CS 180
INTRODUCTION TO ARTIFICIAL INTELLIGENCE (4CR)
Prerequisites: CS 200, DP 138, DP 145, DP 148, DP 150, DP 157, DP 162, DP 172
Upon successful completion of this course, students will be able to use a computer to program introductory exercises and build a small expert system in an artificial intelligence language, define terms and application areas of the field, and describe knowledge representation and problem-resolution techniques used in artificial intelligence. 4 hrs. lecture, 2 hrs. lab/wk.

CS 200
CONCEPTS OF PROGRAMMING ALGORITHMS (4CR)
Prerequisite: DP 134 or ENGR 171 or equivalent experience
This course emphasizes programming methodology and problem solving. Algorithm design and development, data abstraction, good programming style, testing and debugging will be presented. An appropriate block-structured high-level programming language will be studied and used to implement algorithms. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CS 210
DISCRETE STRUCTURES I (3CR)
Prerequisite: MATH 171; or both MATH 116 and DP 134
This course offers an introduction to the topics of discrete structures, including switching circuits, Boolean algebra, logic, set theory and mathematical induction. 3 hrs. lecture/wk.

CS 211
DISCRETE STRUCTURES II (3CR)
Prerequisite: CS 210
This course will provide continued study of topics in discrete structures, including relations, functions, partitions, orderings, graphs and techniques of proving theorems. 3 hrs. lecture/wk.

CS 250
BASIC PROGRAMMING STRUCTURES (4CR)
Prerequisite: CS 200 using C++
Corequisite: CS 210 for students transferring to most four-year computer science programs
This course will cover advanced programming topics using C++. Files, recursion, data structures and large program organization will be used in projects. Students will write programs using the concepts covered in the lecture.

3 hrs. lecture, 2 hrs. lab by arrangement/wk.

Computer Systems Technology
(See Electronics Technology, page 172.)

Construction Management
(See Civil Engineering Technology, page 150.)

Correctional Services

KADJ 185
PRINCIPLES OF CORRECTIONS (3CR)
Prerequisite: Approval of program director
Topics will include the development and philosophy of corrections; ancient codes; medieval justice; and development of parole, probation and community treatment. 3 hrs/wk.

KADJ 186
CORRECTIONAL PSYCHOLOGY (3CR)
Prerequisite: Approval of program director
In this class, students will study psychological theories of crime and delinquency, diagnostic approaches used in correctional settings, psychopathology, classification procedures, and individual and group counseling. 3 hrs/wk.

KADJ 188
PRINCIPLES OF RESIDENTIAL YOUTH CARE (3CR)
Prerequisites: KADJ 185 and approval of program director
The role of the youth case worker will be explored in this course along with the basic theory of treatment, organizational structure and problem-solving skills. 3 hrs/wk.

KADJ 191
CORRECTIONS IN THE COMMUNITY (3CR)
Prerequisites: KADJ 185 and approval of program director
This course will cover community correctional programs, diversion, half-way programs, prerelease centers, group homes, probation and parole. The community support for these programs also will be discussed. 3 hrs/wk.

KADJ 192
CORRECTIONAL ADMINISTRATION (3CR)
Prerequisites: KADJ 185 and approval of program director
This survey of management patterns in correctional agencies will cover management by objectives and accountability, public relations, training, budgeting, record keeping, and custody and treatment classifications. 3 hrs/wk.
KADJ 193
COMMUNICATION AND MANAGEMENT TECHNIQUES WITH CHILDREN AND YOUTH (3CR)
Prerequisite: KADJ 188
Methods of teaching and guiding children and youth in residential care centers or community programs will be explored. The theory and application of techniques for dealing with problem behavior will be covered, and listening and communication skills will be developed. 3 hrs./wk.

KADJ 194
HUMAN SERVICES PRACTICUM I (3CR)
Prerequisites: KADJ 185 and approval of the program director
This course will offer initial field experience in social services, corrections, juvenile treatment, mental health or other community services. It will require a minimum of 10 hours a week or 160 hours during the semester in placement.

KADJ 261
HUMAN SERVICES PRACTICUM II (3CR)
Prerequisites: KADJ 194 and approval of the program director
This course will provide continued field placement or second placement in social services, corrections, juvenile treatment, mental health or other community services. A minimum of 160 hours during the semester in placement plus an evaluation of agency effectiveness will be required.

Cosmetology

AVCO 102
NAIL TECHNOLOGY (350 CONTACT HOURS)
This course provides skill instruction in determining nail disorders and care as well as the artistic application of tips, overlays and sculptured nails. Upon successful completion, students are prepared to take the Kansas State Board of Cosmetology onychology examination.

AVCO 110
INTRODUCTION TO COSMETOLOGY (500 CONTACT HOURS)
This course provides skill instruction in shampooing, cutting, shaping, curling and coloring. Also included is curriculum from Nail Technology and Cosmetology Technician I and II. The first 320 contact hours are in the basic lab and the classroom without client contact.

AVCO 112
CLINICAL COSMETOLOGY (500 CONTACT HOURS)
Prerequisite: AVCO 110
This course provides continuing skill instruction in shampooing, cutting, shaping, curling and coloring. Included is an introduction to client relations skills and sales promotion techniques. Instruction includes classroom and salon.

AVCO 114
ADVANCED COSMETOLOGY (500 CONTACT HOURS)
Prerequisite: AVCO 112
This course provides advanced instruction in shampooing, cutting, shaping, curling and coloring. This course prepares the student for the Kansas State Board of Cosmetology examination.

AVCO 118
ESTHETICS (650 CONTACT HOURS)
This course provides skill instruction in skin care. Topics include sanitation, skin sciences, skin treatments, make-up and business practices. This course prepares the student for the Kansas State Board of Cosmetology esthetician examination.

Data Processing
(See Computer Information Systems, page 156.)

Dental Hygiene

DHYG 121
CLINICAL DENTAL HYGIENE I (5CR)
Prerequisites: Admission to the Dental Hygiene Program and CHEM 122, ENGL 121, SOC 122, PSYC 130 and BIOL 230 (minimum 2.0 G.P.A.)
Corequisites: BIOL 146, DHYG 125 and DHYG 135
This course will include an introduction to the dental hygiene profession, dental hygiene techniques, the principles of instrumentation, patient evaluation, patient education and primary preventive treatment, auxiliary procedures and aseptic techniques. 2 hrs. lecture, 13 hrs. lab/wk.

DHYG 125
DEVELOPMENTAL DENTISTRY (2CR)
Corequisites: BIOL 146, DHYG 121 and DHYG 135
This course will include a study of embryology; oral histology; developmental disturbances of the face, oral cavity and related structures; and dental morphology and occlusion. 1 hr. lecture, 3 hrs. lab/wk.
DHYG 135
DENTAL MATERIALS (2CR)
Corequisites: DHYG 121, DHYG 125 and BIOL 146
This course is designed to provide students with a knowledge base of the science and physical properties of dental materials. The students will be able to apply their knowledge base in future dental sessions and laboratory experiences. 2 hr. lecture/wk.

DHYG 136
DENTAL MATERIALS LABORATORY (1CR)
Prerequisites: CHEM 122, ENGL 121, SOC 122, DHYG 121, BIOL 146, DHYG 125, PSYC 130, BIOL 230, DHYG 135
Corequisites: DHYG 140, DHYG 142, DHYG 146, DHYG 148, BIOL 225
This course is designed to provide the student with hands-on experience of dental materials used in dentistry while applying their knowledge of dental material sciences. Through laboratory exercises, students will manipulate materials discussed in DHYG 135. 3 hrs. lab/wk.

DHYG 140
CLINICAL DENTAL HYGIENE II (4CR)
Prerequisite: DHYG 121
Corequisites: DHYG 140, DHYG 146, DHYG 148, BIOL 225, and no grade below a “C” in DHYG courses
The focus of this course will be on the clinical application of dental hygiene techniques, instrumentation skills, oral health products, patient motivation and educational techniques. Procedures for medical and dental emergencies in the dental office also will be covered as well as an introduction to selected dental specialties. 2 hrs. lecture, 8 hrs. clinic/wk.

DHYG 142
DENTAL RADIOLOGY (2CR)
Prerequisites: DHYG 121 and no grade below a “C” in DHYG courses
Corequisites: DHYG 136, DHYG 140, BIOL 225, DHYG 146 and DHYG 148
This class will concentrate on the theory and clinical practice of exposing, processing, mounting and evaluating oral radiographs with emphasis on radiation protection and infection control for the patient and operator. 1 hr. lecture, 3 hrs. lab/wk.

DHYG 146
PERIODONTICS (3CR)
Prerequisites: DHYG 121 and no grade below a “C” in DHYG courses
Corequisites: DHYG 136, DHYG 140, BIOL 225, BIOL 230, DHYG 142 and DHYG 148
This course will include recognition of the etiology, clinical signs and symptoms of periodontal diseases. The inflammatory process, treatment planning and nonsurgical therapy are discussed. 3 hrs. lecture/wk.

DHYG 148
DENTAL HEALTH EDUCATION (2CR)
Prerequisites: DHYG 121 and no grade below a “C” in DHYG courses
Corequisites: BIOL 225, DHYG 136, DHYG 140, DHYG 142 and DHYG 146
Students will study health and apply educational methods for individuals and groups with special emphasis on behavior modification. Exercises in the research process and evaluating research articles are included. 2 hrs. lecture, 1 hr. lab/wk.

DHYG 221
CLINICAL DENTAL HYGIENE III (6CR)
Prerequisites: DHYG 140, BIOL 235, DHYG 142 and no grade below a “C” in DHYG courses
Corequisites: DHYG 225, DHYG 230 and DHYG 240
Students will continue development in the areas of patient management, preventive dental hygiene treatment and proficiency in clinical techniques through practical application. Current advances in dental hygiene services also will be introduced. 2 hrs. lecture, 16 hrs. clinic/wk.

DHYG 225
PATHOLOGY (3CR)
Prerequisites: DHYG 140, BIOL 235 and no grade below a “C” in DHYG courses
Corequisites: DHYG 221, DHYG 230 and DHYG 240
This course will introduce the students to concepts related to general systemic and oral pathology. General principles of pathology include inflammation, immunity, neoplasia and wound healing. Specific systems will be explained, including cardiovascular, hematopoietic and skeletal systems. Basic pathological processes of oral conditions, their etiologies and treatments, will be discussed. 3 hrs. lecture/wk.
DHYG 230
DENTAL THERAPEUTICS (3CR)
Prerequisites: DHYG 140, BIOL 235 and no grade below a “C” in DHYG courses
Corequisites: DHYG 221, DHYG 225 and DHYG 240
This course will introduce the basic principles of drug actions, emphasizing dental-related therapeutics and drugs associated with common systemic disorders; information on the selection of professional products; and principles necessary in administering local anesthesia. 2 hrs. lecture, 2 hrs. lab/wk.

DHYG 240
COMMUNITY DENTAL HEALTH (2CR)
Prerequisites: DHYG 140, BIOL 235 and no grade below a “C” in DHYG courses
Corequisites: DHYG 221, DHYG 225 and DHYG 230
Topics will include public health agencies, statistical procedures for critiquing scientific literature, identifying dental needs of different groups and planning dental health education programs. Preventive techniques, health promotion, consumer advocacy and the role of the dental hygienist in public health will be emphasized. Field experience will be included. 1 hr. lecture, 3 hrs. lab/wk.

DHYG 245
NITROUS OXIDE ANALGESIA (1CR)
Prerequisite: DHYG 230
Corequisite: DHYG 250
This course will concentrate on the principles of administering and monitoring nitrous oxide analgesia. Upon completion of the course, didactic and clinical proficiency in nitrous oxide analgesia will meet certification standards set by state dental boards. 1 hr. lecture, lab/wk.

DHYG 250
CLINICAL DENTAL HYGIENE IV (6CR)
Prerequisites: DHYG 221 and no grade below a “C” in DHYG courses
This course will offer continued development of proficiency in clinical techniques and current procedural practices of the dental hygienist with emphasis on self-evaluation. Topics will include ethics, jurisprudence, office management, current dental hygiene issues and preparation for board exams. 2 hrs. lecture, 16 hrs. clinic/wk., 1 hr. board review for first 8 wks.

Drafting Technology

DRAF 115
INTRODUCTION TO COMPUTER GRAPHICS SYSTEMS (3CR)
Prerequisite: MATH 111 or an appropriate score on the math assessment test
This course is an introduction to computer graphics systems. Upon successful completion of this course, the student should be able to identify the components of a computer graphics system. Each student will have an opportunity to get hands-on exposure to several computer graphics software packages. Emphasis will be on the development of an understanding of the various types of applications for which each package is best-suited. Students will also be exposed to the various hardware peripherals necessary for the support of computer graphics. Software will range from defining line vectors to the use of menu-controlled color packages. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 116
ENGINEERING GRAPHICS/CAD-2D DRAFTING I (5CR)
Prerequisite: MATH 111 or an appropriate score on the JCCC math assessment test. Basic high school drafting or trigonometry
This course is an introduction to computer-aided drafting as a tool in the study of graphical communications. Emphasis will be on familiarization with CAD hardware, proficiency in the application of 2-D CAD software to various types of engineering drawings, understanding of descriptive geometry fundamentals, geometric construction, technical vocabulary and engineering/drafting design standards (ANSI) and procedures. Comparisons between traditional drafting methods and CAD’s approach to generating engineering drawings will be presented. CAD will be used throughout the semester. 4 hrs. lecture, 6 hrs. lab/wk.

DRAF 118
ENGINEERING GRAPHICS/CAD-2D DRAFTING II (5CR)
Prerequisite: DRAF 116
This course is a continuation of Engineering Graphics/CAD-2D. Upon successful completion of this course, the student should be able to use 2-D and 3-D CAD commands in the engineering design process. The following CAD topics will be included: isometric drawing, basic 3-D, paper space and model space; slides and shows; XREF, digitizer scaling, file management and interface. Application problems will be selected from architectural, civil, electromechanical and technical illustration fields. 4 hrs. lecture, 6 hrs. lab/wk.
DRAF 120
INTRODUCTION TO DRAFTING (2CR)
This course should be taken by students without prior drafting experience. Upon successful completion of this course, the student should be able to identify and apply the essential, basic skills necessary to proceed through the drafting program, including lettering, measuring, geometric construction, sketching, isometrics, orthographic views, dimensioning and auxiliary view. 1 hr. lecture, 3 hrs. lab/wk.

DRAF 123
INTERPRETING MACHINE DRAWINGS (2CR)
This course will provide students with general knowledge in reading machine-type engineering drawings. Upon successful completion of this course, the student should be able to interpret orthographic multiview drawings, symbols, abbreviations, surface finishes, dimensioning and geometric form and position tolerancing. 2 hrs./wk.

DRAF 124
TECHNICAL DRAFTING (4CR)
Prerequisites: DRAF 120 or equivalent and OST 101 or approval of the division administrator
This first-semester course covers the basic manual drafting fundamentals required to begin the Drafting Technology program. Upon successful completion of this course, the student should be able to solve descriptive geometry problems; draw multiview, orthographic views with dimensions and pictorial and three-dimensional views using isometric and perspective methods. Mechanical and civil disciplines are addressed. In addition to workbook-style assignments on bond paper, students will draft on vellum and drafting film. 2 hrs. lecture, 6 hrs. lab/wk.

DRAF 129
INTERPRETING ARCHITECTURAL DRAWINGS (2CR)
This beginning course will explain the fundamentals of interpreting (reading) architectural drawings. Upon successful completion of this course, students should be able to understand plan and elevation views, sections, details, schedules, specifications, symbols and abbreviations found on most residential and commercial construction drawings. 2 hrs./wk.

DRAF 130
INTRODUCTION TO CAD CONCEPTS (3CR)
Prerequisites: DRAF 120 or approval of division administrator
This course provides a basic knowledge of computer-aided drafting. Students will learn to use CAD equipment, including input/output devices and microcomputers as drafting tools. Emphasis will be on a basic understanding of CAD terms and concepts as they are applied in industry. Students will be provided an overview of many of the key features of a major microcomputer CAD package with hands-on experience at a workstation. Basic instruction will be provided on drawing setup, drawing commands, editing commands and screen control. The important concepts of layering, standard symbols and dimensioning will be introduced. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 138
ARCHITECTURAL DRAFTING (3CR)
This course is an introduction to the production of architectural drawings for residential and commercial construction. Upon successful completion of this course, the student should be able to identify and produce the various drawings that compose a complete set of architectural working drawings. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 140
TOPICS IN CAD I (2CR)
This course provides training for a specific design application software. In-depth coverage of the selected software and hands-on experience will be provided to the students. Emphasis will be placed on the application of software to industry projects. 2 hrs. lecture, lab/wk.

DRAF 150
ELECTRICAL DRAFTING (3CR)
Prerequisites: MATH 133 and DRAF 230 or ENGR 131
Upon successful completion of this course, the student should be able to identify drafting techniques applicable to industrial lighting, motor controls, power distribution and generation. Emphasis will be on the use of tables, catalogs and applications software as aids to decision making required on electrical drawings. Project assignments will be completed primarily using CAD. 2 hrs. lecture, 3 hrs. lab/wk.
DRAF 160
PROCESS PIPING (3CR)
Prerequisite or corequisite: DRAF 124 or approval of the division administrator
This course is an introduction to process piping drafting. Upon successful completion of this course, the student should be able to identify techniques applicable to, and definitions related to, industrial process piping. Symbols for fittings and valves will be drawn in plan view, elevation view and in isometric, relative to piping standards and specifications. Calculations relative to pipe lengths and fitting locations will be made. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 180
STRUCTURAL DRAFTING (3CR)
Prerequisites: DRAF 230 or ENGR 131
Corequisite: MATH 134
Upon successful completion of this course, the student should be able to produce structural drawings and details of steel, concrete and wood structures for manufacturing, construction, engineering and architectural firms. Project work will be done using CAD. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 222
MECHANICAL DRAFTING (3CR)
Prerequisite: DRAF 230 or ENGR 131
Corequisite: MATH 134
Students successfully completing this course should be able to draw details and assembly views of mechanical parts. The types of parts drawn in this class include castings, sheet metal pieces, piping, jigs and fixtures, pressure vessels and gauges. Important concepts include dimensioning, form and position tolerancing, coordinate tolerancing and calculations related to material allowances. Project assignments will be completed using computer-aided drafting software. This course is part of the Drafting Technology - Machine Option. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 225
CIVIL DRAFTING (3CR)
Prerequisite: DRAF 230 or ENGR 131
Corequisite: MATH 134
Upon successful completion of this course, the student will be able to apply drafting techniques used in civil engineering offices. The student will learn to draw civil engineering plans from surveying and engineering data. The student will be able to produce plan and profile drawings, roadway cross sections, earthwork calculations, subdivision plats, topographic maps and property maps. The student will use CAD in drawing projects. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 228
INDUSTRIAL DESIGN APPLICATIONS (3CR)
Prerequisites: DRAF 222 and CET 211
Corequisites: DRAF 180 and DRAF 150
This advanced fourth-semester course applies concepts and fundamentals of previously required classes in the machine option of the Drafting Technology program. Assignments address industrial systems and include interdisciplinary considerations of manufacturing processes, electrical controls, structural drafting, form and positional tolerance control and machine elements. Systems options include pumping systems and material handling systems. Student teams will select their specific system project for the semester. Team project/protocol will be used to develop graphic, ISO and ANSI-approved solutions. Job/task responsibilities will be assigned by student-team leadership. Two industrial field trips with subsequent journals are required. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 230
INTERMEDIATE COMPUTER-AIDED DRAFTING (3CR)
Prerequisites: DRAF 130 and DRAF 124 or approval of the division administrator
This course provides an increased knowledge of computer-aided drafting as it is used in today's industries. Students will build on their CAD experience by learning new commands and techniques that increase system productivity. Special emphasis will be on developing construction techniques and command usage to increase CAD proficiency. A didactical study of standard symbols, layers and editing functions will occur. Concepts covered will include dimensioning variables and styles, attributes and external referencing as well as paper space and model space as used in multiple-view drawings. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 231
COMPUTER-AIDED DRAFTING 3-D (3CR)
Prerequisite: DRAF 230
In this course, students will explore the use of computer-aided drafting and design software for the construction of 3-dimensional computer models. Emphasis will be on using 3-D software to produce multiple-view drawings. Visualization commands and techniques will be discussed and developed. Topics will include viewing commands, wireframe and surface construction and solid modeling. 2 hrs. lecture, 3 hrs. lab/wk.
DRAF 232
COMPUTER-AIDED DRAFTING APPLICATIONS (3CR)
Prerequisite: DRAF 230
This course is the fourth in a series of computer-aided drafting courses. Upon successful completion of this course, the student should be able to use a CAD system for advanced drafting applications. The student will select a specific area of interest within a CAD system for further study. Details of system components will be discussed as will CAD management styles and techniques. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 233
ADVANCED CAD APPLICATIONS (3CR)
Prerequisite: DRAF 232
Upon successful completion of this course, the student should be able to describe advanced aspects of computer-aided design-based systems (CAD). Through lectures, lab exercises and discussions, the student will gain insight into the workings of graphic control routines, custom menus and database translators. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 240
INTRODUCTION TO AUTOLISP (2CR)
Prerequisites: CPCA 135 and DRAF 230
This course covers basic techniques and concepts needed to begin using AutoLISP effectively. Techniques for automation of AutoCAD drafting procedures through the use of the AutoLISP programming language will be covered. Also included are basic AutoLISP functions, creation of AutoLISP expressions and program files. 1½ hrs. lecture, 1 hr. lab/wk.

DRAF 242
TOPICS IN CAD II (2CR)
Prerequisite: DRAF 230 or approval of division administrator
This course provides training for a specific design application software. In-depth coverage of the selected software and hands-on experience will be provided to the students. Emphasis will be placed on the application of software to industry projects. 2 hrs. lecture, lab/wk.

DRAF 261
GRAPHIC COMMUNICATIONS I FOR INTERIOR DESIGN (3CR)
Students enrolled in this course are JCCC interior merchandising students and professionals in the interior design field. Upon successful completion of this course, the student should be able to interpret residential and commercial drawings and draft floor plans, interior elevations and full sections of architectural interiors. The student should be able to read and produce two-dimensional architectural drawings. 6 hrs. lecture, lab/wk.

DRAF 264
CAD: INTERIOR DESIGN (3CR)
Corequisite: ITMD 122 or approval of the division administrator
This course is an introduction to the use of computer-aided drafting (CAD) as used in the interior design field. Upon successful completion of this course, the student should be able to draw floor plans and elevations of interiors using a computer-aided drafting system. AutoCAD software will be used. No previous computer experience is required. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 266
GRAPHIC COMMUNICATIONS II FOR INTERIOR DESIGN (3CR)
Prerequisite: DRAF 261
Upon successful completion of this course, the student should be able to describe the fundamentals of pictorial representation and demonstrate the ability to draw perspectives, section evaluations and isometric illustrations. The student will be expected to produce drawings with realistic appearance of building interiors, cabinets, furniture and decor. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 271
DRAFTING INTERNSHIP I (3CR)
Prerequisite: Approval of the division administrator
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students the opportunity to develop job and career-related skills while in a work setting. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 2 hrs. lecture, 15 hrs. min./wk.

DRAF 272
DRAFTING INTERNSHIP II (3CR)
Prerequisites: DRAF 271 and approval of the division administrator
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students the opportunity to develop job- and career-related skills while in a work setting. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 2 hrs. lecture, 15 hrs. min./wk.
Early Childhood Education

EDUC 130
FOUNDATIONS OF EARLY CHILDHOOD EDUCATION (3CR)
This introductory survey course is designed to provide students with current information on topics relevant to employment in early childhood programs. The course will explore the historical and philosophical roots of early childhood education, general principles in child development, the teacher's role, values and ethics in early childhood education, curriculum design and classroom management. Twenty hours of observation in a group child care setting are required. 3 hrs. lecture/wk.

EDUC 131
EARLY CHILDHOOD CURRICULUM I (3CR)
Corequisite: EDUC 130
This methods course is designed for students who are, or will be, working in an early childhood education setting and parents/other who desire to develop an intellectually challenging environment for young children. The focus of the course is curriculum areas that deal with language and physical development. 3 hrs. lecture/wk.

EDUC 210
CREATIVE EXPERIENCES FOR YOUNG CHILDREN (3CR)
This course is a study of constructing and maintaining an environment for young children that fosters aesthetic sensitivity and creativity. The course includes the young child's developmental stages in art, music, movement, language and creative and dramatic play; methods and materials that nourish developmentally appropriate creative experiences and support an inclusive, anti-bias curriculum; integration of creative experiences in the whole curriculum; the use of technology; and helping families understand the creative experience. 3 hrs. lecture/wk.

EDUC 215
YOUNG CHILDREN WITH SPECIAL NEEDS (3CR)
This course is a study of creating and maintaining a developmentally appropriate inclusive environment for young children with special needs. The course includes the history of education and care for young children with special needs, federal and state legislation, types of differing abilities, developmental stages and capabilities of all young children, an inclusive approach to early education, and curriculum development for young children with special needs. Health, safety and nutrition; screening and assessment; interaction techniques; the role of the educator specific to the child's special needs; partnering with the family, other disciplines and community; and advocating for children are presented. The laboratory will include demonstration of the subject matter. 2 hrs. lecture, 1 ½ hrs. lab/wk.

EDUC 220
SURVEY OF THE EXCEPTIONAL CHILD (3CR)
This is a survey of the exceptional children now being served in public schools and their characteristics. Included will be mental retardation; learning disabilities; behavior and communication disorders; hearing, visual, physical and health impairments; and giftedness. 3 hrs./wk.

EDUC 225
INFANT AND TODDLER EDUCATION AND CARE (3CR)
This course is a study of creating and maintaining a developmentally appropriate environment for infants and toddlers, with the course including the history of education and care, theories of child development, developmental stages and capabilities of the very young child and curriculum development for infants and toddlers. Health, safety and nutrition; assessment; interaction techniques; the role of the educator specific to the needs of the infant and toddler; partnering with family and community; and advocating for the very young are presented. The laboratory will include demonstration of the subject matter. 2 hrs. lecture, 1 ½ hrs. lab/wk.

EDUC 231
EARLY CHILDHOOD CURRICULUM II (3CR)
Prerequisite: EDUC 131
This methods course is designed for students who are, or will be, working in an early childhood education setting and parents/other who desire to develop an intellectually challenging environment for young children. The focus of the course is curriculum areas that deal with the physical and social aspects of the world. Included in this inquiry curriculum are mathematics, science, social studies and nutrition. 3 hrs./wk.

EDUC 235
PARENTING (2CR)
Prerequisite or corequisite: PSYC 215 or PSYC 218 or EDUC 270
This course is a study of effective parenting and is designed for teachers of young children and parents/guardians who desire to provide an environment that reflects sensitivity to the unique needs of the individual child and family. History of child-rearing methods, an overview of child development, types of families, parents/guardians' fears and concerns, purposes of child behavior, effective communication techniques, nurturing self-esteem, problem prevention and resolution, and building effective teacher and family relations are presented. 2 hrs. lecture/wk.
EDUC 250
CHILD HEALTH, SAFETY AND NUTRITION (3CR)
This course is a study of the basic health, nutrition and safety management practices for young children. Information on establishing and maintaining a physically and psychologically safe and healthy learning environment appropriate for the needs of young children will be included. The interrelation of health, safety and nutrition is stressed, with emphasis on appraisal procedures, prevention and protection, services and educational experiences for young children and their families. 3 hrs. lecture/wk.

EDUC 260
OBSERVING AND INTERACTING WITH YOUNG CHILDREN (3CR)
Prerequisite or corequisite: PSYC 215 or PSYC 218 or EDUC 270
This course is a study of the role of observation to assess and monitor the development and learning of children, birth through age 8, and the appropriate techniques for interacting with young children considering their individual differences. Included will be the purposes and types of observation procedures, interpretation and use of findings, reporting techniques and legal and ethical responsibilities. Expected age-related child behavior, fundamental principles of and theoretical approaches to child guidance, guidance techniques, working with families and issues of diversity are presented. The laboratory will include demonstration of the subject matter. 2 hrs. lecture, 1 ½ hrs. lab/wk.

EDUC 270
EARLY CHILDHOOD DEVELOPMENT (3CR)
This course is a comprehensive account of human development from conception through age 8 years. The course integrates genetic, biological, physical and social influences with psychological processes affecting the development of young children. 3 hrs. lecture/wk.

EDUC 280
ADMINISTRATION OF EARLY CHILDHOOD PROGRAMS (3CR)
This course is a study of the organization and administration of early childhood programs. The topics included will be the skills and characteristics of effective administrators; types of programs; planning, implementing and evaluating programs; policy development; staff supervision and development; finances and budget; record keeping; relevant state regulations and laws; developing, equipping and maintaining a facility; organizing a developmentally appropriate environment; collaboration with family and community; public relations; and contributing to the profession. The lab will include demonstration of the subject matter. 2 hrs. lecture, 1 ½ hrs. lab/wk.

EDUC 285
INTERNSHIP: EARLY CHILDHOOD (6CR)
Prerequisite: Program facilitator recommendation
This supervised field experience in early childhood education is designed for students to apply their knowledge of teaching young children. The student will participate in curriculum design and presentation, observing and interacting with young children, providing for the health, safety and nutrition of young children, the general management of a program setting, and working with families and the community. A self-assessment and a professional development plan are completed. The student will spend 20 hours a week (300 clock hours total) in at least two different early childhood settings, serving children of two different ages. 6 hrs. lecture-field-lab/wk.

Economics

ECON 130
BASIC ECONOMIC ISSUES (3CR)
Upon successful completion of this course, the student should be able to use basic economic theory, concepts and nomenclature to analyze current economic issues at the local, national and international levels. This course is primarily for students to take only one economics course and for those who want a nontechnical introduction to economics. 3 hrs. lecture/wk.

ECON 132
SURVEY OF ECONOMICS (3CR)
Upon successful completion of this course, the student should be able to explain basic macroeconomic and microeconomic theory, fiscal and monetary policies, the role and significance of international economics and governmental trade and regulatory policies. In addition, the student should be able to describe the characteristics and the consequences of the differing business units in the economy, as well as the functioning of the labor market and how national income is distributed. The course is primarily for students who desire a one-semester, nontechnical overview of the basic components of macroeconomic and microeconomic theory and the functioning of the United States economy. 3 hrs. lecture/wk.
ECON 230
ECONOMICS I (3CR)
Upon successful completion of this course, the student should be able to use economic terminology and principles to explain and discuss basic macroeconomic concepts, including supply of and demand for products, national income determination, money and banking, and monetary and fiscal policy. The student enrolling in this course should have successfully completed one year of high school algebra or the equivalent. (Macro) 3 hrs./wk.

ECON 231
ECONOMICS II (3CR)
Upon successful completion of this course, the student should be able to use economic terminology and principles to explain and discuss basic microeconomic concepts, including extended analysis of product supply and demand and theory of the firm and product and resource market structures. Students enrolling in this course should have successfully completed one year of high school algebra or the equivalent. (Micro) 3 hrs./wk.

Education
(Also see Early Childhood Education, page 168.)

EDUC 121
INTRODUCTION TO TEACHING (3CR)
Teaching concepts and practices as they apply to today's elementary and secondary schools will be introduced. Topics will include the roles and responsibilities of the teacher, various modes of instruction, specialized areas in teaching, and professional requirements and concerns. Twenty hours of observation in a school setting are required. 3 hrs./wk.

EDUC 222
BASIC STRATEGIES FOR SPECIAL EDUCATION PARAPROFESSIONALS I (1CR)
The education of disabled people – from kindergarten through adulthood – will be surveyed. The role of the paraprofessional in various helping situations will be emphasized. Outside readings and a 12-hour practicum will be required. One six-hour session.

EDUC 223
BASIC STRATEGIES FOR SPECIAL EDUCATION PARAPROFESSIONALS II (1CR)
Prerequisite: EDUC 222
Emphasis will be on defining the responsibilities and role of the paraprofessional in special education programs. Outside readings and a 12-hour practicum are required. One six-hour session.

Electrical Technology

ELTE 122
NATIONAL ELECTRICAL CODE I (4CR)
This is an introductory course on the use and interpretation of the National Electrical Code. Students should develop a working knowledge of the code that will permit them to apply it to everyday applications. Upon successful completion of this course, the student should be able to use the code to design service entrances, feeders, branch circuits and discern between wiring methods used in difference occupancies. 4 hrs. lecture/wk.

ELTE 125
RESIDENTIAL WIRING METHODS (4CR)
Corequisite: HVAC 123
This is an introductory course on residential wiring methods that includes practical application and hands-on experience in implementing the code requirements. Upon successful completion of this course, the student should acquire the necessary skills to wire a residence to meet the minimum requirements as set forth in the National Electrical Code for residential occupancies. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

ELTE 200
COMMERCIAL WIRING METHODS (4CR)
Prerequisite: HVAC 123
This advanced course covers commercial wiring methods. Upon successful completion of this course, the student should be able to read commercial blueprints and apply the National Electrical Code to commercial wiring systems. The student will gain working knowledge and hands-on experience with commercial wiring techniques. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

ELTE 205
INDUSTRIAL ELECTRICAL WIRING (4CR)
Prerequisite: HVAC 123
This advanced course covers industrial wiring methods. Upon successful completion of this course, the student should be able to read industrial blueprints and apply the National Electrical Code to industrial wiring systems. The student will gain working knowledge and hands-on experience with industrial wiring techniques. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.
ELTE 210
CODE CERTIFICATION REVIEW (3CR)
Prerequisite: ELTE 122
Upon successful completion of this course, the student should be able to use the current National Electrical Code to do calculations involving loads, lighting and circuit sizing. The course will cover typical load calculations used in both residential and commercial settings. 3 hrs. lecture/wk.

ELTE 271
ELECTRICAL INTERNSHIP I (3CR)
Prerequisite: Approval of the division administrator
The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of job experiences directly related to the student's career goals. Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

ELTE 272
ELECTRICAL INTERNSHIP II (3CR)
Prerequisite: ELTE 271 and approval of the division administrator
The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of job experiences directly related to the student's career goals. Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

Electronics Technology

ELEC 120
INTRODUCTION TO ELECTRONICS (3CR)
This is a beginning course in electronics technology that is appropriate for both the electronics major and other interested students. An overview of basic electronic theory, principles and components is presented. In addition, the laboratory exercises will emphasize the operation and use of the primary pieces of electronic test equipment and the fabrication of selected circuits. 2 hrs. lecture, 2 hrs. lab-lecture, 2 hrs. lab/wk.

ELEC 122
CIRCUIT ANALYSIS I (3CR)
Prerequisite: MATH 133
Corequisite: ELEC 120
This course covers resistive circuits having DC sources. Analysis topics include Ohm's law, Kirchhoff's law, superposition theorem, Thevenin's theorem and Norton's theorem. The current, voltage and resistance relationships in series, parallel and combination circuits will be studied. 3 hrs. lecture/wk.

ELEC 124
MICROCOMPUTER HARDWARE (3CR)
This is an introductory course on personal computer hardware. It is designed to prepare students to buy, optimize, upgrade and maintain IBM and other compatible personal computers. The course will also include a brief introduction to computer architecture. Lecture topics will be supported by hands-on lab projects. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 125
DIGITAL ELECTRONICS I (3CR)
This is a beginning course in which students will study and practice the basic concepts of digital electronics. Topics will include digital number systems, logic gates, logic circuits, flip-flops, digital arithmetic, counters and registers. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 128
COMPUTER APPLICATIONS IN ELECTRONICS (1CR)
This course introduces students to computer software applications that are unique and specific to electronics, e.g., electronic workbench. In addition, other resources available on the JCCC network are presented. 1 hr. lecture/wk.

ELEC 130
ELECTRONIC DEVICES I (4CR)
Corequisite: ELEC 140
This is the first course in electronic devices. Principal topics include diodes, transistors, special-purpose diodes and diode application circuits. Both bipolar junction transistors (BJTs) and field effect transistors (FETs) are examined, and application circuits for both transistor types are constructed. 3 hrs. lecture, 3 hrs. lab/wk.

ELEC 131
INTRODUCTION TO SENSORS AND ACTUATORS (3CR)
This course examines types and uses of industrial sensors and actuators. Topics include temperature, pressure, optical, position, and flow sensors. Operation of AC and DC motor drives will also be covered. The course will also include wiring and troubleshooting of sensors and actuators. Lecture topics will be supported by hands-on lab projects. 2 hrs. lecture, 3 hrs. lab/wk.
ELEC 133
PROGRAMMABLE CONTROLLERS (3CR)
This course defines programmable logic controllers (PLCs) and examines their role in industrial control. It identifies the hardware components of a PLC including processor, chassis, and input/output modules. Memory organization, mapping and addressing of I/O devices will be covered. The course will also include writing and executing of basic ladder logic programs using bit level, timers and counters instructions. Lecture topics will be supported by laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 136
BASIC ELECTRONICS (2CR)
Prerequisites: Approval of the Burlington Northern training director and the JCCC division administrator
This course is an introduction to electronics with a review of basic electrical concepts. Instruction is provided on the operation and use of an oscilloscope, function generator, DC power supply, digital multi-meter and wattmeter. The course also includes an introduction to electronics devices, schematics, basic electronic formulas and programmable logic controllers. 1 hr. lecture, 2 hrs. lab/wk.

ELEC 140
CIRCUIT ANALYSIS II (3CR)
Prerequisites: ELEC 122 and MATH 134
The analysis techniques presented in Circuit Analysis I will be applied to complex circuits driven by AC and pulsed sources. The responses of circuits having resistance, inductance and capacitance will be analyzed. Other topics include transformers and electrical filters. 3 hrs. lecture/wk.

