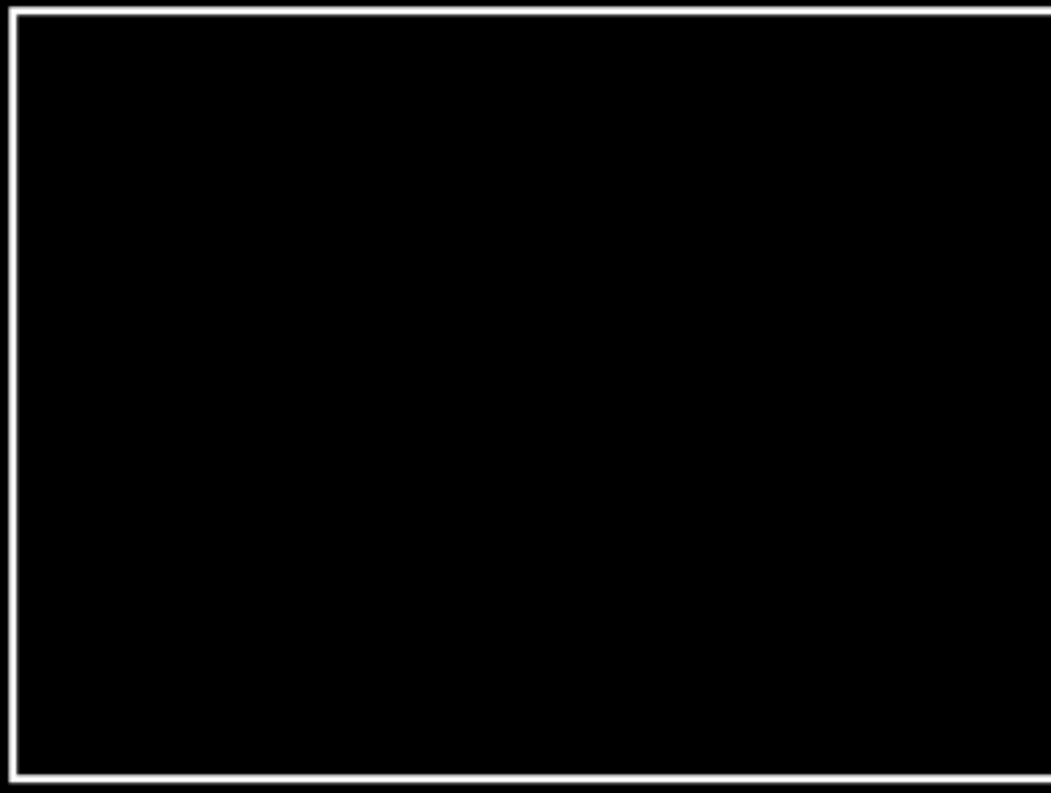
JCCC

Johnson
County
Community
College



Catalog of Courses 1996-1997
and General Information

Johnson County Community College

Johnson County Community College
12345 College Boulevard
Overland Park, Kansas 66210-1299

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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; and
- 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 must exercise prudence in the management of the nonmonetary assets entrusted to it, seeking maximum return on the community's investment of time, trust and intellectual capital;
- 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.

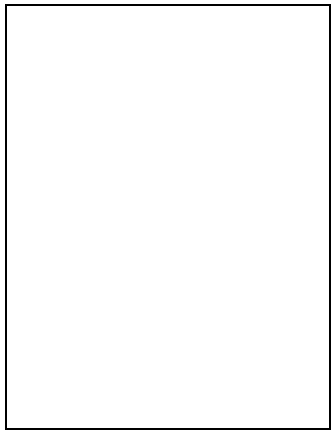
Continuing education/community services/cultural education – lifelong educational programming for personal and professional growth, for cultural and recreational enrichment and for international education leading to an understanding and appreciation of diversity.

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



Dr. Charles J. Carlsen

Dear Friends:

As a student at Johnson County Community College, you're in good company.

According to the latest figures from the National Center for Educational Statistics, fully 56 percent of all adult Americans have, at one time or another, been enrolled in a community college. In this country, community colleges can serve as a first step in a young person's college education, as the point of re-entry to education for adults after a period of work and family commitments, or as a place for workers facing new job challenges to learn new skills.

Community colleges have been the educational choice for many notable Americans. Walt Disney, for example, began his college career at Kansas City, Mo., Junior College, now Metropolitan Community College. Fred Haise, one of the heroes of Apollo 13, earned his associate's degree at Mississippi's Gulf Coast Community College. And Hawaii's young governor, Benjamin Cayetano, earned his associate degree at Los Angeles Harbor College.

This year alone, more than 10 million of us – one out of every 18 adults – will enroll in a community college. At Johnson County Community College, we will enroll more than 15,000 students a semester. About a quarter of all the high school graduates in the county will pass through our doors this year.

That so many people have chosen a community college is not surprising. The commitment of community colleges like JCCC to provide access to every American is real. It is demonstrated in the diversity and flexibility of our programs and services. And it can be found in our affordability.

In a world of seemingly uncontrollable cost increases, community colleges remain remarkably affordable. Today, when a year's study for a freshman at a selective private college can cost $30,000, JCCC can offer virtually the same program, taught by a well-qualified and dedicated faculty, for just $46 a credit hour, allowing students to remain at home, in our community, as productive citizens.

Yet it is the breadth of our programs and services that is the true measure of our commitment to access. At JCCC, we don't demand that you fit some narrow, predetermined mold to secure an education. Our programs and services are tailored to meet the special needs of the young, the older, the physically challenged, those with limited prior schooling, honors students, those dislocated by recent changes in the American economy and countless others with distinctive needs. No institution better reflects our nation's long-standing commitment to provide everyone with the means and opportunity to learn and succeed than does the community college.

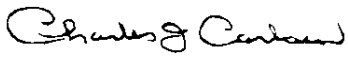
In his new book, *The Pursuit of Wow*, Tom Peters calls community colleges the "backbone of America's all-important lifelong-learning network." Peters fully realizes that in a competitive, technology-driven world, where the workplace is transformed almost daily, continuous learning must become a regular part of all our lives. To fail to adapt or learn new technologies and how to apply them in real-world situations can sentence you to an obsolete job and an uncertain future.

At JCCC, we have the faculty and the technology to provide students of all ages with the instruction needed to succeed in a changing world. We believe in the potential for growth in every individual and that community progress is best achieved through the lifelong learning of each individual.

The community college has become America's college of choice. And for many Johnson Countians, JCCC is the community college of choice.

Thanks for choosing us.

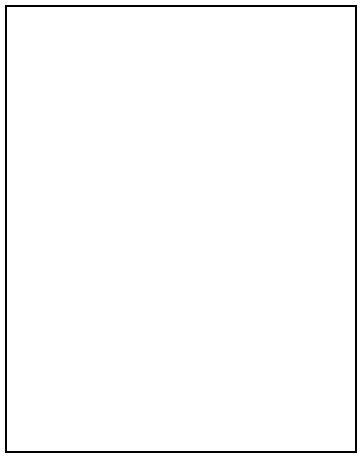
Sincerely,



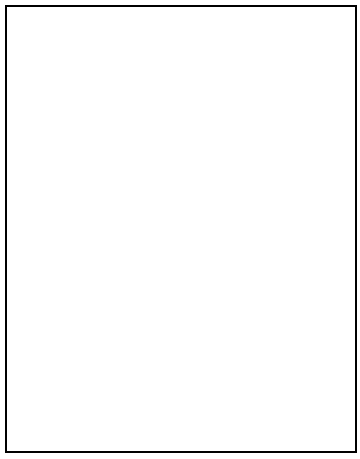
Charles J. Carlsen

President

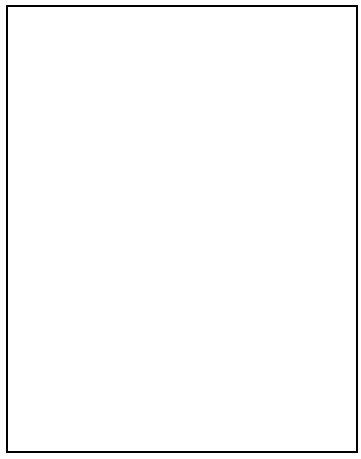
Board of Trustees

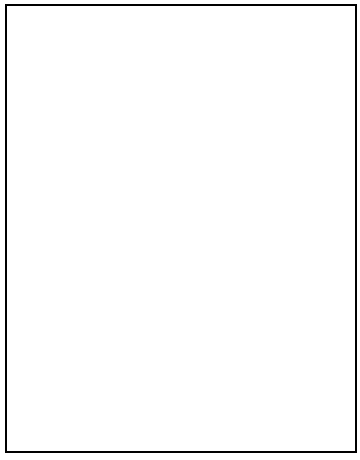


Molly Baumgardner

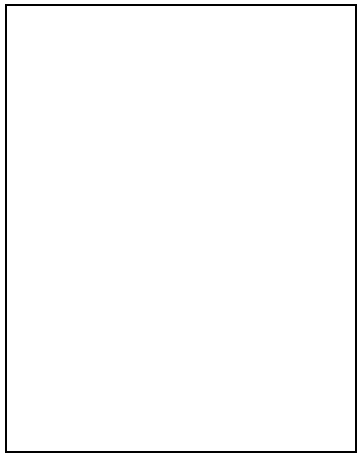


Virginia Krebs

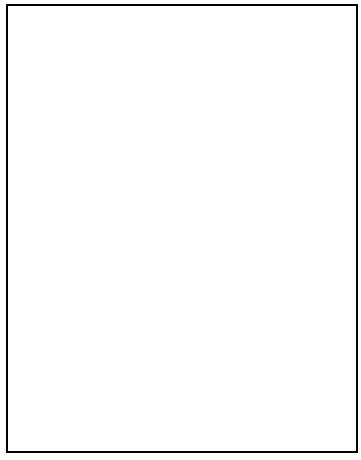




Lynn Mitchelson



Dennis Moore



Elaine Perilla

Academic Calendar

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

April 1	Last day to apply for and be guaranteed consideration for summer and fall graduation.

Summer Session 1996

June 3	First day of 8-week and first 4-week classes.
June 27	Last day of first 4-week classes.
July 1	First day of second 4-week classes.
July 4	Independence Day holiday. Classes not in session. College offices closed.
July 25	Last day of summer session.

Fall Semester 1996

Aug. 19	First day of fall credit classes.
Sept. 2	Labor Day. Classes not in session. College offices closed.
Nov. 1	Last day to apply for spring graduation.
Nov. 15	Last day to drop a 16-week class.
Nov. 27-29	Thanksgiving holiday. Credit classes not in session. College offices closed.
Dec. 13-18	Final exams.
Dec. 19	Last day of fall semester.
Dec. 24-Jan. 1	Winter break. College offices closed.

Note: Saturday credit classes begin Aug. 24 and end Dec. 14. Saturday and Sunday classes will not meet Nov. 30 and Dec. 1.

Spring Semester 1997

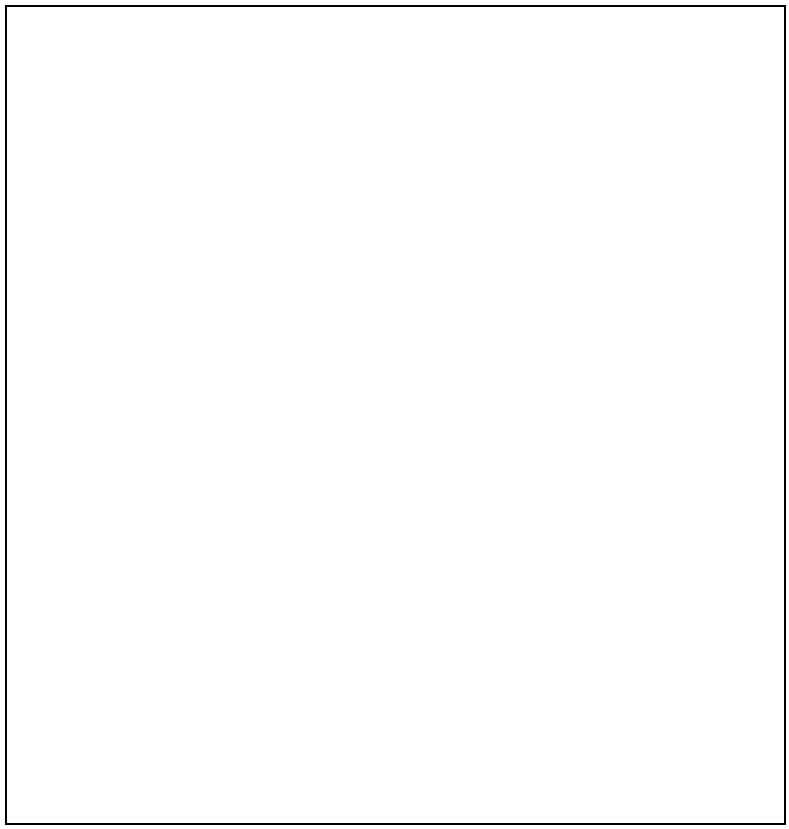
Jan. 13	First day of spring credit classes.
Jan. 20	Martin Luther King's birthday. College offices closed.
March 17-22	Spring break. Credit classes not in session. College offices open.
April 1	Last day to apply for summer and fall graduation.
April 15	Last day to drop a 16-week class.
May 12-15	Final exams.
May 16	Commencement.
May 16	Last day of spring semester.
May 26	Memorial Day holiday. College offices closed.

Note: Saturday credit classes begin Jan. 18 and end May 10. Saturday and Sunday credit classes will not meet March 22 and 23.

Summer Session 1997

June 2	First day of 8-week and first 4-week classes.
June 26	Last day of first 4-week classes.
June 30	First day of second 4-week classes.
July 4	Independence Day holiday. Classes not in session. College offices closed.
July 24	Last day of summer session.

Admission



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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 and Records Office. Application forms are available from the Admissions and Records Office or in the credit class schedule. All new and readmitted students must complete a new application and pay the appropriate application fee. The application fee must be paid at the time you submit the application to the Admissions and Records Office.

   The new student application fee is $10.
2. Have official copies of your transcripts sent to the Admissions and Records 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 should 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.

Notes:

1. 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 and Records Office for details.
2. 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.

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 tuition and fee rates. Affiliate programs include Aviation Maintenance Technology, Grounds and Turf Management, Health Information Technology, Occupational Therapy Assistant, Physical Therapist Assistant, Radiologic 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 at MCCC and being officially accepted into one of the above programs, you must complete and sign the affiliate student contract, available at the JCCC Admissions Office.
3. JCCC will pay your tuition 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.

Reverse Affiliate Programs (Cooperative Programs)

Missouri residents are allowed to enroll in the Hospitality Management, Chef Apprenticeship, Medical Electronics option and Respiratory Care programs offered through Johnson County Community College at resident Missouri tuition and fee 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 into the Hospitality Management/Chef Apprenticeship programs is by approval of the Hospitality Management academic director. Contact the departmental head for more information.
3. Enrollment into the Medical Electronics option is by approval of the Engineering Technologies academic director.

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. 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.
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 and Records 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 English as a Second Language 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. Applications for Educational Credential Evaluators Inc. are available from the Admissions and Records Office. There is a fee for their services.

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.

If you are a foreign student and have completed one or more semesters at another U.S. postsecondary institution and are transferring to JCCC, you may be eligible to apply for limited institutional-based financial aid. However, foreign students should be prepared to pay the entire amount and not rely on financial aid. Other foreign students will not be eligible to apply for institutional-based financial aid until they have satisfactorily completed one semester of credit courses at JCCC.