ELEC 142
INTRODUCTION TO ELECTRICAL CODE (2CR)
Prerequisites: Approval of the Burlington Northern training director and the JCCC division administrator
This course is designed for students with experience in electrical wiring and use of the National Electrical Code (NEC). Upon successful completion of this course, the student should be able to apply NEC articles to determine ampacity, size of conductors, grounding and bonding and overcurrent protection. In addition, the student should be able to understand motors and transformer ratings and their installation. 1.5 hrs. lecture, 1 hr. lab/wk.

ELEC 144
INTRODUCTION TO PLCs (2CR)
Prerequisites: Approval of the Burlington Northern training director and the JCCC division administrator
This course is an introduction to programmable logic controllers using Allen Bradley PLC-5 processors and is designed for electricians and maintenance personnel. Upon successful completion of this course, the student will be able to identify the components of programmable controllers, configure and set up the controllers for specific operations, write and test basic programs and apply troubleshooting procedures to locate problems. 1.5 hrs. lecture, 1 hr. lab/wk.

ELEC 146
HYDRAULIC PRINCIPLES (2CR)
Prerequisite: Approval of the railroad training administrator and the JCCC division administrator
This course is designed for operators and maintenance personnel who use hydraulic systems in their work. Upon successful completion of this course, the student should be able to apply hydraulic principles to improve operational availability of equipment. Students will learn to read hydraulic diagrams and perform preventive maintenance and troubleshooting. In order to explain component operation, there will be extensive use of cut-away components. 1 hr. lecture, 1.5 hrs. lab/wk.

ELEC 148
ELECTRONICS PRINCIPLES (2CR)
Prerequisites: Approval of the railroad training administrator and the JCCC division administrator
This introductory course is designed to familiarize the student with the basic principles of electricity/electronics, the proper usage of a VOM or DMM, the reading of electrical prints in performing basic troubleshooting and the ability to identify basic hardware found in electrical circuits on maintenance of way equipment. 1 hr. lecture, 1.5 hrs. lab/wk.

ELEC 150
INTRODUCTION TO TELECOMMUNICATIONS (3CR)
This is an introductory-level course in telecommunications principles that includes a review of both voice and data communications. Topics include voiceband communications, digital transmission, switching and signaling and future technologies. 3 hrs. lecture/wk.

ELEC 157
FLUID POWER SYSTEMS (2CR)
Prerequisite: Approval of the railroad training administrator and the JCCC division administrator
This course is designed to introduce the field of fluid power. Major topics that will be discussed include: the two types of fluid power systems, major parts in a fluid power system and their purpose, the calculations needed to size motors and cylinders, the proper preventive maintenance procedures needed to keep the system operating at peak efficiency and the troubleshooting methods used to isolate the problem in a system that is not working properly. 2 hrs. lecture/wk.
ELEC 165
ADVANCED PROGRAMMABLE CONTROLLERS (3CR)
Prerequisite: ELEC 133
This course is a continuation of ELEC 133. Principle topics include sequences, file and block transfers, analog control and PID functions. In addition, methods of networking of PLCs and advanced user interface will be covered. Lecture topics will be supported by laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 172
PLC APPLICATIONS (2CR)
Prerequisites: Approval of the Burlington Northern training director and the JCCC division administrator
This course is designed for electricians and maintenance personnel. It is intended as an advanced course for people with basic knowledge in programmable logic controllers operation. Allen Bradley PLC-5 family of processors is used for hands-on training. Upon successful completion of this course, the student should be able to use advanced PLC instructions such as file, block transfer, stack concepts/operations and sequences, and configure and operate a network of processors. 1 hr. lecture, 1.5 hrs. lab/wk.

ELEC 175
TELECOMMUNICATIONS (3CR)
Corequisite: ELEC 230
This course provides an introduction to the hardware functions of a telecommunications system. Topics include both voice and data aspects of telecommunications terminology, telephone sets, interfaces, protocols, fiber optics, PBXs, switching, SS7, ISDN and other related and timely items (ATM, SONET). 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 180
INTRODUCTION TO RAILROADELECTRONICS (1CR)
Prerequisites: Approval of the railroad training administrator and the JCCC division administrator
This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to state basic safety procedures in electronics, explain basic principles of electronics, perform basic electronic calculations and use basic electronic tools. 2.5 hrs. lecture, lab/wk.

ELEC 181
CIRCUIT ANALYSIS DC/AC (6CR)
Prerequisites: ELEC 180 and the approval of the railroad training administrator and the JCCC division administrator
This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to identify and use fundamental DC circuit concepts such as K-irchhoff's laws, power and energy formulas, Ohm's Law, Thvenin's Theorem and Norton's Theorem as they apply to resistive circuits. Also upon successful completion of this course, the student should be able to analyze circuits involving resistors, capacitors and inductors driven by time-variant sources. This analysis will involve both time and frequency responses. 3 hrs. lecture, 2 hrs. lab, 3 hrs. alternate delivery/wk.

ELEC 182
SEMICONDUCTOR DEVICES AND CIRCUITS (6CR)
Prerequisites: ELEC 181 and the approval of the railroad training administrator and the JCCC division administrator
This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to describe the characteristics of basic semiconductor devices, explain practical circuits using semiconductor devices and analyze these circuits for DC and AC quantities. 3 hrs. lecture, 2 hrs. lab., 3 hrs. alternate delivery/wk.

ELEC 183
DIGITAL TECHNIQUES (6CR)
Prerequisites: ELEC 182 and the approval of the railroad training administrator and the JCCC division administrator
This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to analyze basic digital circuitry consisting of arrangements of gates and flip-flops using TTL and CMOS integrated circuits, as well as relay logic. This analysis will include the application of elementary Boolean algebra, truth tables and timing diagrams. 3 hrs. lecture, 2 hrs. lab., 3 hrs. alternate delivery/wk.

ELEC 190
ADVANCED HYDRAULIC PRINCIPLES (2CR)
Prerequisites: ELEC 146 and the approval of the railroad training administrator and the JCCC division administrator
This advanced course contains information on hydraulic components found on the more complex maintenance of way equipment. Upon successful completion of this course, the student should be able to understand symbols, describe the theory of operation and perform basic troubleshooting tasks on these components. 1 hr. lecture, 1.5 hrs. lab/wk.
ELEC 192
ADVANCED ELECTRONIC PRINCIPLES (2CR)
Prerequisites: ELEC 146 and the approval of the railroad training administrator and the JCCC division administrator
This advanced course contains information on electronic components and circuits found on the more complex maintenance of way equipment. Upon successful completion of this course, the student should be able to understand symbols, describe the theory of operation and perform basic troubleshooting tasks on these components. 1 hr. lecture, 1.5 hrs. lab/wk.

ELEC 200
INTRODUCTION TO GLOBAL POSITIONING SYSTEMS (3CR)
Prerequisite: MATH 134
This is a survey course on the Global Positioning Satellite (GPS) system. Topics will include navigational history and current GPS configuration in terms of space, control, user segments, signals, receivers, position determination, selective availability, corrections and applications. 3 hrs. lecture/wk.

ELEC 210
MEDICAL ELECTRONICS PRINCIPLES (3CR)
Prerequisite: ELEC 225
Corequisite: ELEC 230
This course examines the fundamental principles of modern medical instruments. Students will study the human physiological variables most commonly measured, together with the sensors, transducers and electronic circuits needed to measure these variables. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 211
MEDICAL ELECTRONICS APPLICATIONS (3CR)
Prerequisite: ELEC 210
This course continues the topics covered in ELEC 210 by examining the system operation of many commonly used medical electronics instruments. Emphasis is on repair, service and preventive maintenance of medical equipment hardware. Students will be assigned laboratory projects using actual hospital equipment. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 225
DIGITAL ELECTRONICS II (3CR)
Prerequisite: ELEC 125
This course completes the study of basic digital electronics and will begin a study of digital computer hardware and organization. Building, testing and troubleshooting of digital circuitry will be emphasized. The fabrication of a simple computer will be the principle laboratory project. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 230
ELECTRONIC DEVICES II (3CR)
Prerequisites: ELEC 130 and ELEC 140
This is a continuation of the electronic devices sequence. Principal topics include operational amplifiers, thyristors and voltage regulators. Operational amplifier applications include comparators, summing amplifiers, integrators, differentiators and active filters. A digital topic includes frequency response of operational amplifiers. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 240
ELECTRONIC COMMUNICATION SYSTEMS (3CR)
Prerequisite: ELEC 230
This course provides an introduction to electronic communication systems. Topics include the electromagnetic spectrum, decibels, noise, amplitude modulation, frequency modulation, wire and cable media, transmission lines, antennas and the basic principles of television and facsimile. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 245
MICROPROCESSORS (3CR)
Prerequisite: ELEC 225
This is a basic course on microprocessors and micro-processor systems. Principal topics include machine language and the interfacing of memory, input devices and output devices. All topics are supported by laboratory projects. Troubleshooting is emphasized. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 250
MICROCOMPUTER MAINTENANCE (3CR)
Prerequisite: ELEC 225
This course examines the hardware aspects of personal computers and peripheral equipment. Students will configure, build, add cards, test, troubleshoot and repair IBM clone computers. Topics will include diagnostic software, DOS, memory, bus types, video, parallel and serial ports, printers, modems, floppy drives, hard drives and virus prevention. 2 hrs. lecture, 3 hrs. lab/wk.
ELEC 271  
ELECTRONICS INTERNSHIP I (1-3CR)  
Prerequisite: Approval of the division administrator  
This course affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide selected advanced electronics technology students with appropriate on-the-job experience with area employers, under instructional oversight, that will promote the student's career goals. 6-20 hrs. of approved and appropriate work activity/wk.

ELEC 272  
ELECTRONICS INTERNSHIP II (1-3CR)  
Prerequisites: ELEC 271 and approval of the division administrator  
This course is a continuation of ELEC 271. It affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide selected advanced electronics technology students with appropriate on-the-job experience with area employers, under instructional oversight, that will promote the student's career goals. 6-20 hrs. of approved and appropriate work activity/wk.

ELEC 284  
ELECTRONIC COMMUNICATIONS (6CR)  
Prerequisites: ELEC 183 and approval of the Burlington Northern training director and the JCCC division administrator  
This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to state the principles of amplitude, frequency, phase and pulse modulation and describe the technologies of transmitters, receivers, antennas, local area networks, wide area networks and telephone systems. 3 hrs. lecture, 2 hrs. lab, 3 hrs. activity/wk.

ELEC 285  
MICROPROCESSOR TECHNIQUES (6CR)  
Prerequisites: ELEC 183 and approval of the Burlington Northern training director and the JCCC division administrator  
This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to analyze and troubleshoot 6800 family microprocessor circuitry as well as microprocessor interface circuitry. 3 hrs. lecture, 2 hrs. lab, 3 hrs. activity/wk.

ELEC 286  
APPLIED MICROPROCESSORS (2CR)  
Prerequisite: ELEC 285 and approval of the Burlington Northern training director and the JCCC division administrator  
This course is designed to provide an introduction to advanced microcomputer concepts and applications. This course is a continuation of topics introduced in the microprocessor course, with specific applications in general-purpose microcomputers (PCs) and dedicated microprocessor-based control systems. Included are hardware and software training in operating systems, peripherals, monitors, processors, storage media, maintenance, diagnostics and troubleshooting. A analog and digital data acquisition and processing, as well as voice digitization and playback will be demonstrated. Presentations and labs will include incorporation of these functions into a PC and the Servo 9000 hot box detector. 1 hr. lecture, 2 hrs. lab/wk.

Emergency Medical Science

EMS 121  
CPR I – BASIC RESCUE (1CR)  
This class is a study of the techniques, rationale and background of basic life support procedures. Successful completion of both the classroom and lab portions of this class will lead to American Heart Association certification in basic life support at the Basic Rescuer level. A certification fee is required. This class is offered through the Emergency Medical Science Program. Students will be trained by instructors who are educated and experienced in prehospital care procedures. This course will meet the general education health and/or physical education requirement needed for graduation. 2.5 hrs. lecture, lab/wk. for 8 wks.

EMS 125  
CPR II – BASIC CPR INSTRUCTOR (1CR)  
Prerequisite: Successful completion of EMS 121 and current certification by AHA as Basic Rescuer  
This class will include a review of EMS 121 (Basic Rescuer) techniques, designing and implementing CPR courses, demonstration of mastery performances and mini-lectures. Upon successful completion of this class, students will be certified by the American Heart Association as a BCLS instructor. A certification fee is required. This class is offered through the Emergency Medical Science Program. 2.5 hrs. lecture, lab/wk. for 8 wks.
EMS 128
EMS FIRST RESPONDER (5CR)
This course is designed to provide training in emergency medical care for those who are apt to be the first persons responding to a medical incident. For example, a first responder might be an individual in a public service agency (fire, police, civil defense); a school bus driver; a teacher or a day care provider; a postal carrier; a worker from a utility company; or a worker in an industrial setting. The student will receive both didactic and psychomotor skills training in CPR, patient assessment, fracture management, airway management and trauma management. Successful completion of this course will enable the student to sit for the First Responder certification examinations administered by the Kansas Board of Emergency Medical Services. 6 hrs. lecture, 6.5 hrs. lab/wk. for 8 wks.

EMS 130
EMERGENCY MEDICAL TECHNICIAN (9CR)
Prerequisites: EMS 128 or equivalent, or be an active member in a health-related occupation (firefighter, rescue, ambulance, law enforcement, industrial first aid personnel or other health-related field), or attained the minimum of an associate’s degree
Classroom instruction includes anatomy, physiology, recognition and care of actual medical emergencies and trauma-related injuries. Skills in performing CPR, bandaging, splinting, childbirth techniques and many other emergency care procedures are taught. An extrication session will give students hands-on experience with auto accident situations and provide the opportunity to observe an air evacuation of a patient. Upon instructor recommendation, students will participate in a 10-hour clinical observation in a hospital setting. Additionally, students will arrange to participate as an observer with a local EMS service. Students successfully completing this course will be allowed to sit for certification examinations administered by the Kansas Board of Emergency Medical Services. 7 hrs. lecture, 5 hrs. lab/wk. Students are also required to attend approximately four Saturday classes lasting between 4 and 8 hours each. Saturday dates and times will be announced during the first class session.

EMS 140
BASIC CARDIOLOGY AND EKG RECOGNITION (2CR)
Prerequisite: Permission of the program director
Topics will include basic anatomy, physiology, electrophysiology of the cardiac system, recognition of EKG tracings and an overview of coronary artery disease. 2 hrs/wk. Class limited to 30.

Mobile Intensive Care Technician

EMS 220
MICT I (10CR)
Prerequisite: Admission to the MICT Program
This fundamental course will cover roles and responsibilities, medical terminology, anatomy and physiology as they apply to the MICT. Other topics will include diagnostic signs and assessment of patients, biomedical communication, venipuncture, medication administration techniques, advanced airway management, managing the cardiac patient and ECG interpretation. 17 hrs. lecture, 4.5 hrs. lab/wk.

EMS 225
MICT II (10CR)
Prerequisite: EMS 220 with a minimum grade of “C”
This fundamental course will cover diagnosis, etiology and field treatment of victims of respiratory emergencies and hypertensive, vascular, diabetic, OB, endocrine and environmental emergencies. Also covered will be treatment of victims experiencing overdoses or poisoning; chest, neurological and abdominal trauma; fracture; and shock. 14.5 hrs. lecture/wk., 7 hrs. lab avg/wk., 13 hrs. field observation avg/wk.

EMS 230
MICT III CLINICALS (12CR)
Prerequisite: EMS 225 with the minimum grade of “C”
The student will practice diagnostic and treatment skills under supervision in an emergency department, critical care unit, surgery/recovery room, labor/delivery room and a pediatrics unit. Some field experience will be included. 5 hrs. lecture avg/wk., 2.5 hrs. lab avg/wk., 22.5 hrs. clinical lab/wk., 9 hrs. field lab avg/wk.

EMS 271
MICT IV FIELD INTERNSHIP (15CR)
Prerequisite: EMS 230 with a minimum grade of “C”
The student will act as an MICT, under supervision, with an existing advanced life-support ambulance service. The student also will present case histories, analyze systematic medical care and evaluate medical care using prehospital protocols. 6.5 hrs. lecture avg/wk., 3 hrs. lab avg/wk., 52.5 hrs. field lab avg/wk.
Engineering

ENGR 121
ENGINEERING ORIENTATION (2CR)
Upon successful completion of this course, the student should be able to describe careers in engineering and use fundamental concepts in engineering problem solving. Topics include engineering disciplines, aptitude and academic requirements, professional responsibilities, problem definition and solution, engineering design and terminology. Students take field trips to engineering companies and work sites. 2 hrs. lecture/wk.

ENGR 131
ENGINEERING GRAPHICS I (4CR)
Prerequisite: DRAF 120 or permission from the division administrator
Upon successful completion of this course, the student will be able to apply graphic principles used in the engineering design process. The course will cover graphics concepts using computer-aided drafting software. Topics include 2-D and 3-D CAD commands, geometric construction, multiview orthographic projection, auxiliary views, sectional views, isometrics and descriptive geometry. 3 hrs. lecture, 4 hrs. lab/wk.

ENGR 171
PROGRAMMING FOR ENGINEERING AND SCIENCE (3CR)
Prerequisite: MATH 171
Upon successful completion of this course, the student should be able to use a high-level programming language for solving scientific and engineering problems on digital computers. This course will prepare the student for advanced studies in numerical methods and other computer applications. 2 hrs. lecture, 3 hrs. lab/wk.

ENGR 180
ENGINEERING LAND SURVEYING (3CR)
Corequisite: MATH 134 or MATH 172
Upon successful completion of this course, the student should be able to identify the basic applications of plane surveying procedures; measurement of horizontal distances, directions, angles, leveling, traversing, curves and stadia coordinates; computations with the aid of a computer; and topographical property and construction surveying. Students will take part in field operations using equipment such as auto levels, theodolites, EDM and total station. 2 hrs. lecture, 3 hrs. lab/wk.

ENGR 222
CIRCUIT THEORY I (3CR)
Prerequisites: MATH 243 and PHYS 220
Corequisites: MATH 244 and PHYS 221
This course is the first of a two-semester sequence dealing with electrical circuit theory. Upon successful completion of this course, the student should be able to analyze linear passive electrical circuits. Computer applications will be included. 3 hrs. lecture/wk.

ENGR 231
THERMODYNAMICS (3CR)
Prerequisites: MATH 242, PHYS 220 and CHEM 124
Upon successful completion of this course, the student should be able to describe thermodynamic principles. Students will apply these principles to the analysis of energy systems, including various power and refrigeration cycles. Topics include work and energy, first and second laws of thermodynamics, entropy and enthalpy. 3 hrs/wk.

ENGR 251
STATICS (3CR)
Prerequisite: MATH 242
Corequisite: PHYS 220
Upon successful completion of this course, the student should be able to describe and predict the conditions of rest and motion of bodies under the action of forces. The principles used will include vectors, force systems, equilibrium, free body diagram, centroids, moments of inertia, trusses, frames and shear and moment diagrams. Computer applications will be included. 3 hrs. lecture/wk.

ENGR 254
DYNAMICS (3CR)
Prerequisites: ENGR 251
Upon successful completion of this course, the student should be able to apply the principles of dynamics, the branch of engineering mechanics that studies objects in motion. Topics covered include unbalanced force systems (Newton's second law), displacement, velocity and acceleration, work and energy, and impulse and momentum. Computer applications will be included. 3 hrs. lecture/wk.
DEVELOPMENTAL COURSES
ENGL 100 through ENGL 120 are designed to help students develop basic skills in writing, grammar and sentence patterns. Most courses also will work in composing, proofreading, gathering and documenting information. Emphasis will be on developing a plan to meet individual student needs. These courses do not fulfill degree requirements.

ENGL 100
ENGLISH AS A SECOND LANGUAGE I (3CR)
Prerequisite: Appropriate assessment score
This course is designed for students who are familiar with English but who have limited language skills. The class will focus on pronunciation and listening comprehension as well as basic grammar and sentence structure. 3 hrs./wk.

ENGL 101
ENGLISH AS A SECOND LANGUAGE II (3CR)
Prerequisite: ENGL 100 or appropriate assessment score
This course will include continued work in pronunciation, grammar and sentence structure and will emphasize improvement of reading, writing and speaking skills. 3 hrs./wk.

ENGL 102
WRITING STRATEGIES (3CR)
Prerequisite: Appropriate placement test score
This course is designed to develop confidence and competence in writing. The focus will be on developing sentence-level skills that will be applied to paragraph development. Students who are non-native speakers should enroll in ENGL 100 or ENGL 101. 3 hrs./wk.

ENGL 103
PRACTICAL WRITING SKILLS (1CR)
A practical writing course in English for non-native speaking students and the hearing impaired, this course will focus on basic sentence patterns, techniques to expand and modify sentences, and practical methods for developing writing. Individualized instruction and practice in reading, writing and speaking will be included. By arrangement.

ENGL 105
BASIC ENGLISH GRAMMAR (3CR)
This course will focus on grammar, usage and mechanics of edited English, emphasizing clear, correct communication in varied sentence patterns. 3 hrs./wk.

ENGL 106
INTRODUCTION TO WRITING (3CR)
Prerequisite: ENGL 102 or appropriate placement test score
In this introductory writing course, students will review sentence skills, and then move into writing paragraphs, emphasizing topic selection, organization, development and editing. The course will conclude with an essay. 3 hrs./wk.

ENGL 107
SENTENCE PATERN SKILLS (1CR)
Students will work at their own pace in reviewing the parts of speech, elements of the sentence and basic sentence patterns. Emphasis will be on diagramming and combining sentences. The class will include individualized tutoring and practice in writing. By arrangement.

ENGL 108
COMPOSING SKILLS (1CR)
In this review of the various aspects of composition, students will examine creating, outlining and developing a variety of paragraph and essay forms. The class will include individualized tutoring and practice in writing. By arrangement.

ENGL 109
PROOFREADING SKILLS (1CR)
Students will learn to recognize and correct errors on exercise sheets and in their own writing. The class will include individualized tutoring and practice in writing. By arrangement.

ENGL 110
ENGLISH GRAMMAR REVIEW (1CR)
Students will take diagnostic tests to determine the level at which they should begin work. They will use programmed materials dealing with parts of speech, punctuation, capitalization, sentence structure, verb forms, modifiers, pronoun choices, sentence fragments and run-ons. By arrangement.
ENGL 121
COMPOSITION I (3CR)
Prerequisite: ENGL 106 or appropriate placement test score
This standard freshman English I course will concentrate on invention, paragraph development, essay format and an introduction to the research paper. Students will practice developing the form and content of clear, interesting compositions. 3 hrs./wk.

ENGL 122
COMPOSITION II (3CR)
Prerequisite: ENGL 121
This standard freshman English II course will emphasize analysis, synthesis and evaluation through essays written in response to assigned readings. Related research projects will be assigned. 3 hrs./wk.

ENGL 123
TECHNICAL WRITING I (3CR)
Prerequisite: ENGL 121
Students will write memos, letters, short reports, long reports, instructions and technical descriptions related to business and industry. 3 hrs./wk.

ENGL 130
INTRODUCTION TO LITERATURE (3CR)
Prerequisite: ENGL 121
In this course, students will increase their understanding and appreciation of the literary genres of fiction, poetry and drama. Students will be introduced to representative works from various literary traditions and cultures, including numerous works from contemporary writers. 3 hrs./wk.

ENGL 210
TECHNICAL WRITING II (3CR)
Prerequisite: ENGL 123
Upon successful completion of this course, the student will be familiar with writing techniques appropriate for technology, industry and business. The student also will learn to create forms, plans, summaries, newsletter articles, press releases, memorandums, letters, and short and long reports. 3 hrs./wk.

ENGL 222
ADVANCED COMPOSITION (3CR)
Prerequisite: ENGL 122
Students will write a broad range of expository pieces, including interview, informative and descriptive writing and analysis and critical writing. 3 hrs./wk.

ENGL 223
CREATIVE WRITING (3CR)
Prerequisite: ENGL 122
Students will study and practice poetry and fiction with possibly some drama writing. Topics will include the process of writing poems, short stories and short plays or scripts. Marketing creative work will also be covered. 3 hrs./wk.

ENGL 224
CREATIVE WRITING WORKSHOP (3CR)
Prerequisite: ENGL 223
Students with serious writing aspirations will get advanced practice in writing creatively. Advanced strategies for marketing will be covered, and students will regularly critique each other's work. 3 hrs./wk.
ENGL 230
INTRODUCTION TO FICTION (3CR)
Prerequisite: ENGL 122
This introduction to fiction from different countries and eras will emphasize fictional techniques and themes in selected novels and short stories. Students will read, discuss and write about the assigned fiction. 3 hrs/wk.

ENGL 231
AMERICAN PROSE (3CR)
Prerequisite: ENGL 122
Students will read complete works of selected American writers and be assigned related writing projects. The course will focus on important works of various writers and the relationship between their lives and times and their art. 3 hrs/wk.

ENGL 232
CHILDREN'S LITERATURE (3CR)
Prerequisite: ENGL 122
Students will look at children's literature, both past and present. Topics will include children's needs, criteria for selecting books, types of children's literature, and the best authors and illustrators. 3 hrs/wk.

ENGL 233
THE DEAF IN LITERATURE (2CR)
The portrayal and function of deaf characters in selected works will be examined. Students will read, discuss and write about the assigned selections. 2 hrs/wk.

ENGL 235
DRAMATIC LITERATURE (3CR)
Prerequisite: ENGL 122
Beginning with the Greek dramatists and ending with the contemporary scene, students will read and analyze full-length plays and the comments of playwrights, directors, actors and critics. They will analyze drama from psychological, historical, philosophical and dramatic perspectives and write essays demonstrating their understanding of the works studied. Students will be required to attend selected area productions. 3 hrs/wk.

ENGL 241
BRITISH WRITERS (3CR)
Prerequisite: ENGL 122
Students will read a variety of famous British writers and learn about their lives, times and works. Topics from selected writers will promote group discussion, and students will be assigned related writing projects. 3 hrs/wk.

ENGL 243
THE LITERATURE OF SCIENCE FICTION (3CR)
Prerequisite: ENGL 122
The themes and myths of major science fiction writers will be presented, and major science fiction movies and short subjects will be reviewed. The class will include group presentations, simulations, guest speakers and related reading and writing assignments. 3 hrs/wk.

ENGL 245
WRITING LITERATURE FOR CHILDREN (3CR)
Prerequisite: ENGL 232
This course is a continuation of Children's Literature, focusing primarily on writing and marketing literature for children. The course will cover proper research, technique and form, emphasizing the best methods to produce quality prose, poetry and drama for young readers. 3 hrs/wk. Spring.

ENGL 250
WORLD MASTERPIECES (3CR)
Prerequisite: ENGL 122
Students will read works from selected influential Western writers. The course will focus on important works of various writers and trace their influence on later writers. Writing projects will be assigned. 3 hrs/wk.

ENGL 254
MASTERPIECES OF THE CINEMA (3CR)
Prerequisite: ENGL 122
Major American and foreign films will be shown and discussed with video and film shorts added for variety and interest. The class will feature group presentations, written film critiques and related reading assignments. 3 hrs/wk.

ENGL 256
AMERICAN POETRY (3CR)
Prerequisite: ENGL 122
This course is a study of the poetry written in America from colonial times until the present, with emphasis on the relationship between the poetry and the lives and cultural milieu of the poets. Students will participate in class discussions, and writing projects will be assigned. 3 hrs/wk.
Fashion Merchandising

FASH 121
FASHION FUNDAMENTALS (3CR)
Upon successful completion of this course, the student should be able to define appropriate fashion terminology and explain the structure of the industry, including the design process, production and marketing of the fashion product. 3 hrs./wk.

FASH 123
APPAREL CONSTRUCTION I (4CR)
Upon successful completion of this course, the student should be able to apply clothing construction principles, techniques and skills in apparel construction. The class will use lecture, demonstration and hands-on experience to teach the skills needed to plan and construct four garments during this class. 2 hrs. lecture, 4 hrs. lab/wk.

FASH 124
APPAREL CONSTRUCTION II (4CR)
Prerequisite: FASH 123 or two years of high school apparel construction training or division administrator approval
Upon successful completion of this course, the student should be able to apply intermediate apparel construction principles, techniques and skills in the production of various garments. This continuation of FASH 123 will focus on the planning and construction of an ensemble of intermediate complexity made from muslin fitting samples with emphasis on precise fitting alteration. 2 hrs. lecture, 4 hrs. lab/wk.

FASH 125
VISUAL MERCHANDISING (3CR)
Upon successful completion of this course, the student should be able to explain and apply the principles of design in visual merchandising. In addition, the student should be able to identify and explain the use of mannequins and other forms, display fixtures and lighting systems; apply color theory; and present merchandise effectively in visual displays. The student should also be able to demonstrate the use of appropriate types of displays for in-store promotions. 3 hrs./wk.

FASH 127
CAD: PATTERN DESIGN (4CR)
Upon successful completion of this course, the student should be able to apply the use of flat pattern methods in developing patterns for original apparel designs. Basic slopers and the CAD (computer-assisted design) Pattern Design System will be used to develop and manipulate patterns. The class will use lecture, demonstration and hands-on experience to teach skills needed in manual and computer-assisted pattern design. The student will plan and create patterns in this class. 2 hrs. lecture, 4 hrs. lab/wk.

FASH 128
CAD: PATTERN DESIGN II (4CR)
Prerequisite: FASH 127
Upon successful completion of this course, the student should be able to apply advanced methods of flat pattern design in developing patterns. This class is a continuation of FASH 127 CAD: Pattern Design. Lecture, demonstration and hands-on experience will be used to teach techniques needed in computer-assisted and manual advanced pattern design. Industry standards will be used for sloper manipulation. Each student will create advanced flat patterns in this class. 2 hrs. lecture, 4 hrs. lab/wk.

FASH 130
FASHION ILLUSTRATION I (3CR)
Upon completion of this course, students should be able to create fashion illustrations for their portfolios. In addition, the student should be able to apply color, mood, detail and form using various media. 3 hrs./wk.

FASH 132
MARKETING COMMUNICATIONS (3CR)
Upon successful completion of this course, the student should be able to explain advertising and promotion from an integrated marketing communications perspective that combines theory with planning, management and strategy. In addition, the student will be able to explain advertising, sales promotion, direct marketing and publicity/public relations and the need for integration of these promotional mix elements in an overall marketing communications program. 3 hrs./wk.

FASH 135
IMAGE MANAGEMENT (1CR)
Upon successful completion of this course, the student should be able to conduct an extensive wardrobe inventory. In addition, the student should be able to apply principles of personal grooming, elements of design and fabric and accessory knowledge to the development of an individual professional wardrobe plan based on individual budget constraints. 1 hr./wk.

FASH 140
GARMENT DESIGN I (3CR)
Prerequisite: FASH 130
Upon successful completion of this course, students should be able to translate garment ideas from color sketches (croquis); continue the design process through fabric selection and pattern drafting; figure yardage, notions and wholesale cost; and construct a finished garment. 6 hrs. lecture, lab/wk.
FASH 143
APPLIANCE CONSTRUCTION III (4CR)
Prerequisite: FASH 124
Upon successful completion of this course, the student should be able to apply advanced apparel construction principles, techniques and skills in the production of garments. This course is a continuation of FASH 124 Apparel Construction II. The class will use lecture, demonstration and hands-on experience as the students complete a minimum of two fitting muslins and a three-piece ensemble of advanced complexity during this class. 2 hrs. lecture, 4 hrs. lab/wk.

FASH 150
TEXTILES (3CR)
Upon successful completion of this course, the student should be able to differentiate fibers and textiles according to their characteristics and select fibers and textiles for specific applications. In addition, the student should be able to identify the properties and characteristics of natural and man-made fibers, construction methods and various finishing processes, including weaving, knitting, felting, printing and dyeing. 3 hrs./wk.

FASH 220
CAD APPAREL DESIGN (3CR)
Upon successful completion of this course, the student should be able to apply the concepts of relating clothing to the cultural, social, psychological, physiological and economic aspects and practices of chosen individuals and cultural groups. In addition, the student should be able to apply computer-aided design to create fashion silhouettes. 3 hrs./wk.

FASH 224
HISTORY OF COSTUME (3CR)
Upon successful completion of this course, the student should be able to identify the political, economic, technological and sociological factors that have influenced Western costume worn by women, men and children from ancient Egyptian times to the present. 3 hrs./wk.

FASH 230
FASHION ILLUSTRATION II (3CR)
Prerequisite: FASH 130
Upon successful completion of this course, the student should be able to produce refined fashion illustrations to enhance the portfolio. Fashion Illustration II is a continuation of Fashion Illustration I. Greater emphasis is placed on development of a personal illustration style and presentation of a professionally executed portfolio. 3 hrs./wk.

FASH 231
MERCHANDISING PLANNING AND CONTROL (3CR)
Prerequisite: MATH 120
Upon completion of the course, the student should be able to describe the management structure of retail merchandising operations, contrast merchandising functions among the various types of retail operations and explain the buying process and the financial operations of retail merchandising and the application of these principles in simulated case situations. 3 hrs./wk.

FASH 242
CONSUMER PRODUCT EVALUATION (3CR)
Upon successful completion of this course, the student should be able to evaluate a wide range of textile and non-textile products ranging from lingerie to china on the basis of specialized product knowledge. In addition, the student should be able to prepare research projects on selected products. 3 hrs./wk.

FASH 268
FIELD STUDY: THE MARKET CENTER (3CR)
Prerequisite: FASH 121
Upon successful completion of this course, the student should be able to identify and distinguish between national, regional and local retail market centers. In addition, the student should be able to explain the importance of market centers, analyze the marketing mix of selected retailers and describe uses of fashion auxiliary services. 3 hrs./wk.

FASH 277
FASHION SEMINAR: CAREER OPTIONS (2CR)
Upon successful completion of this course, the student should be able to define individual career goals after a thorough examination of five career areas within the fashion industry. In addition, the student should be able to explain strategies for success in the workplace. 2 hrs./wk.

FASH 280
CAPSTONE: INDUSTRY TOPICS (3CR)
Prerequisites: FASH 283 and FASH 284
Corequisite: FASH 231
Upon successful completion of this course, the student should be able to exhibit knowledge and work-based skill inherent to fashion retailing, wholesaling and manufacturing. The student will have opportunities to apply knowledge gained in prior courses in analyzing industry topics. This capstone course will review and evaluate competencies that are essential for employment in the fashion industry. 3 hrs. lecture/wk.
FASH 283
FASHION INTERNSHIP I (1CR)
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

FASH 284
FASHION INTERNSHIP II (1CR)
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

FASH 285
FASHION INTERNSHIP III (1CR)
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

FASH 286
FASHION INTERNSHIP IV (1CR)
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

FASH 298
EUROPEAN FASHION EMPHASIS (3CR)
Upon successful completion of this course, the student will be able to compare American and European retail merchandising, advertising and visual presentation. This travel-for-credit course includes visits to selected European cities.

Fire Services Administration

FIRE 121
FUNDAMENTALS OF FIRE PREVENTION (3CR)
This class covers organization and function of fire prevention, inspections, surveying and mapping, recognition of life and fire hazards, elimination of fire hazards and public relations. 3 hrs./wk.

FIRE 125
BUILDING CONSTRUCTION FOR FIRE SERVICE (3CR)
Classification of buildings by occupancy and type of construction is covered. Emphasis is on fire protection features, including building equipment, facilities, fire-resistant materials and high-rise considerations. 3 hrs./wk.

FIRE 130
FIRE INVESTIGATION (3CR)
This introductory course covers fire cause determination, excluding arson investigation (except as it relates to determining the cause of a fire). 3 hrs./wk.

FIRE 132
ARSON INVESTIGATION (3CR)
Prerequisite: FIRE 130
Arson investigation techniques and procedures are covered in this advanced class. Topics include evidence preservation, interviewing and courtroom procedures. 3 hrs./wk.

FIRE 135
BUILDING AND FIRE CODES (3CR)
This course entails application and interpretation of codes and ordinances, especially the Life Safety Codes used extensively in fire prevention. 3 hrs./wk.

FIRE 137
EXTINGUISHING, DETECTION AND ALARM SYSTEMS (3CR)
This course covers extinguishing, detection and alarm systems and their operation. (Fire sprinkler and stand-pipe systems are covered in detail in a separate course.) 3 hrs./wk.

FIRE 150
INTRODUCTION TO FIRE SCIENCE (3CR)
This survey course covers career opportunities; history of fire protection; fire loss analysis; public, quasi-public and fire protection services; specific fire protection functions; and fire chemistry and physics. 3 hrs./wk.
FIRE 159
FIRE SERVICE HYDRAULICS (4CR)
 Hydraulic principles and formulas are studied, including hydraulic experiments that emphasize fire service applications. 4 hrs./wk.

FIRE 160
FIRE APPARATUS AND EQUIPMENT (3CR)
 Fire apparatus design, specifications, capabilities and use in emergencies are explored. 3 hrs./wk.

FIRE 162
FIRE TACTICS AND STRATEGY (3CR)
 Fire control through manpower, equipment and extinguishing agents will be explored, including theoretical models and practical applications. 3 hrs./wk.

FIRE 169
RESCUE TECHNIQUES (4CR)
 Advanced rescue techniques (rope, high angle, confined space, extrication) are covered, including practical simulations. 5 hrs./wk.

FIRE 170
SPRINKLER AND STANDPIPE SYSTEMS (3CR)
 Types of sprinkler and standpipe systems used in fire protection and their operation will be demonstrated and discussed. 3 hrs./wk.

FIRE 175
ESSENTIALS OF FIREFIGHTING (9CR)
 This course provides cognitive, psychomotor and affective instruction for those students seeking certification as a firefighter in the state of Kansas. The class covers hazardous materials, fire department communications, fireground operations (First Responder: operations level), rescue operations and prevention, preparedness and maintenance. Upon successful completion of the cognitive examinations and all psychomotor skills evaluations, students will be allowed to sit for the Kansas Fire Fighter II state certification examination, which is administered by the University of Kansas, Fire Service Training. 5 hrs. lecture, 7 hrs. lab/wk.

FIRE 190
HAZARDOUS MATERIALS CHEMICAL BEHAVIOR (3CR)
 Prerequisite: FIRE 145 or H.M. First Responder Certificate
 This course introduces properties and behavior of hazardous materials according to their chemical structures and constituents. Both inorganic and organic compounds will be studied, with specific attention to the hazards associated with particular functional groups and chemical classes. Principles of atomic and molecular structure, bonding, ionization and chemical nomenclature will be presented as they relate to the identification, containment and neutralization of hazardous chemicals in field settings. 3 hrs./wk.

FIRE 220
FIRE ADMINISTRATION (3CR)
 Techniques and methods used in managing fire departments are explored, including budgeting processes, administrative functions and types of political systems that affect a fire department. 3 hrs./wk.

FIRE 222
FIRE SCIENCE LAW (3CR)
 The law as it pertains to the fire service will be explained, along with tort law and business law. 3 hrs./wk.

FIRE 224
INCIDENT COMMAND SYSTEMS (3CR)
 This is a course in basic incident command. Disaster control, disaster management, communications for disaster management and types of disasters are presented. 3 hrs./wk.

FIRE 250
FIRE SERVICE INSTRUCTIONAL METHODS (3CR)
 This course is designed to provide the instructional skills and knowledge necessary to develop, conduct and evaluate formal training programs in in-service and classroom formats. This course meets NFPA 1041 standards for Fire Service Instructor.

FIRE 281
DIRECTED STUDIES FOR THE FIRE SERVICE (2CR)
 Prerequisite: Program director approval
 Students will conduct research and study in any individual area of interest. The instructor and student will decide on a topic to be researched. The student will give the results of the research in a written report, reflecting the recognized form and style of writing. By arrangement.
Foreign Language

FL 116
ELEMENTARY LATIN I (3CR)
Students will have the opportunity to learn the basic vocabulary and structural patterns, or grammar, of Latin. Emphasis will be on fundamental grammar concepts, extensive word study for English vocabulary growth, and the lasting contributions Roman society made to Western civilization. 3 hrs./wk. Fall.

FL 117
ELEMENTARY LATIN II (3CR)
Prerequisite: FL 116 or one year of high school Latin
This course will complete the presentation of basic Latin vocabulary and grammar. Fundamental grammar concepts, extensive word study for English vocabulary growth, and the lasting contributions of Roman society to Western civilization will be emphasized. 3 hrs./wk. Spring.

FL 120
ELEMENTARY GERMAN I (5CR)
This course will present the sounds, vocabulary and basic structural patterns of German, focusing on the development of listening comprehension, speaking, reading and writing skills. Cultural material will be integrated into the course. 5 hrs./wk. Spring.

FL 121
ELEMENTARY GERMAN II (5CR)
Prerequisite: FL 120 or one year of high school German
This course will continue the presentation of the vocabulary and basic structural patterns begun in Elementary German I with continued emphasis on the development of listening comprehension, speaking, reading and writing skills. Cultural material will be integrated into the course. 5 hrs./wk.

FL 130
ELEMENTARY SPANISH I (5CR)
In this basic course, students will study Spanish grammar, conversation, composition and the culture of Spanish-speaking countries. 5 hrs./wk.

FL 131
ELEMENTARY SPANISH II (5CR)
Prerequisite: FL 130 or one year of high school Spanish
This course will continue the presentation of the material introduced in Elementary Spanish I. Graded reading selections will be added as a basis for conversation and composition in discussion periods. 5 hrs./wk.

FL 140
ELEMENTARY FRENCH I (5CR)
A review covered in this basic course will include vocabulary building, grammar study, conversation and an introduction to French culture and civilization. The emphasis is on conversation. 5 hrs./wk.

FL 141
ELEMENTARY FRENCH II (5CR)
Prerequisite: FL 140 or one year of high school French
This course continues the presentation of the material introduced in Elementary French I. Graded reading selections will be used as the basis for conversation. 5 hrs./wk.

FL 150
ELEMENTARY RUSSIAN I (5CR)
In this course, students will study the sounds, vocabulary and basic structural patterns of Russian. The focus will be on listening comprehension, speaking, reading and writing skills. Cultural material will be included. 5 hrs./wk.

FL 151
ELEMENTARY RUSSIAN II (5CR)
Prerequisite: FL 150 or one year of high school Russian
This course will complete the presentation begun in Elementary Russian I with further practice and development of listening comprehension, speaking, reading and writing skills. 5 hrs./wk.

FL 160
ELEMENTARY ITALIAN I (5CR)
Students will be introduced to the sounds, vocabulary and basic structural patterns of Italian, with a primary focus on the development of listening comprehension and speaking, reading and writing skills. Integrated throughout the course will be an introduction to the culture of Italy. 5 hrs./wk.

FL 161
ELEMENTARY ITALIAN II (5CR)
Prerequisite: FL 160 or one year of high school Italian
A continuation of the presentation of the vocabulary and basic structural patterns of Italian, this course will emphasize the development of listening comprehension, speaking, reading and writing skills. Cultural material also will be integrated into the course. 7 hrs./wk.

FL 165
ELEMENTARY CHINESE I (5CR)
This course is an introduction to the sounds, vocabulary, grammar, usage, characters and reading of the Chinese language. The emphasis will be on developing basic conversational skills. Cultural materials will be included. 7 hrs./wk.
FL 166
ELEMENTARY CHINESE II (5CR)
Prerequisite: FL 165 or one year of high school Chinese
This course offers a continuation of Elementary Chinese I, emphasizing the sounds, vocabulary, grammar, usage, characters and reading of the Chinese language. The emphasis will be on developing more advanced conversational skills and cultural understanding. 7 hrs/wk.

FL 170
ELEMENTARY JAPANESE I (5CR)
This course is an introduction to the sounds, vocabulary, grammar, usage and reading of the Japanese language. The emphasis will be on developing basic conversational skills. Cultural materials will be included. 7 hrs/wk.

FL 171
ELEMENTARY JAPANESE II (5CR)
Prerequisite: FL 170 or one year of high school Japanese
A continuation of Elementary Japanese I, this course will emphasize the sounds, vocabulary, grammar, usage and reading of the Japanese language. The emphasis is on developing more advanced conversational skills and cultural understanding. 7 hrs/wk.

FL 178
INTERMEDIATE RUSSIAN I (3CR)
Prerequisite: FL 151 or two years of high school Russian
This course will emphasize vocabulary development and more advanced study of Russian grammar. It gives students practice in reading, listening comprehension, speaking and writing. 3 hrs/wk.

FL 179
INTERMEDIATE RUSSIAN II (3CR)
Prerequisite: FL 178 or three years of high school Russian
The emphasis will be on a study of the Russian language and culture that would prepare students to travel in a Russian-speaking country and engage in simple conversation with the citizens. 3 hrs/wk.

FL 191
INTERMEDIATE JAPANESE II (3CR)
Prerequisite: FL 190 or three years of high school Japanese
This course is a continuation of the study of Japanese language and culture, emphasizing the sounds, vocabulary, grammar, usage and reading of the Japanese language. The emphasis will be on developing further advanced conversational skills by increasing vocabulary and variety of sentence patterns. Cultural understanding will also be stressed. 3 hrs/wk.

FL 205
CONVERSATIONAL JAPANESE (2CR)
Prerequisite: FL 171 or two years of high school Japanese
This course is designed to enhance the ability of students to express themselves orally in Japanese through vocabulary building and reiteration of essential grammatical structures. The vocabulary will stress everyday situations and current events. 2 hrs lecture/wk.

FL 220
INTERMEDIATE GERMAN I (3CR)
Prerequisite: FL 121 or two years of high school German
This class will emphasize vocabulary building and grammar review primarily through extensive reading of German texts. There will be additional practice in listening comprehension, speaking and writing. 3 hrs/wk.

FL 221
INTERMEDIATE GERMAN II (3CR)
Prerequisite: FL 220 or three years of high school German
This class will further expand the mastery of German vocabulary and structure through extensive reading of more advanced texts with additional practice in listening comprehension, speaking and writing. 3 hrs/wk.

FL 223
CONVERSATIONAL GERMAN (2CR)
Prerequisite: FL 121 or two years of high school German
This course is a continuation of the presentation of German vocabulary and structural patterns, with an emphasis on speaking and writing skills to build a spontaneous speaking ability and writing fluency. Topics concerning everyday life situations and current events will be discussed. 2 hrs/wk.

FL 230
INTERMEDIATE SPANISH I (3CR)
Prerequisite: FL 131 or two years of high school Spanish
This is a reading course designed to build vocabulary, increase understanding of Hispanic culture and increase speaking fluency. The course will include composition and conversation. 3 hrs/wk.
FL 231
INTERMEDIATE SPANISH II (3CR)
Prerequisite: FL 230 or three years of high school Spanish
Extensive study of Hispanic literature will be included in this class along with advanced reading and grammar review. 3 hrs./wk.

FL 234
CONVERSATIONAL SPANISH (2CR)
Prerequisite: FL 131
This course is designed to enhance the students' ability to express themselves orally in Spanish through vocabulary building and reiteration of essential grammatical structures. The vocabulary will stress everyday life situations and current events. 2 hrs./wk.

FL 240
INTERMEDIATE FRENCH I (3CR)
Prerequisite: FL 141 or two years of high school French
Students will work on building vocabulary and comprehension and increasing speaking ability. The emphasis will be on conversation and composition. A grammar review of Elementary French I and II also will be included. 3 hrs./wk.

FL 241
INTERMEDIATE FRENCH II (3CR)
Prerequisite: FL 240 or three years of high school French
Students will study newspaper articles from Match, Elle, and L'Express in this advanced reading course. A complete review of grammar, conversation and composition will be included. 3 hrs./wk.

FL 243
CONVERSATIONAL FRENCH (2CR)
Prerequisite: FL 141 or two years of high school French
This course is designed to build spontaneous speaking ability. Everyday situations and current events will be discussed in class. 2 hrs./wk.

FL 246
CONVERSATIONAL RUSSIAN (2CR)
Prerequisite: FL 151
This course is designed to enhance students' ability to express themselves orally in Russian through vocabulary building and reiteration of essential grammatical structures. The vocabulary will stress everyday situations and current events. 2 hrs./wk.

FL 298
FRENCH CULTURE AND CIVILIZATION (3CR)
This travel-for-credit course will take students to France, where they will experience French culture as they visit Paris and most of the sites and places of historical significance in France. Summer.

Geoscience
(Also see Physical Science, page 233.)

GEOS 130
GENERAL GEOLOGY (5CR)
This course will provide a survey of the earth and the processes that have shaped it. Lecture units will cover the solid earth, the atmosphere, the hydrosphere, resources and environmental geology. Laboratory units will include identification of rocks and minerals and reading and interpretation of topographic maps. 4 hrs. lecture, 3 hrs. lab/wk.

GEOS 132
HISTORICAL GEOLOGY (5CR)
Prerequisite: GEOS 130
This class will provide a survey of the geological development of North America and the processes, environments and tectonics that occurred during its formation. Topics will include the interrelationships of various rock strata, stratigraphic-geologic time, correlation and interpretation of geologic maps, and identification of fossils. 4 hrs. lecture, 3 hrs. lab/wk.

GEOS 140
PHYSICAL GEOGRAPHY (3CR)
This course is a survey of the physical and environmental topics of geography including the methods used to study them. The Earth, its atmosphere, hydrosphere and surface features will constitute the major units of study. Some additional topics will include mapping, weather, climate, weathering, soils, rivers, deserts, mountains, topography and landforms. 3 hrs./wk.

GEOS 141
PHYSICAL GEOGRAPHY LAB (2CR)
Corequisite: GEOS 140 or the equivalent
Students in this course will broaden their knowledge of geography through identification of earth materials and the reading and interpretation of various maps and remote sensing photographs. 4 hrs. lab/wk.

GEOS 150
INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (3CR)
Geographic information systems (GIS) can be divided into four major areas: data collection, database structure and management, data analysis and data display. Students will explore the basic principles associated with these four areas and will examine how these principles can be used for problem solving. 2 hrs. lecture, 3 hrs. lab/wk.
GEOS 250
APPLICATIONS OF GEOGRAPHIC INFORMATION SYSTEMS (3CR)
Prerequisite: GEOS 150
Corequisite: MATH 171 or MATH 173
This course will introduce spatial analysis using vector GIS to explore the technical aspects in the planning, implementation, operation and management of a GIS. The focus will be on using a GIS to prepare case study analysis and experimental projects including such topics as resource management, urban planning and demographic applications. The student will use GIS techniques to design, resolve, complete and present the application issues involving geographic information with diverse disciplines. 2 hrs. lecture, 3 hrs. lab/wk.

GEOS 295
OZARK GEOLOGY (3CR)
This course will survey the geology of the Ozark Mountain region through field and classroom study. Field observations will be made at numerous locations during two six-day field trips to study the stratigraphy, structure, hydrology, mineralogy, landforms and economic geology of the region. Five three-hour pretrip meetings will provide students with the geologic knowledge necessary to make field observations.

GEOS 297
GEOLOGY OF THE HAWAIIAN ISLANDS (3CR)
This course will survey the geology and natural history of the Hawaiian Islands through field and classroom study. Field observations of concepts presented in five three-hour pretrip seminars will be made during a two-week trip to the Hawaiian Islands. Topics to be studied and observed will include volcanism, oceanography, meteorology, sedimentology, hydrology and the structure of the Hawaiian Islands as well as important natural history sites.

Grounds and Turf Management

KAGB 101
GENERAL BIOLOGY (5CR)
In this course, students will apply biological principles to selected groups of plants and animals. 7 hrs. lecture, 4 hrs. lab/wk.

KAGB 106
LANDSCAPE DESIGN AND MAINTENANCE (2CR)
This course examines the principles of planning, producing, setting out and maintaining trees, vines, groundcovers, perennials, turf and annuals. 3 hrs. lecture, 2 hrs. lab/wk.

KAGB 115
SOIL FERTILITY AND FERTILIZERS (3CR)
In this course, students will study different types of fertilizers for soils and crops. The components, formulation and application of fertilizers will be examined. 3 hrs./wk.

KAGB 129
DECIDUOUS TREES AND SHRUBS (3CR)
In this course, students will learn to identify trees and shrubs. They will also explore methods of growing trees and shrubs and their uses as ornamental plants. 4 hrs. lecture, 2 hrs. lab/wk.

KAGB 145
IRRIGATION AND INSTALLATION (3CR)
In this course, students will study the design, operations and maintenance of modern golf courses and landscape facilities, including water requirements, supply and distribution. 3 hrs./wk.

KAGB 200
OCCUPATIONAL INTERNSHIP (3CR)
In this course, students will get on-the-job training in grounds and turf management. 15 hrs./wk.

KAGB 202
ECOLOGY (5CR)
Prerequisite: KAGB 101, BIOL 125 or BIOL 127 with a minimum grade of "C"
This course will provide a study of forest, aquatic and grassland ecological systems. Various specimens from each of the three habitats will be collected and classified and their ecological relationships discussed. 7 hrs. lecture, 4 hours lab/wk.

KAGB 206
ADVANCED LANDSCAPE DESIGN AND MAINTENANCE (2CR)
Prerequisite: KAGB 106
In this course, students will explore planning and landscape design and the installation and maintenance of various plants. The commercial process of bidding and contracting will also be examined. 3 hrs. lecture, 2 hrs. lab/wk.
Health Information Technology

KMRT 151
MEDICAL TERMINOLOGY FOR MEDICAL RECORDS (3CR)
This course is a study of the professional language of medicine. Medical terms will be analyzed by learning word roots and combining forms. Disease processes and diagnostic and operative procedures will be studied as they apply to each system of the body. Selected medical specialties also will be presented. 3 hrs./wk.

KMRT 160
INTRODUCTION TO THE MEDICAL RECORD PROFESSION (2CR)
Prerequisite: Admission to the Health Information Technology program
This course will offer an orientation to the medical record profession and the supporting professional organization. The history and evolution of health care delivery, health care facilities and practitioners will be examined. Supervisory functions of the medical record department also will be presented. 2 hrs./wk.

KMRT 161
HEALTH RECORD SYSTEMS, ANALYSIS AND CONTROL (3.5CR)
This course will be an in-depth study of the content, storage, retrieval, control and retention of medical records with special emphasis on hospital records. Forms design and control, microfilming and computer applications for medical record departments also will be included. 3 hrs./wk.

KMRT 162
HEALTH CARE STATISTICS (3CR)
Prerequisite: KMRT 161 or approval of PVCC
This course will cover vital and health statistics, their uses and values. A bstraction and analysis of data from medical records and collection from other sources will be studied as will the methods of presenting the data. 3 hrs./wk.

KMRT 163
CLASSIFICATION SYSTEMS, NOMENCLATURES, INDEXES AND REGISTERS I (3CR)
Prerequisites: KMRT 200
This course is a study of nomenclatures and classification systems used for coding and indexing diagnoses and procedures. 3 hrs./wk.

KMRT 164
QUALITY MANAGEMENT (3CR)
Prerequisite: KMRT 169 or approval of the program coordinator
Quality assurance requirements of regulatory agencies will be emphasized as will methodology in assessing quality of care. 3 hrs./wk.

KMRT 166
DIRECTED PRACTICE I (2.5CR)
Prerequisites: KMRT 161 and BIOL 144
This course will offer a supervised learning experience in a medical record department. A one-hour seminar will be included for the supervised discussion of directed practices experiences. 5 hrs./wk.

KMRT 167
DIRECTED PRACTICE II (2CR)
Prerequisite: KMRT 166
This course will offer a supervised learning experience in a medical record department. Students will gain experience in a variety of procedures including coding and abstracting health information, medical transcription and release of information. A one-hour seminar will be included for the supervised discussion of directed practices experiences. 5 hrs. lab/wk.

KMRT 168
DIRECTED PRACTICE III (2CR)
Prerequisite: KMRT 167
This course will provide supervised learning experiences in the medical record department of a specialized health care facility. A one-hour seminar will be included for the supervised discussion of directed practices experiences. 4 hrs./wk.

KMRT 169
LEGAL ASPECTS OF MEDICAL RECORDS (2CR)
Prerequisite: KMRT 161 or approval of the program coordinator
This course is a study of the principles of the legal system applied to the field of health care. Confidentiality of the medical record, informed consent, the medical record as a legal document, release of clinical information, response to subpoena and testimony will be studied. 2 hrs./wk.

KMRT 175
SPECIALIZED HEALTH RECORD SYSTEMS (2CR)
Prerequisite: KMRT 164 or approval of the program coordinator
This course will offer an overview of specialized health care systems with an emphasis on record maintenance, requirements of accrediting and regulating agencies and specialized health information registers. 2 hrs./wk.
KMRT 180
CLASSIFICATION SYSTEMS, NOMENCLATURES, INDEXES AND REGISTERS II (3CR)
Prerequisite: KMRT 163 or approval of the instructor
This course covers nomenclatures and classification systems for coding and indexing diagnoses and procedures. Coding systems for specialized health care facilities is also covered. 3 hrs./wk.

KMRT 184
INTRODUCTION TO MEDICAL TRANSCRIPTION (3CR)
Prerequisite: KMRT 151 or approval of the instructor
In this course, students will be introduced to the transcription of medical record reports using correct terminology, punctuation and format. 3 hrs. lab/wk.

KMRT 200
INTRODUCTION TO CLASSIFICATION SYSTEMS (1CR)
Prerequisites: BIOL 144 and KMRT 151
This course examines classification systems used to organize clinical data in health care. The ICD-9-CM classification system will be introduced. 1 hr./wk.

KMRT 210
CLASSIFICATION SYSTEMS AND NOMENCLATURES FOR AMBULATORY CARE (3CR)
Prerequisites: BIOL 137 and KMRT 200
This course examines outpatient coding, classification and payment systems and the assignment of CPT-4 codes to procedures and services. Also included is an examination of the role of the health information technologist in ambulatory coding and billing. 3 hrs./wk.

Health Occupations

AVHO 102
CERTIFIED NURSE AIDE (96 CONTACT HOURS)
This course provides skill instruction for basic care of clients in long-term and acute-care facilities. Instruction includes daily hygiene, bedside care, vital sign measurement, positioning and safe transfer of clients. Upon successful completion, the student will be scheduled to take the Kansas CNA examination.

AVHO 104
CERTIFIED MEDICATION AIDE (80 HOURS OF INSTRUCTION)
Prerequisite: Proof of Kansas CNA certification
This course provides instruction in knowledge of commonly prescribed medications, classifications, side effects and techniques of administration. The Kansas CMA examination is administered to successful completers.

AVHO 106
HOME HEALTH AIDE (21.5 CONTACT HOURS)
Prerequisite: Proof of Kansas CNA certification
This course provides skill instruction in nutritional planning, task modification, emotional support and personal services to clients needing health care assistance at home. Successful completers will be scheduled to take the Kansas HHA certification examination.

AVHO 108
CERTIFIED MEDICATION AIDE UPDATE (10 CONTACT HOURS)
Prerequisite: Proof of Kansas CMA certification
This course meets the continuing education requirements for licensed Certified Medication Aides. The course includes review of commonly used drugs and their interactions with foods and other drugs. Also included are discussion of legal implications and regulations related to administration and record keeping, biological effects of medications on the elderly and a review of basic safety principles.

AVHO 115
I.V. THERAPY (48 CONTACT HOURS)
Prerequisite: One year of experience as a licensed practical nurse
This course provides review of basic physiology of the circulatory system and instruction in principles of site selection for veins appropriate for I.V. therapy. This course meets the Kansas requirements for LPN's seeking certification in I.V. therapy.

Health, Physical Education and Recreation

HPER 100
BASKETBALL (BEGINNING) (1CR)
The fundamentals of basketball will be introduced as well as strategies necessary for team play. 2 hrs./wk.

HPER 101
BASKETBALL (INTERMEDIATE) (1CR)
Prerequisite: HPER 100
In this continuation of Basketball (Beginning), students will work on advanced skills and strategies. 2 hrs./wk.

HPER 103
TOUCH/FLAG FOOTBALL (1CR)
The fundamentals of recreational football will be introduced as well as strategies necessary for team play. 2 hrs./wk.
HPER 105
BOWLING (BEGINNING) (1CR)
The fundamentals of bowling will be introduced as well as the history of the sport and selection, care and proper use of equipment. 2 hrs./wk.

HPER 107
BOWLING (INTERMEDIATE) (1CR)
Prerequisite: HPER 105
In this continuation of Bowling (Beginning), students will work on advanced skills of league bowling. 2 hrs./wk.

HPER 110
RACQUETBALL (BEGINNING) (1CR)
The fundamentals of racquetball will be introduced as well as strategies necessary for individual participation. 2 hrs./wk.

HPER 112
RACQUETBALL (INTERMEDIATE) (1CR)
Prerequisite: HPER 110
In this continuation of Racquetball (Beginning), students will work on advanced skills and strategies. 2 hrs./wk.

HPER 115
SOCCER (1CR)
The fundamentals of soccer will be introduced as well as strategies necessary for team play. 2 hrs./wk.

HPER 117
POWER VOLLEYBALL (BEGINNING) (1CR)
The fundamentals of volleyball will be introduced as well as strategies necessary for team play. 2 hrs./wk.

HPER 118
POWER VOLLEYBALL (INTERMEDIATE) (1CR)
Prerequisite: HPER 117
In this continuation of Power Volleyball (Beginning), students will work on advanced skills and strategies. 2 hrs./wk.

HPER 130
RUNNING AWARENESS AND EXERCISE (1CR)
Cardiovascular fitness can be improved in this course. Topics will include the proper mechanics of running and training, exercise benefits, fitness programs, warm-ups and cool-downs. 2 hrs./wk.

HPER 134
WEIGHT TRAINING (BEGINNING) (1CR)
Muscular strength and endurance will be developed in this class. A directed workout program will be implemented, and the muscular system and basic terminology will be addressed. 2 hrs./wk.

HPER 135
WEIGHT TRAINING (INTERMEDIATE) (1CR)
Prerequisite: HPER 134
This is a continuation and expansion of HPER 134, Weight Training (Beginning). Individual workout programs will be designed, and basic physiology of muscular activity will be addressed. 2 hrs./wk.

HPER 137
TENNIS (BEGINNING) (1CR)
The fundamentals of tennis will be introduced as well as strategies necessary for individual participation. 2 hrs/wk.

HPER 138
TENNIS (INTERMEDIATE) (1CR)
Prerequisite: HPER 137
In this continuation of Tennis (Beginning), students will work on advanced skills and strategies. 2 hrs/wk.

HPER 140
MODERN DANCE (BEGINNING) (1CR)
Prerequisite: HPER 140
This is a planned, progressive fitness program designed to improve muscle tone, body contour and flexibility through modern dance. 2 hrs./wk.

HPER 142
MODERN DANCE (INTERMEDIATE) (1CR)
Prerequisite: HPER 140
In this continuation of Modern Dance (Beginning), students will concentrate on longer and more difficult dance combinations as they work on muscular control and strength. 2 hrs./wk.

HPER 150
AEROBICS (BEGINNING) (1CR)
Motor skills, jogging and dance steps are combined in this exercise program designed to improve muscle tone and cardiovascular fitness. 2 hrs./wk.

HPER 152
AEROBICS (INTERMEDIATE) (1CR)
Prerequisite: HPER 150
In this continuation of Aerobics (Beginning), students will be performing at a faster pace for a longer period of time. 2 hrs./wk.

HPER 155
BALLET (BEGINNING) (1CR)
The fundamentals of ballet will be introduced as well as terminology and skills. 2 hrs./wk.
HPER 157
BALLET (INTERMEDIATE) (1CR)
Prerequisite: HPER 155
In this continuation of Ballet (Beginning), students will work on advanced skills, terminology and participation. 2 hrs/wk.

HPER 158
JAZZ DANCE (1CR)
This course is an introduction to the concepts and motor skills involved in jazz dancing. Basic body position will be introduced, as well as kinetic awareness, movement combinations, isolations, polycentrics, jazz elements, proper technique, rhythm, various styles, terminology, history of jazz, improvisation and choreography. 2 hrs/wk.

HPER 159
INTERMEDIATE JAZZ DANCE (1CR)
Prerequisite: HPER 158 or equivalent
This course is a continuation of HPER 158 Jazz Dance. Students will be required to assimilate and execute more difficult isolated dance moves as well as utilize the basic skills acquired in the beginning course to perform complex dance sequences to a variety of music. 2 hrs/wk.

HPER 160
TEACHING ELEMENTARY DANCE (2CR)
Upon completion of this course, students will be able to organize and develop a dance program within a primary level physical education curriculum. Class formation, body position, kinetic awareness, count sequences and movement combinations are some of the topics covered. 3 hrs/wk.

HPER 163
BALLROOM DANCE (BEGINNING) (1CR)
This is an introduction to ballroom dance with emphasis on basic patterns and fundamental steps of the waltz, fox trot, swing, polka and cha-cha. Common rules of dance courtesy and a brief overview of ballroom dance history will be included. Music or dance background is not necessary. 2 hrs/wk.

HPER 165
KARATE I (1CR)
The fundamentals of karate will be introduced as well as its history, basic punches, blocks, kicks and self-defense techniques. 2 hrs/wk.

HPER 166
KARATE II (1CR)
Prerequisite: HPER 165
In this continuation of Karate I, students will perform advanced skills, combinations and defense techniques. 2 hrs/wk.

HPER 167
KARATE III (1CR)
Prerequisite: HPER 166
In this continuation and expansion of Karate II, students will have the opportunity to achieve higher levels of proficiency. 2 hrs/wk.

HPER 168
KARATE IV (1CR)
Prerequisite: HPER 167 (Beginning Japanese is a suggested prerequisite)
In this continuation and expansion of Karate III, students will have the opportunity to achieve the advanced level of self-defense application. 2 hrs/wk.

HPER 172
TRACK AND FIELD (BEGINNING) (1CR)
The fundamentals of track and field activities will be introduced as well as techniques and strategies necessary for participation in each event. 2 hrs/wk.

HPER 174
COACHING AND OFFICIATING OF TRACK AND FIELD (2CR)
Students will have the opportunity to learn the fundamentals of coaching and officiating track and field events. Upon successful completion of the course, students will be prepared for USATF Level 1 certification. 2 hrs/wk.

HPER 175
FENCING (1CR)
The fundamentals of fencing will be introduced as well as strategies necessary for individual participation. 2 hrs/wk.

HPER 182
SWIMMING (BEGINNING) (1CR)
The fundamentals of swimming will be introduced for students who have had little or no previous swimming experience. Students will practice beginning swimming strokes and learn basic safety skills. 1 hr/wk.
HPER 183
SWIMMING (INTERMEDIATE) (1CR)
Prerequisite: HPER 182 or the equivalent
In this continuation of Swimming (Beginning), students will work on advanced skills and improve endurance in swimming. Upon successful completion of this course, the student will be able to swim continuously using a variety of strokes. 1 hr./wk.

HPER 185
ARCHERY (1CR)
The fundamentals of archery will be introduced as well as the history, selection and care of equipment necessary for this sport. 2 hrs./wk.

HPER 190
GOLF (1CR)
The fundamentals of golf will be introduced as well as the history, selection and care of equipment and courtesies of the game necessary for individual participation. 2 hrs./wk.

HPER 192
WELLNESS FOR LIFE (1CR)
This course introduces students to the theory and principles upon which the concepts of lifetime fitness and wellness are based. Students will examine the relationship that exists between wellness and lifestyle behaviors. Individual self-assessments will be used to establish current health and fitness levels and identify behaviors that are detrimental to health and well-being. Personal action plans will be developed and implemented to enhance existing levels of fitness, improve nutrition and eating patterns, manage stress, control body composition and reduce risks associated with the major lifetime-related diseases. 1 hr. lecture/wk.

HPER 194
SPORTS CONDITIONING (BEGINNING) (1CR)
This class will include general physical preparation, sport fitness plyometrics, agility drills and sports-related specific conditioning. The students will learn the principles of a year-round conditioning program through participation. 2 hrs./wk.

HPER 197
SPORTS CONDITIONING (INTERMEDIATE) (1CR)
Prerequisite: HPER 194
In this continuation of Sports Conditioning (Beginning), students will work on advancing their level of exercise performance. 2 hrs. lecture/wk.

HPER 200
FIRST AID/CPR (2CR)
This class will introduce the students to first aid care in emergencies. Upon successful completion of this course, certification in responding to emergencies and cardiopulmonary resuscitation may be earned. 2 hrs./wk.

HPER 202
PERSONAL AND COMMUNITY HEALTH (3CR)
Students will discuss the maintenance of good health and wellness. Discussion topics will include exercise and fitness, drug abuse, emotional health, proper nutrition, alcohol, tobacco, chronic and communicable diseases, human sexuality and consumer health. The relationship between the individual and community health will be emphasized. 3 hrs./wk.

HPER 204
CARE AND PREVENTION OF ATHLETIC INJURY (3CR)
Corequisite: HPER 200 or BIOL 140
This introduction to athletic training techniques is for student athletic trainers and coaches and athletes at all levels. The course will cover prevention of sports injuries, rehabilitation and taping techniques. 3 hrs./wk.

HPER 205
INDIVIDUAL LIFETIME SPORTS (2CR)
The fundamentals of badminton, bowling, golf, racquetball and tennis will be introduced as well as the history and strategies necessary for individual participation in each of these lifetime sports. 3 hrs./wk. Fall.

HPER 208
PHYSIOLOGY OF LIFETIME FITNESS (3CR)
In this introduction to the physiological approach to fitness and health, the physiology of aerobic exercise, muscular exercise and exercise metabolism will be studied with an emphasis on preparing students to successfully prescribe individual exercise programs. 3 hrs./wk. Fall.

HPER 217
COACHING AND OFFICIATING OF BASKETBALL (2CR)
With an emphasis on the rules governing basketball and the mechanics of officiating, students will have the opportunity to learn how to organize and plan daily practice sessions. 2 hrs./wk. Fall.

HPER 220
SPORTS OFFICIATING (3CR)
The rules and practical applications of sports officiating for baseball, basketball, football, softball and volleyball will be covered. 3 hrs./wk.
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<thead>
<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>HPER 224</td>
<td>OUTDOOR RECREATION (3CR)</td>
<td>This course is for the outdoor enthusiasts, conservationists and those interested in the welfare and use of our outdoor environment. The history, development and activities of outdoor recreation will be explored. The course will include weekend outdoor field trips. 3 hrs/wk.</td>
</tr>
<tr>
<td>HPER 240</td>
<td>LIFETIME FITNESS I (1CR)</td>
<td>This course is designed to provide an effective exercise circuit system to help the student develop overall muscle tone and cardiovascular conditioning. Handouts emphasizing the value of developing a total lifetime fitness attitude and optional lectures are available to enhance the student's knowledge of the benefits of a lifetime fitness program. This course requires an initial orientation/assessment. After the assessment, the class becomes an open lab format by arrangement. 2 hrs/wk.</td>
</tr>
<tr>
<td>HPER 241</td>
<td>LIFETIME FITNESS II (1CR)</td>
<td>This course is a continuation and expansion of Lifetime Fitness I. 2 hrs/wk., open lab format by arrangement.</td>
</tr>
<tr>
<td>HPER 242</td>
<td>LIFETIME FITNESS III (1CR)</td>
<td>This course is a continuation and expansion of Lifetime Fitness II. 2 hrs/wk, open lab format by arrangement.</td>
</tr>
<tr>
<td>HPER 243</td>
<td>LIFETIME FITNESS IV (1CR)</td>
<td>This course is a continuation and expansion of Lifetime Fitness III. 2 hrs/wk, open lab format by arrangement.</td>
</tr>
<tr>
<td>HPER 245</td>
<td>ELEMENTARY PHYSICAL EDUCATION (3CR)</td>
<td>This course is designed to meet the needs of students who wish to become teachers of physical education at the elementary level. This course will provide both physical education majors and elementary education majors the knowledge and background to plan, organize, direct and instruct an elementary physical education class. The course will include observation and teaching. 3 hrs/wk. Spring.</td>
</tr>
<tr>
<td>HPER 255</td>
<td>INTRODUCTION TO PHYSICAL EDUCATION (3CR)</td>
<td>This course is an introduction to physical education, its history, philosophy, theory and practice. 3 hrs/wk. Spring.</td>
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### Hearing Impaired

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>HRIM 100</td>
<td>BASIC ENGLISH FOR HEARING-IMPAIRED PERSONS (HIP) I (3CR)</td>
<td>Students will work on basic skills in written communication including sentence structure and the system of language, its characteristics and functions. Vocabulary and the effect of words will be emphasized. 5 hrs/wk.</td>
</tr>
<tr>
<td>HRIM 101</td>
<td>BASIC ENGLISH FOR HIP II (3CR)</td>
<td>In this continuation of HRIM 100, the emphasis will be on clear, written communication: grammar, organization, idiomatic usage, spelling and vocabulary. 5 hrs/wk.</td>
</tr>
<tr>
<td>HRIM 102</td>
<td>BASIC ENGLISH FOR HIP III (3CR)</td>
<td>Students will practice expression through writing compositions. Emphasis will be on organization, clarity of expression and style. 5 hrs/wk.</td>
</tr>
<tr>
<td>HRIM 105</td>
<td>ADJUSTMENTS INTO ADULT LIVING (HIP) (3CR)</td>
<td>This class teaches the daily living skills that students need to become part of the mainstream in college, including study habits, money management and employer-employee relationships. Also included is an introduction to college facilities and support services, career exploration and clarification of personal values. 3 hrs/wk.</td>
</tr>
<tr>
<td>HRIM 110</td>
<td>DEVELOPMENTAL READING FOR THE HEARING IMPAIRED I (2CR)</td>
<td>The hearing-impaired student can work on reading skills in these small group sessions. The course will emphasize reading comprehension and vocabulary development through selected readings, current affairs readings, discussion and vocabulary building. 3 hrs/wk.</td>
</tr>
<tr>
<td>HRIM 111</td>
<td>DEVELOPMENTAL READING FOR THE HEARING IMPAIRED II (3CR)</td>
<td>The hearing-impaired student can continue to develop reading skills in these group sessions. Emphasis will be on reading comprehension and vocabulary development through selected readings, Line 21 decoder, discussion and vocabulary building. 3 hrs/wk.</td>
</tr>
</tbody>
</table>
HRIM 121
BASIC MANUAL COMMUNICATIONS (3CR)
In this course on Basic American Sign Language and Pidgin Signed English, students will work on developing visual perception, body language skills and basic ASL/PSE communication skills. 3 hrs./wk.

HRIM 123
INTERMEDIATE MANUAL COMMUNICATIONS (3CR)
Prerequisite: HRIM 121
This continued study of American Sign Language and Pidgin Signed English will emphasize signed vocabulary in context, body and facial grammatical markers, and facial expressions. 3 hrs./wk.