If you attend JCCC as an international student on an I-20 issued from JCCC, you will be required to purchase medical insurance. You need to budget a minimum of $700 a year to cover this expense.

The Internal Revenue Service now considers all F, J and M visa holders to be engaged in a trade or business in the U.S. Therefore, all aliens on these visas must file a 1040NR tax return even if they have no income from U.S. sources.

Foreign students are assessed the out-of-state tuition rate.

Visiting Foreign Students

Visiting foreign students who hold a valid visa other than an F-1 visa must meet all college admission policies in addition to the following requirements each semester:

1. Complete a foreign student application.
2. Present your current passport and I-94 card to the Admissions Office. Your I-94 card must be valid through the end of the semester in which you wish to enroll. This procedure must be repeated prior to enrollment each semester.
3. Complete the JCCC assessment and enrollment process as described under "Resident Aliens." Course selection may be restricted because of JCCC assessment test results.

Visiting foreign students who hold a valid F-1 visa 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.
3. Complete the JCCC assessment and enrollment process as described under "Resident Alients." Course selection may be restricted because of JCCC assessment test results.

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. Your high school transcript is not required at the time of enrollment. Approval from your high school principal or counselor is necessary. A schedule of College Now classes and registration forms will be available early each semester at participating high schools.
- 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 and a signed Quick Step form at the time of enrollment indicating your high school counselor's or 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 the Johnson County Area Vocational School.

For more information about these college credit class options, see your high school counselor or call JCCC's Admissions and Records Office.

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 selection criteria. In addition, you should meet with a JCCC counselor as early as possible.

Nursing

Maximum number selected	55
Application deadline	Feb. 1
Classes begin	Fall semester

Articulation of Licensed Practical Nurses

Maximum number selected	Based on number of available positions in NURS 221
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	Dec. 2, first selection
Classes begin	Fall semester

Mobile Intensive Care Technician (Paramedic)

Maximum number selected	20
Application deadline	Oct. 15
Classes begin	Spring semester

Paralegal**

Maximum number selected	50
Application deadline	March 1 for fall semester July 1** for fall semester Oct. 1 for spring semester April 1** for summer session

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

Maximum number selected	Based on number of available clinical positions
Application deadline	Oct. 15 for spring semester Feb. 15 for fall semester

*Admission to each of the selective admission programs is highly competitive. Therefore, you should request and submit an application packet as early as possible. This is especially true for the Interpreter Training program since selection decisions are based on the date your file is complete.

**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 Admissions Office of the AVS office. The packet provides the specific selection criteria.

Practical Nursing

Maximum number selected	24
Application deadline	March 1
Classes begin	Fall semester

Cosmetology

Maximum number selected	25
Application deadline	Contact AVS office
Classes begin	Fall, spring

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.

Registration and Costs

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Registration Procedures

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, with the following exceptions:

- If you have earned a two-year or higher degree that included math and English from an accredited post-secondary institution.
- If you plan to enroll in courses offered through contract arrangements between JCCC and an outside agency.
- If you plan to enroll in courses offered through the JCCC Business and Industry Institute.
- If you plan to enroll in courses specially designed for specific populations. (These specific courses will be designated by the division administrator and the dean of Instruction.)

You may be required to participate in all or part of the assessment process, based on the following:

- 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 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.

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; if you are enrolled in nine to 11 credit hours, you are three-quarter-time; if you are enrolled in six to eight credit hours, you are 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 part-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 Instruction and 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 Center 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.

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 two days of 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 Records 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 Nov. 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 and add/drop 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, only changes in sections of the same course or class level changes will be treated as an even exchange for tuition purposes. Either change requires written approval by the division administrator of the academic division under which the class is offered. If you drop a course and add a different course after the expiration of the refund period, you will be required to pay the additional tuition. If you drop the class after one-fourth of the semester or session has passed, you will be given a "W" for the course.

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 your check made payable to the college is returned by a bank for any reason, your records will be placed on hold and you will be charged a returned check fee for each returned check.

If your check is returned by a bank, you will be dropped immediately from classes. You may re-register during the registration dates published in the current class schedule; however, your payment must be made by cash, money

order, cashier's check or credit card. You will be charged a returned check fee.

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.

If you have had checks returned, your name will be placed on a Business Office hold and you will no longer be allowed to make payments by check or to cash checks. After you have been on a Business Office hold for four semesters (including spring, summer and fall), you may appeal in writing to the Business Office to have the hold removed. A letter of approval or denial will be mailed to you. If a bad check is written after the hold is removed, the hold is replaced and the opportunity to appeal again is forfeited. You must then pay in the future with cash, money order, cashier's check or credit card.

The Business Office will notify you by mail if your check is returned by the bank. Payment must be received within 10 days of receipt of the notice. Payment may be made only by cash, money order, cashier's check or credit card.

After 10 working days, if payment has not been received, returned items may be turned over to a collection agency. The collection agency may be allowed 60 days to collect items after which time uncollected items will be returned to the college. All items returned by the collection agency may be turned over to the Johnson County District Attorney.

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 and Records Office
  – within two weeks after the beginning of classes for the 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 Admissions and Records Office 48 hours before the class begins. Exceptions to this policy may be authorized by the dean of Student Services.

Textbook Costs

If you are a full-time student, you can expect to pay approximately $250 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

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 at least half-time in a program that leads to an associate's degree or a certificate, or be in a transfer program that leads to a bachelor's degree at another institution.
- Be a U.S. citizen or a permanent resident of the United States.
- Maintain satisfactory academic progress according to the JCCC student financial aid policies.
- Not be in default on a student loan or owe a repayment on a grant.
- Sign a statement 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 types 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 cannot afford to contribute to education costs, with the family then receiving financial aid to cover the need. This evaluation formula is determined by the United States Congress. Nonneed-based financial aid typically has merit criteria not considering the family's financial strength.

All financial aid applicants must have a current admission application 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 March 15 for those programs for which the 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 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 tax forms, a verification worksheet, financial aid transcripts from all previous colleges attended, and others.

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 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 and the current semester credit schedule will be included with your Offer of Financial Aid. If you have questions, contact the 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 if you are enrolled at least half time. These include scholarships and grants, student employment, loans and benefits.

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 March 15. 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.

- 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 $2,340 during the 1995-96 award year. The grant must be applied toward education-related expenses.

- The Federal Supplemental Educational Opportunity Grant is a government grant that ranges from $250 to $500 an academic year and must be applied toward education-related expenses. SEOG is a need-based program 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. To be considered for federal work study, applicants must indicate interest in campus work by marking the appropriate field on their federal application (FAFSA).

  These positions are on campus. 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 $3,000, but may be less, depending on the student's remaining need. Money is paid by the Financial Aid Office.

  The maximum amount a student can earn is $3,000 an academic year, and is awarded by the Student Financial Aid Office.

  The Career Center assists students in securing federal work study positions and will contact awarded students during the summer. The office is located in 155 GEB, (913) 469-8500, ext. 3870.

Loans

- Federal Perkins Loan, a 5-percent interest rate federal government loan, is processed through JCCC. This need-based loan ranges from $400 to $3,000 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 9 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 their loan is determined by the JCCC 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 9 percent, and repayment 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 10 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.

An 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, 309 COM. 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. 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:

*Credit hours enrolled**	*Eligibility rate*
12 or more semester hours	full-time benefits
9-11 semester hours	3/4-time benefits
6-8 semester hours	1/2-time benefits

*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

Cost per credit hour is established annually by the JCCC board of trustees. Below is an estimated cost amount for a Kansas resident student enrolled in 24 credit hours during the fall and spring semesters (full time) during the 1996-97 year. The other budget amounts are estimates of an average student's expenses living in an apartment. These amounts may vary due to required books and personal lifestyle preferences:

Costs per credit hour (12 credit hours)	1104
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 pro rata 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.

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 related only to cumulative JCCC coursework as appearing on your official academic transcript 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:

Number of successfully completed hours	*Minimum cumulative G.P.A.*
1-30	1.7
31-97	2.0

2. Percentage of Completion

You must successfully complete 66 percent of all credit hours attempted as appearing on your 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 in 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 you do 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 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/Pre-advising
Dental Hygiene Clinic
Food Service
Forensics
Instructional Support Services
- Academic Achievement Center
- English for Speakers of Other Languages
- Flexible Training Lab for Basic Skills
- Learning Strategies Program
- Math Resource Center
- PALS Literacy System
- Project Finish
- Writing Center

Library
Massage Therapy Clinic
Music Organizations
Phi Theta Kappa
Student Access Center
- Disability Support Services
- Deaf and Hard-of-Hearing Support Services
- Notice of Nondiscrimination

Student Activities Program
Student Government
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.

Bookstore

Textbooks, classroom supplies and many miscellaneous items are available for purchase in the JCCC bookstore. Bookstore hours of operation are listed each semester in both the credit and noncredit class schedules.

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 $5.

For more information, contact the Student Life Office in the Commons Building, 469-8500, ext. 3945.

Career Center

The center assists you in exploring career options and conducting job searches. The center's staff provides counseling in career/life planning and job search skills for individuals or groups. A resource center provides information on a walk-in basis about careers, occupations, job search and companies. The center can assist in planning internships and works with employers who wish to recruit on campus. The center is also available to help you find full- or part-time employment. Workshops and individual appointments are available throughout the year.

Cheerleading

In support of our athletic programs, JCCC offers a cheerleading squad consisting of male and female students. The squad participates at all home games and select away games. For tryout information and scholarship requirements, contact the Student Activity Office.

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.

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, handicap, 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 may be obtained from the Student Life Office.

Formation applications for starting a new club or organization may be picked up in the Student Life Office.

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. Cosmetology students, supervised by licensed cosmetologists, provide these services. Contact the Area Vocational School office at 469-8500, ext. 4143, for additional information or an appointment.

Counseling Center/Pre-advising

JCCC's counseling staff provides assistance with academic advising, career counseling or personal problems. Currently enrolled students may meet with a counselor on a walk-in basis. 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 before 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. The Counseling Center also provides:

- Academic advising. At JCCC, academic advising plays a significant role in the total process of educating students. Advising at JCCC is conducted in the Counseling Center and is performed by professional counselors. The counselor serves as a facilitator of communication and a coordinator of learning experiences through course and career planning and academic progress review. The counselor/advisee relationship involves making decisions through which you realize your maximum educational potential by exchanging information with a counselor. The process is ongoing, multifaceted and the responsibility of both you and the counselor.
- Academic advising that is developmental in nature. Developmental academic advising means that a counselor helps you clarify your life and career goals and develop an educational plan to realize those goals.
- Current transfer information. The Counseling Center maintains more than 100 transfer sheets with more than 20 colleges and universities. If you plan to transfer, you should consult a counselor to be sure that courses you enroll in will transfer.
- Help in solving personal problems. A counselor can provide guidance in evaluation of attitudes, goals and values. Community referrals also are available.

Dental Hygiene Clinic

At the Dental Hygiene Clinic, you and your family may have an oral examination and have your teeth cleaned, 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.

Food Service

The cafeteria on the first level of the College Commons serves breakfast, lunch and dinner, plus a variety of snacks and beverages throughout the day, evening and Saturday. A cafeteria on the lower level of the Commons is open from 10 a.m. to 3 p.m. 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. You may work on any of the following:

Basic math review	Reading comprehension
Reading rate	Spelling improvement
Vocabulary development	English review
Algebra preparation	Chemistry preparation
Study skills	Tutor exchange

Supplemental instruction for other courses

English for Speakers of Other Languages

Whether you speak little or no English or speak English well, JCCC offers a course at your level. ESL courses are available to anyone 16 years of age or older who is not otherwise enrolled in school. Class size is limited. ESL staff will test and recommend the course most suitable for you. Courses include ESL level 1 through level 6, conversational English, pronunciation and accent reduction and citizenship preparation. For more information, contact JCCC's Division of Community Services.

Flexible Training Lab for Basic Skills

Our instructors will assist you in a step-by-step process using the latest in individualized computer-assisted instruction in basic skills. You can improve your reading, writing and computational skills and prepare for the GED in JCCC's new Flexible Training Lab. More than 400 individual courses are available. Each course includes a pretest, a tutorial and a post-test. An individualized learning plan is developed to help you meet your unique learning needs. There is no fee for currently enrolled students. For those not enrolled, the cost is $33 a course. For more information, contact JCCC's Division of Community Services.

Learning Strategies Program

This program offers you an opportunity to acquire the thinking and learning skills you need to be a successful learner. The program benefits a variety of students, including successful students who want to improve their learning efficiency and those who feel overwhelmed by the demands of college coursework. The information learned in Learning Strategies courses will improve your performance in the other courses you are taking. 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 trigonometry, *Business Math*, computer-assisted instruction and *Introduction to Algebra*), you use the MRC computers and equipment as an integral part of your learning.

PALS Literacy System

PALS teaches basic reading and writing skills using multimedia technology that combines the entertainment capabilities of television and laser discs with the capabilities of the personal computer. PALS integrates voice, music, still images, video, graphics, touch and text. You learn keyboarding and word processing skills through practice on IBM computers. There is no fee. Sessions are held at the Oak Park Library. For information, contact JCCC's Division of Community Services.

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 sessions are held at Roeland Park Community Center, JCCC's Olathe Center, Oak Park Library, Gardner Library/Multi-service Center, DeSoto Library/Multi-service Center, Spring Hill Library/Multi-service Center and Merriam Community Center. For information, contact JCCC's Division of Community Services.

Writing Center

The Writing Center, a Kansas Excellence in Education program, is designed to help you improve your writing skills through computerized and individualized instruction. You work at your own pace on proofreading, researching, writing sentences, composing paragraphs or other areas that need improvement. An instructor is available to help. You may also get tutor feedback on writing assignments from classes other than *Composition I* and *II*. For more 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 70,000 books, 600 current periodicals, 300,000 documents on microfiche and hundreds of slides, videotapes and audio recordings. The catalog of these materials is maintained and made available to the public through interactive computer terminals.

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 or partial 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 469-3811 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 of PTK 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 PTK, you must be currently enrolled. An invitation to become a provisional 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 with a cumulative grade point average of 3.5 or above 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. 3974, or TDD 469-3885.

Disability Support Services

JCCC students with disabilities have access to a variety of support services including reading, notetaking, tutoring 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 and Hard-of-Hearing Support 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 (interpreting, tutoring, 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 Ed Franklin, 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, specialty and recent releases), travel (trips during winter and spring break, skiing and canoeing), 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 karoake).

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

Student Government

The Student Activities Office also works with the Student Senate, which acts as a sounding board for student issues. The Student Senate is involved in various activities and campus issues and participates with the faculty and administration in formulating appropriate policies. Elections for senate positions are held in early fall, and committee membership is open throughout the year.

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 brochure and a list of community members or students who wish to rent a room in their home are just a few of the services provided.

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 emphasizes news, features, entertainment, sports and campus events. Staff editors and writers are paid salaries and must be enrolled in a minimum of six credit hours each semester. If you are interested in writing for the Ledger, stop by the news office in the lower level of the Commons building.

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 taking a proficiency exam in lieu of normal course completion, contact Testing/Assessment Services for more information.

Theater

JCCC's Theatre Department presents several full-length productions each year. Auditions are open to all students. Also, several programs of experimental one-act plays are produced and directed by students.

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

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 JCCC 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.

Credit Hours Attempted with a Grade of A, B, C, D or F	*Cumulative G.P.A.*
0-30	1.7
More than 30	2.0

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 regular semester (fall or spring) has elapsed.