Heating, Ventilation and Air Conditioning Technology

HVAC 108
HVAC TECHNICAL SERVICE I (2CR)
Upon successful completion of this course, the student should be able to identify refrigeration and heating, electric diagram symbols, three-phase wye and Delta, transformer phasing, Ohms Law, series-parallel circuits, voltage imbalance, compressors and compressor failures. Also included will be gas furnace controls, capacity control condensers and evaporators, aluminum coil repair, properties of gas, metering devices, gas combustion, gas burners, ventilation and combustion air. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs./wk.

HVAC 121
BASIC PRINCIPLES OF HVAC (4CR)
Upon successful completion of this course, the student should be able to identify the function of the basic components of an air conditioning system. Topics will include heat laws, refrigerants, oils and refrigeration cycles of residential and light commercial systems. In the lab, students will design, assemble and operate a working refrigeration system. Competencies will include brazing, wiring, evacuating and charging a system. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 123
ELECTROMECHANICAL SYSTEMS (4CR)
Upon successful completion of this course, the student should be able to identify electrical components and their relationships to the various repair and trouble-shooting techniques. The materials in this course will prove useful to service technicians whose background in electricity is limited. The course includes material from basic electrical theory to troubleshooting complex electrical circuits. This course will provide practice in application of electrical theory as well as the interconnection of components of air conditioning and refrigeration systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 124
EQUIPMENT SELECTION AND DUCT DESIGN (4CR)
Prerequisites: HVAC 121
Upon successful completion of this course, the student should be able to identify techniques and procedures used in the residential construction industry to determine proper sizing of HVAC equipment and ducts to meet the requirements for a high-quality, comfortable climate in terms of heating, cooling, humidifying, dehumidifying, ventilation and air cleaning or filtering. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 125
ENERGY ALTERNATIVES (2CR)
Upon successful completion of this course, the student should be able to identify diverse methods of alternate energy production. Some of the technologies that will be discussed are wind energy, photoelectric energy, nuclear energy, hydroelectric energy, biomass, alternate fuel vehicles and others. Students will understand the advantages of using various alternate energy technologies, the impact or byproducts of each and the problems that might be encountered. Some student research will be included in the context of the course. Emphasis will be on the most promising or effective alternate energy technologies available. 2 hrs. lecture/wk.

HVAC 126
RESIDENTIAL HVAC SYSTEMS AND SERVICE (4CR)
Prerequisites: HVAC 121 and HVAC 123
Upon successful completion of this course, the student should be able to identify the major components and accessories and their relation to the functions of the total heating and cooling systems. Topics covered will be electric, fossil fuel, heat pumps and central air condi-
tioning systems in the residential market. The emphasis of this course will be practical instruction in procedures and techniques for the installation, maintenance and repair of these systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 143
READING BLUEPRINTS AND LADDER DIAGRAMS (2CR)
Upon successful completion of this course, the student should be able to identify all types of industrial plant blueprints. Included will be discussion of machine parts and drawings, as well as hydraulic, pneumatic, piping and plumbing, electrical, air conditioning and refrigeration drawings. Sketching used in industrial plants will be covered. A portion of the course will cover the types and uses of ladder logic and its various components such as input, output and diagrams. The structure, symbols and terminology of ladder logic diagrams will be introduced. Logic or decision-making functions will be presented along with practice in creating ladder logic diagrams. 2 hrs. wk.

HVAC 145
SERVICING HVAC EQUIPMENT (2CR)
Prerequisites: Approval of the Burlington Northern Santa Fe training director and the JCCC division administrator
Upon successful completion of this course, the student should be able to identify basic components and know the basic fundamentals of the refrigeration and heating cycle. The student should be able to recognize correct air conditioning service and maintenance procedures. 1.5 hrs. lecture, 1 hr. lab/wk.

HVAC 150
REFRIGERANT MANAGEMENT AND CERTIFICATION (1CR)
Upon successful completion of this course, the student should be able to properly, efficiently and responsibly handle refrigerants as set forth in the Clean Air Act of 1990 and pass the EPA examination. This course covers recovery, recycling and reclaiming of chlorofluorocarbons and is designed to provide the most current information on the Clean Air Act and amendments thereto. 1 hr. lecture/wk.

HVAC 167
SHEET METAL LAYOUT AND FABRICATION (3CR)
Upon successful completion of this course, the student should be able to identify the components, equipment and operation for sheet metal layout and fabrication. Practice problems are included at the end of each unit in order to provide the student with an opportunity to apply the methods attained by sheet metal layout. Shop facilities are available. The patterns will be fabricated and joined into a line of fittings. This gives the most complete test of pattern accuracy and also provides the experience needed by a competent layout person. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

HVAC 205
PNEUMATIC CONTROL SYSTEMS (2CR)
Prerequisites: HVAC 123
Upon successful completion of this course, the student should be able to identify the components and theory of operation of pneumatic control systems as applied to HVAC equipment. The student will be able to identify components, wiring diagrams and sequence of operation. Laboratory competencies include using sequencing controls, PE switches, calibration, setup of pneumatic equipment and receiver controllers. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1.5 hrs. lecture, 1.5 hrs. lab/wk.

HVAC 218
ELECTRONIC CONTROL SYSTEMS (2CR)
Prerequisites: HVAC 123
Upon successful completion of this course, the student should be able to identify the components in an electronic control system applied to HVAC systems. Components, wiring diagrams and sequence of operations will be covered. Laboratory competencies include using modular control motors, sequencing controls, analog to digital converters and electronic controllers. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1.5 hrs. lecture, 1.5 hrs. lab/wk.

HVAC 221
COMMERCIAL SYSTEMS: AIR CONDITIONING (4CR)
Prerequisites: HVAC 121 and HVAC 123
Upon successful completion of this course, the student will be able to identify large cooling systems used in commercial, institutional and industrial applications. Types of equipment include reciprocating and centrifugal chillers, absorption systems, cooling towers, fans and air handlers. Topics also include psychrometrics, pressure-enthalpy diagrams and commercial load calculations. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.
HVAC 223
COMMERCIAL SYSTEMS: HEATING (4CR)
Prerequisite: HVAC 123
Upon successful completion of this course, the student should be able to identify large heating systems used in commercial, institutional and industrial applications. Types of equipment include hot water, low-pressure and high-pressure steam boilers; auxiliary, safety and flame safeguard controls; steam traps; condensate return; and water treatment systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 224
DIAGNOSIS AND SERVICE PROCEDURES (3CR)
Prerequisites: HVAC 121 and HVAC 123
Upon successful completion of this course, the student should be able to systematically maintain, diagnose and repair all types of heating, ventilation and air conditioning systems. Students will review basic servicing skills such as evacuating, charging and start-up procedures. Advanced electrical troubleshooting skills on control circuits, reading ladder schematics, diagnosing malfunctions with testing equipment and correcting the malfunctions on all types of HVAC equipment will be taught. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

HVAC 228
DDC AND MICROPROCESSOR-BASED CONTROLS (2CR)
Prerequisite: HVAC 123
Upon successful completion of this course, the student should be able to identify the components and theory of operation of DDC and microprocessor-based control systems as applied to HVAC systems. Components, blueprints and wiring diagrams will be covered. Laboratory competencies include programming three different energy management systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1.5 hrs. lecture, 1.5 hrs. lab/wk.

HVAC 271
HVAC INTERNSHIP (3CR)
Prerequisite: Approval of the division administrator
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences related to the student’s career goals. 1 hr. lecture, 15 hrs. min./wk.

History

HIST 120
LOCAL AND KANSAS HISTORY (3CR)
This course will trace the development of local community life from trailhead and frontier days in the 19th century to the formation of our current major regional metropolis. Suburbanization and the growth of Johnson County will be a major theme. Also examined will be how Kansas City area communities grew and how they reflected national trends. 3 hrs./wk.

HIST 124
COMMUNITY LIFE AND VALUES (3CR)
This class is a study of the cultural values that are associated with classical Rome, Renaissance Florence and baroque Rome. Architecture, literature, the visual arts and philosophy of the three periods will be examined. The values revealed will be compared to those of a modern community/city. 3 hrs./wk.

HIST 125
WESTERN CIVILIZATION: READINGS AND DISCUSSION I (3CR)
Students will study the ideas that shaped Western civilization from its inception in the ancient Greek and Judeo-Christian world to the 1600s. The course is discussion-centered, and students will be assigned major readings they will discuss in small groups.

HIST 126
WESTERN CIVILIZATION: READINGS AND DISCUSSION II (3CR)
Students will study selected works by significant writers from the 1600s to the modern period. The course is discussion-centered, and students will be assigned major readings they will discuss in small groups.
HIST 130
EUROPEAN HISTORY FROM 1750 (3CR)
Significant trends in Europe from the period of the Industrial Revolution through today will be examined. Topics will include industrialization, nationalism and World Wars I and II. 3 hrs./wk.

HIST 135
EASTERN CIVILIZATION (3CR)
This course is an introduction to the societies and cultures of Asia. Through lectures, readings and discussions, the course will focus on aspects of the history, politics, art, literature and economics of China, Japan and India. The major traditional themes and concepts of these civilizations will be stressed. 3 hrs./wk.

HIST 140
U.S. HISTORY TO 1877 (3CR)
This survey course in U.S. history will emphasize developments and trends in American society from the early period of discovery and settlement through Reconstruction. Topics will include the Colonial era, the Revolutionary period, the Federalist era, expansion of the Republic during the mid-19th century and Civil War and Reconstruction. The emphasis will be on analysis and interpretation of these developments. 3 hrs./wk.

HIST 141
U.S. HISTORY SINCE 1877 (3CR)
This survey course will emphasize developments and trends in American society from the 1870s to the late 20th century. Topics will include Reconstruction era, industrialization, immigration, reform movements, World Wars I and II, social and cultural trends, and foreign policy. Emphasis will be on analysis and interpretation of these developments. 3 hrs./wk.

HIST 151
WORLD HISTORY I: THE TRADITIONAL WORLD (3CR)
This course will provide students an introduction to the history of the major world civilizations to approximately the year 1500. It will include the Neolithic revolution, the ancient Near East, Greece, Rome, medieval Europe, India, China, Japan, the Islamic Middle East, Africa and pre-Columbian America. It will emphasize the basic social, economic, political and cultural characteristics of these societies and long-term developments within them. 3 hrs. lecture/wk.

HIST 152
WORLD HISTORY II: THE MODERN WORLD (3CR)
This course will examine the history of the world since approximately the year 1500. It will begin with the development of the phenomenon of modernism in Europe, including the scientific revolution, secularism, industrialization and the rise of new political ideologies. It will then trace the expansion of modernism in both the Western and non-Western worlds and the response to modernism in the major non-Western countries. 3 hrs. lecture/wk.

HIST 160
MODERN RUSSIAN HISTORY (3CR)
This course will focus on the social, economic, political and cultural forces that have shaped this important world power since the reign of Peter the Great. 3 hrs./wk.

HIST 162
MODERN LATIN AMERICA (3CR)
This course is an examination of the economic, social, political and cultural history of Latin America since independence. Regional identities, such as Central America, and independent national stories—such as Cuba and Mexico—are explored. Literary and intellectual trends together with contemporary popular culture are featured in the course. 3hrs./wk.

HIST 164
THE CHANGING TRADITION (3CR)
This self-paced course explores Japanese history, politics and economics from the early days of the Tokugawa regime from 1500 to the present.

Home Economics

HMEC 131
FAMILY COMMUNICATIONS (3CR)
Strategies for coping with stressful situations, the adult and family life cycle and current issues involving families such as drugs, violence and divorce will be examined. 3 hrs./wk.

HMEC 142
HOME MANAGEMENT (3CR)
A systems approach to management, especially of the dual-career family, will be examined. Topics will include goal setting, planning, decision making and the management of time, energy and money. 3 hrs./wk.
HMEC 151
NUTRITION AND MEAL PLANNING (3CR)
Upon successful completion of this course, the student should be able to identify basic food groups, their use in meal planning, their functions and their nutritional values. In addition, the student should be able to describe the current trends in eating, diet and exercise, as well as fad diets and life-cycle nutritional needs. The student should also be able to describe the effects of nutrient intake on growth and development. 3 hrs./wk.

Honors Program

HON 250
HONORS FORUM: IN SEARCH OF SOLUTIONS (3CR)
This course will focus on two topics during the semester and how the topics affect the local, national and global communities. It complements other courses in the curriculum by combining an emphasis on both specific content and on skill development in the areas of interaction, analysis, syntheses and conflict resolution. In the first topic, students will study issues in a historical and contemporary context, develop a greater understanding of the issues and attempt to take a position on the issues. This resolution will be subjected to further challenge and dialogue. The second topic, which is selected by the students, will have a service learning component. In this course, the process of reflecting, researching, analyzing and evaluating is as important as the content. A student’s points of view concerning an issue are developed, the students must articulate and defend these as they are challenged by others and make judgments among alternative options. 3 hrs./wk in addition to attending scheduled forum presentations.

Horticulture

HORT 115
HOME HORTICULTURE (2CR)
This is an introduction to the management of a home lawn, garden and trees. Students will review the horticulture industry, look at career opportunities and practice the lab techniques studied in class. 1 hr. lecture, 2 hrs. lab/wk.

HORT 201
INTRODUCTORY HORTICULTURE SCIENCE (4CR)
Prerequisite: High school biology/botany or concurrent enrollment in BIOL 125
This is an introduction to the principles and practices of horticultural plant systems. Plant structure and function will be discussed, along with the effects of environmental factors on plant growth. General cultural practices will be described, including pest control, mineral nutrition and plant propagation. 3 hrs. lecture, 2 hrs. lab/wk.

Hospitality Management
(Chef Apprenticeship)
(Food and Beverage Management)
(Hotel Management)

HMGT 120
FOOD SERVICE SANITATION (1CR)
Upon successful completion of this course, the student should be able to understand and describe the basic principles of providing and serving safe food. The student should also understand all safe food-handling procedures necessary to manage a sanitary and safe food service operation. 1 hr. lecture/wk.

HMGT 121
HOSPITALITY MANAGEMENT FUNDAMENTALS (3CR)
Upon successful completion of this course, the student should be able to understand and describe the organization of the food service and public lodging industries. The student should also be able to describe the departmental functions, the positions of the industries in the American economic system and the functions and limitations of these types of establishments. 3 hrs./wk.

HMGT 123
BASIC FOOD PREPARATION (3CR)
Upon successful completion of this course, the student should be able to demonstrate skills in grilling, frying, broiling, sautéing, recipe conversion, salad preparation and the production of the five basic sauces. Also, the student should be able to operate the food service equipment used in commercial kitchens. 3 hrs./wk.

HMGT 126
FOOD MANAGEMENT (4CR)
Prerequisites: HMGT 123, HMGT 145, HMGT 230, HMGT 277 and admission to the Hospitality Management Program
Upon successful completion of this course, the student should be able to explain the components of menu planning and the styles of food service used for various occasions – buffet service and French, Russian and American service. The student will take part in the operation of the campus restaurant and will be involved in sales promotion, purchasing and costing. 6 hrs./wk.
HMGT 128
SUPERVISORY MANAGEMENT (3CR)
Upon successful completion of this course, the student should be able to analyze and explain basic supervisory management skills, management styles, motivation with emphasis on human relations, delegation, training, evaluation and communication. In addition, the hiring and firing functions within FLSA guidelines will be covered. 3 hrs./wk.

HMGT 130
HOSPITALITY LAW (3CR)
This course offers an overview of product and dram shop liability as well as of the various areas of federal and state legislation that regulate the hospitality industry. Emphasis will be on familiarizing the hospitality manager with ways to avoid costly and time-consuming lawsuits. A manager's or owner's legal rights and responsibilities will also be discussed. Upon successful completion of this course, the student should be able to recognize potential legal problems. 3 hrs./wk.

HMGT 145
FOOD PRODUCTION SPECIALTIES (3CR)
Prerequisite: HMGT 123
Upon successful completion of this course, the student should be able to demonstrate an understanding of the handling of convenient bakery products, from the frozen state (or prepared mix) into a finished product. The student should also be able to demonstrate the proper arrangement of foods for plate and platter presentations; prepare granites, sorbets and sherbets; and demonstrate an understanding of the preparation of hors d'oeuvres and modern salads including salad dressings. The student should understand proper gourmet purchasing, be able to categorize and identify imported cheeses and plan a buffet. In addition, the student should be able to identify the uses of basic ingredients, understand the proper use of measurements and the various types of production equipment. 2 hrs. lecture, 1½ hrs. lab/wk.

HMGT 203
HOTEL SALES AND MARKETING (3CR)
Prerequisites: HMGT 121 and admission to the Hospitality Management program
Upon successful completion of this course, the student should be able to understand and describe the hotel sales and marketing functions. The course will focus on practical sales techniques for targeted markets. 3 hrs. lecture/wk.

HMGT 221
DESIGN TECHNIQUES (3CR)
Prerequisites: HMGT 123 and HMGT 271
This course includes detailed information about food service design that covers layout, design and equipment specifications. Upon successful completion of this course, the student should be able to understand and develop a food service design concept, including the menu, the location and the type of clientele expected. 3 hrs./wk.

HMGT 223
FUNDAMENTALS OF BAKING (3CR)
Prerequisite: HMGT 145
Upon successful completion of this course, the student should be able to demonstrate an understanding of bake shop production as it relates to the basic principles of ingredients, measurements, mixing, proofing, baking and final presentation. In addition, the student will be able to identify the various types of baking equipment used in the preparation of bake shop products. The class includes lecture and participation. 3 hrs./wk.

HMGT 226
GARDE-MANGER (3CR)
Prerequisite: HMGT 123
Upon successful completion of the course, students should be able to prepare force meats such as pastes, terrines, ballotines, paste en croute, hors d’oeuvres and canapes. In addition, the student should be able to produce ice carvings, platter layout and design as well as cold sauces such as aspics. 3 hrs./wk.

HMGT 228
ADVANCED HOSPITALITY MANAGEMENT (3CR)
Prerequisites: HMGT 121, HMGT 123, HMGT 128 and HMGT 273
Upon successful completion of this course, the student should be able to explain the various components of menu planning, food service, supervision, design and beverage control. In addition, the student should be able to demonstrate an understanding of the external factors affecting the hotel-restaurant industry. The student should also be able to describe the skills necessary to secure a position in management within the hospitality industry. 3 hrs./wk.
HMGT 230
INTERMEDIATE FOOD PREPARATION (3CR)
Prerequisite: HMGT 123
This course is designed to help the student's transition from basic to intermediate food skills. Upon successful completion of this course, the student should be able to demonstrate the skills necessary to prepare secondary sauces as well as a range of American regional cuisines. This course consists of lecture, demonstration and participation in food preparation. 3 hrs/wk.

HMGT 231
ADVANCED FOOD PREPARATION (4CR)
Prerequisite: HMGT 230
Upon successful completion of this course, the student should be able to demonstrate an understanding of the advanced skills necessary for preparing international cuisine. 4 hrs/wk.

HMGT 240
ADVANCED BAKING (4CR)
Prerequisites: HMGT 123 and HMGT 223
Upon successful completion of this course, the student should be able to demonstrate a working knowledge of the preparation of specialty bakery products. This course will focus on lecture-demonstrations and student participation in advanced baking procedures. Student lab projects will cover specialty yeast and rich dough products as well as baked and chilled desserts. 4 hrs. lecture, lab/wk.

HMGT 248
CONFECTIONERY ARTS (3CR)
Upon successful completion of this course, the student should be able to demonstrate skills in preparing molten sugar in a safe and economical manner. Also, the student should be able to cast, blow and pull sugar, developing decorative pieces. Pastillage, as well as casting and painting with chocolate, also is covered. 4.5 hrs. lecture, lab/wk.

HMGT 250
INTRODUCTION TO CATERING (3CR)
Upon successful completion of this course, the student should be able to explain the different types of catered events within the hospitality industry. The student should also be able to explain the importance of marketing, contract writing, food production, room arrangements and required personnel relative to specific catered events. 3 hrs. lecture/wk.

HMGT 265
FRONT OFFICE MANAGEMENT (3CR)
Upon successful completion of this course, the student should be able to understand the flow of business through a hotel, beginning with the reservation process and ending with check-out and settlement. The student should be able to understand the various elements of effective front office management, procedures and the role of the front office in the operation of a hotel. 3 hrs/wk.

HMGT 268
HOTEL ACCOUNTING (3CR)
Prerequisites: MATH 120, HMGT 121 and HMGT 273
Upon successful completion of this course, the student should be able to describe hotel accounting concepts, procedures, processing of data and the flow of financial information within the various hotel departments. 3 hrs. lecture/wk.

HMGT 271
SEMINAR IN HOSPITALITY MANAGEMENT: PURCHASING (3CR)
Prerequisite: Admission to the Hospitality Management Program
Upon successful completion of this course, the student should be able to define purchasing techniques and specification writing for items used in the industry. In addition, the student should be able to demonstrate decision-making skills in the areas of quality, quantity, specifications and general value analysis. Two hours in class and a minimum of 15 hours a week are required in a supervised work situation in an approved area of the hospitality industry. Work experience is concurrent but does not necessarily concentrate on the subject being taught in the course.

HMGT 273
SEMINAR IN HOSPITALITY MANAGEMENT: ACCOUNTING (3CR)
Prerequisites: Admission to the Hospitality Management Program and MATH 120 or higher
Upon successful completion of this course, the student should be able to prepare operation statements for food service operators, inventories and control systems. Areas of concentration will be food cost and controls, labor cost controls and profit production. While enrolled in this class, a student must work a minimum of 15 hours a week in the hospitality industry. The work experience is concurrent but does not necessarily concentrate on the subject being taught in the course.

HMGT 275
SEMINAR IN HOSPITALITY MANAGEMENT INTERNSHIP (3CR)
Prerequisite: Admission to the Hospitality Management Program
Upon successful completion of this course, the student should be able to demonstrate an understanding of an actual hospitality industry operation and identify and explain operational problems. In addition, the student
should be able to construct and contrast solutions to these problems. While enrolled in this course, a student must work a minimum of 320 hours in an approved position in the hospitality industry. By arrangement.

**HMGT 277**
**SEMINAR IN MENU PLANNING (3CR)**
*Prerequisite: HMGT 123*
Upon successful completion of this course, the student should be able to explain the components of menu planning for every type of service and facility. In addition, the student should be able to demonstrate an understanding of menu layout, selection and development, price structures and the theory of menu design. A minimum of 15 hours a week is required in a supervised work situation in an approved area of the hospitality industry. Work experience is concurrent but does not necessarily concentrate on the subject being taught in the course.

**HMGT 279**
**BEVERAGE CONTROL (3CR)**
Upon successful completion of this course, the student should be able to demonstrate an understanding of beverage control and how it is used in all types of operations. The course covers the history of wines and their use and storage procedures. The student will take part in an in-depth study of spirits, internal control systems and local and state alcoholic beverage control laws. 3 hrs./wk.

**HMGT 281**
**CULINARY ARTS PRACTICUM I (2CR)**
*Prerequisite: Acceptance into the American Culinary Federation Chef Apprenticeship Training Program*
A qualified American Culinary Federation chef will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation.

**HMGT 282**
**CULINARY ARTS PRACTICUM II (2CR)**
*Prerequisite: HMGT 281*
This is a continuation of Culinary Arts Practicum I.

**HMGT 285**
**CULINARY ARTS PRACTICUM III (2CR)**
*Prerequisite: HMGT 282*
This is a continuation of Culinary Arts Practicum II.

**HMGT 286**
**CULINARY ARTS PRACTICUM IV (2CR)**
*Prerequisite: HMGT 285*
This is a continuation of Culinary Arts Practicum III.

**HMGT 287**
**CULINARY ARTS PRACTICUM V (2CR)**
*Prerequisite: HMGT 286*
This is a continuation of Culinary Arts Practicum IV.

**HMGT 288**
**CULINARY ARTS PRACTICUM VI (2CR)**
*Prerequisite: HMGT 287*
This is a continuation of Culinary Arts Practicum V. In this course, the student also will be required to pass a written as well as practical programmatic final exam.

**Humanities**

**HUM 122**
**INTRODUCTION TO THE HUMANITIES (3CR)**
This interdisciplinary study will begin with a look at artistic and technical elements of several art forms including painting, music and drama. The major themes expressed in these art forms also will be examined. 3 hrs. lecture/wk.

**HUM 136**
**THE HUMAN EXPERIENCE (3CR)**
The themes of freedom and personal identity will be traced in the arts and sciences from the classical period of the 18th century through the romanticism of revolution in politics and the arts and finally in more modern idioms. The course will conclude with a consideration of each student's personal identity through family language. 3 hrs. lecture/wk.

**HUM 137**
**INTRODUCTION TO RUSSIAN CULTURE (3CR)**
This course is a survey of the cultural history of Russia from the ninth century to the present day. The approach will be interdisciplinary, examining representative examples of Russian art, architecture, music, theater, dance literature and philosophy in their historical context. In addition to developing the students' appreciation of Russia's contribution to world culture, the course aims to enhance students' understanding of the contemporary world. 3 hrs. lecture/wk.

**HUM 138**
**INTRODUCTION TO RUSSIAN CULTURE, FIELD STUDY (1CR)**
*Prerequisite: HUM 137 or approval of instructor*
This course is the field study portion of the HUM 137 Introduction to Russia course. Students will study on site, selected works of art, architecture, music, literature, theater and film of the various historical periods from the perspective of Russian experts in these fields. In
addition, students will enhance their knowledge of Russian history by visiting the sites of many of the major events that have shaped the development of Russia's culture. 2 hrs. lab/wk.

HUM 145
INTRODUCTION TO WORLD HUMANITIES I (3CR)
This course will acquaint students with the arts and ideas of the world's major civilizations, from antiquity to the period of world exploration during the Renaissance. The approach will be interdisciplinary, covering the artistic values embodied in painting, sculpture, architecture, literature, theater, music and dance as they have emerged out of their historical contexts. In addition to providing the fundamental principles, generalizations and theories used in the study of the humanities, the course aims to enhance students' understanding of the contemporary world. 3 hrs. lecture/wk.

HUM 146
INTRODUCTION TO WORLD HUMANITIES II (3CR)
This course will acquaint students with the arts and ideas of the world's major civilizations, from the period of world exploration during the Renaissance to the present. The approach will be interdisciplinary, covering the artistic values embodied in painting, sculpture, architecture, literature, theater, music, dance, photography and film as they have emerged out of their historical contexts. In addition to providing the fundamental principles, generalizations and theories used in the study of the humanities, the course aims to enhance students' understanding of the contemporary world. 3 hrs. lecture/wk.

HUM 155
CLASSICAL MYTHOLOGY (3CR)
This is a systematic examination of the origins and cycles of myths and their survival and metamorphosis in Roman, medieval, Renaissance, baroque and modern cultures. Sources studied will include both literature and the visual arts. 3 hrs. lecture/wk.

HUM 164
CIVILISATION (3CR)
This course, based upon the Time-Life television series of the same name and narrated by the art historian Kenneth Clark, covers the major ideas and events that have shaped Western civilization from the fall of the Roman Empire to the 20th century. By arrangement.

Industrial Technology

INDT 125
INDUSTRIAL SAFETY (1CR)
Upon successful completion of this course, the student should be able to identify various industrial safety and health considerations, list basic safety rules and regulations, identify the proper personal protective equipment needed for common industrial tasks and recognize the need for an ongoing safety program. 1 hrs. lecture/wk.

INDT 140
QUALITY IMPROVEMENT USING SPC (2CR)
Upon successful completion of this course, the student should be able to describe the concepts of quality improvement. This course will examine the application of the "Transformation of America" concept to American businesses. Statistical process control will be introduced as a tool to improve quality. W. Edwards Deming's 14 points and the management changes required to implement quality improvement also will be covered. 2 hrs./wk.

Information Technology

IT 160
LOCAL AREA NETWORK FUNDAMENTALS (1CR)
Prerequisite: CPCA 105
In this survey course of local area networks, students will learn of the evolution of LANs in terms of the need and cost justification in both workgroup and total company environments. Ramifications of decentralizing the processing of information will be examined, and components of a local area network will be outlined. Students will receive hands-on use of a network to show practical applications for LANs. 1 hr. lab/wk.

IT 200
INTRODUCTION TO INFORMATION TECHNOLOGY (3CR)
The focus of this course is information technology, which deals with the confluence of data, voice, video and imaging in a business environment. Computerized networks will be examined from global systems to wide area networks and to local area networks that connect the user at the desktop. Applications that will make organizations and their members more effective and efficient will be discussed. Opportunities for new and emerging technologies that are being planned or implemented in large and small organizations will be examined. 3 hrs. lecture/wk.
IT 210
LOCAL AREA NETWORKING SYSTEMS (4CR)
Prerequisites: IT 200, ELEC 124, CPCA 137 and CPCA 138; or IT 160 and ELEC 250
This course is designed to provide students with the necessary knowledge and skills to perform competently in the role of network administrator or system manager. It expands on network concepts specific to the operating system being used (IntranetWare, Windows NT or Unix). 3 hrs. lecture, 3 hours lab/wk.

IT 211
ADVANCED LOCAL AREA NETWORKING SYSTEMS (3CR)
Prerequisite: IT 210
This course is designed to provide network administrators with information that enhances their network managing and monitoring skills. Included are topics that are related to server and client management and performance, server memory concepts and management and advanced print services. 2 hrs. lecture, 3 hrs. lab/wk.

IT 213
LOCAL AREA NETWORK SUPERVISOR (1CR)
Prerequisite: IT 210
Students will build on the initial environment of a local area network, concentrating on the organization of users and directories into workgroups, with emphasis on ease of administration, reliability issues and integration of LAN systems. The use of special server functions such as printing, multimedia and communication will be covered in detail. Emphasis will be on hands-on use of the system in a business scenario situation. 1 hr. lecture/wk.

IT 215
LOCAL AREA NETWORK APPLICATIONS (1CR)
Prerequisite: IT 210
Students will review the prerequisites for networking application software such as multi-user and file-sharing attributes. Products involving databases, communications, spreadsheets and word processing will be discussed. Multi-user considerations for in-house program design will be addressed. Class projects will involve sharing of physical resources, data files and application software. 1 hr. lecture/wk.

IT 217
LOCAL AREA NETWORK COMPONENTS (2CR)
Prerequisite: IT 210
This course is intended as a comprehensive investigation of the hardware components of a LAN, its topology and cable design options. After a review of IEEE 802 and ANSI protocols, practical lab work will be presented in the configuration and installation of network components to include fabrication and testing of cable segments. The class will determine specifications for servers, workstations and hubs and identify sources for those items. 1 hr. lecture, 2 hrs. lab/wk.

IT 219
NETWORK CONNECTIVITY (3CR)
Prerequisites: IT 210 and six hours of technical electives
The current state of the communications industry will be discussed as well as trends for the future, which include the convergence of data, voice, video and imaging in a single transport. Means of connecting workstations to network resources via local area networks, internetworking technology using hubs, gateways, routers and switches, and wide-area networks will be covered. 2 hrs. lecture, 2 hrs. lab/wk.

IT 248
LOCAL AREA NETWORK SPECIFICATIONS AND CONTRACTING (3CR)
Prerequisites: IT 210 and six hours of technical electives
This course takes an investigative look at the impact of technology on today's changing business information needs. Requirements for meeting organizational goals will be translated into a formal plan based on these needs and budget limits. This plan will be further expanded into a specification phase using TIA/EIA/ANSI standards for commercial building systems. A contracting phase with equal emphasis on the contractor as well as the solicitor will be covered, along with a final system review phase. 2 hrs. lecture, 2 hrs. lab/wk.

IT 250
NETWORK DESIGN AND IMPLEMENTATION (3CR)
Prerequisites: IT 211 and six hours of technical electives
This course is intended as a capstone course that will provide a forum for applying concepts and procedures developed in previous LAN courses using realistic business scenarios. Workshop competencies will be stressed, as well as certification-level skills in LAN systems. 1 hr. lecture, 4 hrs. lab/wk.

Information/Word Processing
(See Office Systems Technology, page 226.)
Interdisciplinary Studies

IDSP 175
GLOBAL RESOURCES FROM GEOLOGIC AND ECONOMIC VIEWPOINTS (3CR)
This interdisciplinary course will examine the interdependence of geology and economics in the development, production and use of the world's geologic resources. Land, water, mineral and energy resources form a structure that students can use to gain a perspective on the interrelationships between resources and economics to synthesize their knowledge into intelligent and logical conclusions about past, present and future resource problems. 3 hrs./wk.

Interior Merchandising

ITMD 121
INTERIOR DESIGN I (3CR)
Upon successful completion of this course, the student should be able to demonstrate logical and usable arrangement of furniture in a house plan; use correct scale and symbols in creating a floor plan; develop a color wheel and color schemes; and develop a complete floor plan and decorative scheme for that plan. 3 hrs./wk.

ITMD 122
INTERIOR DESIGN II (3CR)
Prerequisites: ITMD 121 and DRAF 261
Upon successful completion of this course, the student should be able to demonstrate an advanced level of furniture arrangement on a floor plan; develop color schemes that will solve specific assigned decorating problems; and demonstrate the ability to coordinate fabrics, colors, texture, patterns and finishes in a complete floor plan for a residential unit. 3 hrs./wk.

ITMD 125
INTERIOR TEXTILES (3CR)
Upon successful completion of this course, the student should be able to differentiate fibers and textiles according to their specific characteristics and to select fibers and interior textiles for specific applications. This course will cover properties and characteristics of natural and man-made fibers, construction methods and various finishing processes such as weaving, knitting, felting, printing and dying. The course will concentrate on textiles designed for interior applications. 2 hrs. lecture, 2 hrs. lab/wk.

ITMD 127
ELEMENTS OF FLORAL DESIGN (1CR)
Upon successful completion of this course, the student should be able to use the principles of floral design, develop a proficiency in the techniques of line and mass arrangements, obtain an enhanced appreciation for flowers and other plant material, use the mechanics and design considerations involved in working with silk and dried materials and design and create silk and dried floral arrangements. 1½ hrs. integrated lecture, lab/wk.

ITMD 132
INTERIOR PRODUCTS (3CR)
Upon successful completion of this course, the student should be able to evaluate the quality of interior products; demonstrate the ability to use catalogs and other product information resources; identify manufacturing and construction techniques used in products; use correct terminology to describe the various types of interior products; and compare design, use, durability and cost of products. 3 hrs./wk.

ITMD 133
FURNITURE AND ORNAMENTATION/ANTIQUITY TO RENAISSANCE (3CR)
Upon successful completion of this course, the student should be able to analyze and compare furniture, ornamentation, design motifs and textiles of historical periods from antiquity to the Renaissance. Additionally, the student should be able to define the religious, political and social influences on the ornamentation and furnishings of each period. The student should also be able to identify the craftsmanship and materials used in the furniture of each historical period and use correct vocabulary related to each era. 3 hrs./wk.

ITMD 140
DRAPERIES, TREATMENTS AND CONSTRUCTION (1CR)
Prerequisites: ITMD 121 and ITMD 125
Corequisite: ITMD 275
Upon successful completion of this course, the student should be able to demonstrate the use of correct vocabulary relating to drapery and window treatments; explain the use of equipment in the drapery industry; identify appropriate textiles and fabrics for specific window treatments; measure for window treatments; and describe and select the proper suspension system for specific window treatments. 1 hr./wk.
ITMD 145
UPHOLSTERY CONSTRUCTION (1CR)
Prerequisites: ITMD 121 and ITMD 125
Corequisite: ITMD 275
Upon successful completion of this course, the student should be able to demonstrate the use of correct vocabulary relating to upholstery construction; explain the use of equipment in the upholstery industry; identify appropriate textiles and fabrics for specific upholstery uses; and describe the various suspension systems used in bench-constructed and mass-produced furniture. 1 hr./wk.

ITMD 147
LIGHTING DESIGN AND PLANNING (1CR)
Prerequisite: ITMD 121
Upon successful completion of this course, the student should be able to define and use vocabulary relating to lighting design and planning. Additionally, the student should be able to recognize and explain the use of fixtures and other related equipment necessary to the lighting industry; identify and describe proper fixtures and equipment for lighting applications, and demonstrate skills in selecting proper lighting designs for specific applications. 1 hr./wk.

ITMD 148
FURNITURE AND ORNAMENTATION/ORIENTAL (3CR)
Upon successful completion of this course, the student should be able to analyze and compare furniture, ornamentation, design motifs and textiles of the Near and Far East during historical periods from antiquity to modern times. Additionally, the student should be able to define the religious, political and social influences on the ornamentation and furnishings of each period. The student should also be able to identify the craftsmanship and materials used in the furniture of each period and demonstrate the use of correct vocabulary related to each era. 3 hrs./wk.

ITMD 223
CONTRACT DESIGN (3CR)
Prerequisites: ITMD 122 and DRAF 264
Upon successful completion of this course, the student should be able to explain the differences between residential and contract design; demonstrate the use of interior design skills to convert, redesign and create contract design space; explain the concept of open office planners; and compare and analyze the costs and benefits of open planning vs. closed planning. 1 hr. lecture, 3 hrs. lab/wk.

ITMD 231
FURNITURE AND ORNAMENTATION/RENAISSANCE TO 20TH CENTURY (3CR)
Upon successful completion of this course, the student should be able to analyze and compare furniture, ornamentation, design motifs and textiles of historical periods from the Renaissance to the 20th century. Additionally, the student should be able to define social, religious and political influences on the ornamentation of each period. The student should also be able to identify the craftsmanship and materials used in the furniture of each period and use correct vocabulary related to each era. 3 hrs./wk.