If you are academically suspended by JCCC, you will not be allowed to re-enter JCCC for at least one regular semester (fall or spring). You will be readmitted on probationary status and must maintain a 2.0 G.P.A. each semester while on probation or raise your JCCC 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 23 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 and Records 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 and Records Office.

Academic Renewal

Academic 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 more than five years ago from all colleges or universities must be dropped.
2. Coursework to be dropped must have been completed at least five years prior to applying for academic renewal.
3. 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.
4. Academic renewal will be granted only once.
5. Academic renewal does not affect or alter your record for financial aid awards or athletic eligibility.
6. All 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.
7. Credits dropped as a result of academic renewal cannot be used to meet course or program prerequisites.
8. You must meet with a counselor before applying for academic renewal to ensure that interpretation of a policy is correct.
9. This policy applies to your records 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.

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.

Advanced Standing Credit

A maximum of 30 hours of credit may be earned through proficiency examinations, military credit,

national standardized tests and assessment of prior learning. Advanced standing credit will not count toward satisfying the 15-credit-hour residency requirement. To apply for advanced standing credit, you must be currently enrolled or have successfully completed 12 credit hours in residence at the college. Advanced standing credit, with the exception of transfer credit, will be included on your permanent record after 12 credit hours have been successfully completed in residence at the college. Exceptions to the application transcripting policy may be made for specific 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.

Assessment of Prior Learning

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 comparable classes and where assessment of prior learning is an option. A fee will be charged for each class.

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, Armed 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 Commission on Accreditation of Service Experience of 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 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.) You shall be accorded the opportunity to independently make up coursework 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. The instructor is not obligated to repeat any lab or other in-class experiences you miss while absent. You should be aware that the quality of your learning experience may suffer as a result of your absence.

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.

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 division office listed for the class, and of a registration form in the Admissions and Records 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 the director of Admissions and Records. All transfer credit will be equated 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 the college.

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 Nov. 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 and Records 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 end of the following 16-week semester. An "I" will be changed to an "F" if you do not successfully complete the work by the end of the semester following the grading period in which the "I" was given. 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 and Records 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 assistant dean of enrollment services and financial aid.

Grade Changes

Grade changes and withdrawal appeals must be submitted to the Admissions and Records Office within one semester of your initial enrollment in the course. Requests for a grade change must be made in writing and approved by the dean of instruction. Withdrawal appeals must be made in writing and submitted to the director of Admissions and Records. Additional information and forms may be obtained in the Admissions and 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.

Grade point averages are figured to the nearest hundredth.

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.

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 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.

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 unlaw-

ful 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 psylocybin. State law classifies amphetamines and methamphetamines 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

Abuse 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.

Alcoholism is the number one drug problem in the United States. Alcoholism 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 may cause psychosis, convulsions, coma and psychological dependency.

Counseling, Treatment or Rehabilitation Programs

Many 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 loss, 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 motorscooters 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 motorscooters.

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.

Student records that have been placed on hold will be kept in the office of the dean of Student Services.

In cases of violation of the handicapped spaces, enforcement may be handled by the Overland Park Police Department. Violators having violations written from the Overland Park Police Department will be summoned to appear in Overland Park Municipal Court. The college will have no involvement in this action.

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. Johnson County Community College violations will be paid at the JCCC Business Office.

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 places inside buildings.

Emergency Parking or Loading

Special permits for emergency parking and loading are available at the switchboard.

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.

Johnson County Community College Campus Safety and Security Annual Report

	1993		1994		1995	
Group A Offenses	Actual Offenses	Arrests	Actual Offenses	Arrests	Actual Offenses	Arrests
Arson	0	0	0	0	1	0
Assault	9	3	4	0	4	0
Burglary	6	0	15	0	17	9
Destruction/Damage/ Vandalism of Property	61	0	22	0	38	2
Drug Offenses	2	1	1	0	0	0
Gambling Offenses	1	0	0	0	0	0
Homicides	0	0	0	0	0	0
Larceny/Theft	110	2	105	0	90	7
Motor Vehicle Theft	2	0	2	0	1	0
Robbery	1	0	0	0	1	0
Sex Offenses, Forcible	0	0	0	0	0	0
Weapon Law Offenses	0	0	1	1	0	0
TOTAL GROUP A OFFENSES	192	6	150	1	152	18
Group B Offenses						
Bad Checks	0	0	0	0	0	0
Curfew/Loitering/Vagrancy	0	0	0	0	0	0
Disorderly Conduct	2	0	12	0	6	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	3	0	5	0	5	0
TOTAL GROUP B OFFENSES	5	0	17	0	11	0

Sexual Harassment of Students

Harassment of any student on the basis of sex shall be considered a violation of college policy.

Conduct involving unwelcome sexual advances, requests for sexual favors or other verbal or physical conduct of a sexual nature shall be considered to constitute sexual harassment when:

1. Submission to such conduct is made either explicitly or implicitly a term or condition of academic success.
2. Submission to or rejection of such conduct by an individual is used as the basis for academic decisions affecting the student.
3. Such conduct has the purpose or effect of unreasonably interfering with a student's performance or creating an intimidating, hostile or offensive environment.

Prohibited is any behavior that represents repeated or unwanted sexual attention or sexual advances when acceptance of such attention or advances is made a condition of reward or penalty.

In determining whether alleged behavior constitutes sexual harassment, JCCC will examine the record as a whole and all aspects of the circumstances, such as the nature of the sexual advances and the context in which the alleged incidents occurred. The president has established and promulgated a procedure for resolving sexual harassment complaints. A copy of these procedures may be obtained from the dean of Student Services.

If you feel you have been the victim of sexual harassment, you should contact the dean of Student Services within 14 calendar days of the occurrence of the incident that gave rise to the complaints. This contact can be in an oral or written form, but you must submit a confidential written and signed statement of the complaints to the dean of Student Services within five calendar days of the initial contact so that the dean can proceed with an investigation into the matter.

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. Any 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 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 action if such action is warranted; or

c. take no action.

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.

11. Smoking – No student shall smoke in any enclosed indoor area of the college.

12. Harassment – No student shall engage in harassment of another student, instructor or staff member of the college. This shall include, but not be limited to, sexual and racial harassment and may include verbal and/or physical actions. Sexual harassment is defined as conduct involving unwelcome sexual advances, requests for sexual favors or other verbal or physical conduct of a sexual nature when:

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

b. 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

c. 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.

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. 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.

   None 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. An appeal to the president will not alter the effective date of any disciplinary action imposed by the appeals board.

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 investigaged 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 1993-1994, the completion or graduation rate for students who entered Johnson County Community College in fall 1991 as first-time, full-time, degree-seeking students was 9.7 percent. Sixteen percent of these students were still attending JCCC in fall 1994.

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
ABE/GED 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.

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. Continuing education courses are taught at the business site. Courses 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 on the JCCC campus. 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 and federal funding to pay for training, applicant testing 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.
- Microcomputer Training and Development. The center trains employees in business applications, using much of today's best-selling software. With clearly written manuals and concentrated hands-on experience, the courses 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.
- Professional Resources. Assistance in defining and solving company training, equipment and manpower problems is available.
- 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.
- Technical Training. Hands-on technical and quality improvement training is available through customized courses, seminars, workshops and teleconferences.
- Workplace Skills Enhancement. Customized, job-specific basic skill training 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.
- Flexible Training Lab. Computerized instruction in basic skills, including reading, writing, computational skills and preparation for the GED, is available in our new all-computerized flexible training lab. More than 400 individual courses are available.
- Career/Life Planning. Career/life planning programs and services can be offered on site to help individuals assess their skills and interests and develop a plan to maximize their potential. One- or two-day workshops are available.

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 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. Ten computerized independent study modules approved for RN, LPN and LMHT relicensure credit in Kansas are offered by appointment in our computer lab.
- 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 and Kansas Bar Associations, Practicing Law Institute, CPCU Society and many others.
- Consortium for Health Education and Consortium for Law Enforcement Education. Reduced-cost continuing education opportunities for employees of member agencies, organizations and institutions.
- Education. Seminars and workshops for teachers at all levels, including early childhood, primary, secondary and postsecondary. The Learning Technologies Institute offers workshops that train educators to integrate computing and information technologies in support of teaching and learning.
- Health and Human Services. Approved programs for registered nurses, licensed practical nurses, social workers, counselors, psychologists, mental health technicians, dietitians, dental hygienists, dentists, adult care home administrators, hospital administrators, physical therapists, occupational therapists, respiratory therapists, massage therapists and other health care professionals.
- 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.
- 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, fire service professionals, emergency medical technicians, mobile intensive care technicians, code enforcement specialists and arson investigators.
- The Real Estate Institute. Prelicense instruction to prepare you to sit for the Kansas real estate salesperson's license examination. 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.
- 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, career development and professional ethics, psychology 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. The center sponsors an annual writers conference 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

Mentally retarded adults are offered a variety of continuing education opportunities through College Learning Experiences for Adults with Retardation, better known as CLEAR. The program focuses on independent living skills and life-enhancing experiences through classes offered on Saturdays and weekday evenings during the semester.

CLEAR also offers programs for parents of mentally retarded individuals and for other interested community members. The Student Access Center at JCCC offers complete information.

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.

Courses are held at convenient locations throughout Johnson County. Class schedules announcing the available courses are mailed to all Johnson County residents three times a year. Courses and activities are offered in these areas:

ABE/GED
Art Appreciation
Arts and Crafts
Aviation
Career Planning
Computers
(home use and SeniorNet)
Cultural Education
Citizens' Forums
Dance
Developmental Education
English as a Second Language
Exercise and Fitness
Food and Wine
Foreign Language
Health and Lifestyles
House and Garden
Literature and Writing
Money Management
Music
Personal Development
Photography
Practical Know-how
Real Estate
Singles
Sign Language
Special Interests
Sports and Recreation
Tours and Travel
Youth Program
Youth Sports Clinics

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 106,000 people attended 336 events, activities and performances in the theaters of JCCC's Cultural Education Center in 1993-94. For the entire Cultural Education Center, approximately 200,000 people attended classes, performances, events and activities during 1993-94.

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's concert with Bill Cosby, plus the annual *SummerFare*
- Girl Scouts of America *Cookie Kick-off*
- American Youth Ballet holiday performances of *Sleeping Beauty* and *Cinderella*
- Overland Park Arts Commission concerts with Dudley Moore and Doc Severinsen
- Barbershop quartet and Sweet Adelines regional competitions
- Overland Park Regional Medical Center presentation by Sid Caesar
- The U.S. Air Force Airlift Command Band
- Kansas City Civic Orchestra concerts
- Theatre League's summer Broadway series
- The UMKC Conservatory of Music
- Miller-Marley Dance Studios
- Kansas City Youth Symphony
- Heart to Heart's *Holidays from the Heartland* concert

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
- The Edward Asner Showcase with actors Edward Asner, Dee Wallace Stone, local professionals and JCCC theater students
- Staff Development in-service meetings
- Campus Activities Board country music concerts with Billy Dean, Trisha Yearwood, Suzy Boggus and the Mavericks
- Community Services' *Red Balloon Series* and *Travelogue Series*, plus school performances for elementary and middle school audiences
- Gallaudet University presentations of I. King Jordan and deaf commedian Kathy Buckley
- Burlington Northern employee development meetings
- The JCCC Theatre Department's four productions each year
- The Humanities Division's *Ruel Joyce 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 Today*, *The Walter Huxman Human Rights Lecture*, *Women in the Media* and *Men in the Media*
- Brown & Gold Club celebrations and shows
- GED graduation, featuring Waylon Jennings

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 Kansas City Series*, with Missouri Repertory Theatre, Lyric Opera, the Kansas City Symphony and State Ballet of Missouri
- *The Stage Left Series*, presenting cutting-edge theater, dance and performance artists
- *The Young Artists Series*, cosponsored by the CEC Circle of Friends donor group, featuring emerging classical artists in recital
- Partnerships with more than 50 community organizations that have produced such projects as *An American Celebration of BloomsDay*, *The Songwriters Showcase* and *The Boulevard Bash*

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.

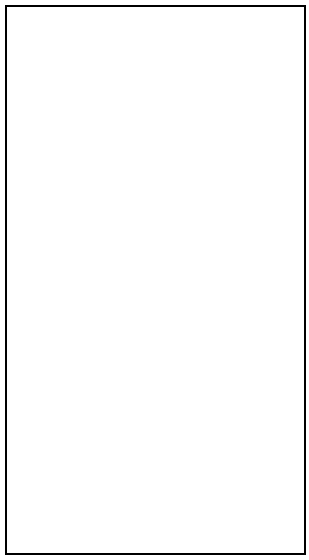
Special Events

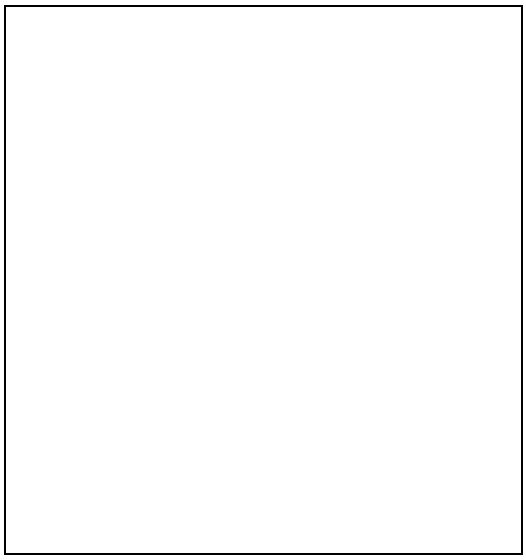
Special events attract thousands of people to the JCCC campus and to locations throughout the county each year. Among the many special events sponsored or cosponsored by the college are public forums, candidate forums, lectures, concerts, conferences, theater, dance, film festivals and a wide range of public service activities such as dental health days, blood drives, job fairs, the annual *Women Today* 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.

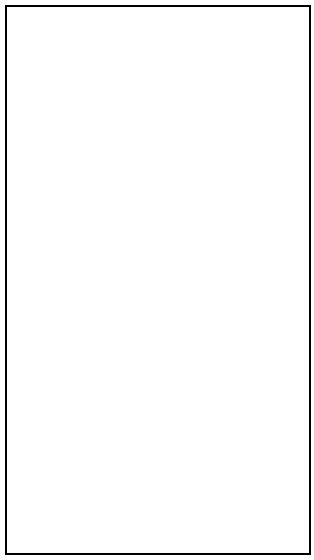
Youth Program

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







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, appeals 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 in previous semesters or terms, you will be invited to participate in commencement exercises. Diplomas are available approximately six weeks after the ceremony. 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 noncomputer 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 and/or Arts.....6 hours
(History is included in this category)
Social Science and/or Economics.....6 hours
Science and Mathematics .....9 hours
(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.

   B. Oral Communication – 3 hours
      SPD 120 Interpersonal Communications ...3
      SPD 121 Public Speaking.....3
      SPD 125 Personal Communication 3
      COM 125 Oral/Written Communications * 6

II. Humanities/Arts – 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

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/Arts

ART	180	Western Art History I	3
ART	182	Western Art History II	3
HUM	122	Introduction to Humanities	3
HUM	133	Comparative Cultures	3
HUM	136	The Human Experience	3
HUM	145	World Humanities I	3
HUM	146	World Humanities II	3
HUM	164	Civilisation	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	165	Philosophy of Current Civilization	3
PHIL	176	Philosophy of Religion	3

III. Social Science/Economics – 6 hours
No more than one course from each of the five areas may count toward the six 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	130	Political Economics: Power in Society	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/or Mathematics – 9 hours
Must include one course from a lab science and one from mathematics.

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	225	Human Physiology	4
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 (Nonlab science)	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
SCI	121	Science: A Dynamic Process	4

C. Mathematics

MATH	165	Finite Math: A Cultural Approach 3
MATH	171	College Algebra 3
MATH	172	Trigonometry.....3
MATH	173	Precalculus.....5
MATH	175	Discrete Math and Its Applications 3
MATH	181	Statistics 3
MATH	231	Calculus I 3
MATH	232	Calculus II 3
MATH	241	AG/Calculus I 5
MATH	242	AG/Calculus II.....5
MATH	243	AG/Calculus III 5
MATH	244	Differential Equations 3

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/Community Health 3
HPER	205	Individual Lifetime Sports 2
HPER	210	Fundamentals of Athletics.....2
HPER	240	Lifetime Fitness 1
HPER	255	Introduction to Physical Education 3

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	**CR**
Composition I	3
Social Science Elective	3
Math/Natural Science Elective	3-5
Humanities Elective	3
General Elective	3
TOTAL CREDIT HOURS	15-17

Second Semester	**CR**
Composition II	3
Oral Communication Elective	3
Math/Natural Science Elective	3-5
Social Science/Humanities Elective	3
General Elective	3
TOTAL CREDIT HOURS	15-17

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
Automotive 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.S.
Communication Design, A.A.S.
Data Processing, A.A.S.
  Mainframe Programmer/Analyst Option
  Minicomputer Programmer/Analyst Option
  Microcomputer Programmer/Analyst Option
Dental Hygiene, A.S.
Drafting Technology, A.S.
  Civil Option
  Machine Option
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
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 Therapist Assistant, A.A.S.*
Radiologic Technology, A.A.S.*

Railroad Operations, A.S.
- Conductor Option
- Dispatcher Option
- General Option
- Maintenance of Way Welding Option
- Mechanical Option

Respiratory Care, A.S.
Science Technology, A.S., A.A.S.
- Chemical Specialty Option

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 and/or Arts.....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 I.....3
BUS 150 Business Communications 3
SPD 120 Interpersonal Communications ..3
SPD 121 Public Speaking.....3
SPD 125 Personal Communication 3

II. Humanities and/or Arts – 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
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 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/Arts

ART 180 Western Art History I.....3
ART 182 Western Art History II.....3
HUM 122 Introduction to Humanities.....3
HUM 133 Comparative Cultures.....3
HUM 136 The Human Experience 3
HUM 145 World Humanities I 3
HUM 146 World Humanities II.....3
HUM 164 Civilisation.....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	165	Philosophy of Current Civilization.....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	130	Political Economics: Power in Society 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
SCI	121	Science: A Dynamic Process ...4

Any remaining hours for this requirement beyond the one math and one lab science requirement may be satisfied 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
HMEC	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 and/or Arts.....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

ENGL	121	Composition I	3
	or		
COM	125	Oral and Written Communications *	6

* Satisfies both the Composition I and Oral Communication requirements.

II. Humanities and/or Arts – 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
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 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/Arts

ART	180	Western Art History I	3
ART	182	Western Art History II	3
HUM	122	Introduction to Humanities	3
HUM	133	Comparative Cultures	3
HUM	136	The Human Experience	3
HUM	145	World Humanities I	3
HUM	146	World Humanities II	3
HUM	164	Civilisation	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	165	Philosophy of Current Civilization	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	130	Political Economics: Power in Society 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
SCI	121	Science: A Dynamic Process ...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	210	Fundamentals of Athletics.....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.

Specific course completion certificates will be awarded as appropriate and as specified in the college catalog.

Approved certificate programs are:

Vocational Certificates

Administrative Support Specialist
Advanced Data Processing
Automotive Technology
Basic Railroad Electronics
Business Entrepreneurship
Business Plan
Communications Electronics
Computer-aided Drafting
Construction Management
Desktop Publishing Applications Specialist
Electrical Technology
Emergency Medical Technician
Heating, Ventilation and Air Conditioning Technology
Industrial Controls
Local Area Network Administrator
Local Area Network Technology Specialist
Mainframe Programmer/Analyst
Medical Electronics
Metal Fabrication Technology
Microcomputer Programmer/Analyst
Minicomputer Programmer/Analyst
Mobile Intensive Care Technician
Office Automation Skills
Office Automation Technology
Office Careers
Personal Computer Applications Specialist
Personal Computer Support
Sales and Customer Relations
Structural Welding
Supervisors Welding
Track Welding

Postsecondary Certificates

Emergency Services Dispatcher
Food and Beverage Management
Heating, Ventilation and Air Conditioning Technology
Hospitality Management
Paralegal
Respiratory Care
Welding (Railroad Maintenance of Way)

Career and Certificate Programs

Accounting
Administration of Justice/Law Enforcement
Automotive Technology
Aviation Maintenance Technology
Business Administration
Business Entrepreneurship
Chef Apprenticeship
Civil Engineering Technology
Communication Design
Construction Management
Cosmetology
Data Processing
Dental Hygiene
Drafting Technology
Electrical Technology
Electronics Technology
Emergency Medical Science
Fashion Merchandising
Fire Services Administration
Grounds and Turf Management
Health Information Technology
Health Occupations
Heating, Ventilation and Air Conditioning Technology
Hospitality Management
  Food and Beverage Management
  Hotel/Motel Management
Interior Merchandising
Interpreter Training
Marketing and Management
Metal Fabrication
Nursing
  Practical Nursing
  Associate Degree – Registered Nurse
Occupational Therapy Assistant
Office Systems Technology
Paralegal
Physical Therapist Assistant
Radiologic Technology
Railroad Operations
Respiratory Care
Science Technology
Travel and Tourism Management
Veterinary Technology

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			**CR**
ENGL	121	Composition I	3
		Social Science and/or Economics Elective	3
ACCT	121	Accounting I	3
MATH	120	Business Math	3
OST	101	Computerized Keyboarding	1
OST	115	Electronic Calculators	1
		Business Electives	3
		TOTAL CREDIT HOURS	17

Second Semester			
ACCT	122	Accounting II	3
BUS	150	Business Communication	3
BUS	261	Business Law I	3
		Business Electives	6
		TOTAL CREDIT HOURS	15

Third Semester			
ACCT	231	Intermediate Accounting I	3
		or	
ACCT	222	Managerial Accounting	3
CPCA	105	Introduction to Personal Computing: IBM	1
ACCT	278	Accounting Internship I	1
BUS	225	Human Relations	3
CPCA	110	Spreadsheets on Microcomputers I	1
PHIL	138	Business Ethics	1
HIST	141	U.S. History Since 1877	3
		Business Electives	2
		TOTAL CREDIT HOURS	15

Fourth Semester			
		Health and/or Physical Education Elective	1
ACCT	221	Cost Accounting	3
		or	
ACCT	232	Intermediate Accounting II	3
		or	
ACCT	115	Accounting for Nonprofit Organizations	3
ACCT	131	Federal Income Taxes I	3
ACCT	135	Computerized Accounting	3
ACCT	285	Accounting Capstone	3
CPCA	114	Databases on Microcomputers I	1
		Business Electives	3
		TOTAL CREDIT HOURS	17
		TOTAL PROGRAM CREDIT HOURS	64

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			**CR**
ENGL	121	Composition I	3
		Social Science Course *	3
ADMJ	121	Introduction to Administration of Justice ***	3
ADMJ	124	Criminal Justice System	3
ADMJ	127	Criminology	3
		TOTAL CREDIT HOURS	15

Second Semester			
ENGL	122	Composition II	3
		Social Science Course *	3
ADMJ	133	Juvenile Delinquency	3
ADMJ	136	Police and the Public	3
ADMJ	140	Constitutional Case Law ***	3
		TOTAL CREDIT HOURS	15

Third Semester

ADMJ	154	Fundamentals of Criminal Investigation	3
PHIL	143	Ethics	3
ADMJ	141	Criminal Law ***	3
SPD	120	Interpersonal Communication	3
		Science and/or Mathematics Elective **	6
		TOTAL CREDIT HOURS	18

Fourth Semester

		Humanities Course (Cannot be a philosophy course)	3
		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

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, concentrates on a theoretical background in 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, including 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:

AUTO 125 Introduction to Automotive Shop Practices 3
or
An equivalent basic auto course
or
One year of basic experience in the automotive field

First Semester **CR**

AUTO 163 Automotive Steering and Suspension.....3
INDT 125 Industrial Safety.....1
MFAB 121 Introduction to Welding 4
MATH 120 Business Math.....3
ENGL 121 Composition I.....3
Social Science and/or Economics Elective 3
TOTAL CREDIT HOURS 17

Second Semester

AUTO 165 Automotive Engine Repair 4
AUTO 167 Automotive Brake Systems 2
AUTO 168 Automotive Manual Drive Trains and Axles.....2
ENGL 123 Technical Writing I 3
BUS 141 Principles of Management.....3
Technical/Related Electives 3
TOTAL CREDIT HOURS 17

Third Semester

AUTO 234 Automotive Electrical Systems 4
AUTO 250 Automatic Transmissions and Transaxles ..4
AUTO 254 Automotive Engine Performance.....5
Humanities and/or Art Elective.....3
TOTAL CREDIT HOURS 16

Fourth Semester

AUTO 230 Automotive Heating and Air Conditioning..3
AUTO 260 Automotive Service Management and Techniques 7
Technical/Related Electives 3
Health and/or Physical Education Elective.....1
TOTAL CREDIT HOURS 14
TOTAL PROGRAM CREDIT HOURS.....64

Technical/Related Electives

AUTO 121 Small Engine Service 3
AUTO 123 Motorcycle Maintenance and Repair 2
AUTO 128 Automotive Parts Specialist.....2
AUTO 130 Automotive Diesel 2
AUTO 271 Automotive Technology Internship I 3
AUTO 272 Automotive Technology Internship II....3
MATH 133 Technical Math I.....4
PHYS 125 Technical Physics I.....4
BUSE 138 FastTrac Business Plan.....4
CPCA 105 Introduction to Personal Computing: IBM..1
DP 124 Introduction to Computing Concepts and Applications 3
ELEC 120 Introduction to Electronics 3

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 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 had:

MATH 111 Fundamentals of Math or an appropriate score on the math assessment test and

AUTO 125 Introduction to Auto Shop Practices.....3
or
Completion of a basic auto course
or
One year of basic experience in the automotive field

Required Courses

INDT 125 Industrial Safety.....1
AUTO 163 Automotive Steering and Suspension.....3
AUTO 165 Automotive Engine Repair 4
AUTO 167 Automotive Brake Systems 2
AUTO 168 Automotive Manual Drive Trains and Axles.....2
AUTO 234 Automotive Electrical Systems 4
AUTO 250 Automatic Transmissions and Transaxles ..4
AUTO 254 Automotive Engine Performance.....5
AUTO 230 Automotive Heating and Air Conditioning.....3
MFAB 121 Introduction to Welding 4
TOTAL CREDIT HOURS 32

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 English, 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

First Semester **(General Aviation I)**			**CR**
KAV	100	Introduction to Aviation Maintenance I	14
KAV	110	Technical Mathematics/AVMT	4
ENGL	121	Composition I	3
		TOTAL CREDIT HOURS	21

Second Semester **(General Aviation II)**			
KAV	111	Introduction to Aviation Maintenance II	4.5
KAV	108	Aircraft Electrical Systems	5.5
KAV	203	Electrical Generator/Alternator	5.5
SPD	121	Public Speaking	3
		TOTAL CREDIT HOURS	18.5

Third Semester **(Airframe I)**			
KAV	102	Wood and Fabric	3
KAV	104	Assembly and Rigging	5
KAV	200	Sheet Metal Structures	4
KAV	202	Fuel and Fire Protection Systems	4
		TOTAL CREDIT HOURS	16

Fourth Semester **(Airframe II)**			
KAV	106	Hydraulic and Pneumatic Systems	7
KAV	204	Communication and Navigation Systems	6
KAV	206	Airframe Inspection and Welding	5.5
		TOTAL CREDIT HOURS	18.5

Fifth Semester **(Powerplant I)**			
KAV	101	Carburetion and Lubrication	7
KAV	103	Aircraft Reciprocating Powerplant	6
KAV	107	Jet Propulsion Powerplant	5
		TOTAL CREDIT HOURS	18

Sixth Semester **(Powerplant II)**			
KAV	105	Propellers	5
KAV	109	Ignition and Starting Systems	6
KAV	201	Powerplant Testing	2.5
KAV	205	Fire Protection Systems	5.5
		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 English, 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

First Semester **(General Aviation I-N)**			**CR**
KAV	100	Introduction to Aviation Maintenance I	14
ENGL	121	Composition I	3
		TOTAL CREDIT HOURS	17

Second Semester **(General Aviation II-N)**			
KAV	111	Introduction to Aviation Maintenance II	4.5
KAV	110	Technical Mathematics/AVMT	4
ENGL	101	Composition/Reading I (optional)	3
		TOTAL CREDIT HOURS	11.5

Third Semester **(General Aviation III-N)**			
KAV	108	Aircraft Electrical Systems	5.5
KAV	203	Electrical Generator/Alternator	5.5
SPD	121	Public Speaking	3
		TOTAL CREDIT HOURS	14

***Fourth Semester* (Airframe I-N)**

KAV	200	Sheet Metal Structures	4
KAV	102	Wood and Fabric	3
KAV	202	Fuel and Fire Protection Systems	4
		TOTAL CREDIT HOURS	11

***Fifth Semester* (Airframe II-N)**

KAV	104	Assembly and Rigging	5
KAV	106	Hydraulic and Pneumatic Systems	7
		TOTAL CREDIT HOURS	12

***Sixth Semester* (Airframe III-N)**

KAV	204	Communication and Navigation Systems	6
KAV	206	Airframe Inspection and Welding	5.5
		TOTAL CREDIT HOURS	11.5

***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	117
		TOTAL POWERPLANT 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			**CR**
ENGL	121	Composition I	3
MATH	120	Business Math or higher	3
BUS	121	Introduction to Business	3
BUS	225	Human Relations	3
HIST	141	U.S. History Since 1877	3
OST	101	Computerized Keyboarding	1
		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
DP	124	Introduction to Computing Concepts and Applications	3
		or	
DP	134	Programming Fundamentals	4
ECON	230	Economics I	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16-17

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	15/16
		TOTAL PROGRAM CREDIT HOURS	64-65

Recommended Electives

BUS	120	Management Attitudes and Motivation	3
BUS	235	Introduction to International Business	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			**CR**
BUSE	140	FastTrac Feasibility Plan	2
ENGL	121	Composition I or higher	3
MATH	120	Business Math or higher	3
PHIL	138	Business Ethics	1
OST	101	Computerized Keyboarding	1
BUS	230	Marketing	3
BUS	225	Human Relations	3
		TOTAL CREDIT HOURS	16

Second Semester			
BUS	145	Small Business Management	3
ACCT	111	Small Business Accounting	3
		or	
ACCT	121	Accounting I	3
ECON	130	Basic Economics Issues	3
		or	
ECON	231	Economics II	3
BUS	140	Principles of Supervision	3
BUSE	160	Legal Issues for Small Business	2
MKT	133	Salesmanship	3
		or	
MKT	134	Creative Retail Selling	3
		TOTAL CREDIT HOURS	17

Third Semester			
BUS	150	Business Communications	3
DP	124	Introduction to Computing Concepts and Applications	3
BUSE	180	Seminar: The Small Business Environment	2
BUSE	210	Entrepreneurship Internship I	1
BUSE	131	Financial Management/Small Business	2
		Health and/or Physical Education Elective	1
		Electives	3
		TOTAL CREDIT HOURS	15

Fourth Semester			
BUSE	190	Entrepreneurship Seminar: Small Business Analysis	2
BUSE	215	Entrepreneurship Internship II	1
BUSE	138	FastTrac Business Plan	4
HIST	141	U.S. History Since 1877	3
		Humanities and/or Social Science Elective	3
		Electives	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	64

Recommended Electives

BUS	120	Management Attitudes and Motivation	3
BUS	123	Personal Finance	3
BUS	235	Introduction to International Business	3
BUS	141	Principles of Management	3
BUS	243	Human Resource Management	3
BUS	261	Business Law I	3
BUS	263	Business Law II	3
FASH	132	Marketing Communications	3
FASH	231	Merchandising Planning and Control	3
HMGT	121	Hospitality Management Fundamentals	3
MKT	121	Retailing	3
SPD	120	Interpersonal Communications	3
SPD	121	Public Speaking	3

Business Entrepreneurship Vocational Certificate Program

Students in the 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			**CR**
ACCT	111	Small Business Accounting	3
		or	
ACCT	121	Accounting I	3

BUSE	140	FastTrac Feasibility Plan.....2
BUS	230	Marketing.....3
BUSE	160	Legal Issues for Small Businesses.....2
DP	124	Introduction to Computing Concepts and Applications*.....3
MATH	120	Business Math or higher.....3
		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
CPCA	110	Spreadsheets on Microcomputers I.....1

Second Semester

BUS	145	Small Business Management.....3
BUSE	131	Financial Management/Small Business...2
BUSE	190	Entrepreneurship Seminar: Small Business Analysis.....2
BUSE	210	Entrepreneurship Internship I.....1
		or
BUSE	211	Entrepreneurship Internship II.....1
BUSE	138	FastTrac Business Plan.....4
MKT	133	Salesmanship.....3
		or
MKT	134	Creative Retail Selling.....3
		TOTAL CREDIT HOURS.....15
		TOTAL PROGRAM CREDIT HOURS.....31

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.