ITMD 234
KITCHEN AND BATH: PLANNING AND DESIGN (3CR)
Prerequisites: DRAF 261 and DRAF 264 and ITMD 122
Upon successful completion of this course, the student should be able to define and use vocabulary related to kitchen and bath design and construction; identify and use proper architectural symbols common to kitchen and bath floor plans and elevations; state the space relationships required for proper kitchen and bath usage; and draw kitchen and bath floor plans and elevations. Additionally, the student should be able to identify and explain the work triangle, structural detail, cabinetry and appliances in kitchen design and wet walls, cabinetry, structural detail and plumbing in bath planning. 2 hrs. lecture, 1 hr. lab/wk.

ITMD 239
CAPSTONE: PORTFOLIO AND PRESENTATION (2CR)
Corequisites: ITMD 223 and ITMD 234
Upon successful completion of this course, the student should be able to select and rework portfolio materials for maximum visual potential and appeal. In addition, the student will prepare a résumé, conduct a job search and present written and oral presentations based on resource and product files from other classes. This course is designed as a capstone for the interior merchandising program. It should be taken in conjunction with or after completion of the final interiors studio course or in the graduating semester. 2 hrs. lecture/wk.

ITMD 273
INTERIOR MERCHANDISING SEMINAR: PRACTICES AND PROCEDURES (2CR)
Prerequisite: ITMD 121
Upon successful completion of this course, the student should be able to demonstrate the use of proper interior design industry terminology and appropriate business forms and contracts; define the types of business legal structures; and solve business organizational and ethical problems through the use of case studies. 2 hrs./wk.
ITMD 275
INTERIOR MERCHANDISING SEMINAR:
BUDGET AND ESTIMATING (2CR)
Prerequisite: ITMD 121
Upon successful completion of this course, the student should be able to describe methods of pricing interior design materials and services; measure accurately for materials; demonstrate the use of business math in interior merchandising applications; and compute cost in example cases. 2 hrs/wk.

ITMD 282
INTERIOR MERCHANDISING PRACTICUM I (1CR)
Prerequisite: ITMD 121
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the interior merchandising industry. A minimum of 15 hrs. on-the-job training/wk.

ITMD 284
INTERIOR MERCHANDISING PRACTICUM II (1CR)
Prerequisite: ITMD 121
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the interior merchandising industry. A minimum of 15 hrs. on-the-job training/wk.

ITMD 295
FIELD STUDY: DESIGN AND MERCHANDISING (3CR)
Prerequisites: ITMD 121 and approval of the program director
Upon successful completion of this course, the student should be able to compare, contrast and evaluate manufacturing processes and marketing techniques for interior products. This travel-for-credit course consists of visits to manufacturing plants, a market showroom and a merchandise mart in a major market city. Summer.

ITMD 296
INTERIOR DESIGN: THE ORIENT (3CR)
Upon successful completion of this course, the student should be able to recognize and identify Oriental furniture pieces and accessories from different countries; define and use vocabulary common to the art periods; and compare and contrast furniture and accessory pieces observed in museums, temples, homes and antique stores. This course will include five three-hour pre-departure seminars, followed by a three-week field trip to Japan, Hong Kong and Thailand. Summer.

Interpreter Training

INTR 110
CONVERSATIONAL SIGNED ENGLISH I (2CR)
An introduction to signed English, this class will help students develop basic conversational skills. 4 hrs. lab/wk.

INTR 111
CONVERSATIONAL SIGNED ENGLISH II (2CR)
Prerequisite: INTR 110
This course will offer continued development of signed English skills, leading to the development of conversational skills. 4 hrs. lab/wk.

INTR 115
CONVERSATIONAL ASL I (2CR)
This is an introduction to American Sign Language, leading to the development of basic conversational skills. 4 hrs. lab/wk.

INTR 116
CONVERSATIONAL ASL II (2CR)
Prerequisite: INTR 115
This is an introduction to American Sign Language, leading to the development of intermediate conversational skills. 4 hrs. lab/wk.

INTR 125
AMERICAN SIGN LANGUAGE I (ASL) (5CR)
Prerequisite: Admission to the Interpreter Training Program
This class will focus on the development of beginning communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. 1 hr. lecture, 9 hrs. lab/wk.

INTR 130
ORIENTATION TO INTERPRETING (3CR)
Prerequisite: Admission to the Interpreter Training Program
In this overview of interpreting as an occupation, topics will include interpersonal skills, professional ethics, parameters of the interpreter’s responsibilities, community resources and legal ramifications. 3 hrs/wk.

INTR 132
AMERICAN SIGN LANGUAGE II (ASL) (5CR)
Prerequisite: INTR 125
Students will work on developing intermediate communication skills, concentrating on comprehension and production skills. Linguistic and cultural features will be presented in the context of language-learning experiences. 1 hr. lecture, 9 hrs. lab/wk.
INTR 135
THEORY OF AMERICAN SIGN LANGUAGE (ASL) (3CR)
Prerequisite: INTR 125
Students will examine the structural and grammatical principles of ASL in this introduction to linguistic problems of equivalency in English and ASL. 3 hrs./wk.

INTR 140
AMERICAN SIGN LANGUAGE III (ASL) (5CR)
Prerequisite: INTR 132
Students will continue to develop ASL skills in this class. Emphasis will be on comprehension and production skills. Linguistic and cultural features will be presented in the context of language-learning experiences. 1 hr. lecture, 9 hrs. lab/wk.

INTR 142
FINGERSPELLING I (3CR)
Prerequisite: INTR 125
Students will work on developing beginning expressive and receptive fingerspelling skills based on word and phrase recognition principles. 2 hrs. lecture, 3 hrs. lab/wk.

INTR 145
DEAF CULTURE (3CR)
Prerequisite: Admission to the Interpreter Training Program
Corequisite: INTR 125
Students will compare middle-class American values, beliefs and institutions with those of the deaf community in the United States. 3 hrs./wk.

INTR 181
INTERPRETING PRACTICUM I (1CR)
Prerequisite: INTR 130
Students will observe skilled interpreters in various interpreting situations in a variety of settings during the semester. 2 hrs. lab, field work/wk.

INTR 225
PHYSICAL AND PSYCHOLOGICAL ASPECTS OF INTERPRETING (2CR)
Corequisites: INTR 181 and INTR 250
Discussion will focus on the physical and mental stress interpreting can bring about and on therapeutic exercises for preventing negative physical effects. 2 hrs./wk.

INTR 230
AMERICAN SIGN LANGUAGE IV (ASL) (4CR)
Prerequisite: INTR 140
Students will continue to develop ASL skills at an advanced level. Emphasis will be on comprehension and production skills. Additional linguistic and cultural features will be presented in the context of language-learning experiences. 1 hr. lecture, 7 hrs. lab/wk.

INTR 242
FINGERSPELLING II (2CR)
Prerequisite: INTR 142
This course will focus on continued development of expressive and receptive fingerspelling skills based on word and phrase recognition and expression. 1 hr. lecture, 2 hrs. lab/wk.

INTR 246
ENGLISH EQUIVALENTS FOR ASL (3CR)
Prerequisite: INTR 140 or permission of the division administrator and proficiency in ASL
Students will study the many English equivalents for ASL discourse, enhancing the written English skills of deaf students and the interpreting skills of hearing students. 3 hrs./wk.

INTR 250
INTERPRETING I (6CR)
Prerequisite: INTR 130
Corequisite: INTR 140
In this introduction to interpreting principles, emphasis will be on English-to-ASL and ASL-to-English skills. Students will participate in sequential drills and apply these skills in class. 2 hrs. lecture, 8 hrs. lab/wk.

INTR 255
INTERPRETING II (6CR)
Prerequisite: INTR 250
This is an advanced course concentrating on the continued development of English-to-ASL, ASL-to-English and transliteration skills. Students will have the opportunity to use these skills as they role-play employment situations. 2 hrs. lecture, 8 hrs. lab/wk.

INTR 261
SPECIAL TOPICS (3CR)
Prerequisite: Depends on topics
Current trends and topics in interpreting are the focus of this course. Topics may include medical/mental health interpreting, deaf-blind interpreting, oral interpreting, educational interpreting and trends in the field. These topics will be offered on an “as needed” basis, and the course may be repeated for up to eight credits. Lecture-lab hours vary from one to four hours depending on the topic and the number of lecture-lab hours needed.

INTR 281
INTERPRETING PRACTICUM II (3CR)
Prerequisite: INTR 181
Corequisite: INTR 255
Students will observe and interpret at assigned places as well as discuss current literature in the field. The field work totals 96 hours a semester. 6 hrs. lab, field work/wk.
Journalism and Media Communications

JOUR 120
MASS MEDIA AND SOCIETY (3CR)
This course examines the forms of mass media students are exposed to daily, including newspapers, magazines, radio, television, films, cable and video technologies. Students will be able to understand these various media, become better critics of media messages and understand the influence that the media has on their lives, decisions, goals and beliefs. 3 hrs./wk.

JOUR 122
INTRODUCTION TO NEWSWRITING (3CR)
Prerequisite: Basic typing skills or concurrent enrollment in OST 110
This course is structured for students interested in writing news and gathering information, and especially for students who want to develop the basics of journalistic-style writing. Basic newswriting and news-style principles will be emphasized, with a focus on interviewing techniques. Practical experience will be gained through writing for the campus newspaper. 3 hrs./wk.

JOUR 125
FUNDAMENTALS OF ADVERTISING (3CR)
This course will introduce students to the basics of advertising principles by familiarizing them with the forms of advertising and the types of media available. The functions and roles that both print and broadcast advertising play in business and for consumers will be included. 3 hrs./wk.

JOUR 127
INTRODUCTION TO BROADCASTING (3CR)
This course serves as a general introduction to radio and television broadcasting and will include a study of the industry's development, program formats, personnel, equipment function, FCC codes and regulations, and cable. Class time also will include discussion of current trends and issues in broadcasting so that students may develop a critical understanding of these media. Productions in the college's audio booth and TV facilities offer students real-life experiences. 3 hrs./wk.

JOUR 130
PRINCIPLES OF PUBLIC RELATIONS (3CR)
This course will offer an overview of the function, purpose, procedures and practices of public relations, its roots in history, its role in society, business and government, and its potential as a career field. Primary emphasis will be on theory, practice and criticism, supplemented with written and verbal exercises in the application of public relations techniques. Discussion will center on the tools and media used in communicating with the public. 3 hrs./wk.

JOUR 202
BROADCAST PERFORMANCE (3CR)
Students will learn how to improve their speaking voice and body language as well as the techniques necessary to understand and communicate messages through basic announcing skills. Interviewing, radio and television news and commercial announcing are some of the topics to be covered. Students will do performances in the TV studio and audio booth. 3 hrs./wk.

JOUR 222
NEWS REPORTING (3CR)
Prerequisite: JOUR 122
This is an advanced news gathering and reporting course designed to sharpen writing skills. Practice in writing in-depth news features, editorials, profiles, and advance and follow-up stories will be included, with an emphasis on editing and newspaper layout. Students will gain experience writing for the campus newspaper. 3 hrs./wk.

JOUR 225
PROMOTIONAL WRITING (3CR)
Prerequisite: JOUR 125 or the equivalent
This course is for students who want to learn the elements of layout and copywriting for promotional purposes. It will emphasize how to determine advertising appeals, copy structure and copy style, and how to develop advertising campaigns. The importance of coordinating marketing goals, advertising goals and campaign strategy also will be stressed. 3 hrs./wk.

JOUR 227
BASIC TV PRODUCTION (3CR)
Prerequisite: JOUR 127
This course provides students with the fundamentals of television production. The objective is to teach students in basic video techniques. Topics to be covered will include technology, lighting, camera operations, audio and editing. Students will gain hands-on experience in the college's television services department. 3 hrs. lecture/wk.

JOUR 271
JOURNALISM INTERNSHIP (3CR)
Prerequisite: Approval of the division administrator
This course permits a student to gain work experience at an approved training center under staff supervision. Emphasis will be on the application of writing techniques needed to produce print news, broadcast news, and/or advertising or public relations promotional copy or production. On-the-job training involves a minimum of 12 hours a week by arrangement.
Leadership Development

LEAD 120
LEADERSHIP DEVELOPMENT SEMINAR (3CR)
This seminar course is designed for individuals who are interested in exploring the concepts of leadership using discussion, film, exercises, computer programs and works of classic literature. The course will lead to the development of a personal leadership philosophy and plan of action. 3 hrs./wk. Offered spring semester.

Learning Strategies

LS 160
TEXTBOOK LEARNING STRATEGIES (1CR)
Corequisite: Concurrent enrollment in a course requiring the use of a textbook
This course is designed for the student who wants to develop techniques to comprehend and retain information contained in textbooks, journals, newspapers, class handouts and other written sources. The techniques are practiced on the written materials from the student's other classes. 1 hr./wk.

LS 172
LECTURE NOTES STRATEGY (1CR)
Prerequisite: Concurrent enrollment in a college lecture course
Students will have the opportunity to learn active listening skills and an effective notetaking strategy in order to improve their understanding and recall of information in lecture courses and other lecture settings. The techniques learned in this class are practiced in the other courses students are taking. 1 hr./wk.

LS 174
LEARNING STRATEGIES FOR MATH (1CR)
Corequisite: Concurrent enrollment in a math course
This course teaches thinking and study skills specifically geared toward the learning of math, including problem-solving skills, test-taking skills and cognitive skills. Students practice these skills on their math textbooks and homework assignments as well as in their math class discussions and lectures. This course also addresses feelings and attitudes that may block math learning and offers strategies and techniques designed to overcome these feelings. 1 hr./wk.

LS 176
STRATEGIC LEARNING SYSTEM (1CR)
Corequisite: Concurrent enrollment in a college lecture course
In this course, students will learn a series of strategies for processing information from textbooks and lectures and for studying for and taking tests. As the strategies are introduced, students apply them to the content of courses in which they are concurrently enrolled. Upon successful completion of the course, students will have developed a system for learning that can be adapted for use in any learning situation. 1 hr./wk.

LS 178
MEMORY STRATEGIES (1CR)
Corequisite: Concurrent enrollment in another college course
In this course, students learn a series of techniques to help them improve their retention and recall of information needed for success in college courses. These techniques provide a systematic approach to learning and remembering. Students immediately use the techniques to learn information from their other college courses. 1 hr./wk.

LS 186
EXAM STRATEGIES (1CR)
Corequisite: Concurrent enrollment in at least one other college course in which exams are taken
In this course, students have an opportunity to explore their own learning styles and to develop appropriate strategies for improving test performance through improved learning procedures. Emphasis will be placed on practical application of the learned strategies to courses in which the students are concurrently enrolled. 1 hr./wk.

LS 195
LEARNING STRATEGIES FOR CAREER PROGRAMS (1CR)
Corequisite: Students must be either concurrently enrolled in a JCCC career program or accepted into a program, and taking appropriate elective classes to which the strategies can be applied
This course is designed to help students enrolled in the various career programs at JCCC develop more efficient and effective learning plans for meeting the intensive cognitive demands of the two-year programs. Techniques and strategies for managing time, acquiring and reviewing information, test taking and analyzing test errors will be presented. 1 hr. lecture/wk.
LS 200
COLLEGE LEARNING METHODS (3CR)
Corequisite: Concurrent enrollment in at least one academic college course
This course provides students with opportunities to develop skills and habits that will help them establish and maintain effective learning systems for a variety of academic courses. Students first learn and practice the learning methods in class and then apply these methods to appropriate situations in their other college coursework. The methods, which are based on valid learning and thinking principles, will help students meet the higher-level demands of the subjects encountered in college courses. 3 hrs/wk.

Legal Nurse Consultant

LNC 220
LEGAL NURSE CONSULTANT PROFESSION (3CR)
Prerequisite: Admission to the Legal Nurse Consultant Program
Upon successful completion of this course, the student should be able to identify functions of legal nurse consultants and career opportunities available to them. In addition, the student should be able to explain applicable medical and legal ethics and apply them to professional situations. 3 hrs lecture/wk.

LNC 230
FOUNDATIONS OF LAW (3CR)
Prerequisite: Admission to the Legal Nurse Consultant Program
Upon successful completion of this course, the student should be able to explain and identify the major principles of the structure and functioning of the American legal system. This course will concentrate on the lawmaking activities of the three branches of American government, with special attention given to the operation of the court system and the substantive and procedural aspects of American law, and will emphasize the role of the legal nurse consultant in the litigation process. 3 hrs lecture/wk.

LNC 240
LEGAL MEDICAL RESEARCH (3CR)
Prerequisite: Admission to the Legal Nurse Consultant Program and basic computer knowledge of word processing, spreadsheet and database software through course work or work experience verified by division administrator.
Upon successful completion of this course, the student should be able to perform legal and medical research and investigative functions. Topics covered include medical records, medical and legal research techniques and interviewing of clients and medical witnesses and experts. 1 hr lecture/wk.

LNC 250
LEGAL MEDICAL WRITING (3CR)
Prerequisites: Admission to the Legal Nurse Consultant Program and LNC 240
Upon successful completion of this course, the student should be able to produce or contribute to the preparation of correspondence, reports and other legal documents and resources used in a legal/medical-related law practice. This course will focus on the role of the legal nurse consultant in the preparation of such resources, particularly in the context of intentional tort, negligence, products liability, strict liability and medical malpractice litigation. 3 hrs lecture/wk.

LNC 260
PERSONAL INJURY LAW (3CR)
Prerequisites: Admission to the Legal Nurse Consultant Program and LNC 240
Upon successful completion of the course, the student will be able to explain and apply substantive and procedural principles of personal injury claims. The course will concentrate on the role of a legal nurse consultant in analyzing and applying legal theories and defenses relevant to intentional torts, negligence, products liability, strict liability and medical malpractice. 3 hrs lecture/wk.

LNC 270
ADMINISTRATIVE LAW (3CR)
Prerequisites: Admission to the Legal Nurse Consultant Program and LNC 240
Upon successful completion of the course, the student will be able to explain and apply substantive and procedural principles of administrative agencies. The course will concentrate on the basic principles of workers’ compensation law, Social Security law, public health law and the Americans with Disabilities Act. 3 hrs lecture/wk.
Library

LIBR 125
INTRODUCTION TO LIBRARY RESEARCH (1CR)
This course provides an introduction to the methods and technologies of library research. Included will be a study of the various information resources available for research and techniques for retrieving information from both print and electronic sources. The resources of the JCCC Library will be featured, although the emphasis will be on building information retrieval skills which will be useful in many settings. 1 hr. lecture/wk.

Marketing and Management

MKT 121
RETAIL MANAGEMENT (3CR)
Upon successful completion of this course, the student should be able to describe and analyze retail store organization and operation, including customer markets, store location and design, human resource management, merchandise planning and control and retail promotion and presentation. 3 hrs. lecture/wk.

MKT 133
SALESMANSHIP (3CR)
Upon successful completion of this course, the student should be able to define and contrast the three main areas of selling direct, wholesale and retail, and explain the selling process. In addition, the student should be able to define the steps of selling and identify their appropriate application. The student should also be able to demonstrate selling skills through role play and presentations. Students who have received credit for MKT 134 may not receive credit for MKT 133. 3 hrs. lecture/wk.

MKT 134
CREATIVE RETAIL SELLING (3CR)
Upon successful completion of this course, the student should be able to describe the process of successful selling in the retail environment. In addition, the student should be able to define the steps of selling and identify their appropriate application. The student should also apply selling principles through role playing. Students who have received credit for MKT 133 may not receive credit for MKT 134. 3 hrs. lecture/wk.

MKT 140
TELESERVICE COMMUNICATION SKILLS (3CR)
Upon successful completion of this course, the student should be able to describe the process of successful communication in the teleservice field. In addition, the student should be able to define the principles of tele-client service and identify their appropriate application. The student should also be able to demonstrate effective telecommunication and client services skills through role playing. 3 hrs. lecture/wk.

MKT 202
CONSUMER BEHAVIOR (3CR)
Prerequisite: MKT 133 or MKT 134
Upon successful completion of this course, the student should be able to demonstrate successful selling techniques for products and services. In addition, the student should be able to develop methods for listening effectively to customers, acquire product information, develop features and benefits to meet specific customer demands, refine personal selling style, develop customer follow-up techniques, create customer records of purchase, demonstrate an ability to handle difficult customers and develop a product information book and a self-training program. 3 hrs. lecture/wk.

MKT 206
AUTOMOTIVE RETAILING SALES (3CR)
Prerequisite: MKT 133 or MKT 134
Upon successful completion of this course, the student should be able to demonstrate the skills necessary for competency in automotive retailing. Student awareness and understanding will be directed toward: an introduction to automotive retailing, past, present and future; professionalism in sales; the components of sales transactions; a structured sales program and product knowledge; customer satisfaction and follow-up; building a clientele; and success through self-improvement. 3 hrs. lecture/wk.

MKT 221
SALES MANAGEMENT (3CR)
Prerequisite: MKT 134 or MKT 133
Upon successful completion of this course, the student should be able to identify skills necessary to manage a sales force and develop a plan for recruitment, selection, training, motivation and evaluation. In addition, the student should be able to describe and analyze techniques to forecast and plan sales and audit results. 3 hrs. lecture/wk.
MKT 234
SERVICES MARKETING (3CR)
Corequisite: BUS 230
Upon successful completion of this course, the student should be able to describe the functioning of a services economy. In addition, students should be able to describe and define the nature and characteristics of services and the ways services are required to be marketed due to their intangible core. Additionally, students should be able to describe service quality, the foundation of services marketing, and the success factors in services marketing. 3 hrs. lecture/wk.

MKT 271
MARKETING AND MANAGEMENT SEMINAR: ORGANIZATIONAL BEHAVIOR (2CR)
Upon successful completion of this course, the student should be able to explain organizational structure and process and the principles of human behavior in organizations; describe core concepts of motivation, perception and communication in organizations; and analyze individual and team effectiveness in organizations. 2 hrs. lecture/wk.

MKT 273
MARKETING AND MANAGEMENT SEMINAR: MARKETING RESEARCH (2CR)
Upon successful completion of this course, the student should be able to explain market research design; collect, organize and analyze market research data; explain demographic and psychographic impacts on markets; and prepare and present a marketing research project. 2 hrs. lecture/wk.

MKT 284
MARKETING AND MANAGEMENT INTERNSHIP I (1CR)
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

MKT 286
MARKETING AND MANAGEMENT INTERNSHIP II (1CR)
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

MKT 288
MARKETING AND MANAGEMENT INTERNSHIP III (1CR)
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

MKT 289
MARKETING AND MANAGEMENT INTERNSHIP IV (1CR)
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

MKT 290
CAPSTONE: MARKETING AND MANAGEMENT CASE STUDIES (3CR)
Prerequisites: BUS 141, BUS 230, MKT 284, MKT 286 or permission of division administrator
Upon successful completion of this course, the student should be able to identify problems and develop and describe the situational analysis, formulate alternative solutions and reach and explain a decision for each issue. In addition, the student should be able to apply the knowledge of marketing and management concepts and techniques in the analysis of cases and actual business situations. 3 hrs. lecture/wk.
Mathematics

DEVELOPMENTAL COURSES
MATH 111 and MATH 115 are designed to help students review and improve math concepts and develop math skills. MATH 111 and MATH 115 provide the mathematical foundation upon which subsequent studies in mathematics and other areas depend. These courses do not fulfill degree requirements.

MATH 111
FUNDAMENTALS OF MATH (3CR)
Prerequisite: Appropriate score on the math assessment test
Fundamentals of Mathematics is designed for the student who needs to improve or review basic math skills and concepts. This course includes computation using whole numbers, integers, fractions, decimals and percents and includes mathematical applications of exponents, measurement, geometry, statistics and linear equations. 3 hrs./wk.

MATH 115
INTRODUCTION TO ALGEBRA (3CR)
Prerequisite: MATH 111 or appropriate score on the math assessment test
Topics include simplifying numeric and algebraic expressions, including polynomials; simplifying rational, exponential and radical expressions; solving equations and inequalities, including linear and quadratic equations and equations containing rational expressions; and developing, analyzing and graphing linear equations. 3 hrs./wk.

MATH 116
INTERMEDIATE ALGEBRA (3CR)
Prerequisite: MATH 115 or appropriate score on the math assessment test
Topics include polynomials, rational expressions, exponents and radicals, equations and inequalities, graphing and systems of equations and functions. 3 hrs./wk.

MATH 118
GEOMETRY (3CR)
Prerequisite or corequisite: MATH 115 or appropriate score on the math assessment test
This course is an intuitive approach to geometry. Topics will include lines, polygons, area, volume, circles, similarity, congruence and coordinate geometry. 3 hrs./wk.

MATH 120
BUSINESS MATH (3CR)
Prerequisite: MATH 111 or appropriate score on the math assessment test
This is a course for the student who needs specific skills in math to address business problems and applications in payroll, retailing, money management, depreciation and financial statements. Students will use business calculators and computers to solve various business problems. 3 hrs./wk.

MATH 122
MATHEMATICS IN OUR CULTURE (3CR)
Prerequisite: MATH 111 or appropriate score on the math assessment test
This is a course about the extent, power and history of many interesting areas of mathematics. Topics will include mathematical reasoning and recreation, calculator activities, computer literacy, mathematics in art and music, probability, statistics and topology. 3 hrs./wk.

MATH 125
SURVEY OF MATHEMATICS (3CR)
Prerequisite: MATH 111 or appropriate score on the math assessment test
This television course surveys a variety of mathematical topics including logic, sets, equation solving, graphing, measurement, number sequences, probability statistics, calculators and computers. 3 hrs. lecture/wk.

MATH 133
TECHNICAL MATHEMATICS I (4CR)
Prerequisite: MATH 111 or an equivalent course
This course is the first of a two-semester sequence that will introduce the mathematical skills and concepts necessary in technical work. It will focus on the basics of algebra, geometry and trigonometry and their applications. Topics will include operations with polynomials, linear equations, systems of equations, right triangle trigonometry and basic statistical concepts. 4 hrs./wk.

MATH 134
TECHNICAL MATHEMATICS II (5CR)
Prerequisite: MATH 133 or an equivalent course
This course is the second of a two-semester sequence on technical applications of algebra and trigonometry. Topics will include factoring, algebraic fractions, quadratic equations, exponents, radicals, an introduction to coordinate geometry, logarithmic and exponential functions, oblique triangles, vectors, trigonometric graphs and identities. 5 hrs./wk.
MA TH 165
FINITE MA TH, A CULTURAL APPROACH (3CR)
Prerequisite: MATH 116 or appropriate score on the math assessment test
This course is designed to teach math concepts as well as quantitative skills. Topics will include inductive and deductive reasoning, mathematical patterns, sets, networks, geometry, probability, statistics, matrices, introduction to trigonometry, and exponential and logarithmic functions. The common themes throughout the course will be practical applications, innovations in computers, related mathematical and cultural history and reasoning ability. 3 hrs./wk.

MA TH 171
COLLEGE ALGEBRA (3CR)
Prerequisite: MATH 116 or appropriate score on the math assessment test
A student in this course will analyze and graph functions, including constant, linear, absolute value, square root, polynomial, rational, exponential and logarithmic functions; solve equations and inequalities, including equations of variation, polynomial equations, exponential equations, logarithmic equations, systems of linear and nonlinear equations and systems of linear inequalities; and analyze and create algebraic and numerical patterns. Not available for credit to students currently enrolled in MATH 173 or with prior credit in MATH 171 and/or MATH 172. 3 or 5 hrs./wk.

MA TH 172
TRIGONOMETRY (3CR)
Prerequisite: MATH 171 or MATH 173 or appropriate score on the math assessment test
This is a study of trigonometric functions and their properties, identities, graphs, equations, inverse trigonometric functions, polar coordinates and applications. Not available for credit to students currently enrolled in MATH 173 or with prior credit in MATH 173. 3 hrs./wk.

MA TH 173
PRECALCULUS (5CR)
Prerequisite: MATH 116 or appropriate score on the math assessment test
This course is a study of polynomial, rational, exponential, logarithmic, trigonometric and inverse trigonometric functions, equations, determinants, sequences and series, the binomial theorem and complex numbers. This course is intended for students planning to enroll in MATH 232 or MATH 241. It is not available for students currently enrolled in MATH 171 or MATH 172 or with prior credit in MATH 171 and/or MATH 172 without prior approval of the math director. 5 hrs. lecture/wk.

MA TH 175
DISCRETE MA TH AND ITS APPLICATIONS (3CR)
Prerequisite: MATH 171 or MATH 173 or appropriate score on the math assessment test
Students will study many of the puzzles that were solved by mathematicians of the 18th and 19th centuries and how these solutions are being used to find answers to 20th century problems. Topics may include network theory, the analysis of voting power, the analysis of human behavior in conflict situations using game theory, and optimal allocation of resources using the simplex method. The emphasis of the course will be on exploration and understanding. Computer/calculator applications will be incorporated into course topics. 3 hrs./wk.

MA TH 181
STATISTICS (3CR)
Prerequisite: MATH 171 or MATH 173 or an equivalent course or appropriate score on the math assessment test
This is a beginning course in statistical analysis. Topics include observational studies, designed experiments, descriptive statistics and inferential statistics. The course also includes an introduction to probability, regression, correlation, confidence intervals and hypothesis testing. The course examines statistical distributions from a non-calculus point of view, including the normal, chi-square and binomial distributions. Computer/calculator applications are incorporated into the course topics. 3 hrs./wk.

MA TH 231
CALCULUS I (3CR)
Prerequisite: MATH 171 or MATH 173 or appropriate score on the math assessment test
This is the first course in a two-semester series on calculus. It will cover differentiation of algebraic, exponential and logarithmic functions used in business, biology and the social sciences along with an introduction to the integration of algebraic and exponential functions. Trigonometry (MATH 172) may be taken concurrently with MATH 231 for those students planning to enroll in MATH 232 in subsequent semesters. 3 hrs./wk.

MA TH 232
CALCULUS II (3CR)
Prerequisites: MATH 231 and either MATH 172 or MATH 173 or an equivalent course
This is the second course in a two-semester series on calculus. It will cover techniques of integration, differentiation and integration of trigonometric functions, differential equations, functions of several variables and a brief introduction to statistics. This information can be applied to business, statistics, biology and the social sciences. 3 hrs./wk.
**MATH 241**  
ANALYTIC GEOMETRY – CALCULUS I (5CR)  
Prerequisite: MATH 172 or MATH 173 or appropriate score on the math assessment test  
This is the first course in a three-semester sequence on analytic geometry and calculus. Students will study and apply elements of plane analytic geometry and the differentiation and integration of algebraic and trigonometric functions. 5 hrs./wk.

**MATH 242**  
ANALYTIC GEOMETRY – CALCULUS II (5CR)  
Prerequisite: MATH 241 or an equivalent course  
This is the second in a three-semester sequence on analytic geometry and calculus. The emphasis will be on infinite series, differentiation and integration of transcendental functions, polar coordinates, vectors and applications. 5 hrs./wk.

**MATH 243**  
ANALYTIC GEOMETRY – CALCULUS III (5CR)  
Prerequisite: MATH 242 or an equivalent course  
This is the third course in a three-semester sequence on analytic geometry and calculus. Topics will include vector-valued functions, functions of several variables, multiple integration, vector analysis and an introduction to linear algebra. 5 hrs./wk.

**MATH 244**  
DIFFERENTIAL EQUATIONS (3CR)  
Prerequisite: MATH 243 or an equivalent course  
This course will cover standard types of ordinary equations, second and higher order linear equations, solutions by series, the Laplace transform numerical solutions, and applications. 3 hrs./wk.

**MATH 285**  
STATISTICS FOR BUSINESS (4CR)  
Prerequisite: MATH 232 or MATH 242 or an equivalent course  
This is a beginning course in calculus-based statistical analysis. Students must have an understanding of calculus concepts in order to successfully complete this course. Topics will include descriptive statistics, probability, sampling, confidence intervals, hypothesis testing and linear regression. The course will stress the applications to business with an emphasis on quality control. 4 hrs./wk.

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**Metal Fabrication**

**MFAB 121**  
INTRODUCTION TO WELDING (4CR)  
This course is an introduction to oxyacetylene cutting, welding and brazing and shielded metal arc welding (SMAW). The SMAW portion of the course will cover fillet welds in all positions using a variety of electrodes. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

**MFAB 125**  
ADVANCED GAS AND ARC WELDING (4CR)  
Prerequisite: MFAB 121  
This course is a continuation of Introduction to Welding. The course will cover more advanced projects in oxyacetylene welding, cutting, brazing, shielded metal arc welding (SMAW) and air carbon arc cutting. The SMAW process will be used to weld vee groove butt joints in the flat, horizontal, vertical up and overhead positions with root and face bend test being performed on the vertical weldment. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

**MFAB 130**  
GAS METAL ARC WELDING I (4CR)  
Prerequisite: MFAB 121  
Upon successful completion of this course, the student should be able to identify basic theory of gas metal arc welding (GMAW) and flux cored arc welding (FCAW). The welding of mild steel plate will occur in all positions on both fillet and groove welds with the GMAW process. The FCAW process will be used to weld some fillet and groove welds on mild steel. Root and face bend test will be performed on a vertical up GMAW weldment. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

**MFAB 152**  
MANUFACTURING MATERIALS AND PROCESSES (3CR)  
Upon successful completion of this course, the student should be able to identify various manufacturing materials and processes currently used in industry. The capabilities and applications of machine tool, general fabrication, welding processes, robotics, cut-off equipment and other manufacturing processes and equipment will be studied. Lecture will be supplemented with demonstrations of various processes and equipment. 3 hrs. lecture/wk.
MFAB 160
GAS TUNGSTEN ARC WELDING (4CR)

Prerequisite: MFAB 121
Upon the successful completion of this course, the student should be able to identify the basic theory of gas tungsten arc welding (GTAW). The student will weld on mild steel, stainless steel and aluminum in a variety of positions on both fillet and groove welds using the GTA process, with u-bend test being performed on mild steel. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

MFAB 170
BASIC MACHINE TOOL PROCESSES (4CR)

Upon successful completion of this course, the student should be able to practice the basic principles of machining as well as setup and operation of machines. The laboratory will include the use of lathes, mills, drills, cut-off and other types of equipment. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 4 hrs. lab/wk.

MFAB 230
GAS METAL ARC WELDING II (4CR)

Prerequisite: MFAB 130
Upon the successful completion of this course, the student should be able to identify the theory of gas metal arc welding (GMAW) and flux cored arc welding (FCAW). The student will weld with the GMAW and FCAW processes in the flat, horizontal, vertical up and overhead positions on both fillet and groove welds. The GMAW welds will be made on aluminum, and the FCAW welds will be on one-inch mild steel with side bend test being made on the overhead and horizontal weldments. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

MFAB 240
METALLURGY (2CR)

Metallurgy is the study of the science and technology of metals. This course covers the extractive, mechanical and physical phases of metallurgy. Topics include the identification of metals, types and classification of metals, heat treatment procedures and common steel manufacturing processes. 2 hrs. lecture-demonstration/wk.

MFAB 271
METAL FABRICATION INTERNSHIP (3CR)

Prerequisite: Approval of the division administrator
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 15 hrs. minimum on-the-job training/wk.

Music

MUS 121
INTRODUCTION TO MUSIC LISTENING (3CR)

The emphasis will be on listening in this survey of the development of music. Students will hear recorded medieval, Renaissance, baroque, classical, romantic and contemporary music, including popular American forms. 3 hrs./wk.

MUS 123
INTRODUCTION TO MUSIC FUNDAMENTALS (2CR)

This class is for the elementary classroom teacher or music student without a background in theory. It will cover notation of melody, rhythm, meter and musical terminology, intervals, chords and very basic four-part writing. 2 hrs./wk.

MUS 125
INTRODUCTION TO JAZZ LISTENING (3CR)

Listening will be emphasized in this introduction to the history of jazz in America. The focus will be on trends, periods and styles. 3 hrs./wk.

MUS 131
SIGHT-SINGING AND EAR TRAINING I (2CR)

Students will combine aural and sight-reading skills in this course on the melodic, harmonic and rhythmic elements of music. 2 hrs./wk.