BUSE	140	FastTrac Feasibility Plan.....2
BUSE	138	FastTrac Business Plan.....4
		TOTAL PROGRAM CREDIT HOURS.....6

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			**CR**
HMGT	121	Hospitality Management Fundamentals	..3
HMGT	123	Basic Food Preparation	3
MATH	120	Business Math or higher	3
CPCA	105	Introduction to Personal Computing: IBM	.1
		or	
CPCA	105	Introduction to Personal Computing: MAC	.1
HMGT	281	Culinary Practicum I	2
		TOTAL CREDIT HOURS	12

Second Semester

HMGT	273	Seminar in Hospitality Management: Accounting.....3
HMGT	230	Intermediate Food Preparation.....3
HMEC	151	Nutrition and Meal Planning.....3
HMGT	282	Culinary Practicum II.....2
		TOTAL CREDIT HOURS.....11

Summer

ENGL	121	Composition I.....3
SPD	125	Personal Communications.....3
		TOTAL CREDIT HOURS.....6

Third Semester

HMGT	277	Seminar in Hospitality Management: Menu Planning.....3
HMGT	271	Seminar in Hospitality Management: Purchasing.....3
HMGT	145	Food Production Specialties.....3
HMGT	285	Culinary Practicum III.....2
		TOTAL CREDIT HOURS.....11

Fourth Semester

HMGT	226	Garde-manger.....3
HMGT	223	Fundamentals of Baking.....3
PSYC	121	Applied Psychology.....3
		or
PSYC	130	Introduction to Psychology.....3
HMGT	286	Culinary Practicum IV.....2
		TOTAL CREDIT HOURS.....11

Fifth Semester

HMGT	231	Advanced Food Preparation.....4
HMGT	279	Beverage Control.....3
HMGT	130	Hospitality Law.....3
HMGT	287	Culinary Practicum V.....2
		TOTAL CREDIT HOURS.....12

Sixth Semester

HMGT	128	Supervisory Management	3
HMGT	228	Advanced Hospitality Management	3
HMGT	288	Culinary Practicum VI	2
		Humanities and/or Art Elective	3
		TOTAL CREDIT HOURS	11
		TOTAL PROGRAM CREDIT HOURS	74

Civil Engineering Technology

A civil engineering technician has the responsibility of maintaining communications between engineers and draftsmen. These technicians apply theory and practical application in planning, designing, constructing, inspecting and maintaining structures such as bridges, treatment plants and roadways.

JCCC's Civil Engineering Technology program offers a broad base of learning experiences in mathematics, physical science, surveying and graphics. The program will qualify graduates for a variety of entry-level positions in the field and will provide preparation for the individual certification examination of the National Institute for Certification in Engineering Technology. Successful completion of 67 hours from the civil engineering technology curriculum will lead to an associate of science degree.

Associate of Science Degree

First semester **CR**

DRAF	129	Interpreting Architectural Drawings	2
ENGR	131	Engineering Graphics I	4
MATH	173	Precalculus (College Algebra and Trigonometry)	5
ENGL	121	Composition I	3
CET	105	Construction Methods	3
		TOTAL CREDIT HOURS	17

Second Semester

CET	127	Construction Estimating	3
		or	
CET	129	Construction Management	3
ENGR	180	Engineering Land Surveying	3
DRAF	180	Structural Drafting	3
MATH	241	Analytic Geometry – Calculus I	5
ENGL	122	Composition II	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	18

Third Semester

DRAF	225	Civil Drafting	3
PHYS	130	General Physics I	5
		or	
PHYS	220	Engineering Physics I	5
CET	211	Technical Statics and Mechanics	3
CET	140	Civil Engineering Materials	3
ENGR	171	Programming for Engineering and Science	3
		TOTAL CREDIT HOURS	17

Fourth Semester

CET	258	Structural Design	3
CET	270	Fluid Mechanics	3
		Humanities and/or Art Elective	3
		Social Science and/or Economics Elective	3
		Technical Electives from approved list	3
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM CREDIT HOURS	67

Approved Technical Electives

BIOL	130/1	Environmental Science/Lab	3/1
CET	127	Construction Estimating	3
CET	129	Construction Management	3
DRAF	124	Technical Drafting	4
DRAF	160	Process Piping	3
DRAF	231	Computer-aided Drafting 3-D	3
DRAF	232	Computer-aided Drafting Applications	3
MATH	242	Analytic Geometry – Calculus II	5
ELEC	200	Introduction to GPS	3
GEOS	140/1	Physical Georgraphy/Lab	3/2
GEOS	130	General Geology	5
GEOS	150	Introduction to Geographic Information Systems	3
PHYS	131	General Physics II	5
		or	
PHYS	221	Engineering Physics II	5

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 enountered by small- to medium-sized contractors.

First Semester **CR**

DRAF	129	Interpreting Architectural Drawings	2
CET	105	Construction Methods	3
ACCT	111	Small Business Accounting	3
		or	
ACCT	121	Accounting I	3
BUS	140	Principles of Supervision	3
MATH	120	Business Math or higher	3
		TOTAL CREDIT HOURS	14

Second Semester

CET	127	Construction Estimating	3
CET	129	Construction Management	3
		Management Electives	6
		Computer Electives	3
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM CREDIT HOURS	29

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	3
BUSE	131	Financial Management/Small Business	2
BUSE	160	Legal Issues for Small Business	2

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 Micros	1

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) **CR**

ART	124	Design 2-D	3
CD	120	Introduction to Communication Design	3
CDPT	131	Desktop Publishing I: QuarkXPress	1
		TOTAL CREDIT HOURS	7

First Semester (fall)

ENGL	121	Composition I	3
ART	129	Design Color	3
CD	130	Representational Drawing I	3
CD	132	Typography	3
PHOT	121	Fundamentals of Photography	3
		TOTAL CREDIT HOURS	15

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
		Humanities and/or Art Elective	3
		TOTAL CREDIT HOURS	15

Third Semester (fall)

PHOT	123	Commercial Photography	3
CD	230	Illustration Techniques	3
CD	231	Advanced Typography	3
CD	235	Production Methods	3
		Social Science and/or Economics Elective	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16

Fourth Semester (spring)

CD	236	Electronic Production	3
CD	244	Communication Systems	3
CD	245	Advanced Design Practice	3
CD	272	Professional Preparation **	3
		Science and/or Math Elective	3
		Technical/Studio Elective	1
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	69

** 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. Completion of this course is not required for the A.A.S. degree.

Technical/Studio Electives

CDPT	151	Desktop Publishing II: QuarkXPress	1
CDPT	171	Desktop Publishing III: QuarkXPress	1
CDPT	135	Desktop Photo Manipulation: Photoshop	1
CDPT	145	Desktop Illustration: Illustrator	1
CPCA	123	Presentation Graphics:	1
PHOT	122	Fine Art Photography	3
PHOT	127	Color Photography	3
PHOT	130	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

* 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

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

CD	120	Introduction to Communication Design	3
ART	124	Design 2-D	3
CDPT	131	Desktop Publishing I: QuarkXPress	1
ENGL	121	Composition I	3
ART	129	Design Color	3
ART	127	Design 3-D	3
CD	132	Typography	3
CD	130	Representational Drawing I	3
PHOT	121	Fundamentals of Photography	3
CD	131	Representational Drawing II	3
CD	134	Layout Design	3
CD	140	Technical Processes	3
CD	230	Illustration Techniques	3
CD	231	Advanced Typography	3
PHOT	123	Commercial Photography	3
CD	235	Production Methods	3
CD	236	Electronic Production	3
CD	244	Communications Systems	3
CD	245	Advanced Design Practice	3
CD	272	Professional Preparation **	3
		Technical/Studio Elective	1
		Humanities Elective	3
		Economics and/or Social Science Elective	3
		Science or Math Elective	3
		Health and/or Physical Education Elective	1
		TOTAL PROGRAM CREDIT HOURS	66

** 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.

Construction Management

(See Civil Engineering Technology, page 73.)

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.

Employment opportunities are available in beauty salons, department stores, health care or 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. Admission 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

Cosmetology Vocational Certificate

1,500 contact hours

AVCO 110 Introduction to Cosmetology
AVCO 112 Clinical Cosmetology
AVCO 114 Advanced Cosmetology

Esthetics Vocational Certificate

650 contact hours

AVCO 118 Esthetics

Data Processing

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 client/server and open-system computing architectures. The need for individuals with network management and application programming skills will also continue to increase.

JCCC's Data Processing program focuses on the skills needed for entry-level programmer analysts and related positions. The associate of applied science degree in data processing is segmented into mainframe, minicomputer and microcomputer options in the recognition of the higher degree of specialization needed to function in each of these environments. The emphasis on practical experience and the specific courses will upgrade and broaden your knowledge even if you are already working in the data processing field. The associate of applied science degree is awarded for successful completion of one of the three 64-credit-hour options.

Associate of Applied Science Degree

Mainframe Programmer/Analyst Option

Prior to admission to the Data Processing for the Mainframe Programmer/Analyst program, the student must take the following prerequisite or have taken an equivalent transfer course:

DP 134 Programming Fundamentals....4

First Semester **CR**

DP 148 COBOL I....4
DP 140 Editor for COBOL....1
ACCT 121 Accounting I....3
ENGL 121 Composition I....3
MATH 116 Intermediate Algebra....3
or
MATH 171 College Algebra....3
or
Any Calculus course....3
Humanities and/or Arts Elective....3
TOTAL CREDIT HOURS....17

Second Semester

DP 248 COBOL II....4
CS 210 Discrete Structures I....3
General DP/CS Elective....4
SPD 125 Personal Communication....3
or
SPD 128 Business and Professional Speech....3
Health and/or Physical Education Elective....1
TOTAL CREDIT HOURS....15

Third Semester

DP 253 Customer Information Control System Command Level COBOL....4
DP 150 Assembler Language I....4
Social Science and/or Economics Elective....3
DP 242 Introduction to System Design and Analysis....3
General DP/CS Elective....1
TOTAL CREDIT HOURS....15

Fourth Semester

DP 258 Operating Systems....3
DP 264 Application Development and Programming....4
DP 260 Database Management....4
General DP/CS Elective....3
Approved Business/Accounting Elective....3
TOTAL CREDIT HOURS....17
TOTAL PROGRAM CREDIT HOURS....64

Eight hours of DP/CS electives and three hours of Business/Accounting electives are to be selected from the following lists:

General DP/CS Electives

CS 200 Concepts of Programming Algorithms (using C++)....4
CS 211 Discrete Structures II....3
CS 250 Basic Programming Structures (using C++)....4
CPCA 135 M/S DOS....1
CPCA 137 M/S DOS Intermediate....1
CPCA 138 Windows for Micros....1
CPCA 139 Introduction to UNIX....1
IT 160 Local Area Network Fundamentals....1
IT 217 Local Area Network Components....2
IT 215 Local Area Network Applications....1
IT 200 Introduction to Information Technology....3
IT 210 Local Area Networking Systems....4
DP 138 Visual Basic for Windows....4
DP 157 RPG III Beginning....4
DP 172 Introduction to PowerBuilder Enterprise....4
DP 174 Teleprocessing....3
DP 190 Introduction to REXX....4
DP 204 UNIX Operating System....3
DP 215 OS/VS Job Control Language....3
DP 235 Object-Oriented Programming (using C++)....4
DP 238 Visual Basic Intermediate Topics....4
DP 243 Systems Analysis and Design Using CASE....4
DP 250 Assembler Language II....4
DP 257 RPG III Advanced....4
DP 267 Advanced CICS....5
DP 269 GUI Programming....4
DP 270 Data Processing Internship....1
DP 272 Intermediate PowerBuilder Enterprise....4

Approved Business/Accounting Electives

ACCT 122 Accounting II....3
ACCT 201 Computerized Accounting Applications....3
ACCT 222 Managerial Accounting....3
BUS 121 Introduction to Business....3
BUS 141 Principles of Management....3

Associate of Applied Science Degree

Minicomputer Programmer/Analyst Option

Prior to admission to the Data Processing for the Minicomputer Programmer/Analyst program, the student must take the following prerequisite or have taken an equivalent transfer course:

DP 134 Programming Fundamentals....4

First Semester **CR**

DP 157 RPG III Beginning....4
DP 140 Editor for AS/400....1
ACCT 121 Accounting I....3
ENGL 121 Composition I....3
MATH 116 Intermediate Algebra....3
or

MATH	171	College Algebra....3
		or
		Any Calculus course....3
		Humanities and/or Arts Elective....3
		TOTAL CREDIT HOURS 17

Second Semester

DP	257	RPG III Advanced 4
CS	210	Discrete Structures I....3
CS	200	Concepts of Programming Algorithms Using C++....4
SPD	125	Personal Communications 3
		or
SPD	128	Business and Professional Speech 3
		Health and/or Physical Education Elective....1
		TOTAL CREDIT HOURS 15

Third Semester

DP	178	AS/400 CL Programming....4
DP	180	AS/400 Utilities 4
DP	242	Introduction to System Design and Analysis 3
		General DP/CS Elective....2
		Social Science and/or Economics Elective ..3
		TOTAL CREDIT HOURS 16

Fourth Semester

DP	204	UNIX Operating System....3
DP	264	Application Development and Programming 4
DP	260	Database Management 4
		General DP/CS Elective....2
		Approved Business/Accounting Elective....3
		TOTAL CREDIT HOURS 16
		TOTAL PROGRAM CREDIT HOURS....64

Four hours of DP/CS electives and three hours of Business/Accounting electives are to be selected from the following lists:

General DP/CS Electives

CS	200	Concepts of Programming Algorithms (using C++)....4
CS	211	Discrete Structures II....3
CS	250	Basic Programming Structures (using C++)....4
CPCA	135	M/S DOS....1
CPCA	137	M/S DOS Intermediate 1
CPCA	138	Windows for Micros 1
CPCA	139	Introduction to UNIX....1
IT	160	Local Area Network Fundamentals 1
IT	217	Local Area Network Components....2
IT	215	Local Area Network Applications....1
IT	200	Introduction to Information Technology...3
IT	210	Local Area Networking Systems....4
DP	138	Visual Basic for Windows....4
DP	157	RPG III Beginning 4
DP	172	Introduction to PowerBuilder Enterprise ..4
DP	174	Teleprocessing....3
DP	190	Introduction to REXX....4
DP	204	UNIX Operating System....3
DP	215	OS/VS Job Control Language....3
DP	235	Object-Oriented Programming (using C++)....4
DP	238	Visual Basic Intermediate Topics 4
DP	243	Systems Analysis and Design Using CASE ..4
DP	250	Assembler Language II 4
DP	257	RPG III Advanced 4
DP	267	Advanced CICS 5
DP	269	GUI Programming....4
DP	270	Data Processing Internship....1
DP	272	Intermediate PowerBuilder Enterprise....4

Approved Business/Accounting Electives

ACCT	122	Accounting II....3
ACCT	201	Computerized Accounting Applications ..3
ACCT	222	Managerial Accounting....3
BUS	121	Introduction to Business 3
BUS	141	Principles of Management....3

Associate of Applied Science Degree

Microcomputer Programmer/Analyst Option

Prior to admission to the Data Processing for the Microcomputer Programmer/Analyst program, the student must take the following prerequisite or have taken an equivalent transfer course:

DP	134	Programming Fundamentals....4

First Semester			**CR**
CS	200	Concepts of Programming Algorithms Using C++....4	
ACCT	121	Accounting I 3	
ENGL	121	Composition I....3	
MATH	116	Intermediate Algebra 3	
		or	
MATH	171	College Algebra....3	
		or	
		Any Calculus course....3	
ELEC	124	Microcomputer Hardware 3	
		TOTAL CREDIT HOURS 16	

Second Semester

CS	250	Basic Programming Structures Using C++....4
CS	210	Discrete Structures I....3
		Operating Systems Elective....3
SPD	125	Personal Communication....3
		or
SPD	128	Business and Professional Speech 3
		Humanities and/or Arts Elective....3
		TOTAL CREDIT HOURS 16

Third Semester

DP	235	Object-Oriented Programming Using C++	4
DP	162	Database Programming	4
DP	242	Introduction to System Analysis and Design	3
		Social Science and/or Economics Elective	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	15

Fourth Semester

DP	145	Assembler Language for Microcomputers	4
DP	264	Application Development and Programming	4
DP	269	GUI Programming	4
		Local Area Network Elective	3
		General DP/CS Electives	3
		TOTAL CREDIT HOURS	18
		TOTAL PROGRAM CREDIT HOURS	65

Three hours of DP/CS electives, three hours of Operating Systems electives and three hours of Local Area Network electives are to be selected from the following lists:

General DP/CS Electives

CS	180	Introduction to Artificial Intelligence	3
CS	211	Discrete Structures II	3
DP	138	Visual Basic for Windows	4
DP	172	Introduction to PowerBuilder Enterprise	4
DP	190	Introduction to REXX	4
DP	238	Visual Basic Intermediate Topics	4
DP	243	Systems Analysis and Design Using CASE	4
DP	260	Database Programming	4
DP	270	Data Processing Internship	1
DP	272	Intermediate PowerBuilder Enterprise	4

Operating Systems Electives

CPCA	135	M/S DOS	1
CPCA	137	M/S DOS Intermediate	1
CPCA	138	Windows for Micros	1
CPCA	139	Introduction to UNIX	1
DP	204	UNIX Operating System	3
DP	258	Operating Systems	3

Local Area Network Electives

IT	160	Local Area Network Fundamentals	1
IT	217	Local Area Network Components	2
IT	215	Local Area Network Applications	1
IT	200	Introduction to Information Technology	3
IT	210	Local Area Networking Systems	4

Data Processing Vocational Certificates

JCCC's Data Processing Vocational Certificate program makes it possible for the student who already has a college degree to obtain certification in the data processing field in preparation for a career transition. The following certificates consist of the core data processing courses found in each of the three associate of applied science degree options.

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 for COBOL	1
DP	148	COBOL I	4
		TOTAL CREDIT HOURS	5

Second Semester

DP	150	Assembler Language I	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
		TOTAL CREDIT HOURS	11
		TOTAL PROGRAM CREDIT HOURS	27

Minicomputer Programmer/Analyst Vocational Certificate

Prior to admission in the Minicomputer 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 for RPG	1
DP	157	RPG III Beginning	4
		or	
CS	200	Concepts of Programming Algorithms Using C++	4
		TOTAL CREDIT HOURS	5

Second Semester

DP	178	AS/400 CL Programming	4
		or	
CS	250	Basic Programming Structures Using C++	4
DP	242	Introduction to System Design and Analysis	3
DP	257	RPG III Advanced	4
		or	
IT	200	Introduction to Information Technology	3
		TOTAL CREDIT HOURS	10-11

Third Semester

DP	180	AS/400 Utilities	4
		or	
DP	204	UNIX Operating Systems	3
DP	260	Database Management	4
		TOTAL CREDIT HOURS	7-8
		TOTAL PROGRAM CREDIT HOURS	22-24

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**
ELEC	124	Microcomputer Hardware	3
CS	200	Concepts of Programming Algorithms Using C++	4
DP	145	Assembler Language for Microcomputers	4
DP	162	Database Programming	4
		TOTAL CREDIT HOURS	15

Second Semester

CS	250	Basic Programming Structures Using C++	4
DP	242	Introduction to System Design and Analysis	3
		Operating Systems Elective	3
		Local Area Network Elective	3
		TOTAL CREDIT HOURS	13
		TOTAL PROGRAM CREDIT HOURS	28

Operating Systems Electives

CPCA	135	M/S DOS	1
CPCA	137	M/S DOS Intermediate	1
CPCA	138	Windows for Micros	1
CPCA	139	Introduction to UNIX	1
DP	204	UNIX Operating System	3

Local Area Network/Communications Electives

IT	160	Local Area Network Fundamentals	1
IT	217	Local Area Network Components	2
IT	215	Local Area Network Applications	1
IT	200	Introduction to Information Technology	3
IT	210	Local Area Networking Systems	4

Personal Computer Applications Specialist Vocational Certificate Program

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. 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 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			**CR**
CPCA	128	Integrated Applications I	3
		or the following four courses	
CPCA	105	Introduction to Personal Computing: IBM	1
		or	
CPCA	106	Introduction to Personal Computing: MAC	1
CPCA	108	Word Processing on Micros I	1
CPCA	110	Spreadsheet on Micros I	1
CPCA	114	Database on Micros I	1

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

CPCA	112	PC Communications	1
CPCA	123	Presentation Graphics	1
		TOTAL CREDIT HOURS	5-6

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.

DP	134	Programming Fundamentals	4
DP	148	COBOL I	4
DP	248	COBOL II	4
DP	150	Assembler Language I	4
		or	
CS	200	Concepts of Programming Algorithms Using C++	4

Required Courses

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

DP	174	Teleprocessing	3
DP	235	Object-oriented Programming Using C++	4
DP	238	Visual Basic Intermediate Topics	4
DP	242	Introduction to System Design and Analysis	3
DP	250	Assembly Language II	4
DP	253	Customer Information Control System Command Level COBOL	4
DP	258	Operating Systems	3
DP	260	Database Management	4
DP	267	Advanced CICS	5
DP	272	Intermediate PowerBuilder Enterprise	4
		TOTAL PROGRAM CREDIT HOURS	17-21

Desktop Publishing Applications Specialist Vocational Certificate

This certificate is intended for those seeking entry-level positions as well as those currently employed who desire to enhance job skills. The certificate provides current or prospective employers with tangible evidence of desktop publishing competency. Application courses for the certificate are based on either the Windows of Macintosh operating environments. Students will be encouraged to master applications on a cross/bi-platform basis.

Required Courses – IBM-Compatible Platform

CPCA	105	Introduction to Personal Computing: IBM	1
CPCA	108	Word Processing on Micros I	1
CPCA	123	Presentation Graphics	1
CPCA	138	Windows for Micros	1
CDTP	135	Desktop Photo Manipulations: Photoshop	1
CDTP	145	Desktop Illustration: Illustrator	1
		Technical Elective	1

Four of the following six courses must be chosen*

CDTP	130	Desktop Publishing I: PageMaker	1
CDTP	131	Desktop Publishing I: QuarkXPress	1
CDTP	150	Desktop Publishing II: PageMaker	1
CDTP	151	Desktop Publishing II: QuarkXPress	1
CDTP	170	Desktop Publishing III: PageMaker	1
CDTP	171	Desktop Publishing III: QuarkXPress	1
		TOTAL CREDIT HOURS	11

Required Courses – Macintosh Platform

CPCA	106	Introduction to Personal Computing: MAC	1
CPCA	108	Word Processing on Micros I	1
CPCA	123	Presentation Graphics	1
CPCA	134	Managing Your Macintosh	1
CDTP	135	Desktop Photo Manipulations: Photoshop	1
CDTP	145	Desktop Illustration: Illustrator	1
		Technical Elective	1

Four of the following six courses must be chosen*

CDTP	130	Desktop Publishing I: PageMaker	1
CDTP	131	Desktop Publishing I: QuarkXPress	1
CDTP	150	Desktop Publishing II: PageMaker	1
CDTP	151	Desktop Publishing II: QuarkXPress	1
CDTP	170	Desktop Publishing III: PageMaker	1
CDTP	171	Desktop Publishing III: QuarkXPress	1
		TOTAL CREDIT HOURS	11

Approved Technical Electives

CDTP	130	Desktop Publishing I: PageMaker	1
CDTP	131	Desktop Publishing I: QuarkXPress	1
CDTP	150	Desktop Publishing II: PageMaker	1
CDTP	151	Desktop Publishing II: QuarkXPress	1
CDTP	170	Desktop Publishing III: PageMaker	1
CDTP	171	Desktop Publishing III: QuarkXPress	1
CPCA	118	Electronic Mail/Calendar Systems	1
CPCA	121	Introduction to Project Management	1
CPCA	125	Word Processing on Microcomputers II	1
CPCA	141	Introduction to Internet	1

*Prerequisites must be met for selected courses

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

CPCA	112	PC Communications	1
CPCA	128	Personal Computer Applications	3
CPCA	135	MS/DOS	1
CPCA	137	MS/DOS Intermediate	1
CPCA	138	Windows for Microcomputers	1
CPCA	141	Introduction to Internet	1
ELEC	124	Microcomputer Hardware	3
IT	160	Local Area Network Fundamentals	1
SPD	120	Interpersonal Communications	3
		TOTAL CREDIT HOURS	15

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 five semesters and a summer session, totaling 80 credit hours, leading to an associate of science degree.

Associate of Science Degree

Summer **CR**

Before beginning clinical courses

CHEM	122	Principles of Chemistry	5
ENGL	121	Composition I	3
SOC	122	Sociology	3
		TOTAL CREDIT HOURS	11

First Semester

DHYG	121	Clinical Dental Hygiene I	6
BIOL	146	General/Head and Neck Anatomy	4
DHYG	125	Developmental Dentistry	2
PSYC	130	Introduction to Psychology	3
		TOTAL CREDIT HOURS	15

Second Semester

DHYG	140	Clinical Dental Hygiene II	5
DHYG	142	Dental Radiology	2
BIOL	225	Human Physiology	4
BIOL	230	Microbiology	3
DHYG	146	Periodontics	2
DHYG	148	Dental Health Education	1
		TOTAL CREDIT HOURS	17

Summer

BIOL	235	General Nutrition	3
		Humanities and/or Art Elective	3
		Mathematics Elective (MATH 116 or higher)	3
		TOTAL CREDIT HOURS	9

Third Semester

DHYG	221	Clinical Dental Hygiene III	7
DHYG	225	Pathology	3
DHYG	230	Dental Therapeutics	3
DHYG	235	Dental Materials	2
DHYG	240	Community Dental Health	2
		TOTAL CREDIT HOURS	17

Fourth Semester

DHYG	250	Clinical Dental Hygiene IV	7
SPD	120	Interpersonal Communication	3
		or	
SPD	121	Public Speaking	3
		or	
SPD	125	Personal Communication	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	11
		TOTAL PROGRAM CREDIT HOURS	80

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 66 credit hours.

Prerequisites

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

DRAF	120	Introduction to Drafting	2
OST	101	Computerized Keyboarding	1

Associate of Science Degree

Civil Option

First Semester

DRAF	124	Technical Drafting	4
DRAF	130	Introduction to CAD Concepts	3
CPCA	105	Introduction to Personal Computing: IBM	1
CPCA	135	M/S DOS	1
ENGL	121	Composition I	3
MATH	133	Technical Mathematics I	4
		CPCA Elective	1
		TOTAL CREDIT HOURS	17

Second Semester

DRAF	129	Interpreting Architectural Drawings	2
DRAF	230	Intermediate CAD 2-D	3
CET	105	Construction Methods	3
ENGL	123	Technical Writing I	3
MATH	134	Technical Math II	5
		TOTAL CREDIT HOURS	16

Third Semester

DRAF	225	Civil Drafting	3
DRAF	231	Computer-aided Drafting 3-D	3
CET	211	Technical Statics and Mechanics	3
PHYS	125	Technical Physics I	4
		Technical Elective	3
		TOTAL CREDIT HOURS	16

Fourth Semester

DRAF	150	Electrical Drafting	3
DRAF	180	Structural Drafting	3
		Social Science and/or Economics elective	3
		Humanities and/or Art elective	3
		Health and/or Physical Education Elective	1
		Technical Elective	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	65

Associate of Science Degree

Machine Option

First Semester			**CR**
DRAF	124	Technical Drafting	4
DRAF	130	Introduction to CAD Concepts	3
CPCA	105	Introduction to Personal Computing: IBM	1
CPCA	135	M/S DOS	1
ENGL	121	Composition I	3
MATH	133	Technical Mathematics I	4
		CPCA Elective	1
		TOTAL CREDIT HOURS	17

Second Semester

DRAF	230	Intermediate CAD 2-D	3
MFAB	152	Manufacturing Materials and Processes	3
ENGL	123	Technical Writing I	3
MATH	134	Technical Math II	5
		Technical Elective	3
		TOTAL CREDIT HOURS	17

Third Semester

DRAF	222	Mechanical Drafting	3
DRAF	231	Computer-aided Drafting 3-D	3
CET	211	Technical Statics and Mechanics	3
PHYS	125	Technical Physics I	4
		Social Science and/or Economics elective	3
		TOTAL CREDIT HOURS	16

Fourth Semester

DRAF	150	Electrical Drafting	3
DRAF	180	Structural Drafting	3
DRAF	228	Industrial Design Applications	4
		Humanities and/or Art elective	3
		Health and/or Physical Education elective	1
		Technical Elective	2
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	66

CPCA Electives

CPCA	108	Word Processing on Microcomputers I	1
CPCA	110	Spreadsheet on Microcomputers I	1
CPCA	114	Database on Microcomputers I	1
CPCA	138	Windows for Micros	1
CDTP	130	Desktop Publishing I: PageMaker	1
		or	
CDTP	131	Desktop Publishing I: QuarkXPress	1

Technical Electives (Civil Option)

CET	127	Construction Estimating	3
CET	129	Construction Management	3
CET	258	Structural Design	3
CET	270	Fluid Mechanics	3
DRAF	232	CAD Applications	3
DRAF	271	Drafting Internship I	3
DRAF	272	Drafting Internship II	3
ENGR	180	Engineering Land Surveying	3
MFAB	121	Introduction to Welding	3

Technical Electives (Machine Option)

DRAF	225	Civil Drafting	3
DRAF	232	CAD Applications	3
DRAF	271	Drafting Internship I	3
DRAF	272	Drafting Internship II	3
ELEC	120	Introduction to Electronics	3
MFAB	121	Introduction to Welding	3
MFAB	240	Metallurgy	1

Any of the Following Programming Courses (Civil or Machine Option)

CS	200	Concepts of Programming Algorithms	4
DP	134	Programming Fundamentals	4
ENGR	171	Programming for Engineering and Science	3

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

CPCA	105	Introduction to Personal Computing: IBM	1
CPCA	135	M/S DOS	1
CPCA	138	Windows for Microcomputers	1
DRAF	130	Introduction to CAD Concepts	3
DRAF	230	Intermediate Computer-aided Drafting	3
DRAF	231	Computer-aided Drafting 3-D	3
		TOTAL PROGRAM CREDIT HOURS	12

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 66 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.