MUS 132
SIGHT-SINGING AND EAR TRAINING II (2CR)

Prerequisite: MUS 131
This is a continued study of the melodic, harmonic and rhythmic elements of music, integrating aural and sight-reading skills. 2 hrs./wk.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 133</td>
<td>SIGHT-SINGING AND EAR TRAINING III (2CR)</td>
<td></td>
<td>This is a continued advanced study of melodic, harmonic and rhythmic elements of music. 2 hrs./wk.</td>
</tr>
<tr>
<td>MUS 134</td>
<td>SIGHT-SINGING AND EAR TRAINING IV (2CR)</td>
<td></td>
<td>In this advanced study, students will continue working on aural and sight-reading skills through melodic and harmonic dictation. 2 hrs/wk.</td>
</tr>
<tr>
<td>MUS 141</td>
<td>MUSIC THEORY: HARMONY I (3CR)</td>
<td></td>
<td>This is a basic study of the harmonic system used in music composed from 1650 to 1900 and still in use in certain areas of music composition. Students will both write and analyze music of the period as well as play simple chord progressions on the piano. Students will gain further understanding of harmonic practices through selected software programs. 3 hrs/wk.</td>
</tr>
<tr>
<td>MUS 142</td>
<td>MUSIC THEORY: HARMONY II (3CR)</td>
<td></td>
<td>This is a continuation of the study of the harmonic system used in music composed from 1650 to 1900 and still in use in certain areas of music composition. The course includes introduction and extensive use of non-harmonic tones, proper usage of the supertonic and dominant sevenths, correct use of the submedian and mediant triads, advanced melodic writing and introduction of secondary dominant chords leading to elementary modulation. Students will play simple chord progressions on the piano as well as write and analyze music of the period. Selected software programs will enhance student skills and understanding. 3 hrs/wk.</td>
</tr>
<tr>
<td>MUS 143</td>
<td>MUSIC THEORY: HARMONY III (3CR)</td>
<td></td>
<td>This is a continuation of the study of the harmonic system used in music composed from 1650 to 1900 and still in use in certain areas of music composition. Important topics include devices of modulation, binary and ternary musical forms and application of part writing procedures to instrumental music. Particular attention will be paid to the nature and functions of diatonic seventh chords, borrowed chords and augmented sixth chords in both minor and major keys. Keyboard harmony exercises of increasing difficulty will be utilized by the student. Advanced software programs will aid student skills and harmonic understanding. 3 hrs/wk.</td>
</tr>
<tr>
<td>MUS 144</td>
<td>MUSIC THEORY: HARMONY IV (3CR)</td>
<td></td>
<td>This course is a continuation of the study of music composed from 1650 to 1900 with particular emphasis on compositional and harmonic techniques of the 20th century. Primary topics include chords of the ninth, 11th and 13th; more chromatic harmonic progressions; harmonic practices of the Debussy and Impressionism; and an introduction to 20th century music. Particular emphasis will be on the theories and techniques of Arnold Schoenberg and serial composition. Techniques since 1950 will also be explored and students will compose short excerpts utilizing contemporary styles and techniques.</td>
</tr>
<tr>
<td>MUS 151</td>
<td>MIXED VOCAL ENSEMBLE I (1CR)</td>
<td></td>
<td>Open to both majors and nonmajors, this class involves rehearsal and performance of a wide range of vocal music. 3 hrs/wk.</td>
</tr>
<tr>
<td>MUS 152</td>
<td>MIXED VOCAL ENSEMBLE II (1CR)</td>
<td>MUS 151</td>
<td>This is a continuation of Mixed Vocal Ensemble I. 3 hrs/wk.</td>
</tr>
<tr>
<td>MUS 153</td>
<td>MIXED VOCAL ENSEMBLE III (1CR)</td>
<td>MUS 152</td>
<td>This is a continuation of Mixed Vocal Ensemble II. 3 hrs/wk.</td>
</tr>
<tr>
<td>MUS 154</td>
<td>MIXED VOCAL ENSEMBLE IV (1CR)</td>
<td>MUS 153</td>
<td>This is a continuation of Mixed Vocal Ensemble III. 3 hrs/wk.</td>
</tr>
<tr>
<td>MUS 156</td>
<td>MIDI MUSIC COMPOSITION I (3CR)</td>
<td></td>
<td>This course will combine the study of harmony, rhythm and melody as used in music composition with electronic technology available with the MIDI music system. Students will be introduced to the computer and the compatible equipment and software available for the expressed purpose of stimulating and enhancing the student's musical creativity. 2 hrs. lecture, 2 hrs. lab/wk.</td>
</tr>
</tbody>
</table>
MUS 157
MIDI MUSIC COMPOSITION II (3CR)
Prerequisite: MUS 156
This course is designed to put into practical use and to
build on skills acquired in MIDI Music Composition I.
Students will demonstrate the ability to create, store
and utilize new, original sonorities via the graphic
editing process. Students will also demonstrate a profi-
ciency appropriate to the beginning student in notation
software, learning how to use sequencing and notation
software together to produce both visual and aural repre-
sentations of their work. An emphasis will be placed on
each student's portfolio – a comprehensive example of
their work, both print and aural – for students to use,
either for personal, commercial or academic purposes.
2 hrs. lecture, 2 hrs. lab/wk.

MUS 161
CHAMBER CHOIR I (1CR)
Prerequisite: Audition
Students will study and rehearse a variety of vocal music
and perform at student and community activities.
3 hrs./wk.

MUS 162
CHAMBER CHOIR II (1CR)
Prerequisite: MUS 161
This is a continuation of Chamber Choir I. 3 hrs./wk.

MUS 163
CHAMBER CHOIR III (1CR)
Prerequisite: MUS 162
This is a continuation of Chamber Choir II. 3 hrs./wk.

MUS 164
CHAMBER CHOIR IV (1CR)
Prerequisite: MUS 163
This is a continuation of Chamber Choir III. 3 hrs./wk.

MUS 171
APPLIED VOICE I (Class) (1CR)
This class will offer instruction in singing from the be-
inning stages. 1 hr./wk.

MUS 172
APPLIED VOICE II (Class) (1CR)
Prerequisite: MUS 171
This is a continuation of Applied Voice I.

MUS 173
APPLIED VOICE III (Class) (1CR)
Prerequisite: MUS 172
This is a continuation of Applied Voice II.

MUS 174
APPLIED VOICE IV (Class) (1CR)
Prerequisite: MUS 173
This is a continuation of Applied Voice III.

MUS 176
EVENING JAZZ ENSEMBLE I (1CR)
Prerequisite: Audition
The ensemble will perform jazz and popular music at fes-
tivals, public concerts and college functions. 3 hrs./wk.

MUS 177
EVENING JAZZ ENSEMBLE II (1CR)
Prerequisite: MUS 176
This class will consist of continued performances of jazz
and popular music at festivals, public concerts and
college functions. 3 hrs./wk.

MUS 178
EVENING JAZZ ENSEMBLE III (1CR)
Prerequisite: MUS 177
This class will consist of continued performances of jazz
and popular music at festivals, public concerts and
college functions. 3 hrs./wk.

MUS 179
EVENING JAZZ ENSEMBLE IV (1CR)
Prerequisite: MUS 178
This class will consist of continued performances of jazz
and popular music at festivals, public concerts and
college functions. 3 hrs./wk.

MUS 187
JAZZ IMPROVISATION I (2CR)
Prerequisite: Audition
This is a fundamental approach to the rhythm and me-
loc lines involved in creative improvisation. Basic pro-
cedures for anayzing chords and chord structures will serve
as an outline for organized spontaneous playing. 2 hrs./wk.

MUS 188
JAZZ IMPROVISATION II (2CR)
Prerequisite: MUS 187
This continuation of Jazz Improvisation I will focus on
creative improvisation and procedures for analyzing
chord structures as an outline for organized spontaneous
playing. 2 hrs./wk.

MUS 191
BAND I (1CR)
Prerequisite: Audition
Concert band repertore – especially early works and
original contemporary selections – will be the basis of
these performances. 3 hrs./wk.
MUS 192  
BAND II (1CR)  
*Prerequisite: MUS 191*
This is a continuation of Band I. 3 hrs./wk.

MUS 193  
BAND III (1CR)  
*Prerequisite: MUS 192*
This is a continuation of Band II. 3 hrs./wk.

MUS 194  
BAND IV (1CR)  
*Prerequisite: MUS 193*
This is a continuation of Band III. 3 hrs./wk.

MUS 195  
VOCAL JAZZ ENSEMBLE I (1CR)  
*Prerequisite: Audition*
This course is an introductory-level vocal ensemble musical experience. Prior choral experience is necessary to be successful in this course. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

MUS 196  
VOCAL JAZZ ENSEMBLE II (1CR)  
*Prerequisite: MUS 195*
This course is a beginning-level vocal ensemble musical experience. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

MUS 197  
VOCAL JAZZ ENSEMBLE III (1CR)  
*Prerequisite: MUS 196*
This course is an intermediate-level vocal ensemble musical experience. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

MUS 198  
VOCAL JAZZ ENSEMBLE IV (1CR)  
*Prerequisite: MUS 197*
This course is an advanced-level vocal ensemble musical experience. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

MUS 201  
CHAMBER ENSEMBLE I (1CR)  
*Prerequisite: Audition*
Students will study and perform standard literature for ensembles: brass, woodwind, jazz combo and percussion. 2 hrs./wk.

MUS 202  
CHAMBER ENSEMBLE II (1CR)  
*Prerequisite: MUS 201*
This is a continuation of Chamber Ensemble I. 2 hrs./wk.

MUS 203  
CHAMBER ENSEMBLE III (1CR)  
*Prerequisite: MUS 202*
This is a continuation of Chamber Ensemble II. 2 hrs./wk.

MUS 204  
CHAMBER ENSEMBLE IV (1CR)  
*Prerequisite: MUS 203*
This is a continuation of Chamber Ensemble III. 2 hrs./wk.

MUS 211  
ORCHESTRA I (1CR)  
*Prerequisite: Audition*
Students will rehearse and perform with the Overland Park Civic Orchestra. 2 hrs. (1 evening)/wk.

MUS 212  
ORCHESTRA II (1CR)  
*Prerequisite: MUS 211*
This is a continuation of Orchestra I. 2 hrs. (1 evening)/wk.

MUS 213  
ORCHESTRA III (1CR)  
*Prerequisite: MUS 212*
This is a continuation of Orchestra II. 2 hrs. (1 evening)/wk.

MUS 214  
ORCHESTRA IV (1CR)  
*Prerequisite: MUS 213*
This is a continuation of Orchestra III. 2 hrs. (1 evening)/wk.

MUS 216  
APPLIED WOODWIND I (Class) (1CR)  
In this class, students will be instructed on the wind instrument of their choice. 1 hr./wk.
MUS 217
APPLIED WOODWIND II (Class) (1CR)
Prerequisite: MUS 216
This course will offer advanced instruction for those who have completed Applied Woodwind I. 1 hr./wk.

MUS 218
APPLIED WOODWIND III (Class) (1CR)
Prerequisite: MUS 217
This course will offer advanced instruction for those who have completed Applied Woodwind II. 1 hr./wk.

MUS 219
APPLIED WOODWIND IV (Class) (1CR)
Prerequisite: MUS 218
This course will offer advanced instruction for those who have completed Applied Woodwind III. 1 hr./wk.

MUS 221
APPLIED PIANO I (Class) (2CR)
This class will offer beginning group instruction in playing the piano. 2 hrs./wk.

MUS 222
APPLIED PIANO II (Class) (2CR)
Prerequisite: MUS 221
This course will provide advanced group instruction for those who have completed Applied Piano I. 2 hrs./wk.

MUS 223
APPLIED PIANO III (Class) (2CR)
Prerequisite: MUS 222
This course will provide advanced group instruction for those who have completed Applied Piano II. 2 hrs./wk.

MUS 224
APPLIED PIANO IV (Class) (2CR)
Prerequisite: MUS 223
This course will provide advanced group instruction for those who have completed Applied Piano III. 2 hrs./wk.

MUS 226
APPLIED GUITAR I (Class) (1CR)
This class will offer beginning instruction in playing the guitar. 1 hr./wk.

MUS 227
APPLIED GUITAR II (Class) (1CR)
Prerequisite: MUS 226
A advanced group instruction in playing the guitar will be offered in this course. 1 hr./wk.

MUS 228
APPLIED GUITAR III (Class) (1CR)
Prerequisite: MUS 227
This course will provide advanced group instruction in playing the guitar. 1 hr./wk.

MUS 229
APPLIED GUITAR IV (Class) (1CR)
Prerequisite: MUS 228
This course will offer advanced group instruction in playing the guitar. 1 hr./wk.

MUS 231
APPLIED VOICE I (Private) (1CR)
This course offers private instruction in vocal music, 1/2 hr./wk. for 16 weeks by arrangement with an approved instructor.

MUS 232
APPLIED VOICE II (Private) (1CR)
Prerequisite: MUS 231
This course will offer advanced private vocal music instruction.

MUS 233
APPLIED VOICE III (Private) (1CR)
Prerequisite: MUS 232
This course will offer advanced private vocal music instruction.

MUS 234
APPLIED VOICE IV (Private) (1CR)
Prerequisite: MUS 233
This course will offer advanced private vocal music instruction.

MUS 236
APPLIED PIANO I (Private) (1CR)
Students will be offered private instruction on the piano, 1/2 hr./wk. for 16 weeks by arrangement with an approved instructor.

MUS 237
APPLIED PIANO II (Private) (1CR)
Prerequisite: MUS 236
A dvanced private instruction on playing the piano will be offered in this course.

MUS 238
APPLIED PIANO III (Private) (1CR)
Prerequisite: MUS 237
A dvanced private instruction on playing the piano will be offered in this course.
MUS 239  
APPLIED PIANO IV (Private) (1CR)  
Prerequisite: MUS 238  
This course will offer advanced private instruction on playing the piano.

MUS 241  
APPLIED GUITAR I (Private) (1CR)  
Students will be offered private instruction on the guitar, 1/2 hr/wk. for 16 weeks by arrangement with an approved instructor.

MUS 242  
APPLIED GUITAR II (Private) (1CR)  
Prerequisite: MUS 241  
This course will offer advanced private instruction on playing the guitar.

MUS 243  
APPLIED GUITAR III (Private) (1CR)  
Prerequisite: MUS 242  
This course will offer advanced private instruction on playing the guitar.

MUS 244  
APPLIED GUITAR IV (Private) (1CR)  
Prerequisite: MUS 243  
This course will offer advanced private instruction on playing the guitar.

MUS 246  
APPLIED CLASSICAL GUITAR I (Private) (1CR)  
Students will be offered private instruction on the classical guitar, 1/2 hr/wk. for 16 weeks by arrangement with an approved instructor.

MUS 247  
APPLIED CLASSICAL GUITAR II (Private) (1CR)  
Prerequisite: MUS 246  
This course will offer advanced private instruction on playing the classical guitar.

MUS 248  
APPLIED CLASSICAL GUITAR III (Private) (1CR)  
Prerequisite: MUS 247  
This course will offer advanced private instruction on playing the classical guitar.

MUS 249  
APPLIED CLASSICAL GUITAR IV (Private) (1CR)  
Prerequisite: MUS 248  
This course will offer advanced private instruction on playing the classical guitar.

MUS 251  
APPLIED BRASS I (Private) (1CR)  
Students will be offered private instruction on the brass instrument of their choice, 1/2 hr/wk. for 16 weeks by arrangement with an approved instructor.

MUS 252  
APPLIED BRASS II (Private) (1CR)  
Prerequisite: MUS 251  
Students will be offered advanced private instruction on playing a brass instrument.

MUS 253  
APPLIED BRASS III (Private) (1CR)  
Prerequisite: MUS 252  
This course will offer advanced private instruction on playing a brass instrument.

MUS 254  
APPLIED BRASS IV (Private) (1CR)  
Prerequisite: MUS 253  
Advanced private instruction on playing a brass instrument will be offered in this course.

MUS 256  
APPLIED PERCUSSION I (Private) (1CR)  
Students will be offered private instruction on the percussion instrument of their choice, 1/2 hr/wk. for 16 weeks by arrangement with an approved instructor.

MUS 257  
APPLIED PERCUSSION II (Private) (1CR)  
Prerequisite: MUS 256  
Advanced private instruction on playing a percussion instrument will be offered in this course.

MUS 258  
APPLIED PERCUSSION III (Private) (1CR)  
Prerequisite: MUS 257  
This course will offer advanced private instruction on playing a percussion instrument.

MUS 259  
APPLIED PERCUSSION IV (Private) (1CR)  
Prerequisite: MUS 258  
This course will offer advanced private instruction on playing a percussion instrument.

MUS 261  
APPLIED WOODWIND I (Private) (1CR)  
Students can choose their own woodwind instrument for advanced private instruction, 1/2 hr/wk. for 16 weeks by arrangement with an approved instructor.
MUS 262
APPLIED WOODWIND II (Private) (1CR)
Prerequisite: MUS 261
This course will offer advanced private instruction in playing a woodwind instrument.

MUS 263
APPLIED WOODWIND III (Private) (1CR)
Prerequisite: MUS 262
This course will offer advanced private instruction in playing a woodwind instrument.

MUS 264
APPLIED WOODWIND IV (Private) (1CR)
Prerequisite: MUS 263
This course will offer advanced private instruction in playing a woodwind instrument.

Nursing
Associate Degree – Registered Nurse

NURS 121
FUNDAMENTALS OF NURSING (9CR)
Prerequisites: Admission to the Nursing Program, MATH 116 or higher and CPR certification
Corequisites: BIOL 140 and PSYC 130
CHEM 122 must be completed before enrolling in NURS 121.
This course, the first in a sequence of four nursing courses, introduces the student to care of individuals along the health care continuum. Emphasis is placed on prevention of illness, assessment of health status and maintenance of wellness in individuals of various ages. A critical thinking approach is used as the course examines the concepts and principles of basic nursing care that provide a foundation for subsequent nursing practice. The clinical component of the course focuses on (1) prevention, (2) assessment of the healthy adult and (3) the application of fundamental principles in caring for adults encountering acute alterations in wellness. 4.5 hrs. lecture, 15.5 hrs. clinic/wk.

NURS 122
NURSING ACROSS THE LIFE SPAN – PART I (9CR)
Prerequisites: NURS 121, BIOL 140 and PSYC 130
Corequisites: BIOL 225 and PSYC 218
This course is the second in a sequence of four nursing courses. It provides an opportunity for students to explore diverse human responses to predictable events occurring throughout the life span. Students are helped to view clients within a family structure and on a wellness-illness continuum. Nursing role emphasis is on using communication and critical thinking to apply nursing process in preventing illness and promoting wellness. The clinical component of the course focuses on (1) prevention, (2) assessment of individuals within the family structure and (3) application of knowledge in the care of a variety of clients across the life span. Students will apply concepts to individuals with acute and/or chronic alterations in the following areas: maternal/newborn, mental health, older adult, infants/children/adolescents. Clinical experiences will include a variety of settings. Each student will encounter all of these clinical areas over the course of two semesters (NURS 122 and NURS 221). 4.5 hrs. lecture, 15.5 hrs. clinic/wk.

NURS 123
LPN-RN TRANSITION COURSE (6CR)
Prerequisites: Licensure as a vocational/practical nurse, admission with advanced standing to the Nursing Program and MATH 116 or higher, BIOL 140, PSYC 130, BIOL 225 and PSYC 218
This is an orientation to the philosophy of the associate degree nursing program for LPNs entering with advanced standing. Topics will include group process, relationships, the role of the associate degree graduate, communication skills, and the nursing process. Individual assessment and assistance will be emphasized. 18 hrs/wk. for 6 wks. Summer.

NURS 221
NURSING ACROSS THE LIFE SPAN – PART II (9CR)
Prerequisites: NURS 122 or NURS 123, BIOL 140, BIOL 225, PSYC 130, PSYC 218 and ENGL 121
Corequisites: SOC 122 or SOC 125, and communications elective
This course is the third in a sequence of four nursing courses. It provides an opportunity for students to explore human responses to stressors occurring throughout the life span. Students are asked to view clients within a family structure and on a continuum of adaptation to mal-adaptation that may result in acute or chronic illnesses. Nursing role emphasis is on organizational skills and use of critical thinking to apply nursing process to diverse populations. The clinical component of the course focuses on (1) prevention, (2) assessment of individuals within the family structure and (3) application of knowledge in the care of a variety of clients across the life span. Students will apply concepts to individuals with acute and/or chronic alterations in the following areas: maternal/newborn, mental health, older adult, infants/children/adolescents. Clinical experiences will include a variety of settings. Each student will encounter all of these clinical areas over the course of two semesters (NURS 122 and NURS 221). 4.5 hrs. lecture, 15.5 hrs. clinic/wk.
NURS 222
MANAGING CLIENT CARE (9CR)
Prerequisites: NURS 221
This course, the last in a sequence of four nursing courses, focuses primarily on adults experiencing common health alterations that require long-term adaptation. Using a critical-thinking approach, principles of client care management in various health care settings are studied. Ethical and legal issues are explored as they relate to nursing practice. The clinical component of the course focuses on (1) application of knowledge in the care of clients coping with long-term problems and (2) applying management principles in planning, implementing and evaluating care for a group of clients. 4/5 hrs. lecture, 15.5 hrs. clinic/wk.

Nursing
Practical Nursing

AVPN 105
BASIC NURSING: FUNDAMENTALS THEORY AND PRACTICE (366 CONTACT HOURS)
Prerequisite: Admission to the Practical Nursing program, BIOL 140, PSYC 130, CPA 105, MATH 111
This course emphasizes the necessary skills in the performance of nursing care, with focus on the role of the practical nurse in health care delivery. The course focuses on specific assessments of basic physiologic needs and addresses the practical nurse's role in assisting the client to deal with stressors related to interdependent health factors. The presentation and learning of techniques and procedures proceeds from simple to complex. Clinical and laboratory experience is an important part of this course and provides the foundation for subsequent nursing courses. 9 hrs. lecture, 14 hrs. clinic/wk. Fall.

AVPN 106
MEDICAL SURGICAL NURSING (366 CONTACT HOURS)
Practical nursing students will continue to explore their role in helping clients meet basic and special physiologic needs. Students enroll for AVPN 106 in both the spring and summer term. The nursing process is used to plan client-centered nursing care for clients who require health care interventions. Clinical assignments in health care agencies are designed to continue development of assessment and technical skills in providing safe patient care. 9 hrs. lecture, 14 hrs. clinic/wk. (concurrent with AVPN 111 and AVPN 109). Spring and summer.

AVPN 108
INTRODUCTION TO PHARMACOLOGY FOR THE PRACTICAL NURSE (45 CONTACT HOURS)
This course is designed to provide the opportunity for students to develop an understanding of the principles and methods of drug administration. Major drug categories are identified by their clinical uses, and the course presents the basic underlying pharmacological principles of drug action, uses in clinical practice and related nursing care considerations. 3 hrs. lecture/wk. Fall.

AVPN 109
PSYCHOSOCIAL ADAPTATION (117 CONTACT HOURS)
Students will explore the adaptive capacity of clients with emotional stressors and diagnosed mental disorders. This course is designed to expose the student to knowledge and skills required to function in the mental health setting. The focus for the practical nursing student is on use of therapeutic communication skills in assisting clients and to encourage student pursuit of further education and investigation in this area. Clinical assignments occur in a structured clinical agency and are an important part of the course. 3 hrs. lecture, 14 hrs. clinic/wk. (concurrent with AVPN 106 and AVPN 111. Spring.

AVPN 110
PROFESSIONAL VOCATIONAL RELATIONSHIPS (45 CONTACT HOURS)
This course is presented in units designed to address the transition from student to the role of the practical nurse. This course introduces the study of gerontology and the aging process and discusses physiologic, psychosocial and economic issues that impact health care needs across the life span. Development of good communication skills is addressed as a section of this course. Students enroll in PVR for both fall and spring semesters. The spring semester is designed to introduce the student to concepts of management, changes impacting nursing practice, nursing ethics and current issues in nursing and the health care delivery system. 3 hrs. lecture/wk. Fall and spring.

AVPN 111
MATERNAL/CHILD HEALTH NURSING (117 CONTACT HOURS)
This course is designed to guide the practical nursing student in the care of the expectant mother and family during phases of the reproductive process. The role of the practical nurse is emphasized in caring for the new family. Discussion of child health issues related to normal growth and development and also an important focus in this course. Clinical assignments in health care agencies will be relevant to both obstetric and pediatric clients. 3 hrs. lecture, 14 hrs. clinic/wk. (concurrent with AVPN 106 and AVPN 109). Spring.
AVPN 112
NUTRITION FOR THE PRACTICAL NURSE
(45 CONTACT HOURS)
Nutrition is identified as one of the basic needs for physiologic integrity. This course is planned to assist the practical nursing student in identifying basic principles of food requirements and the relationship of nutrition to physiologic health. The content is designed to guide students in assessment of nutritional patterns influencing the client's adaptation level. The practical nurse's role in promotion of healthy patterns in this physiologic mode is emphasized. 3 hrs. lecture/wk. Fall.

Occupational Therapy Assistant

KOT 100
INTRODUCTION TO OCCUPATIONAL THERAPY (5CR)
Prerequisite: Formal admission to the program
This course is an introduction to the fundamentals and contemporary issues in occupational therapy and the health care guidelines for documentation procedures.

KOT 101
PEDIATRICS (3CR)
Prerequisites: BIOL 144, KOT 100, KOT 103, KOT 106, KOT 116 and KOT 102
Physical, perceptual, cognitive, social, intellectual and emotional development during normal growth from prenatal stages to later adolescence will be covered, as will the role of occupational therapy in growth and development.

KOT 102
BASIC EMERGENCY PATIENT CARE (1CR)
This course introduces current cardiopulmonary resuscitation skills, including adult, child and infant resuscitation according to American Heart Association standards. Medical and environmental emergencies are reviewed.

KOT 103
CLINICAL CONDITIONS (2CR)
Prerequisite: Formal admission to the program
This course will cover common medical diseases and conditions referred to and treated by occupational therapy in the clinical setting.

KOT 105
GERONTOLOGY (3CR)
Prerequisite: SOC 122, KOT 204 and American Institutions
Physical, perceptual, cognitive, social, intellectual and emotional development of human beings during normal growth and development from later adolescence to death will be covered. The role of the OTR/COTA will be explored, i.e., treatment approaches and service management.

KOT 106
GENERAL TREATMENT PROCEDURES (3CR)
Prerequisites: Formal admission to the program
General treatment procedures used by OTs in the clinical setting will be presented. Use of adaptive equipment and techniques for home and work will be included.

KOT 107
KINESIOLOGY (3CR)
Prerequisite: KOT 102, BIOL 144, KOT 100, KOT 103, KOT 106 and KOT 116 with a minimum grade of “C”
The study of kinetics of normal and abnormal motion of the human musculoskeletal system will be covered, as will evaluation procedures for range of motion and functional muscle strength.

KOT 111
LEVEL I FIELDWORK: PEDIATRICS (.5CR)
Prerequisites: KOT 102, BIOL 144, KOT 100, KOT 103, KOT 106 and KOT 116 and concurrent enrollment in KOT 101
This course is an introduction to pediatrics through observation in a clinical setting.

KOT 116
LEVEL I FIELDWORK: INTRODUCTION TO CLINICAL EXPERIENCE (.5CR)
Prerequisites: Formal admission to the program and concurrent enrollment in KOT 100
This course is an introduction to the medical setting through observations and clinical experience under the direct supervision of an OTR or an experienced COTA.

KOT 154
APPLIED NEUROLOGY (2CR)
Prerequisites: KOT 102, BIOL 144, KOT 100, KOT 103, KOT 106 and KOT 116 or BIOL 210 and KPT 152
This course will present foundations of neuroscience necessary for practice as a rehabilitation professional. Included is anatomy and function of the nervous system and correlation of clinical problems with pathology of the nervous system.
KOT 201
MENTAL HEALTH (2.5CR)
Prerequisites: SOC 122, KOT 204, American Institutions
This is a study of occupational therapy assessment and treatment techniques in the mental health setting.

KOT 202
PHYSICAL DYSFUNCTION (4CR)
Prerequisites: SOC 122, KOT 204, American Institutions
Areas covered include occupational therapy treatment techniques and assessment used with the physically and cognitively challenged population.

KOT 203
ASSISTIVE TECHNOLOGY/SPLINTING (3CR)
Prerequisites: SOC 160, KOT 204 and American Institutions
This course is an introduction to and hands-on experience with assistive technology, augmentative communication and splint fabrication.

KOT 204
THERAPEUTIC MEDIA/FABRICATION (2CR)
Prerequisite: PSYC 130, SPD 121, KOT 101, KOT 111, KOT 107 and KOT 154
Students will study the characteristics, adaptability and therapeutic use of activities employed in occupational therapy. Instruction in the performance of teaching techniques as they apply to special conditions also will be included, as will demonstration of use of power and hand tools for fabrication purposes.

KOT 212
LEVEL I FIELDWORK: PHYSICAL/PSYCHOSOCI AL DYSFUNCTION (2CR)
Prerequisites: SOC 122, KOT 204 and American Institutions
This class will introduce students to physical and psychosocial dysfunctions through observation in a clinical setting.

KOT 222
LEVEL II FIELDWORK: PHYSICAL DISABILITIES (8CR)
Prerequisites: KOT 201, KOT 202, KOT 105, KOT 203 and KOT 212
Directed occupational therapy fieldwork in different practice areas of occupational therapy will be presented in this class.

Office Systems Technology
OST 101
COMPUTERIZED KEYBOARDING (1CR)
Upon successful completion of this course, the student should be able to operate a computer keyboard using the touch-typing system to enter data with speed and accuracy. 1 hr./wk.

OST 102
BUSINESS ENGLISH (1CR)
Upon successful completion of this course, the student should be able to develop business documents that demonstrate correct sentences using correct English grammar and mechanics. Students should be able to proofread written work using standard proofreading symbols. 1 hr./wk.

OST 105
KEYBOARDING/FORMATTING I (3CR)
Upon successful completion of this course, the student should be able to develop speed and accuracy by learning to use the alphabetic, numeric and symbol keys by touch; identify and operate the basic machine parts and special purpose keys; and format and type personal correspondence and business documents - letters, reports, tables and memos. A basic word processing package will be used in this class. 3 hrs./wk.

OST 110
SKILLBUILDING I (1CR)
Prerequisite: OST 105 or equivalent
Upon successful completion of this course, the student should be able to use a diagnostic approach to develop typing speed and accuracy. Specific problems will be identified, and the student should be able to complete specialized drills and activities tailored to the student's own typing needs to improve or eliminate deficiencies. 1 hr./wk.

OST 115
ELECTRONIC CALCULATORS (1CR)
Upon successful completion of this course, the student should be able to review basic arithmetic, operate the electronic calculator by touch to build speed and accuracy, use basic calculator functions and operating controls, and solve application problems. 1 hr./wk.
OST 118
SKILLBUILDING II (1CR)
Prerequisite: OST 110
Upon successful completion of this course, the student should further develop speed and accuracy. The student should be able to improve keyboard skillbuilding through diagnostic evaluation and by completing individualized drills and activities. 1 hr. lecture/wk.

OST 120
MACHINE TRANSCRIPTION (1CR)
Prerequisite: OST 105 or equivalent
Upon successful completion of this course, the student should be proficient in transcribing a variety of business documents from machine transcription. Emphasis is placed on operation of transcription equipment; development of speed and accuracy in transcription; and developing English, proofreading and formatting skills. 1 hr./wk.

OST 125
DOCUMENT FORMATTING (1CR)
Prerequisite: OST 155
Upon successful completion of this course, the student should be able to type business letters using standard letter styles (block, modified block and simplified); format letters with special features: center ruled or boxed tables, type memos, specialized reports and tables; create and complete forms: create and design letterhead stationery; and apply formatting skills in a simulated office environment. The student should also be able to use basic word processing commands to complete the activities. The student should also be able to build speed and accuracy in keyboarding and production skills. 1 hr./wk.

OST 130
OFFICE SYSTEMS CONCEPTS (3CR)
Prerequisite: OST 155
Upon successful completion of this course, the student should be able to understand and apply technological factors of contemporary office systems. Implementation of office automation concepts will be examined as they relate to people, technology and organizations. These concepts will be applied to organizational and strategic planning to enhance productivity in the office. 3 hrs./wk.

OST 150
RECORDS MANAGEMENT (3CR)
Prerequisite: LC 130
Methods for developing and controlling an office records management program will be discussed. Selection of equipment for active, semiactive and inactive records will be covered, along with procedures for document, card and special records; microrecords; mechanized and automated records; and records storage, retention and transfer. Upon successful completion of this course, the student should be able to file documents using alphabetic, subject, consecutive numeric, terminal digit numeric and geographic filing systems using requisition charge out and transfer procedures. The student should be able to create a computer database for records management; enter, modify and delete records; print reports; and determine disposition of records filed alphabetically, numerically, by subject and geographically. The course will cover the identification of evaluation methods and standards for both staff and programs in a records management department. 3 hrs./wk.

OST 155
WORD PROCESSING APPLICATIONS I (2CR)
Prerequisite: OST 105 or equivalent
Upon successful completion of this course, the student should be able to demonstrate skill in using such word processing features as creating, saving, opening, closing, printing and editing documents. The student should be able to use all beginning and intermediate features of the designated software package. In addition, the student should be able to demonstrate knowledge of standard disk maintenance procedures. 2 hrs. lecture-demonstration/wk.

OST 160
LEGAL TRANSCRIPTION (3CR)
Prerequisite: OST 125 or equivalent
This course is a systematic approach to learning legal vocabulary. Upon successful completion of this course, the student should be able to spell, define, pronounce and use in proper context 750 legal terms. The student should also be able to learn to use legal reference sources and transcribe legal documents from shorthand notes or dictation using proper formats and typing rules. 3 hrs./wk. Spring semester only.

OST 165
MEDICAL TRANSCRIPTION (3CR)
Prerequisites: LC 130 and OST 125 or equivalent
Upon successful completion of this course, the student should be able to spell, define, pronounce and use in proper context 1,000 medical terms. Also, the student should be able to use medical reference books and transcribe medical case studies using proper formats and typing rules. 3 hrs./wk. Spring semester only.

OST 170
MEDICAL CODING AND BILLING (3CR)
Prerequisite: LC 130
This course is designed to give the student an overview of the medical insurance billing process. This includes becoming acquainted with ICD-9, HCPCS and CPT procedural coding systems as well as Blue Cross/Blue Shield, Medicaid, Medicare and Champus/Champva programs. Students will be given hands-on coding advice for optimal insurance reimbursement. 3 hrs. lecture/wk.
Upon successful completion of this course, the student should be able to develop the knowledge, skills, process and understanding of good working relationships in an office environment. The student will also be able to recognize and understand behavior patterns and what work-related events might trigger workplace conflict. Strategies will be developed for dealing with conflict and difficult people. 1 hr. lecture/wk.

OST 180
BUSINESS SPREADSHEET APPLICATIONS (1CR)
Prerequisite: CPCA 110 or extensive experience using Windows-based spreadsheets
Upon successful completion of this course, the student should be able to demonstrate competencies in using Microsoft Excel IntelliSense™ features including AutoSum, AutoCalculate, AutoComplete and AutoFill and use the Function Wizard to create complex formulas. Additionally, a student successfully completing this course should be able to create charts and include graphics in the worksheets and workbooks, create regional sales reports using maps, create and analyze an inventory list, link multiple worksheets and workbooks, create financial forecasts and analyze potential variations in a multitude of situations by using the Scenario, Goal Seek and Solver Functions. 1 hr. lecture/wk.

OST 185
BUSINESS DATABASE APPLICATIONS (1CR)
Prerequisite: CPCA 114 or extensive experience using Windows-based databases
Upon successful completion of this course, the student should be able to demonstrate database development skills by effectively identifying the types of projects that should be developed using a database program rather than a spreadsheet, build tables that can be related to each other in order to eliminate data entry duplication, customize forms and reports, create basic and advance queries and define relational integrity between tables. The student should also be able to create basic and advanced queries with single and multiple tables using Boolean logic, identify and implement methods of troubleshooting and explain ways of getting additional help. 1 hr. lecture/wk.

OST 205
PROFESSIONAL IMAGE DEVELOPMENT (1CR)
Upon successful completion of this course, the student should be able to develop work habits and self-management skills that will affect performance on the job by reducing stress, conflict and miscommunication. 1 hr. lecture/wk.

OST 210
WORKING IN TEAMS (1CR)
Upon successful completion of this course, the student should possess the necessary skills to work in teams. Students should also be able to assess and adjust their perceptions of how they should communicate within a team environment and to assess their own workplace expectations, values and methods of communicating as a basis for understanding how to improve communication with others to achieve a common goal. 1 hr. lecture/wk.

OST 255
WORD PROCESSING APPLICATIONS II (2CR)
Prerequisite: OST 155 or extensive experience using the same software with approval of the program facilitator
Upon successful completion of this course, the student should be able to demonstrate word processing skills using such features as macros, styles, columns, outline and paragraph numbering, table of contents and indexes, graphics and other advanced features of the designated word processing package. Desktop publishing, macros and styles will also be introduced as part of the advanced features of word processing. 2 hrs. lecture-demonstration/wk.

OST 260
DESKTOP PUBLISHING FOR THE OFFICE (3CR)
Prerequisite: OST 155 or the equivalent
Upon successful completion of this course, the student should be able to use desktop publishing skills to produce publications such as fliers, newsletters, brochures, operating manuals, price lists and bulletins. 3 hrs. lecture-demonstration/wk.

OST 265
COMPUTERIZED OFFICE APPLICATIONS (3CR)
Prerequisites: CPCA 110, CPCA 114, OST 255 and OST 130. This capstone course should be taken near the end of the degree or certificate program.
Upon successful completion of this course, the student should be able to use software to complete computerized administrative tasks performed by specialists in today's electronic office. The student will select an administrative, medical or legal specialty. 3 hrs./wk.

OST 270
OFFICE AUTOMATION IMPLEMENTATION (3CR)
Prerequisite(s): This course should be taken near the end of the degree or certificate program.
The student should be able to evaluate and select office system hardware and software and identify appropriate sources of help when necessary. The student should also be able to propose and support desirable changes in office systems to a variety of audiences. 3 hrs. lecture-demonstration/wk.
OST 275
OFFICE INTERNSHIP I (1CR)
Prerequisite: Admission to the Office Systems Technology Program
Upon successful completion of this course, the student should be able to gain work experience in an approved training situation under instructional supervision. The course will provide practical experience in the use of skills acquired in Office Systems Technology courses. 240 hrs. work experience.

Paralegal

PL 121
INTRODUCTION TO LAW (3CR)
Upon successful completion of this course, the student should be able to explain the major substantive and procedural aspects of law. This course is available to students with a general interest in the law, and is required for students seeking admission to the Paralegal program. 3 hrs. lecture/wk.

PL 123
PARALEGAL PROFESSIONAL STUDIES (1CR)
Upon successful completion of this course, the student should be able to explain the legal assistant profession. Topics will include paralegal licensing, certification, education, employment and professional ethics. The course is required for students seeking admission to the Paralegal program. 1 hr. lecture/wk.

PL 131
LEGAL RESEARCH (3CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to demonstrate a systematic method of researching legal questions. Topics covered are issue recognition, fact analysis and primary and secondary resources. Research results will be communicated in written form. 3 hrs. lecture/wk.