Associate of Science Degree

Summer			**CR**
MATH	133	Technical Mathematics I	4

First Semester			**CR**
ELEC	120	Introduction to Electronics	3
ELEC	122	Circuit Analysis I	3
ELEC	125	Digital Electronics I	3
CPCA	105	Introduction to Personal Computing: IBM	1
MATH	134	Technical Mathematics II	5
		TOTAL CREDIT HOURS	15

Second Semester			
ELEC	140	Circuit Analysis II	3
ELEC	225	Digital Electronics II	3
ENGL	121	Composition I	3
ELEC	130	Electronic Devices I	3
		Health and/or Physical Education Elective	1
		Programming Elective	3
		TOTAL CREDIT HOURS	16

Third Semester			
ELEC	230	Electronic Devices II	3
ELEC	245	Microprocessors	3
PHYS	125	Technical Physics I (medical electronics students may substitute BIOL 144)	4
SPD	125	Personal Communication	3
		Technical Electives	3
		TOTAL CREDIT HOURS	16

Fourth Semester			
ENGL	123	Technical Writing I	3
		Social Science and/or Economics Elective	3
		Technical Electives	6
		Humanities and/or Art Elective	3
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM CREDIT HOURS	66

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.

ELEC 131 Introduction to Sensors and Actuators...3
ELEC 133 Programmable Controllers 3
ELEC 165 Advanced Programmable Controllers.....3
ELEC 175 Telecommunications 3
ELEC 200 Introduction to GPS 3
ELEC 210 Medical Electronics Principles.....3
ELEC 211 Medical Electronics Applications.....3
ELEC 240 Electronic Communication Systems.....3
ELEC 250 Microcomputer Maintenance 3
ELEC 271 Electronics Internship I.....1-3
ELEC 272 Electronics Internship II 1-3
CPCA 135 M/S DOS.....1
CPCA 137 M/S DOS Intermediate 1
IT 160 Local Area Network Fundamentals 1
IT 210 Local Area Networking Systems.....4

Microcomputer Maintenance Option

This degree option will be awarded to those completing the Electronics Technology curriculum and the following 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
CPCA 135 M/S DOS.....1
CPCA 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 Technical Electives

CPCA 135 M/S DOS.....1
CPCA 137 M/S DOS Intermediate 1
IT 160 Local Area Network Fundamentals 1
IT 217 Local Area Network Components.....2
IT 210 Local Area Networking Systems.....4
ELEC 128 Computer Applications in Electronics ...1
ELEC 133 Programmable Controllers 3
ELEC 150 Introduction to Telecommunications 4
ELEC 165 Advanced Programmable Controllers.....3
ELEC 175 Telecommunications 3
ELEC 210 Medical Electronics Principles.....3
ELEC 211 Medical Electronics Applications 3
ELEC 271 Electronics Internship I.....3
ELEC 272 Electronics Internship II.....3
LC 130 Medical Terminology.....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 satisfy the need of individuals having a minimum background in electricity and electronics but who want to develop competency with programmable controllers. The certificate is a 9-credit-hour, two-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 required 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 will make it possible for those students who already have an electronics degree or sufficient electronics background to obtain certification in communication electronics. 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

ELEC	125	Digital Electronics I or equivalent electronics background	3
ELEC	230	Electronic Devices II or equivalent electronics background	3

Mathematics equivalent of:

MATH	133	Technical Mathematics I	4
		and	
MATH	134	Technical Mathematics II	5
		or	
MATH	171	College Algebra	3
		and	
MATH	172	Trigonometry	3

Required Courses

ELEC	150	Introduction to Telecommunications	3
ELEC	175	Telecommunications	3
ELEC	200	Introduction to Global Positioning Systems	3
ELEC	240	Electronics Communications Systems	3
		TOTAL PROGRAM CREDIT HOURS	12

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.

CPCA	105	Introduction to Personal Computing: IBM	1
CPCA	135	MS/DOS	1

Required Courses

IT	200	Introduction to Information Technology	3
CPCA	137	MS/DOS Intermediate	1
CPCA	138	Windows for Micros	1
ELEC	124	Microcomputer Hardware	3
IT	210	Local Area Networking Systems (using NetWare 3.12, 4.0, WinNT)	4
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 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 (student may not get credit for CPCA 128 and CPCA 108, CPCA 110 and CPCA 114	3
CPCA	141	Introduction to Internet	1
CPCA	148	Financial Applications – Business	1

CDTP	130	Desktop Publishing: PageMaker.....1
CPCA	180	OS/2.....1
CPCA	139	UNIX Operating System.....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 contractor involved in designing, installing and implementing a local area network. Training in requirement planning, standards for commercial building cabling systems and testing and certification of systems will be covered.

Prerequisites

Prerequisites may be satisfied by course work, examination or work experience.

CPCA	105	Introduction to Personal Computing: IBM .1
CPCA	135	MS/DOS.....1

Required Courses

IT	200	Introduction to Information Technology...3
CPCA	137	MS/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	21?	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 I ...1
CPCA	110	Spreadsheets on Microcomputers I 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.....3 (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
CDTP	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	138	Visual Basics for Windows.....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	Accounting I 3
		or
ACCT	111	Small Business Accounting.....3

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 Class

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.

The EMS First Responder class is offered as the need arises, generally once each semester.

EMS	128	EMS First Responder.....3
		TOTAL CREDIT HOURS.....3

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 successfully completing this course will be allowed to sit for the Kansas EMT state certification examination, which is administered by the Board of Emergency Medical Services. 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.

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

EMS	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 state 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 associates's degree.

MICT Vocational Certificate

Prerequisites

Certified as Emergency Medical Technician. College-level anatomy/physiology, human anatomy or human physiology course.

Spring Semester			CR
EMS	220	MICT I	10
EMS	225	MICT II	10
		TOTAL CREDIT HOURS	20
Summer Session			
EMS	230	MICT III (clinicals)	12
Fall Semester			
EMS	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	122	Principles of Chemistry	5
		TOTAL CREDIT HOURS	13

First Semester (Spring)			**CR**
EMS	220	MICT I	10
EMS	225	MICT II	10
		TOTAL CREDIT HOURS	20
Summer			
EMS	230	MICT III (Clinicals)	12
Second Semester (Fall)			
EMS	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	144	Human Anatomy and Physiology	5
		or	
BIOL	140	Human Anatomy	4
		or	
BIOL	225	Human Physiology	4

First Semester (Spring)			**CR**
EMS	220	MICT I	10
EMS	225	MICT II	10
		TOTAL CREDIT HOURS	20

Second Semester (Summer)

EMS	230	MICT III (clinicals)	12

Third Semester (Fall)

EMS	271	MICT IV (field internship)	15

Fourth Semester

ENGL	121	Composition I	3
SOC	125	Social Problems	3
		or	
		Social Science and/or Economics Elective	3
PHIL	143	Ethics	3
		or	
		Humanities and/or Art Elective	3
HPER	134	Weight Training and Physical Fitness	1
		or	
		Health and/or Physical Education Elective	1
		Elective	2
		TOTAL CREDIT HOURS	12
		TOTAL PROGRAM CREDIT HOURS	64

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			**CR**
FASH	277	Seminar: Career Options	2
FASH	283	Fashion Internship I	1
FASH	121	Fashion Fundamentals	3
FASH	220	CAD Apparel Design	3
MKT	134	Creative Retail Selling	3
ENGL	121	Composition I	3
FASH	135	Image Management	1
		TOTAL CREDIT HOURS	16

Second Semester

FASH	284	Fashion Internship II	1
FASH	132	Marketing Communications	3
		Health and/or Physical Education Elective	1
MATH	120	Business Math or higher	3
FASH	150	Textiles	3
FASH	125	Visual Merchandising	3
BUS	140	Principles of Supervision	3
		TOTAL CREDIT HOURS	17

Third Semester

BUS	225	Human Relations	3
FASH	285	Fashion Internship III	1
FASH	231	Merchandising Planning and Control	3
MKT	121	Retail Management	3
ECON	130	Basic Economic Issues	3
		or	
ECON	230	Economics I	3
		Electives	3
		TOTAL CREDIT HOURS	16

Fourth Semester

FASH	286	Fashion Internship IV	1
FASH	242	Consumer Product Evaluation	3
BUS	230	Marketing	3
FASH	280	Capstone: Industry Topics	3
		Humanities and/or Art Elective	3
		Electives	2
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM CREDIT HOURS	64

Recommended Electives

BUS	235	Introduction to International Business	3
FASH	123	Apparel Construction I	4
FASH	124	Apparel Construction II	4
FASH	127	CAD: Pattern Design I	4
FASH	128	CAD: Pattern Design II	4
FASH	130	Fashion Illustration I	3
FASH	140	Garment Design	3
FASH	143	Apparel Construction III	4
FASH	224	History of Costume	3
FASH	230	Fashion Illustration II	3
FASH	268	Field Study: The Market Center	3

Suggested Sequence of Required Courses

FASH	121	Fashion Fundamentals	3
FASH	277	Seminar: Career Options	2
FASH	283	Fashion Internship I	1
ENGL	121	Composition I	3
FASH	220	CAD Apparel Design	3
MKT	134	Creative Retail Selling	3
FASH	135	Image Management	1
FASH	284	Fashion Internship II	1
FASH	125	Visual Merchandising	3
BUS	140	Principles of Supervision	3
MATH	120	Business Math or higher*	3
FASH	132	Marketing Communications	3
FASH	150	Textiles	3
FASH	285	Fashion Internship III	1
BUS	225	Human Relations	3
FASH	231	Merchandising Planning and Control	3
FASH	242	Consumer Product Evaluation	3
MKT	121	Retail Management	3
ECON	130	Basic Economic Issues	3
		or	
ECON	230	Economics I*	3
FASH	286	Fashion Internship IV	1
BUS	230	Marketing	3
FASH	280	Capstone: Industry Topics	3
		Health and/or Physical Education Elective	1
		Humanities and/or Art Elective	3
		Fashion Electives	6

** Recommended for students who intend to transfer to a baccalaureate degree program*

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

First Semester			**CR**
ENGL	121	Composition I	3
BUS	140	Principles of Supervision	3
MATH	171	College Algebra (equivalent or higher)	3
FIRE	162	Fire Tactics and Strategy	3
		Social Science Elective	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16

Second Semester

ENGL	122	Composition II	3
BUS	141	Principles of Management	3
FIRE	224	Incident Command Systems	3
		Humanities and/or Arts Elective	3
		Physical Science, with lab (see page 56, section IV B)	4
		TOTAL CREDIT HOURS	16

Third Semester

FIRE	220	Fire Administration	3
FIRE	222	Fire Law	3
		Technical Electives*	4
		Oral Communication	3
		Science and/or Math Elective	3
		TOTAL CREDIT HOURS	16

Fourth Semester

FIRE	135	Building and Fire Codes	3
FIRE	250	Instructional Methods	3
		Technical Electives*	4
		Humanities and/or Arts Elective	3
		Social Science Elective	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	64

* 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
FIRE	190	Hazardous Material Chemical Behavior	3

Note: Significant expansion of this list has been recommended by the advisory committee and will be proposed in fall 1995.

Food and Beverage Management

(See Hospitality Management, page 94.)

Grounds and Turf Management

The Grounds and Turf Management program is a cooperative program with Longview Community College leading to an associate of applied science degree. The degree is granted by Longview Community College. The program offers training in professional lawn management and golf course management, providing a study of soils, fertilizers, grasses, trees and pesticide application procedures. The program also prepares lawn 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.

Associate of Applied Science Degree

Degree granted by Longview Community College

First Semester			**CR**
AGRI	107	Turfgrass Management I	3
AGRI	120	Introduction to Urban Agribusiness	3
ECON	130	Basic Economic Issues	3
		TOTAL CREDIT HOURS	9

Second Semester

CHEM	122	Principles of Chemistry	5
PSYC	130	Introduction to Psychology	3
SPD	125	Personal Communication	3
		TOTAL CREDIT HOURS	11

Summer

KAGB	200	Occupational Internship	3

Third Semester

ENGL	121	Composition I	3
BIOL	125	General Botany	5
		History or Political Science Elective	3
		TOTAL CREDIT HOURS	11

Fourth Semester

KAGB	129	Deciduous Trees and Shrubs	3
KAGB	106	Landscape Design and Maintenance	2
KAGB	145	Irrigation/Installation	3
		TOTAL CREDIT HOURS	8

Fifth Semester

MATH	120	Business Math	3
AGRI	115	Turf and Ornamental Plants: Pest Management	3
AGRI	109	Turfgrass Management II	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	10

Sixth Semester

KAGB	115	Soil Fertility and Fertilizers	3
KAGB	202	Ecology	5
KAGB	206	Advanced Landscape Design	2
		TOTAL CREDIT HOURS	10
		TOTAL PROGRAM CREDIT HOURS	62

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 67-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.

Associate of Applied Science Degree

Degree granted by Penn Valley Community College

First Semester			**CR**
BIOL	144	Human Anatomy/Physiology	5
DP	124	Introduction to Computing Concepts and Applications	3
KMRT	160	Introduction to Medical Records Profession	2
KMRT	161	Health Record Systems Analysis and Controls	3
KMRT	151	Medical Terminology for Medical Records	3
		TOTAL CREDIT HOURS	16

Second Semester			
BIOL	210	Pathophysiology	4
ENGL	121	Composition I	3
KMRT	162	Health Care Statistics	3
KMRT	184	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	1
		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	68.5

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.

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. 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. 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 competence and safety through continuing education.

Certified Nurse Aide

96 contact hours

AVHO 102 Certified Nurse Aide

Certified Medication Aide

80 hours of instruction

AVHO 104 Certified Medication Aide

Home Health Aide
21.5 contact hours
AVHO 106 Home Health Aide

Certified Medication Aide Update
10 contact hours
AVHO 108 Certified Medication Aide Update

I.V. Therapy
48 contact hours
AVHO 115 I.V. Therapy

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.