PL 132
CIVIL LITIGATION (3CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to explain the Rules of Civil Procedure and the Rule of Evidence as they relate to litigation. The emphasis in the course will be on the role of the legal assistant in a civil litigation practice and will include drafting of pleadings. 3 hrs. lecture/wk.

PL 140
ALTERNATIVE DISPUTE RESOLUTION (3CR)
Prerequisites: Admission to the Paralegal program and PL 132, or division administrator approval
This course examines the various methods utilized by the legal system for dispute resolution and the role of the legal assistant in those methods. The course will concentrate on the major alternatives to litigation, including mediation, arbitration, summary jury trials, mini-trials and the moderated settlement conferences. 3 hrs. lecture/wk.

PL 142
TORTS (3CR)
Prerequisites: Admission to the Paralegal program and PL 132, or division administrator approval
This course examines the major principles of tort law and personal injury litigation. The course will concentrate on the substantive law of negligence, intentional torts and strict liability torts. Elements of prima facie tort claims, types of damages available and defenses to tort claims will be examined. 3 hrs. lecture/wk.

PL 148
CRIMINAL LITIGATION (3CR)
Prerequisite: Admission to the Paralegal program and PL 132, or division administrator approval
The emphasis in this course will be on the role of the paralegal in criminal litigation practice and will include the preparation of documents used in the criminal litigation process. Upon successful completion of this course, the student should be able to explain the objectives, substantive principles and procedural rules of the criminal process. 3 hrs. lecture/wk.

PL 152
REAL ESTATE LAW (3CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to describe common types of real estate transactions and conveyances. The preparation of legal instruments, namely deeds, contracts, leases and mortgages, will be studied. 3 hrs. lecture/wk.

PL 155
SPECIAL TOPICS IN REAL ESTATE (1CR)
Prerequisite: PL 152 or division administrator approval
This course will focus on current developments in real estate law. Topics will include special areas of real estate practice such as zoning, financing, mechanics lien laws and environmental concerns. 1 hr. lecture/wk.
PL 162
FAMILY LAW (3CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to describe the substantive and procedural principles of family law. Topics will include adoption and divorces, as well as child issues of custody, support and visitation. 3 hrs. lecture/wk.

PL 165
SPECIAL TOPICS IN FAMILY LAW (2CR)
Prerequisite: PL 162 or division administrator approval
This course will focus on current developments in family law. Topics will include special areas of family law, such as finance, biological/medical advances and domestic violence. 2 hrs. lecture/wk.

PL 171
LAW OFFICE MANAGEMENT (3CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to describe the operational systems in a law office. Some topics addressed are billing systems, pleadings organization, docket control and law library maintenance. 3 hrs. lecture/wk.

PL 205
LEGAL WRITING (3CR)
Prerequisite: PL 131 or division administrator approval
Upon successful completion of this course, the student should be able to research complex legal problems, communicate the results of this research and other law-related information clearly and effectively, and analyze legal problems using the skills of logic and reasoning. 3 hrs. lecture/wk.

PL 212
BUSINESS ORGANIZATIONS (3CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to describe the various forms of business ownership, including corporations, partnerships and sole proprietorships. The emphasis in the course is on the role of the legal assistant in a business law practice and on the preparation of related documents. 3 hrs. lecture/wk.

PL 220
COMPUTER-ASSISTED LEGAL RESEARCH (2CR)
Prerequisites: PL 131 or division administrator approval
Upon successful completion of this course, the student should develop computer research skills allowing the use of Lexis-Nexis and Westlaw-Dialog databases. By inputting a search request, the student should be able to retrieve relevant cases, statutes or other important documents. Furthermore, the student should be able to use on-line cite checking and Shepardizing in order to guarantee current information by means of legal computer services. 2 hrs. lecture/wk.

PL 223
COMPUTER APPLICATIONS IN THE LAW OFFICE (3CR)
Prerequisites: Admission to the Paralegal program and either DP 124 or CPCA 128 or three hours of CPCA 108 and CPCA 110 and CPCA 114
Upon successful completion of this course, the student should be able to evaluate and use legal software to perform customary law office procedures, including computer litigation support, drafting and editing of specific legal documents, document and file management, time keeping and billing, docket control and forms generation. 3 hrs. lecture/wk.

PL 225
ADVANCED COMPUTER-ASSISTED LEGAL RESEARCH (2CR)
Prerequisite: PL 220 or division administrator approval
This course builds on the foundation of PL 220 Computer-assisted Legal Research. The computer research skills are enhanced by in-depth, hands-on training on Lexis-Nexis and Westlaw-Dialog databases. 2 hrs. lecture/wk.

PL 241
WILLS, TRUSTS AND PROBATE ADMINISTRATION (3CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to draft a will with testamentary powers. The use of trusts, probate procedures, techniques for fact gathering and mastery of estate tax principles are emphasized in the course. 3 hrs. lecture/wk.

PL 245
ELDER LAW (3CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to explain the legal aspects of aging. Topics include financial and estate planning, health care, personal planning and protection, taxation, housing and other legal matters affecting the elderly and people with special legal needs. 3 hrs. lecture/wk.
PL 264
WORKERS’ COMPENSATION (2CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to explain the basic principles of workers’ compensation. Topics include administrative and adjudicative procedures, calculation of benefits and preparation of claims. 2 hrs. lecture/wk.

PL 266
EMPLOYMENT LAW (3CR)
Prerequisites: Admission to the Paralegal program or division administrator approval
This course examines the relationship between employer and employee. Major federal and state employment laws will be examined, including Title VII of the Civil Rights Act of 1964, the Age Discrimination Employment Act and the Americans with Disabilities Act. 3 hrs. lecture/wk.

PL 268
BANKRUPTCY (2CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to explain the purpose and applicability of the Bankruptcy Code. This course will emphasize the role of the legal assistant in a bankruptcy practice. Topics will include bankruptcy court procedures and the preparation of bankruptcy forms and documents. 2 hrs. lecture/wk.

PL 271
LEGAL ETHICS, INTERVIEWING AND INVESTIGATION (3CR)
Prerequisite: PL 132
Corequisite: PL 205 or division administrator approval
Upon successful completion of this course, the student should be able to explain ethical rules and standards governing the legal profession, interview clients and witnesses and perform factual investigation pursuant to legal proceedings. The emphasis will be on recognition of ethical problems commonly encountered by legal assistants, as well as the development of interviewing and investigating skills. 3 hrs. lecture/wk.

PL 275
PARALEGAL INTERNSHIP I (1CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to explain how a law office or legal-related office operates from practical experience. By arrangement.

PL 276
PARALEGAL INTERNSHIP II (1CR)
Prerequisite: Admission to the Paralegal program or division administrator approval
Upon successful completion of this course, the student should be able to explain how a law office or legal-related office operates from practical experience. The student should also be able to successfully draft a job résumé and conduct a job interview. By arrangement.

Philosophy

PHIL 121
INTRODUCTION TO PHILOSOPHY (3CR)
This course is a study of basic issues of philosophy, including the nature of being, methods of acquiring knowledge and man’s moral, social, religious and political values. Emphasis will be on the applications of the study of traditional problems of philosophy to the study of contemporary society. 3 hrs./wk.

PHIL 124
LOGIC AND CRITICAL THINKING (3CR)
This course is an inquiry into techniques of persuasion and the standards for interpretation and assessment that a critical thinker should employ. Argumentative and non-argumentative forms of persuasion are examined, including propaganda, exaggeration, stereotyping, slanted news and common fallacies. In addition, the course offers standards for evidential warrants based on samples, probabilities and casual claims. 3 hrs./wk.

PHIL 138
BUSINESS ETHICS (1CR)
Upon successful completion of this course, the student should be able to analyze and explain classical and contemporary ethical theories by examining case studies of ethical problems in contemporary business. In addition, students should be able to identify methods of ethical analysis and examine their own moral convictions in the context of the theories and cases studied. 1 hr./wk.

PHIL 143
ETHICS (3CR)
This course is a study of historical theories of ethics as well as contemporary perspectives and applications of these theories to specific moral issues. The goal of the course is to help the student better understand contemporary social and moral issues in order to make personal ethical decisions. 3 hrs./wk.
PHIL 154
HISTORY OF ANCIENT PHILOSOPHY (3CR)
This course examines ancient Greek and Roman philosophical thought from its original efforts to understand the fundamental operations of the natural world to concerns about the ways a person can live successfully in nature and society. It provides a comprehensive view of the philosophical foundations of its Western world view. 3 hrs./wk.

PHIL 161
ELEMENTARY SYMBOLIC LOGIC (3CR)
This course is a study of formal logic. The student will be introduced to strategies for symbolizing arguments, propositional logic, truth tables, formal proofs, quantification theory and other tests of formal validity. Attention will also be given to the historical development of formal logic. 3 hrs./wk.

PHIL 176
PHILOSOPHY OF RELIGION (3CR)
This course is an inquiry into the nature of religion, religious thought and religious language. It addresses philosophical topics such as the nature of religious belief, the apparent need of some people for religion, differences between religion and science and between religious and scientific language, the special problems raised by religious language, and changes religion and philosophy of religion have made to accommodate a modern world view. All readings are from traditional and contemporary theological and philosophical sources. 3 hrs./wk.

PHIL 210
HISTORY OF MODERN PHILOSOPHY (3CR)
Prerequisite: PHIL 121 or PHIL 143 or HIST 125 or HIST 126
This course takes a historical approach to the development of modern philosophy, covering the period from the Renaissance up to the 20th century. The course covers the epistemological, metaphysical and relevant axiological issues of the major philosophers and philosophical movements of the period. The course also examines the influence of modern philosophy on contemporary thought. 3 hrs. lecture/wk.

Photography

PHOT 121
FUNDAMENTALS OF PHOTOGRAPHY (3CR)
This course covers basic processes and principles in black-and-white photography. The course treats the theory and practice of photography as essential tools of the visual communicator. Emphasis is on development of competence in the use of photographic equipment and materials. Topics include cameras, light meters, films, developing negatives, printing, filters, chemicals and presentation. Students must provide their own cameras with adjustable focus, shutter speeds and aperture. 3 hrs. lecture, 3 hrs. lab-demonstration/wk.

PHOT 122
FINE ART PHOTOGRAPHY (3CR)
Prerequisite: PHOT 121
An advanced course in black-and-white photography, Fine Art Photography is a continuation of Fundamentals of Photography topics and content. Emphasis will be on the development of professional standards of photographic technique and image quality and the advancement of students' abilities to think photographically. A working knowledge of camera and darkroom techniques is assumed. The course is primarily intended to advance the abilities of students interested in photography as a means of self-expression. 6 hrs./wk.

PHOT 123
COMMERCIAL PHOTOGRAPHY (3CR)
Prerequisite: PHOT 121
This advanced course treats the theory and practice of commercial photography. It is intended to satisfy requirements for students seeking commercial art degrees as well as serve as an introduction for prospective commercial photographers. 6 hrs./wk.

PHOT 125
PHOTOJOURNALISM (3CR)
Prerequisite: PHOT 121
This course is an introduction to the theory and practice of photojournalism. The student will become familiar with the issues and problems posed to the working photojournalist and will learn the techniques and methods photojournalists use to disseminate information. The course includes a practicum in which the students will observe and practice in professional news organizations. 3 hrs./wk.
PHOT 127
COLOR PHOTOGRAPHY (3CR)
Prerequisite: PHOT 121
This course is a practical and theoretical treatment of the materials, equipment and processes of color photography. Camera and darkroom techniques and controls necessary to produce effective and expressive color photographic images will be emphasized. 6 hrs. lecture, studio/wk.

PHOT 140
HISTORY OF PHOTOGRAPHY (3CR)
In this survey of the history of photography from the 1830s through today, the technology and aesthetics of photography will be studied and related to art, culture and ideas. 3 hrs./wk.

PHOT 141
ISSUES IN CONTEMPORARY PHOTOGRAPHY (3CR)
Current photography will be surveyed along with important contemporary photographers, new color photography, recent criticism, and photography's relation to art. Photography will be viewed in relation to important aspects of modern culture and thought. 3 hrs./wk.

Physical Education
(Refer to Health/Physical Education and Recreation [HPER], page 191.)

Physical Science
(Also see Geoscience, page 187.)

PSCI 120
PHYSICAL SCIENCE (4CR)
This is a study of the fundamentals of physics, chemistry, astronomy and geology. Topics will include energy, electricity, magnetism, modern physics and chemical bonding. It includes audiovisual-tutorial, computer-tutorial and other multimedia aids. This course is intended for nonscience majors. 3 hrs. lecture, 3 hrs. lab/wk.
The student will learn anatomy and function of the nervous system, as well as correlation of clinical problems with the pathology of the nervous system. 2 hrs/wk.

**KPT 155**
**REHABILITATION (4CR)**
Prerequisite: KPT 160 and KPT 162 with a minimum grade of “C”
The student will be introduced to the philosophy underlying rehabilitation theory and principles of treatment involved in normal and abnormal ambulation and mobility. Attention will be given to application of external supports and assistive devices and teaching activities of daily living with attention to description, demonstration and practice. Field trips are required. 2 hrs. lecture, 5 hrs. lab/wk.

**KPT 158**
**THERAPEUTIC EXERCISE (4CR)**
Prerequisite: KPT 160 and KPT 162 with a minimum grade of “C”
This course will introduce students to the theory and principles of application of therapeutic exercise including patient instruction, manual techniques and equipment commonly used by the physical therapist assistant. Field trips are scheduled during the semester so students may learn various specialized techniques. 2 hrs. lecture, 4 hrs. lab/wk.

**KPT 159**
**ORTHOPEDIC PATHOLOGY (2CR)**
Prerequisite: BIOL 225 and KPT 152 with a minimum grade of “C” and acceptance into the program
Students will study orthopedic pathologies commonly seen in physical therapy practice, diagnosis, signs and symptoms, physiological factors and treatment. 2 hrs/wk.

**KPT 160**
**MEDICAL DISEASES (2CR)**
Prerequisites: KPT 153, KPT 154, KPT 159 and KPT 161 with a minimum grade of “C”
The student will be introduced to medical diseases commonly seen in physical therapy practice, with emphasis on diagnosis, signs and symptoms, physiologic factors and treatment. 2 hrs. lecture/wk.

**KPT 161**
**FUNDAMENTALS OF MODALITIES II (4CR)**
Prerequisites: KPT 152 and BIOL 225 with a minimum grade of “C”
The student will be introduced to the theory and practical application of electrotherapy, patient documentation, patient care skills and selected modalities, including indications and contraindications for use. 2.5 hrs. lecture, 3 hrs. lab/wk.

**KPT 162**
**CLINICAL EXPERIENCE I (2CR)**
Prerequisites: KPT 155, KPT 158, KPT 159, KPT 161 and KPT 102 with a minimum grade of “C”
Completion of preclinical examination with a score of 80 percent or better
Demonstrated competency in preclinical checkouts
Students receive supervised clinical experience in the practical application of techniques of physical therapist assistants in the treatment of patients in a variety of clinical settings. 30 lab hrs.

**KPT 164**
**PEDIATRICS AND GERONTOLOGY (2CR)**
Prerequisites: KPT 160 and KPT 162 with a minimum grade of “C”
The student will be introduced to specialized information related to the treatment of pediatric and older adult populations. 2 hrs. lecture/wk.

**KPT 170**
**CLINICAL EXPERIENCE II (2CR)**
Prerequisites: KPT 160 and KPT 162 with a minimum grade of “C”
Concurrent enrollment in KPT 155, KPT 158, KPT 164 and KPT 171
Students receive supervised clinical experience in the practical application of techniques and procedures covered in all previous KPT courses. Students assist physical therapists and physical therapist assistants in the treatment of patients in a variety of clinical settings. (Clinical 5)

**KPT 171**
**CLINICAL SEMINAR (2CR)**
Prerequisites: KPT 160 and KPT 162 with a minimum grade of “C”
Students will discuss current professional and patient care issues regarding the practice of physical therapy, ethics, departmental organization, reimbursement, safety and research. 2 hrs. lecture/wk.

**KPT 172**
**CLINICAL EXPERIENCE III (8CR)**
Prerequisites: Completion of all other required courses in the KPT program with a minimum grade of “C”
The student will experience practical application of principles learned in all prior course work. Students will rotate internships in selected hospitals and clinic sites throughout the United States under the guidance of a physical therapist. 40 hrs. clinic/wk.
## Physics

**PHYS 125**  
**TECHNICAL PHYSICS I** (4CR)  
*Prerequisite: MATH 133*  
This class is an applied study of the concepts of force, work, rate, resistance and power in mechanical, fluidal, thermal and electrical energy systems. 3 hrs. lecture, 3 hrs. lab/wk.

**PHYS 126**  
**TECHNICAL PHYSICS II** (3CR)  
*Prerequisite: PHYS 125*  
This is a continuation of the applied study of concepts begun in Technical Physics I. Concepts studied will include energy, force transformers, energy converters, and vibrations and waves in mechanical, fluidal, electrical and thermal systems. 2 hrs. lecture, 3 hrs. lab/wk.

**PHYS 130**  
**GENERAL PHYSICS I** (5CR)  
*Prerequisite: MATH 171*  
Selected topics in physics will be introduced: motion, energy, matter, thermodynamics and wave motion. 4 hrs. lecture, 3 hrs. lab/wk.

**PHYS 131**  
**GENERAL PHYSICS II** (5CR)  
*Prerequisite: PHYS 130*  
In this continuation of General Physics I, topics will include electricity, magnetism, light, atomic and nuclear structure, quantum theory, relativity and particle physics. 4 hrs. lecture, 3 hrs. lab/wk.

**PHYS 135**  
**SPECIAL TOPICS IN TECHNICAL PHYSICS I** (1CR)  
*Prerequisite: MATH 133 or MATH 171*  
Corequisite: PHYS 125  
Students in this course will explore momentum as it operates in mechanical, fluidal and electromagnetic systems. Topics begun in PHYS 125 will be explored further. 4 hrs. lecture, 3 hrs. lab/wk.

**PHYS 136**  
**SPECIAL TOPICS IN TECHNICAL PHYSICS II** (2CR)  
*Prerequisites: PHYS 125 and PHYS 135*  
Corequisite: PHYS 126  
Students will explore concepts involved in developing exponential constants for linear systems, radiation and optics. Students will continue studies begun in PHYS 125, PHYS 126 and PHYS 135. 4 hrs. lecture, 3 hrs. lab/wk.

**PHYS 220**  
**ENGINEERING PHYSICS I** (5CR)  
*Corequisite: MATH 242*  
This is an introduction to physics for engineering and science students. Included will be mathematical approaches to the study of vectors, wave motion and thermodynamics. 4 hrs. lecture, 3 hrs. lab/wk.

**PHYS 221**  
**ENGINEERING PHYSICS II** (5CR)  
*Prerequisite: PHYS 220 and MATH 242*  
Electricity and magnetism, light, and topics in modern physics will be addressed. 4 hrs. lecture, 3 hrs. lab/wk.

## Political Science

**POLS 122**  
**POLITICAL SCIENCE** (3CR)  
This course will explore the interaction between political and economic ideas and institutions in the world political arena and examine the role of communism, capitalism, fascism and democracy in political systems. 3 hrs./wk.

**POLS 124**  
**AMERICAN NATIONAL GOVERNMENT** (3CR)  
This course is an examination of the current national policy-making structure and process. Topics of study include basic political and economic concepts, the Constitution, political parties, pressure groups, budget construction and decision-making institutions. 3 hrs./wk.

**POLS 126**  
**STATE AND LOCAL GOVERNMENT** (3CR)  
This course is a survey of organization, theory and practice of state and local governments through examination of executive, legislative, judicial and service functions in the United States in general and Kansas in particular. The course includes guest lectures by elected officials, government personnel and community activists. 3 hrs./wk.

**POLS 132**  
**INTRODUCTION TO COMPARATIVE GOVERNMENT** (3CR)  
This course studies the major world political systems. It will compare and contrast the resolution of key 20th-century political, social and economic issues. 3 hrs./wk.
POLS 135
INTERNATIONAL RELATIONS (3CR)
This course analyzes the conflict and cooperation among nation-states. Students will study contemporary problems and how they relate to power, war, terrorism, diplomacy, international organizations and the future of the nation-state system. 3 hrs./wk.

Psychology

PSYC 121
APPLIED PSYCHOLOGY (3CR)
This course will examine how students can use psychological principles to better understand themselves and others. Topics will include popular approaches to psychological problems; problem-solving techniques; and the student's view of self, values and goals. The course also will show how psychology applies to other disciplines and social institutions. 3 hrs./wk.

PSYC 124
HUMAN POTENTIAL SEMINAR (3CR)
This is a structured group experience designed to increase self-affirmation, self-motivation, self-determination and empathetic regard for others. It will include analysis of achieving satisfaction and success, clarification of personal values, acknowledgment of personal strengths and long-range goal setting. Regular attendance is imperative. 3 hrs./wk.

PSYC 130
INTRODUCTION TO PSYCHOLOGY (3CR)
This is an introduction to general psychology. Topics will include the biological aspects of behavior, the brain, consciousness, sensation, perception, motivation, emotion, stress, maturation and development, learning and memory, normal and abnormal personality, and social psychology. This course is a prerequisite for other courses in psychology. 3 hrs./wk.

PSYC 205
HUMAN SEXUALITY (2CR)
Prerequisites: PSYC 130
This course is designed to provide a balanced and thoughtful account of what is known about sexuality from various perspectives. A broad and representative survey of research is presented in a number of topical areas. Psychobiology, sexual development during childhood and adolescence, sexual interactions, love relationships and behavior, gender issues, sexual orientation, health issues and diseases, and sexual problems and solutions will be studied. Primary emphasis will be placed on the individual and the couple as units of analysis. Class discussions of issues relating to human sexuality will be encouraged. 3 hrs. lecture/wk.

PSYC 210
METHODOLOGY IN THE SOCIAL SCIENCES (3CR)
Prerequisite: PSYC 130 or SOC 122 or ECON 230
This course will involve active participation in the application of research strategies to the social and behavioral sciences. A wide range of data collection methods will be studied. Students will be expected to do an independent research project. 3 hrs./wk.

PSYC 215
CHILD DEVELOPMENT (3CR)
Prerequisite: PSYC 130
This course is a comprehensive account of human development from conception through adolescence, integrating genetic, biological, physical and anthropological influences with psychological processes. 3 hrs./wk.

PSYC 218
HUMAN DEVELOPMENT (3CR)
Prerequisite: PSYC 130
This course is a comprehensive account of human psychological and physical development from conception through infancy, childhood, adolescence, adulthood and death. The course integrates genetic, biological, physiological and anthropological influences with the psychological process, and explores determinants of development from both hereditary and environmental perspectives. 3 hrs./wk.

PSYC 220
SOCIAL PSYCHOLOGY (3CR)
Prerequisite: PSYC 130
This class will seek to comprehend the nature and causes of individual behavior in social situations. It will identify those factors that shape our feelings, overt actions and thought in social situations. Topics will include social attitudes and prejudice, conformity, aggression and leadership. 3 hrs./wk.

PSYC 225
EDUCATIONAL PSYCHOLOGY (3CR)
Prerequisite: PSYC 130
The psychology of learning-teaching situations will be addressed. A broad covered will include behavior, skills, memory, generalization of learning, assessment and measurement of learning, and intelligence. A practicum in a structured setting will be required. 3 hrs./wk.
PSYC 230
PERSONALITY THEORY (3CR)
Prerequisite: PSYC 130
Three general viewpoints or paradigms in psychology will be studied with emphasis on each system's contribution to understanding human personality and its contribution to our response to everyday problems. 3 hrs./wk.

PSYC 235
TRANSPERSONAL PSYCHOLOGY (3CR)
Prerequisite: PSYC 130
Human potential and capacity beyond the usual state of consciousness will be explored in this class. Students will consider assumptions, consciousness, mystical experiences, spirit, interpersonal encounters, extrasensory phenomena, ultimate values and eternal meanings. 3 hrs./wk.

PSYC 250
HEALTH PSYCHOLOGY (3CR)
Prerequisite: PSYC 130
This course is intended to acquaint students with content, methods and theory regarding the interplay between psychological and biological determinants of health and illness, and to examine how these factors relate to students' own health status and that of others. The course will focus on the application of psychological methods and principles to the maintenance of health, prevention of disease and treatment of illness and to rehabilitation and recovery from impaired health, following an interdisciplinary approach to content and instruction. 3 hrs. lecture/wk.

Radiologic Technology

KRAD 160
INTRODUCTION TO RADIOLOGIC TECHNOLOGY (4CR)
Prerequisite: Admission to the program
Students will receive an orientation to the program and clinical responsibilities, with emphasis on body mechanics of patient transport, methods of radiation protection and types of radiographic equipment. Clinical observation is also included. 5 hrs./wk.

KRAD 162
IMAGE PROCESSING (2CR)
Prerequisite: Admission to the program and KRAD 173 with a minimum grade of "C"
This course is intended for the student who is enrolled in the study of radiologic technology. The course content is intended to prepare the student for the processing of radiographs. 2.5 hrs./wk.

KRAD 165
PATIENT CARE (2CR)
Prerequisite: KRAD 160
This is the study of patient care and the skills required for patient care in the procedures of radiology. 2 hrs./wk.

KRAD 170
RADIOLOGIC BIOLOGY/PROTECTION (3CR)
Prerequisite: KRAD 160 with a minimum grade of “C”
Radiation biology, radiation protection and monitoring, professional attitudes and ethics will be among the topics covered. 3 hrs./wk.

KRAD 171
RADIOGRAPHIC EXPOSURES I (3CR)
Prerequisite: KRAD 170
Radiographic image formation and the factors affecting or controlling it will be examined. Students will conduct related experiments. 3.5 hrs./wk.

KRAD 172
RADIOGRAPHIC POSITIONING I (3CR)
Prerequisite: Admission to the program and concurrent enrollment in KRAD 173
This is a study of anatomy and positioning for the abdomen, chest, upper and lower extremities, upper and lower gastrointestinal track, gall bladder/biliary track and kidneys. 3.5 hrs./wk.

KRAD 173
CLINICAL TRAINING I (3CR)
Prerequisites: Admission to the program and concurrent enrollment in KRAD 172
This class will offer training in basic radiographic procedures and related tasks that correlate with KRAD 172 course content. Training is under the supervision of a radiologic technologist. 16 hrs. clinic/wk.

KRAD 174
RADIOGRAPHIC EXPOSURES II (3CR)
Prerequisites: KRAD 178 with a minimum grade of “C”
Topics will include analysis and quality control measures used for image-producing equipment including tests and calibration requirements. Computer-assisted image production will be studied in detail including the technology of computer-assisted tomography (C.A.T.) and magnetic resonance imaging (M.R.I.) scanners. 3.5 hrs./wk.
KRAD 175
CLINICAL TRAINING II (4CR)
Prerequisites: KRAD 172 and KRAD 173 with a minimum grade of “C”
Corequisite: KRAD 176
This training will focus on the upper and lower extremities, cervical, thoracic and lumbar vertebrae, ribs, sternum, skull and mammographic examinations. The student must be able to perform eight additional unassisted examinations by the end of the term. 26 hrs. clinic/wk.

KRAD 176
RADIOGRAPHIC POSITIONING II (3CR)
Prerequisite: KRAD 172 and KRAD 173 with a minimum grade of “C”
Corequisite: KRAD 175
This class will cover anatomy and positioning related to the upper and lower extremities, the vertebral column and thorax and will include mammography. 3.5 hrs./wk.

KRAD 178
CLINICAL TRAINING III (4CR)
Prerequisites: KRAD 175 and KRAD 176 with a minimum grade of “C”
Students will continue to perform examinations they have previously proven competent in. Direct supervision and instruction will be provided until competence is attained for a minimum of three additional examinations not previously learned. Students will complete 10 evening shifts during the summer session. Average 19 hrs./wk.

KRAD 278
IMAGING MODALITIES AND PATHOLOGY (3CR)
Prerequisites: KRAD 279 and KRAD 280 with a minimum grade of “C”
This course will study the disease processes of all organ systems, with an emphasis on pathology visualized on radiographs or through other image-producing modalities such as C.A.T. scans or ultrasound exams. 3 hrs./wk.

KRAD 279
RADIOGRAPHIC POSITIONING III (2CR)
Prerequisites: KRAD 175 and KRAD 176 with a minimum grade of “C” and concurrent enrollment in KRAD 280
This course will concentrate on image evaluation for every radiographic examination of the human anatomy. 2 hrs./wk.

KRAD 280
CLINICAL TRAINING IV (4CR)
Prerequisite: KRAD 178 with a minimum grade of “C”
Corequisite: KRAD 285
Training opportunities in portable radiography, emergency room techniques and supervised fluoroscopy will be provided. By the end of the term, students will be expected to perform with limited supervision all the exams they have previously shown competence in as well as new exams. 29 hrs./wk.

KRAD 281
RADIATION PHYSICS (3CR)
Prerequisites: KRAD 178 with a minimum grade of “C”
Students will apply the principles of physics to the study of X-ray equipment and other diagnostic imaging devices used in the X-ray department. 3.5 hrs./wk.

KRAD 282
CLINICAL TRAINING V (4CR)
Prerequisites: KRAD 280 and KRAD 285, each with a minimum grade of “C”
Students will perform patient examinations in a clinical setting with the supervision of a radiologic technologist. 36 hrs./wk.

KRAD 283
FINAL SEMINAR (2CR)
Prerequisites: KRAD 280, KRAD 281 and KRAD 285, each with a minimum grade of “C”
Students will prepare for the National Registry examination by using tests and materials designed to simulate ARRT examinations. Completion of this course and all radiologic technology courses with a “C” or better is required for qualification for the National Registry exam. 3 hrs./wk.

KRAD 285
SPECIAL PROCEDURES (2CR)
Prerequisites: KRAD 178 with a minimum grade of “C”
This course will cover anatomy, positioning, equipment and special tasks related to the circulatory, nervous and lymphatic systems. The role of the technologist will be stressed. 2 hrs./wk.

KRAD 289
MAMMOGRAPHY (3CR)
Prerequisite: Current enrollment in second year of the program or ARRT radiographer in good standing
This course will cover the principles of mammography, with practical application under the supervision of a radiologic technologist. 2 hrs. lecture, 8 hrs. clinic/wk.
Railroad Operations

RRT 120
HISTORY OF RAILROADING (3CR)
This course covers the history and traditions of railroading and the industry's role in North American economic development. Upon successful completion of this course, students should be able to list and explain the significance of major events in North American railroading. 3 hrs. lecture/wk.

RRT 121
RAILROAD TECHNICAL CAREERS (3CR)
This course includes information about technical careers in railroading, enabling students to choose suitable career paths. This course includes field trips that will demonstrate the relationship among technical work groups in day-to-day railroad operations. Upon successful completion of this course, students should be able to describe basic technical job functions, requirements and characteristics. 3 hrs. lecture/wk.

RRT 150
RAILROAD OPERATIONS (3CR)
This course includes information about the industry, its major assets, structure and typical operations. Upon successful completion of this course, students should be able to define the current North American railroad industry characteristics, basic operations, components and processes, and industry structure and administrative processes. 3 hrs. lecture/wk.

RRT 165
RAILROAD SAFETY, QUALITY AND ENVIRONMENT (3CR)
This course covers the importance of safety, quality, personal health and environmental awareness to the railroad industry and emphasizes the basic tools and techniques for improving these conditions on the job. Upon successful completion of this course, students should be able to define and explain the needs for improved safety, quality, health and environmental awareness; describe their basic principles; explain the elements of successful programs; and apply these elements to typical tasks on the job. 3 hrs. lecture/wk.

RRTC 123
INTRODUCTION TO CONDUCTOR SERVICE (4CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, conductor option
Upon successful completion of this course, the student should be able to describe railroad organization and general operations, policies and practices to ensure railroad safety and the basic responsibilities of conductors. 5 hrs. lecture, demonstration/wk.

RRTC 175
CONDUCTOR MECHANICAL OPERATIONS (2CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, conductor option, and successful completion of RRTC 123 with a grade of “C” or better
This course covers mechanical operations that relate to conductor service. This is the second course in the conductor option of the Railroad Operations degree program. Upon successful completion of this course, the student should be able to describe the importance and application of freight care mechanical policies and practices to ensure safe railroad operations. 2.5 hrs. lecture/wk.

RRTC 261
CONDUCTOR SERVICE (2CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, conductor option, and successful completion of RRTC 175 with a grade of “C” or better
Upon successful completion of this course, the student should be able to describe and apply railroad organization and general operations, policies and practices to ensure railroad safety and the basic responsibilities of conductors. This course includes safety and the general rules with which conductors must comply and teaches the techniques and administrative procedures conductors use on the job to perform safely and effectively. 2.5 hrs. lecture/wk.

RRTC 263
GENERAL CODE OF OPERATING RULES (4CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, conductor option, and successful completion of RRTC 261 with a grade of “C” or better
This is the fourth course in the conductor option for the Railroad Operations degree program. Conductors must maintain a thorough understanding of the General Code of Operating Rules (GCOR). This course provides an in-depth study of the GCOR. Upon successful completion of this course, the student should be able to demonstrate abilities to apply the GCOR to safe and efficient train movement and operations. 5 hrs. lecture/wk.

RRTC 265
CONDUCTOR FIELD APPLICATION (9CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, conductor option, and successful completion of RRTC 263 with a grade of “C” or better
Upon successful completion of this course, the student will have observed actual operations and be able to apply skills learned in classroom-based instruction to those operations. The student will observe and perform operations under the supervision of experienced conductors.
conductor mentors in actual field locations. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

RRTD 122
INTRODUCTION TO RAILROAD DISPATCHING (2CR)
Prerequisite: Admission to the JCCC's Railroad Operations program, dispatcher option
Upon successful completion of this course, the student should be able to describe railroad organization and general operations, policies and practices to ensure railroad safety and basic dispatching functions. 2.5 hrs. lecture/wk.

RRTD 271
APPRENTICE RAILROAD DISPATCHER TRAINING I (6CR)
Prerequisite: Admission to the JCCC's Railroad Operations program, dispatcher option, and successful completion of RRTD 275 with a grade of “C” or better
Upon successful completion of this course, the student should demonstrate abilities to apply the General Code of Operating Rules, Maintenance of Way operating rules and the Train Dispatcher's Manual of policies and practices to safe and effective train movement and maintenance operations. This is an intensive course that prepares students to observe actual dispatching operations. 7.5 hrs. lecture/wk.

RRTD 272
APPRENTICE RAILROAD DISPATCHER TRAINING II (6CR)
Prerequisite: Admission to the JCCC's Railroad Operations program, dispatcher option, and successful completion of RRTD 271 with a grade of “C” or better
Upon successful completion of this course, the student should demonstrate the ability to use centralized traffic control equipment, computerized track warrant control equipment and management information systems that record and report train movement. Students also will identify and resolve traffic conflicts safely and effectively. This is an intensive course in which students observe, practice and demonstrate rail traffic dispatching functions in a laboratory setting. 4.5 hrs. lecture, 3 hrs. lab/wk.

RRTD 275
RAILROAD DISPATCHING FIELD OBSERVATION (3CR)
Prerequisite: Admission to the JCCC's Railroad Operations program, dispatcher option, and RRTD 122 with a grade of “C” or better
Upon successful completion of this course, the student will have observed actual dispatching operations and should be able to identify major job responsibilities. Students will observe operations under the supervision of experienced dispatcher mentors in actual dispatching offices. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

RRTD 276
RAILROAD DISPATCHING FIELD APPLICATION (5CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, dispatcher option, and RRTD 272 with a grade of “C” or better
Upon successful completion of this course, the student should be able to apply skills learned in classroom-based dispatching instruction to those operations. This course is offered for 10 weeks, and students will observe and practice operations under the supervision of experienced dispatcher mentors in actual dispatching offices. Minimum 15 hrs. on-the-job training/wk.

RRTD 276
RAILROAD DISPATCHING FIELD APPLICATION (5CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, dispatcher option, and RRTD 272 with a grade of “C” or better
Upon successful completion of this course, the student should be able to apply skills learned in classroom-based dispatching instruction to those operations. This course is offered for 10 weeks, and students will observe and practice operations under the supervision of experienced dispatcher mentors in actual dispatching offices. Minimum 15 hrs. on-the-job training/wk.

RRTM 124
ORIENTATION TO THE RAILROAD MECHANICAL CRAFT (2CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, mechanical option
This course is designed to familiarize the student with work in railroad mechanical crafts. Upon successful completion of the course, students should be able to describe apprenticeship program structures, benefits, organization goals, basic safety and quality principles and other aspects of mechanical craft work. 2.5 hrs. lecture/wk.

RRTM 170
RAILROAD MECHANICAL SAFETY AND HEALTH (2CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, mechanical option and RRTM 124 with a grade of “C” or better
This course is designed to teach the principles and policies governing railroad safety and health. Upon successful completion of this course, the student should be able to describe safety and health rules and policies, including applying a team process to improving safety and health, use and care of personal protective equipment, back injury prevention, hear conservation. Students will be qualified to perform first aid and CPR and will be able to conduct a job safety analysis. 2.5 hrs. lecture/wk.

RRTM 251
LOCOMOTIVE DIESEL ENGINE FUNDAMENTALS (2CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, mechanical option and completion of RRTM 124 with a grade of “C” or better
This course covers the principles of diesel engine operation. Upon successful completion of this course, students should be able to identify two-cycle and four-cycle diesel engine parts and describe how diesel engine lubricating, cooling and fuel systems operate. 1.5 hrs. lecture, 1 hr. lab/wk.
RRTM 253
FREIGHT CAR FUNDAMENTALS (2CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, mechanical option and completion of RRTM 124 and RRTM 170 with a grade of “C” or better
This course covers the basic types and purpose of railroad freight cars. Upon successful completion of this course, students should be able to identify five types of railroad freight cars, explain their functions, describe their basic construction and explain purposes and references for AAR rules and regulations governing freight cars. 1.5 hrs. lecture, 1 hr. lab/wk.

RRTM 254
BASIC LOCOMOTIVE ELECTRICITY AND ELECTRONICS (2CR)
Prerequisite: Admission to the JCCC’s Railroad Operations program, mechanical option and completion of RRTM 124 and RRTM 170 with a grade of “C” or better
This course covers the theory and operation of electrical and electronic circuitry on board modern locomotives and complements EMD and GE electrical systems classes. Upon successful completion of this course, students should be able to describe the theory and purpose of the processes and operation of locomotive electrical system components and maintenance techniques. 1.5 hrs. lecture, 1 hr. lab/wk.

Railroad Operations
Industrial Technology

RRIT 122
ELEMENTS OF WELDING (3CR)
Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student should be able to cut and weld using oxy-fuel (OFW, OFC) and shielded metal arc welding (SMAW). The OFW portion will cover puddling with and without filler metal; OFC will cover straight line cutting, beveling, piercing and gouging. The SMAW portion will cover flat position and will be limited to fillet welds. The student should be able to discuss electrical safety in SMAW, handle welding cables properly, understand eye hazards, list safe clothing requirements and discuss environmental safety. This knowledge will be evidenced by achieving the specified score on the unit test. 2 hrs. lecture, 3 hrs. lab/wk.

RRIT 123
BASIC WELDING (3CR)
Prerequisites: RRIT 122 or approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student should be able to use oxy-fuel cutting (OFC), shielded metal arc welding (SMAW) and air carbon arc cutting (AARC). The SMAW portion will cover 1G and will be limited to groove welds. Processes will be limited to flat and horizontal positions of fillet and groove welds. Testing of welds will be inspected according to industrial standards. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 127
WELDING PROCESSES (2CR)
Prerequisites: Approval of the BNSF training director and the JCCC division administrator
Upon successful completion of this course, the student should be able to identify various welding processes used by railroads and industry. Standard shop and maintenance welding processes will be taught and demonstrated. Welds will be tested and inspected according to industry standards. 1 hr. lecture, 1.5 hrs. lab/wk.

RRIT 132
THERMITE WELDING (3CR)
Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student should be able to produce, in a safe manner, high-quality, sound Thermite welds on standard rail and mismatched rail. This course is intended for people who are employed in the railroad industry. This will be specific, in-depth industrial training. Students will be required to make various rail alignments and grind various new and worn rail. The students also should be able to clean a used crucible, assemble a crucible and temper new and used crucibles. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 135
COMPONENT WELDING (3CR)
Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student should be able to identify industrial welding of track components. The course will involve the study of different welding processes, metallurgy and the effects of heat on track components. Demonstrations on actual track components will be given with the lecture. The student will be required to experience all appropriate methods and processes of welding and straight edging rail steel for evaluation. 1 hr. lecture, 4 hrs. lab/wk.
RRIT 137
STRUCTURAL WELDING SMAW (3CR)
Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student will be qualified to weld with SMAW according to AWS D1.5.88 code. All welds will be made in the vertical (3G) and overhead (4G) positions. Passing or failing will be determined by the student's ability to successfully produce welds according to the prescribed standards in AWS D1.5.88. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 138
STRUCTURAL WELDING FCAW (3CR)
Prerequisites: RRIT 137 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student will be qualified to weld with FCAW according to AWS D1.5.88 code. All welding will be made in the vertical (3G) and overhead (4G) positions. Passing or failing will be determined by the student's ability to successfully produce welds according to prescribed standards in AWS D1.5.88. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 139
STRUCTURAL WELDING PIPE (3CR)
Prerequisites: RRIT 137 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student should be qualified to weld on pipe using the SMAW process. All welding will be made in the vertical uphill fixed position. Passing or failing the course will be determined by the student's ability to successfully produce test welds according to standards. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 140
STRUCTURAL QUALITY SMAW (3CR)
Prerequisites: RRIT 127 or approval of BNSF training director and JCCC division administrator
Upon successful completion of this course, the student should be qualified to weld with Shielded Metal Arc (SMAW) and fluxed cored arc welding (FCAW), identify materials, and use equipment related to the processes. The student will weld on mild steel plate in all positions producing both fillet and groove welds with the SMAW process with a U-bend test being performed in selected positions according to industrial standards. The student will also weld in selected positions on mild steel plate with the FCAW process. Selected welding codes and specifications will be used as a reference for this class. The oxy-fuel cutting (OF) will be used to prepare mild steel for welding. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 141
STRUCTURAL QUALITY GMAW (3CR)
Prerequisites: RRIT 127 or approval of BNSF training director and JCCC division administrator
Upon successful completion of this course, the student should be able to explain the theory of gas metal arc (GMAW) and fluxed cored arc welding (FCAW), identify materials, and use equipment related to the processes. The student will weld on mild steel plate in all positions producing both fillet and groove welds with the GMAW process with a U-bend test being performed in selected positions according to industrial standards. The student will also weld in selected positions on mild steel plate with the FCAW process. Selected welding codes and specifications will be used as a reference for this class. The oxy-fuel cutting (OF) will be used to prepare mild steel for welding. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 143
THERMITE WELDING FOR SUPERVISORS (2CR)
Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student should be able to produce, in a safe manner, high-quality sound thermite welds on standard rail and mismatched rail. This course is intended for people who are employed in the railroad industry. This will be specific, in-depth, industrial training. Students will be required to make various rail alignments and grind various new and worn rail. The student should also be able to clean a used crucible, assemble a crucible and temper new and used crucibles. 1.5 hrs. lecture, 1 hr. lab/wk.

RRIT 145
FROG WELDING (3CR)
Prerequisites: RRIT 135 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student should be able to repair by welding a frog casting. Students will be required to grind, straight edge, dye penetrant test and monitor heat input during the repair process. 1 hr. lecture, 4 hrs. lab/wk.
RRIT 147
COMPONENT WELDING FOR SUPERVISORS (2CR)
Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student should be able to identify industrial welding of track components. This course will introduce the student to various types of welding processes, metallurgy and the effects of heat on rail steel and frog castings. Demonstration and experience will be given regarding grinding on rail steel and frog castings, air arc cutting (CAC-A), straight edging, temperature monitoring and dye penetrant on both rail steel and frog castings. 1.5 hrs. lecture, 1 hr. lab/wk.

RRIT 150
SWITCH POINT REPAIR (2CR)
Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student should be able to produce, in a safe manner, high-quality repairs of switch points, switch point protectors, adjacent railends and adjacent and associated rail components. This specific in-depth industrial training course is intended for people who are employed in the railroad industry. Students will be required to complete repairs of components with flux cored arc welding (FCAW), shielded metal arc welding (SMAW) and associated welding processes. Students will also be able to grind components before and after welding to meet current standards. Straight edging according to current standards will be required of all students. 1.5 hrs. lecture, 1 hr. lab/wk.

RRIT 155
RAILROAD WELDING REVIEW (2CR)
Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator
Upon successful completion of this course, the student should be able to identify currently used rail, frogs, switch points, crossings, Conley's and insulated joint plugs. The student should be able to locate operating procedures in an approved manual and apply them to the appropriate component. In addition, the student should be able to describe the proper application of OFC, OFW, heating, SMAW, FCAW, CAC-A and thermite welding procedures. Welds will be tested and inspected according to industry standards. 1.5 hrs. lecture, 1 hr. lab/wk.

Religion
REL 120
EXPLORING WORLD RELIGIONS (3CR)
This course is a comparative study of the world's major religious traditions. The basic beliefs of Hinduism, Buddhism, Confucianism, Taoism, Judaism, Christianity and Islam will be explored. A comparative framework for religious studies will be provided, and essential differences between Eastern and Western religions will be noted. Literary texts and iconographic images will be studied as appropriate. 3 hrs. lecture/wk.

Respiratory Care
RC 125
BEGINNING PRINCIPLES OF RESPIRATORY CARE (4CR)
Prerequisite: Admission to the Respiratory Care program
This is an introduction to respiratory therapy. Students will focus on basic anatomy, physiology, pathophysiology and respiratory therapy techniques needed in the care of pulmonary disease patients. Students will have contact with patients after two to three weeks of introductory material. Lab time also will be scheduled. 6 hrs. lecture, 16 hrs. lab/wk. Summer.

RC 130
RESPIRATORY CARE EQUIPMENT (4CR)
Prerequisite: Admission to the Respiratory Care program
The equipment used in providing basic patient care will be introduced. Topics will include equipment for oxygen therapy, humidity and aerosol therapy and IPPB. Students will gain hands-on experience in the lab before actually treating patients. 6 hrs. lecture, 8 hrs. lab/wk. Summer.

RC 135
CARDIOPULMONARY MEDICINE I (1CR)
Prerequisite: Admission to the Respiratory Care program
This is the first of three courses in which the medical director of the program will lecture. This course will be an introduction to the diagnostic procedures used by the pulmonary physician in evaluating patients with respiratory disease. The class also will provide information on the pathology of disease states the student will encounter. 2 hrs./wk. Summer.
RC 220  
**CLINICAL CARDIOPULMONARY PHYSIOLOGY (2CR)**  
Prerequisite: Successful completion of the summer sequence of respiratory care courses  
This is a comprehensive study of the physiology and pathophysiology of the pulmonary, cardiovascular and renal systems as they relate to respiratory therapy. 2 hrs./wk. Fall.

RC 230  
**CLINIC TOPICS AND PROCEDURES I (4CR)**  
Prerequisite: Successful completion of the summer sequence of respiratory care courses  
In this lecture and lab course, students will focus on basic and emergency care and be introduced to mechanical ventilators and critical care of the respiratory patient. 3 hrs. lecture, 3 hrs. lab/wk. Fall.

RC 231  
**CLINIC TOPICS AND PROCEDURES II (4CR)**  
Prerequisite: Successful completion of the fall sequence of respiratory care courses  
Critical care and more sophisticated aspects of respiratory therapy will be emphasized in this lab/lecture course. Medical ethics and department management will be covered. 3 hrs. lecture, 3 hrs. lab/wk. Spring.

RC 233  
**RESPIRATORY CARE OF CHILDREN (2CR)**  
Prerequisite: RC 230  
The focus will be on the respiratory care of neonatal and pediatric patients with emphasis on the management of cardiopulmonary disease states unique to children. Information will be based on developmental anatomy and physiology, pathology, diagnostic/laboratory procedures, and equipment manipulation in acute, chronic, critical and emergency care settings. 2 hrs./wk. Spring.

RC 235  
**CARDIOPULMONARY MEDICINE II (2CR)**  
Prerequisite: Successful completion of the summer sequence of respiratory care courses  
This is a continuation of the series taught by the program medical director emphasizing disease states of the cardiopulmonary system. Discussion will cover the pathology, diagnosis and treatment of various diseases and the role of the respiratory therapist in the medical management of these patients. 2 hrs./wk. Fall.

RC 236  
**CARDIOPULMONARY MEDICINE III (2CR)**  
Prerequisite: Successful completion of the fall sequence of respiratory care courses  
This is a continuation of the medical director's discussion of pulmonary diseases, their pathology and their treatment. 2 hrs./wk. Spring.

RC 240  
**RESPIRATORY PHARMACOLOGY (2CR)**  
Prerequisite: Successful completion of the summer sequence of respiratory care courses  
This class will present all the pharmacology that respiratory therapists provide. A general study of most of the drugs used in the care of patients with cardiopulmonary problems will be included. Drugs administered during a code blue also will be stressed. 2 hrs./wk. Fall.

RC 245  
**CRTT-RRT CLINIC TOPICS AND PROCEDURES (4CR)**  
Prerequisite: Admission to the Respiratory Care program CRTT to RRT transition process  
This course is a transition course for the certified respiratory therapy technician preparing for the registry respiratory care process. Assessment, monitoring and respiratory management of the adult critical care patient is the primary emphasis. 4 hrs./wk.

RC 271  
**CLINICAL PRACTICE I (4CR)**  
Prerequisite: Successful completion of the summer sequence of respiratory care courses  
In the first eight-week period, students will give basic care to adults and children. In the second eight-week period, they will concentrate on critical care medicine, giving treatments in the intensive care unit. Also during the semester, students will learn to intubate under the guidance of anesthesia personnel, will go on rounds with the program medical director, and will learn to perform arterial punctures. 24 hrs. clinic/wk. Fall.

RC 272  
**CLINICAL PRACTICE II (4CR)**  
Prerequisite: Successful completion of the fall sequence of respiratory care courses  
Two eight-week quarters will emphasize critical care of adults and newborns. Students will participate in rehabilitation, department management, intubations and medical rounds rotations. 24 hrs./wk. Spring.

RC 274  
**CRTT-RRT CLINICAL PRACTICE TRANSITION (4CR)**  
Prerequisites: RC 233 and RC 245  
Students will assess and treat adult, pediatric and neonatal patients with respiratory and/or cardiac-related conditions using the basic respiratory therapy arsenal, as well as the critical care monitoring, mechanical ventilation and airway management techniques required for the more critically ill patient. Students will be exposed to cardiopulmonary diagnostic procedures, pulmonary rehabilitation and home care management of the respiratory patient. 4 hrs./wk.
Sociology

SOC 122
SOCIOLOGY (3CR)
This overview of social life will cover group structure and processes, social interaction and an examination of major institutions. Theories, methods of study and uses of social research will be examined. 3 hrs./wk.

SOC 125
SOCIAL PROBLEMS (3CR)
Selected social problems from crime to racism will be analyzed. The history and development of each problem will be examined from a variety of sociological perspectives, as will possible solutions. 3 hrs./wk.

SOC 131
MARRIAGE AND THE FAMILY (3CR)
This is a sociological examination of marriage and the family as a social institution. It will emphasize changing roles, family formation, socialization, domestic conflict, interaction among family members and marriage partners, and the role of marriage and the family in society. 3 hrs./wk.

SOC 146
SOCIAL WELFARE (3CR)
Social welfare and its relationship to other social systems in America will be introduced. The social, economic and political factors that foster inequality as well as social welfare as a response to social deprivation will be examined. 3 hrs./wk.

SOC 147
SOCIAL WORK AND SOCIAL SERVICES (3CR)
Students will study social work as a profession in this class. Origins, values, skills, fields of service and current issues in social work will be analyzed. 3 hrs./wk.

SOC 152
PERSPECTIVES ON AGING (3CR)
Social aspects of aging will be identified. Areas of special interest will include research themes and demographic trends; aging and its relationship to family, the economy, politics, religion and education; the effect of cultural values on behavior; and the future of the elderly. 3 hrs./wk.

SOC 160
SOCIAL POWER: MOTIVATION AND ACTION (3CR)
This course will concentrate on the socio-psychological aspects of power. Topics will include the development of personality, the role of social class and ideology, the mechanics of domination and subordination, discrimination, economic inequality, powerlessness and the search for community. Basic terminology and theoretical foundations of both sociology and psychology will be at the heart of the course. 3 hrs./wk.

SOC 165
CHINESE SOCIETY: PAST AND PRESENT (3CR)
This self-paced course is an introduction to Chinese society since 1949. The course examines Chinese society and culture in the 20th century and focuses on contemporary developments while tracing the historical roots of Chinese values and institutions. Issues such as socialization, economic development, political change, social organization and conflict are studied.

Speech

SPD 120
INTERPERSONAL COMMUNICATION (3CR)
In this basic speech course, students will study principles of effective communication in one-to-one relationships and in small groups. They will apply these principles in a variety of learning exercises and situations. Individualized talks may be given, but everyday communication will be stressed. 3 hrs./wk.

SPD 121
PUBLIC SPEAKING (3CR)
This fundamental speech course will emphasize speech organization, development of ideas, audience analysis and delivery. Students will deliver informative and persuasive speeches in the impromptu, extemporaneous and manuscript styles. 3 hrs./wk.

SPD 122
GROUP DISCUSSION (3CR)
Students will participate in small groups to study the principles of effective group dynamics and leadership skills and to practice these principles in class. 3 hrs./wk.

SPD 125
PERSONAL COMMUNICATION (3CR)
An integration of interpersonal communication and public speaking, this course will focus on communication theory, listening, self-concept, language and perception. It also will discuss types of speaking including impromptu, informative and persuasive speaking. Emphasis will be on the natural relationship that exists between one-to-one and public communication. 3 hrs./wk.

SPD 128
BUSINESS AND PROFESSIONAL SPEECH (3CR)
Students will improve their verbal communication skills both formally and informally by studying interviewing
techniques, making effective presentations, working in groups, negotiating, studying listening techniques, and recognizing verbal and nonverbal messages. The course is designed for the student presently working in business or planning to pursue a business degree. 3 hrs./wk.

SPD 130 ELEMENTARY DEBATE (3CR)
Theories of argumentation and debate will be introduced. Students will attend two to eight weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

SPD 132 INTERMEDIATE DEBATE I (3CR)
Prerequisite: SPD 130 or the equivalent
This is a continuation of argumentation and debate theories. Students will attend two to eight weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

SPD 180 INTERCULTURAL COMMUNICATIONS (3CR)
This interdisciplinary course will draw on the disciplines of psychology, sociology, anthropology and communications to analyze how communication is influenced by culture. Students will explore the cultural basis of values, perceptions and behavior and learn how this affects communication across cultural lines. Specific topics will include the role of verbal and nonverbal symbols, cues, stereotypes, prejudice and ethnocentrism. Specific cultures will be studied, and role play and simulations will be used. 3 hrs. lecture/wk.

SPD 230 INTERMEDIATE DEBATE II (3CR)
Prerequisite: SPD 132 or the equivalent
Intercollegiate debates will be stressed in this review of argumentation and debate theories. Students will attend two to eight weekend debate tournaments each semester. 3 hrs./wk.

SPD 235 ADVANCED DEBATE (3CR)
Prerequisite: SPD 230 or the equivalent
Students will participate on the senior level in intercollegiate debate, attending two to eight debate tournaments a semester. 3 hrs./wk.

SPD 298 INTERCULTURAL COMMUNICATION:
GREAT BRITAIN AND THE UNITED STATES (3CR)
In this travel-for-credit course, students will visit selected cities in Great Britain where they will compare British and U.S. languages, values and institutions. Offered periodically.

Surgical Technology

KSUR 100 INTRODUCTION TO SURGICAL TECHNOLOGY (2CR)
This course explores the historical development of surgery, health care facilities development and organization, the composition and duties of the surgical team, ethical, legal and moral responsibilities and career obligation of the surgical technologist. Focus is on effective communication skills, accurate medical terminology and the impact of transcultural psychosocial outcomes for clients in the surgical setting. 4 hrs./wk.

KSUR 102 FUNDAMENTALS OF OPERATING ROOM TECHNIQUE (11 CR)
This course explores the application of the principles of medical and surgical asepsis, preparation and maintenance of the sterile field, identification of instruments, sutures, supplies and equipment. Emphasis is on basic skills of the surgical technologist in preparation for and during the operative procedure. The student will practice maintaining a safe client environment and explore the responsibilities and duties of surgery personnel. Common surgical techniques and procedures are introduced. 21 hrs. (clinical 15 hrs.)/wk.

KSUR 104 BODY STRUCTURE AND FUNCTION (2 CR)
Prerequisite: Students must meet entrance standards and must be accepted into the program.
This course introduces students to the major structures and function of the human body. Each body system is explored. Laboratory time is used to introduce and reinforce classroom instruction. 2 hrs. lecture, 4 hrs. lab/wk.

KSUR 105 PHARMACOLOGY FOR THE SURGICAL TECHNOLOGIST (2 CR)
This course explores the development of knowledge and understanding of the metric, apothecary, household and linear systems of measurement. The conversion of equivalents from one system to another is explored. Focus is on terminology associated with pharmacology and procedures for safe and accurate handling of medications and solutions. Included is discussion of principles of anesthesia administration, postanesthesia client care and care in emergencies. 3 hrs. lecture, 1 hr. lab/wk.
KSUR 106
ASEPTIC TECHNIQUE FOR THE SURGICAL TECHNOLOGIST (2 CR)
This course studies the structure, function and pathogenicity of microorganisms and immune and infectious responses. Emphasis is on principles of sterilization, disinfecting, environmental sanitation and practices that promote optimal healing. 4 hrs. lecture/wk.

KSUR 109
PRINCIPLES OF SURGICAL PROCEDURES I (8 CR)
Prerequisite: Successful completion of all previously attempted courses of the program
This course focuses on the diagnosis, pathology and surgical sequence of general surgery, gynecological surgery, genitourinary surgery and laparoscopic surgery. Included is discussion of postoperative care and complications. 16 hrs. (clinical 12 hrs.)/wk.

KSUR 110
PRINCIPLES OF SURGICAL PROCEDURES II (7 CR)
This course focuses on diagnosis, pathology and surgical sequence of ophthalmological, ENT, head and neck, plastic/reconstructive and orthopedic surgeries. Included is a discussion of postoperative care and complications. 15 hrs. (clinical 12 hrs.)/wk.

KSUR 111
CAREER DEVELOPMENT FOR THE SURGICAL TECHNOLOGIST (2 CR)
This course focuses on résumé development, interviewing techniques and introduction to the current health care market. Emphasis is on self-evaluation of professional skills and their potential application to the current health care market. 2 hrs./wk.

KSUR 114
PRINCIPLES OF SURGICAL PROCEDURES III (7 CR)
This course focuses on diagnosis, pathology and surgical sequence with complex surgical specialties: neurosurgery, cardiovascular and peripheral vascular, thoracic, pediatric, geriatric and trauma. Included is discussion of postoperative care and complications. 13 hrs. (clinical 9 hrs.)/wk.

Theater

THEA 120
INTRODUCTION TO THEATER (3CR)
Students will be introduced to a variety of theatrical experiences, read great plays and see live theater presentations. They also will discuss theater practices, dramatic literature and the history of the theater. Includes 12 required shop hours. 3 hrs./wk.

THEA 123
IMPROVISATION FOR THEATER (1CR)
Prerequisite: THEA 130
Theater improvisation will be introduced in this class, which will emphasize creative stage activities not requiring a written script. 1 hr./wk.

THEA 130
ACTING I (3CR)
The fundamentals of acting will be studied in this class. Emphasis will be on discovering and expanding creative potential through exercises in self-awareness, posture, movement, voice and personality projection. Students will complete a minimum of three in-class performances. 3 hrs./wk. plus rehearsals and performances.

THEA 133
TECHNICAL PRACTICUM I (1CR)
Students can gain practical experience in technical theater techniques in this class. 2 hrs. lab/wk.

THEA 134
PERFORMANCE PRACTICUM I (1CR)
This course will enable students to gain practical experience in performance-related aspects of college theater productions. Admission is by audition. 2 hrs. lab/wk.

THEA 135
MAKEUP (1CR)
Students will study and practice applying stage makeup. 1 hr./wk.

THEA 136
BASIC COSTUMING (3CR)
This course is a survey of the theory, techniques and skills used in costume production for the theater and film. A reas of study and practice include basic construction, patterning and cutting; fabrics, design and realization; millinery, craft work and organization. 2 hrs. lecture, 2 hrs. lab/wk.
THEA 140
BASIC STAGECRAFT (3CR)
This course will provide students with stagecraft theory as well as practical experience with stage scenery and current theater technology. 2 hrs. lecture, 2 hrs. lab/wk.

THEA 145
INTRODUCTION TO THEATER DESIGN (3CR)
This lecture and studio class introduces the theory and practice of theater design and the graphics and standards of entertainment technology. Emphasis will be on the processes and practices used in designing for the performing arts. Using course-taught computer and hand-based drawing techniques, the student will begin to create a portfolio of work through in-class projects. 2 hrs. lecture, 2 hrs. lab/wk.

THEA 225
READER'S THEATER (3CR)
Students will combine acting, interpretation and rhetoric as they analyze and perform prose, poetry and dramatic literature and present public performances. 3 hrs./wk. plus rehearsals.

THEA 230
ACTING II (3CR)
Prerequisite: THEA 130
This continuation of Acting I will focus on more in-depth character analysis and development, emphasizing the actor's responsibility in creating the character. 3 hrs./wk. plus rehearsals and performances.

THEA 233
TECHNICAL PRACTICUM II (1CR)
Prerequisite: THEA 133
This class will provide additional practice in technical theater techniques. 4 hrs. lab/wk.

THEA 234
PERFORMANCE PRACTICUM II (1CR)
Prerequisite: THEA 134
This course will enable students to gain further practical experience in the performance-related aspects of college theater productions. Admission is by audition. 2 hrs. lab/wk.

THEA 240
COSTUMING (1CR)
Students will study designing and creating costumes for theatrical productions. 2 hrs./wk.

THEA 298
BACKSTAGE ON BROADWAY (2CR)
In this travel-for-credit course, students will have a week of intensive study in professional New York theaters. The course will involve five one-hour sessions on campus and five full days of study on location in New York City. Sessions on campus will cover such topics as working in professional theaters, American theater history, writing theater criticism and initiating theater research. While in New York, time will be spent in daily class sessions, doing theater research at special performing arts archives, touring professional theater facilities, seeing professional theater productions and visiting with various guest lecturers. Spring.

Travel and Tourism Management

KTT 101
INTRODUCTION TO THE TRAVEL INDUSTRY (3CR)
This survey of all aspects of the travel industry includes domestic and international air travel, cruises, railroads, hotels, tours and vacation planning. 3 hrs. lecture/wk.

KTT 102
DESTINATION GEOGRAPHY (3CR)
Prerequisite: Completion or enrollment in KTT 101
Major travel destinations and how to get there from Kansas City will be studied. Also included will be required documents for travelers, major suppliers and activities and attractions. 3 hrs. lecture/wk.

KTT 103
TRAVEL SALES (3CR)
Prerequisite: KTT 102
Topics in this course include sales techniques with travel reservations, travel customer counseling and cross selling of specific travel products. 3 hrs. lecture/wk.

KTT 104
TRAVEL OPERATIONS (3CR)
Prerequisite: Completion or enrollment in KTT 103
This survey of major activities of travel specialists includes reservations, work flow, communications and automation. 3 hrs. lecture/wk.

KTT 105
COMPUTER RESERVATIONS SYSTEMS (4CR)
Prerequisite: Completion or enrollment in KTT 104
This training on a computer reservation system of a major airline includes codes and inputting data, reservation formats, pricing and ticketing and booking cars and hotel. 3 hrs. lecture, 2 hrs. lab/wk.
KTT 111
DESTINATION SPECIALIST – CARIBBEAN AND MEXICO (3CR)
Designed as an applied geography course for professional
certification for travel agency, cruise line, and airline
employees, this course provides in-depth knowledge of
the geography, climate, cultures, politics, languages and
history of the region. Emphasis will be placed on both
physical and cultural attractions and activities and on
the dynamics of the tourism industry. Students will take
a national certification test to become a destination specialist. This is also a good introduction for people simply planning to visit the region.

KTT 112
DESTINATION SPECIALIST – PACIFIC RIM (3CR)
Designed as an applied destination geography course
leading to professional certification for travel agency,
cruise line, and airline employees, this course provides
in-depth knowledge of the geography, climate, cultures,
politics, languages, and history of the Pacific Rim including Australia, New Zealand, Tahiti and Polynesia, Melanesia, Micronesia, Japan, China, and East Asia.
Emphasis will be placed on both physical and cultural
attractions and activities as well as the dynamics of the
regional tourist industry. Students will take a national
certification test to become a destination specialist.

KTT 113
DESTINATION SPECIALIST – NORTH AMERICA (3CR)
Designed as an applied destination geography course
leading to professional certification for travel agency,
cruise line, and airline employees, this course provides
in-depth knowledge of the geography, climate, cultures,
politics, languages and history of North America, especially
Canada and the United States. Students will take a na-
tional certification test to become a destination specialist.

KTT 114
DESTINATION SPECIALIST – WESTERN EUROPE
(3CR)
Designed as an applied destination geography course
leading to professional certification for travel agency,
cruise line and airline employees, this course provides
in-depth knowledge of the geography, climate, cultures,
politics, languages and history of Western Europe.
Students will take a national certification test to be-
come a destination specialist.

KTT 115
DESTINATION SPECIALIST – CORPORATE TRAVEL
(3CR)
This is an in-depth study of major business travel desti-
nations. Both U.S. and international cities are reviewed.
Topics include the fundamentals of business travel,
needs of business travelers and types of business travel.
Students will work in teams to develop a service plan for
commercial accounts. Each student will take a certifica-
tion test from the Institute of Certified Travel Agents.

KTT 116
DESTINATION SPECIALIST – CORPORATE TRAVEL
(3CR)
This is an in-depth study of major business travel desti-
nations. Both U.S. and international cities are reviewed.
Topics include the fundamentals of business travel,
needs of business travelers and types of business travel.
Students will work in teams to develop a service plan for
commercial accounts. Each student will take a certifica-
tion test from the Institute of Certified Travel Agents.

KTT 117
MANAGEMENT INTERNSHIP I (1CR)
Prerequisite: Approval of the instructor
On-the-job training takes place in a field directly related
to the management program. 15 hrs/wk.

KTT 118
MANAGEMENT INTERNSHIP II (1CR)
Prerequisite: KTT 117 and approval of the instructor
On-the-job training takes place in a field directly related
to the management program. 15 hrs/wk.

KTT 119
MANAGEMENT INTERNSHIP III (1CR)
Prerequisite: KTT 118 and approval of the instructor
On-the-job training takes place in a field directly related
to the management program. 15 hrs/wk.
Veterinary Technology

**KSAH 100**
INTRODUCTION TO VETERINARY TECHNOLOGY (2CR)
This course is an orientation to career opportunities available in veterinary technology. Professional ethics, public relations, and the psychological adjustment of the student to the need for physical treatment and emotional involvement in the care of animals will be discussed. Client relations, vaccination programs, regulatory organizations, receptionist duties, breeds and breed characteristics, neutering, puppy care, diets and hospital management also will be covered. 2 hrs/wk.

**KSAH 101**
PRINCIPLES OF ANIMAL SCIENCE I (3CR)
This course will present the principles of handling, housing and managing animals; basic dietary and sanitation requirements; restraint and handling; administration of medications; bathing; skin scraping TPRs; and basic laboratory tests. The emphasis will be on animal physiology including the cell, muscle, nervous, respiratory and cardiovascular systems. An introduction to anesthesia and general animal nursing also will be included. 2 hrs lecture, 2 hrs lab/wk.

**KSAH 108**
CLINICAL MATH (1CR)
The metric system and conversion of units; apothecaries’ equivalents and vocabulary; preparation of solutions – strengths, procedures and computations; and drug administration – calculating and measuring dosages – will be covered. 1 hr/wk.

**KSAH 110**
PRINCIPLES OF ANIMAL SCIENCE II (3CR)
Prerequisite: KSAH 101
This course is a continuation of Animal Science I. Specimen collection, urinary catheterization, blood collection, basic bandaging and an introduction to surgical preps and radiographic processing will be covered. Emphasis will be on anesthesia and the physiology of the digestive, urinary, endocrine and reproductive systems. 2 hrs lecture, 2 hrs lab/wk.

**KSAH 111**
SANITATION AND ANIMAL CARE (2CR)
This course is an introduction to micro-organisms, sanitation, disinfectants and sterilization. Zoonotic diseases and public health problems; parasitology and vermin control; specimen preservation, instrument identification, cleaning and sterilization; and anesthesia monitoring and patient care will be discussed. 1 hr lecture, 2 hrs lab/wk.

**KSAH 120**
CLINICAL PATHOLOGY TECHNIQUES I (4CR)
This course is an introduction to laboratory procedures including preparation of blood smears, cell identification, fecal analysis and parasitology. Urinalysis and urine sediment evaluation also will be covered. 1 hr lecture, 6 hrs lab/wk.

**KSAH 182**
VETERINARY OFFICE AND COMPUTER SKILLS (3CR)
Prerequisite: Ability to key or type
This specialized training course in veterinary office skills and computer applications will include computerized office management skills, bookkeeping and accounts management, records and supply control, telecommunication and client relation techniques. 2 hrs lecture, 2 hrs lab/wk.

**KSAH 200**
VETERINARY HOSPITAL TECHNOLOGY I (3CR)
Prerequisite: KSAH 101, KSAH 110, KSAH 120
This course will cover the administration of anesthetics and surgical assisting, bandaging, casting, blood transfusions, surgical preparation and postoperative procedures. Parenteral fluid administration, intravenous hook-ups and an introduction to orthopedics, electrocardiography, bone marrow cytology and pharmacology also will be presented. 1 hr lecture, 4 hrs lab/wk.

**KSAH 202**
VETERINARY TECHNOLOGY ANATOMY (5CR)
Prerequisites: KSAH 101, KSAH 110 and KSAH 120
This course will present the basic principles of anatomy using a systemic approach. Physiology as it relates to anatomy and applicable pathology involving the animal body systems will be covered, as will a comparison of the animal species using the cat for dissection. 3 hrs lecture, 4 hrs lab/wk.

**KSAH 203**
LABORATORY ANIMAL TECHNOLOGY (2CR)
Prerequisites: KSAH 101, KSAH 110 and KSAH 120
Restraint and handling of laboratory animals and birds, blood collection, physical examinations, medicating and anesthesia of various species will be covered. 1 hr lecture, 2 hrs lab/wk.

**KSAH 209**
EQUINE MEDICINE AND MANAGEMENT (3CR)
This course will cover breeds and types of horses and their use. Also presented will be conformation as it relates to soundness, horse psychology, fitting, conditioning, first aid and restraint, parasites and their control, farm management for safety, nutrition, mare care, breeding, foaling, hoof soundness, diseases and their prevention. 2 hrs lecture, 2 hrs lab/wk.
KSAH 210
VETERINARY HOSPITAL TECHNOLOGY II (3CR)
Prerequisite: KSAH 200
This course will cover the administration of anesthetics and surgical assisting, bandaging, casting, blood transfusions, surgical preparations and postoperative care. Parenteral fluid administration, emergency treatments, an introduction to ophthalmology and dermatology also will be covered. 1 hr. lecture, 4 hrs. lab/wk.

KSAH 211
CLINICAL PATHOLOGICAL TECHNIQUES II (5CR)
Prerequisite: KSAH 120
Theory and performance in hematology, urinalysis, clinical chemistry and parasitology will be covered. This course is an introduction to immunologic testing, blood coagulation tests and bone marrow evaluation. 2 hrs. lecture, 6 hrs. lab/wk.

KSAH 212
LARGE ANIMAL TECHNOLOGY (4CR)
Prerequisites: KSAH 101 and KSAH 110
Studied will be the techniques necessary to assist the veterinarian in a large animal or mixed practice and in research facilities. Equine, bovine, porcine and ovine medicine and management, including restraint, blood collection, medicating and nursing techniques, will be covered. 2 hrs. lecture, 4 hrs. lab/wk.

KSAH 213
RADIOLOGY AND ELECTRONIC PROCEDURES (2CR)
This course is an intensive study providing practice in radiological techniques, radiographic exposure techniques, film processing, contrast radiography and machine electronics. 1 hr. lecture, 2 hrs. lab/wk.

KSAH 214
VETERINARY TECHNICIAN INTERNSHIP (6CR)
Prerequisite: Two semesters of first-year animal health courses
Supervised intensive clinical study under the direction of a cooperating veterinarian will provide the student with actual work experience. 420 work hours.
Staff
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<th>Name</th>
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<th>Degrees</th>
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<td>Marilyn Gairns</td>
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<td>Sean T. Garvey</td>
<td>Systems Software Programmer</td>
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<tr>
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| Keith Geekie        | Instructor, English                           | B.S., M.A., Murray State University  
|                     |                                               | Ph.D., University of Missouri-Columbia                                    |
| Dennis J. George    | Instructor, Life Science                      | B.S., Rockhurst College  
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M.S., Rensselaer Polytechnic Institute
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<td>Dale Hughes</td>
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<td>William C. Karnaze Jr.</td>
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<td>Raymond Kenny</td>
<td>Hazardous Materials Coordinator</td>
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<td>Kyong-Mal Kim</td>
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<td>Juliet Kincaid</td>
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Ed Kindermann
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<td>R.E. “Budd” Langley</td>
<td>Instructor, Drafting</td>
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<td>Darwin D. Lawyer</td>
<td>Counselor</td>
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<td>J. Ronald Leake</td>
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<td>William Lehman</td>
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<td>Susan Lindahl</td>
<td>Program Director, Testing and Assessment</td>
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<td>Pat Long</td>
<td>Dean, Student Services</td>
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<td>David Loring</td>
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<td>Jim R. Lossing</td>
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<td>Delphine Lovitt</td>
<td>Systems Specialist</td>
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<td>Edward Lovitt</td>
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<td>Deborah Ludwig</td>
<td>Librarian</td>
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<td>Gregory J. Luthi</td>
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<td>Darryl Luton</td>
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<td>Arden MacDowell</td>
<td>Instructor, Interpreter Training</td>
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<td>Gerald Magliano</td>
<td>Instructor, CPCA</td>
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<td>Barbara Mahring</td>
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<td>Lori Mallory</td>
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<td>Doreen Maronde</td>
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<td>Michael Martin</td>
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<td>Craig Maxim</td>
<td>Instructor, Hospitality Management</td>
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<td>Joan E. McCrillis</td>
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<td>Al Mettenburg</td>
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<td>Sam Mirsepasi</td>
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<td>Michelle Moriarty</td>
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<tr>
<th>Name</th>
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<td>Loralee Stevens</td>
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