Associate of Applied Science Degree

First Semester			**CR**
HVAC	121	Basic Principles of HVAC	4
HVAC	123	Electromechanical Systems	4
HVAC	125	Energy Alternatives	2
HVAC	143	Reading Blueprint and Ladder Diagrams	2
MATH	133	Technical Math I	4
		TOTAL CREDIT HOURS	16
Second Semester			
HVAC	126	Residential HVAC Systems	4
HVAC	150	Refrigerant Management and Certification	1
INDT	125	Industrial Safety	1
ENGL	121	Composition I	3
PHYS	125	Technical Physics I	4
		Social and/or Economics Elective	3
		TOTAL CREDIT HOURS	16
Third Semester			
HVAC	124	Equipment Selection and Duct Design	4
HVAC	205	Pneumatic Control Systems	2
HVAC	218	Electronic Control Systems	2
HVAC	223	Commercial Systems: Heating	4
CPCA	105	Introduction to Personal Computing: IBM	1
		Health and/or Physical Education Elective	1
		Technical Electives	3
		TOTAL CREDIT HOURS	17
Fourth Semester			
HVAC	167	Sheet Metal Layout and Fabrication	3
HVAC	221	Commercial Systems: Air Conditioning	4
HVAC	224	Diagnosis and Service Procedures	3
HVAC	228	DDC and Microprocessor-based Controls	2
		Humanities and/or Art Elective	3
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM CREDIT HOURS	64

Technical Electives

AUTO	125	Introduction to Automotive Shop Practices	3
AUTO	230	Automotive Heating and Air Conditioning	3
BUS	121	Introduction to Business	3
BUS	145	Small Business Management	3
DRAF	120	Introduction to Drafting	2
DRAF	121	Introduction to Business	3
DRAF	130	Introduction to CAD Concepts	3
ELEC	120	Introduction to Electronics	3
ELEC	133	Programmable Controllers	3
ELTE	122	National Electrical Code I	4
ELTE	125	Residential Wiring Methods	4
ENGR	131	Engineering Graphics I	4
HVAC	271	HVAC Internship	3
HVAC	291	Independent Study	3
MFAB	121	Introduction to Welding	4

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. If you elect the certificate option, you 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 you to seek employment as a maintenance and service technician in the heating/air conditioning trade.

Required Courses			**CR**
ENGL	121	Composition I	3
HVAC	121	Basic Principles of HVAC	4
HVAC	123	Electromechanical Systems	4

HVAC	124	Equipment Selection and Duct Design	4
HVAC	126	Residential HVAC Systems	4
INDT	125	Industrial Safety	1
MATH	115	Introduction to Algebra	3
		Technical Elective	3
		TOTAL CREDIT HOURS	26

Eight credit hours from the following courses must be completed in addition to the courses listed above.

HVAC	167	Sheet Metal Layout and Fabrication	3
HVAC	205	Pneumatic Control Systems	2
HVAC	218	Electronic Control Systems	2
HVAC	221	Commercial Systems: Air Conditioning	4
HVAC	223	Commercial Systems: Heating	4
HVAC	224	Diagnosis and Service Procedures	3
HVAC	228	DDC and Microprocessor-based Controls	2
		TOTAL CREDIT HOURS	8
		TOTAL PROGRAM CREDIT HOURS	33

Technical Electives

AUTO	125	Introduction to Automotive Shop Practices	3
AUTO	230	Automotive Heating and Air Conditioning	3
BUS	121	Introduction to Business	3
BUS	145	Small Business Management	3
DRAF	120	Introduction to Drafting	2
DRAF	129	Interpreting Architectural Drawings	2
DRAF	130	Introduction to CAD Concepts	3
ELEC	120	Introduction to Electronics	3
ELEC	133	Programmable Controllers	3
ELTE	122	National Electrical Code I	4
ELTE	125	Residential Wiring Methods	4
ENGR	131	Engineering Graphics I	4
HVAC	125	Energy Alternatives	2
HVAC	150	Refrigerant Management and Certification	1
HVAC	271	HVAC Internship	3
HVAC	291	Independent Study	3
MFAB	121	Introduction to Welding	4

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 **CR**

HVAC	121	Basic Principles of HVAC	4
HVAC	123	Electromechanical Systems	4
INDT	125	Industrial Safety	1
		Technical Elective	4
		TOTAL CREDIT HOURS	13

Twelve credit hours from the following courses must be completed in addition to the courses listed above.

HVAC	124	Equipment Selection and Duct Design	4
HVAC	126	Residential HVAC Systems	4
HVAC	167	Sheet Metal Layout and Fabrication	3
HVAC	205	Pneumatic Control Systems	2
HVAC	218	Electronic Control Systems	2
HVAC	221	Commercial Systems: Air Conditioning	4
HVAC	223	Commercial Systems: Heating	4
HVAC	224	Diagnosis and Service Procedures	3
HVAC	228	DDC and Microprocessor-based Controls	2
		TOTAL CREDIT HOURS	12
		TOTAL PROGRAM CREDIT HOURS	25

Technical Electives

AUTO	125	Introduction to Auto Shop Practices	3
AUTO	230	Automotive Heating and Air Conditioning	3
BUS	121	Introduction to Business	3
BUS	145	Small Business Management	3
DRAF	120	Introduction to Drafting	2
DRAF	129	Interpreting Architectural Drawings	2
DRAF	130	Introduction to CAD Concepts	3
ELEC	120	Introduction to Electronics	3
ELEC	133	Programmable Controllers	3
ELTE	122	National Electrical Code I	4
ELTE	125	Residential Wiring Methods	4
ENGR	131	Engineering Graphics I	4
HVAC	125	Energy Alternatives	2
HVAC	143	Reading Blueprint and Ladder Diagrams	2
HVAC	150	Refrigerant Management and Certification	1
HVAC	271	HVAC Internship	3
HVAC	291	Independent Study	3
MFAB	121	Introduction to Welding	4

Electrical Technology Vocational Certificate

The Electrical Technology Vocational Certificate program is a one-year program that students can complete in two semesters. Designed to give students the basic skills to gain employment as a construction or maintenance electrician, the curriculum includes an internship with local employers. Coursework includes work on the

National Electrical Code to prepare students to take a national licensure exam and job training to develop basic psychomotor skills needed to work in the electrical field.

First Semester			CR
ELTE	122	National Electrical Code I	4
ELTE	125	Residential Wiring Methods	4
HVAC	123	Electromechanical Systems	4
INDT	125	Industrial Safety	1
		TOTAL CREDIT HOURS	13

Second Semester			
ELTE	200	Commercial Wiring Methods	4
ELTE	210	Code Certification Review	3
ELTE	271	Electrical Internship I	3
		Technical Electives	3
		TOTAL CREDIT HOURS	13
		TOTAL PROGRAM CREDIT HOURS	26

Technical Electives

ELTE	205	Industrial Electrical Wiring	4
ELTE	272	Electrical Internship II	3
CET	105	Construction Methods	3
DRAF	120	Introduction to Drafting	2
DRAF	129	Interpreting Architectural Drawings	2
ELEC	120	Introduction to Electronics	3
ELEC	124	Microcomputer Hardware	3
ELEC	125	Digital Electronics I	3
ELEC	133	Programmable Controllers	3
ELEC	165	Advanced Programmable Controllers	3
HVAC	121	Basic Principles of HVAC	4
MFAB	121	Introduction to Welding	4

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			CR
HMGT	121	Hospitality Management Fundamentals	3
HMGT	123	Basic Food Preparation	3
ENGL	121	Composition I	3
HMGT	271	Seminar: Purchasing	3
MATH	120	Business Math or higher	3
CPCA	105	Introduction to Personal Computing: IBM	1
		or	
CPCA	105	Introduction to Personal Computing: MAC	1
		TOTAL CREDIT HOURS	16

Second Semester			
HMGT	230	Intermediate Food Preparation	3
HMGT	128	Supervisory Management	3
HMGT	273	Seminar: Accounting	3
PSYC	121	Applied Psychology	3
		or	
PSYC	130	Introduction to Psychology	3
HMEC	151	Nutrition and Meal Planning	3
		TOTAL CREDIT HOURS	15

Summer			
HMGT	275	Hospitality Management Internship	3

Third Semester			
HMGT	277	Seminar: Menu Planning	3
HMGT	145	Food Production Specialties	3
HMGT	221	Design Techniques	3
HMGT	279	Beverage Control	3
HMGT	130	Hospitality Law	3
		TOTAL CREDIT HOURS	15

Fourth Semester			
HMGT	126	Food Management	4
HMGT	228	Advanced Hospitality Management	3
HMGT	250	Introduction to Catering	3
SPD	125	Personal Communications	3
		Humanities and/or Art Requirement	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	65

Postsecondary Certificate Program

ENGL	121	Composition I	3
HMGT	121	Hospitality Management Fundamentals	3
HMGT	123	Basic Food Preparation	3
HMGT	126	Food Management	4
HMGT	128	Supervisory Management	3
HMGT	230	Intermediate Foods	3
HMGT	271	Seminar: Purchasing	3
HMGT	273	Seminar: Accounting	3
HMGT	275	Hospitality Management Internship	3
MATH	120	Business Math	3
		TOTAL CREDIT HOURS	31

Associate of Applied Science Degree

Hotel/Motel Management

The JCCC Hotel/Motel Management program prepares the graduate to enter hotel/motel management, usually as a trainee or department supervisor. Courses in supervisory management, hotel accounting, food management, hotel sales and marketing and advanced hospitality management provide a comprehensive management background. In addition, the students learn basic skills through courses in housekeeping, front office management, basic and intermediate food preparation, food production specialties, nutrition and beverage control.

Individuals considering this field should enjoy a very active environment and a lot of contact with people.

First Semester			***CR***
HMGT	121	Hospitality Management Fundamentals	3
HMGT	123	Basic Food Preparation	3
HMEC	151	Nutrition and Meal Planning	3
CPCA	105	Introduction to Personal Computing: IBM	1
		or	
CPCA	106	Introduction to Personal Computing: MAC	1
ENGL	121	Composition I	3
HMGT	132	Seminar in Housekeeping	3
		TOTAL CREDIT HOURS	16

Second Semester			
HMGT	271	Seminar in Hospitality Management: Purchasing	3
HMGT	230	Intermediate Food Preparation	3
HMGT	265	Front Office Management	3
MATH	120	Business Math or higher	3
HMGT	128	Supervisory Management	3
		TOTAL CREDIT HOURS	15

Summer			
HMGT	275	Seminar in Hospitality Management: Internship	3
SPD	125	Personal Communications	3
		TOTAL CREDIT HOURS	6

Third Semester			
HMGT	273	Seminar in Hospitality Management: Accounting	3
HMGT	203	Hotel Sales and Marketing	3
PSYC	121	Applied Psychology	3
		or	
PSYC	130	Introduction to Psychology	3
HMGT	279	Beverage Control	3
HMGT	145	Food Production Specialties	3
		TOTAL CREDIT HOURS	15

Fourth Semester			
HMGT	126	Food Management	4
HMGT	228	Advanced Hospitality Management	3
HMGT	130	Hospitality Law	3
		Humanities and/or Art requirement	3
HMGT	268	Hotel Accounting	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	68

Information/Word Processing

(See Office Systems Technology, page 100.)

Interior Merchandising

Career opportunities as interior design assistant, manufacturer's representative, store display person or entrepreneur are open to the Interior Merchandising graduate at JCCC.

Courses in interior products, creative retail selling, business 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			**CR**
ITMD	133	Furniture and Ornamentation/ Antiquity to Renaissance	3
ITMD	121	Interior Design I	3
DRAF	261	Graphic Communications I for Interior Design	3
MATH	120	Business Math or higher	3
ITMD	125	Interior Textiles	3
ENGL	121	Composition I	3
		TOTAL CREDIT HOURS	18

Second Semester			
DRAF	264	CAD: Interior Design	3
ITMD	122	Interior Design II	3
ITMD	132	Interior Products	3
MKT	134	Creative Retail Selling	3
ITMD	231	Furniture and Ornamentation/ Renaissance to 20th Century	3
BUS	150	Business Communications	3
		TOTAL CREDIT HOURS	18

Third Semester

ITMD	223	Contract Design	3
ITMD	275	Seminar: Budgeting and Estimating	2
ITMD	282	Interior Merchandising Practicum I	1
ART	180	Introduction to Art History	3
ECON	130	Basic Economic Issues	3
		or	
ECON	230	Economics I	3
ITMD	140	Draperies, Treatment and Construction	1
ITMD	145	Upholstery Construction	1
ITMD	147	Lighting Design and Planning	1
		TOTAL CREDIT HOURS	15

Fourth Semester

ITMD	234	Kitchen and Bath: Planning and Design	3
ITMD	273	Seminar: Business Practices and Procedures	2
ITMD	284	Interior Merchandising Practicum II	1
ITMD	148	Furniture and Ornamentation/ Oriental	3
DRAF	266	Graphic Communications II for Interior Design	3
ITMD	239	Capstone:Portfolio and Presentation	2
FASH	135	Image Management	1
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	67

Suggested Sequence of Required Courses

ITMD	121	Interior Design I	3
DRAF	261	Graphic Communications I for Interior Design	3
ITMD	125	Interior Textiles	3
ITMD	133	Furniture and Ornamentation/ Antiquity to Renaissance	3
MATH	120	Business Math or higher	3
ENGL	121	Composition I	3
ITMD	122	Interior Design II	3
DRAF	264	CAD: Interior Design	3
ITMD	231	Furniture and Ornamentation/ Renaissance to 20th Centure	3
MKT	134	Creative Retail Selling	3
ITMD	132	Interior Products	3
BUS	150	Business Communications	3
ITMD	223	Contract Design	3
DRAF	266	Graphic Communications for Interior Design	3
ITMD	275	Seminar: Budgeting and Estimating	2
ART	180	Introduction to Art History	3
ITMD	282	Interior Merchandising Practicum I	1
ITMD	140	Draperies: Treatments and Construction	1
ITMD	145	Upholstery Construction	1
ITMD	147	Lighting: Design and Planning	1
ITMD	148	Furniture and Ornamentation/Oriental	3
ECON	130	Basic Economic Issues	3
		or	
ECON	230	Economics I	3
ITMD	234	Kitchen and Bath/Planning and Design	3
ITMD	273	Seminar: Business Practices and Procedures	2
ITMD	284	Interior Merchandising Practicum II	1
FASH	135	Image Management	1
		Health and/or Physical Education Elective	1
ITMD	239	Capstone: Portfolio and Presentation	2

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. Another 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 Dec. 1. If you are interested, contact the Admissions and Records office for an application packet, which includes deadlines, admission requirements and academic criteria.

Associate of Applied Science Degree

First Semester			**CR**
INTR	125	American Sign Language I	5
INTR	130	Orientation to Interpreting	3
INTR	145	Deaf Culture	3
		Health and/or Physical Education Elective	1
ENGL	122	Composition II	3
		TOTAL CREDIT HOURS	15

Second Semester

INTR	132	American Sign Language II	5
INTR	135	American Sign Language Theory	3
		Science and/or Math Elective	3
INTR	142	Fingerspelling I	3
		Social Science and/or Economics Elective	3
		TOTAL CREDIT HOURS	17

Third Semester

INTR	140	American Sign Language III	5
INTR	250	Interpreting I	6
INTR	225	Physical and Psychological Aspects of Interpreting	2

INTR	242	Fingerspelling II	2
INTR	181	Interpreter Practicum I	1
		TOTAL CREDIT HOURS	16

Fourth Semester

INTR	230	American Sign Language IV	4
INTR	255	Interpreting II	6
INTR	281	Interpreter Practicum II	3
		Humanities and/or Art Elective	3
		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 can 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			**CR**
BUS	121	Introduction to Business	3
BUS	225	Human Relations	3
MKT	133	Salesmanship	3
		or	
MKT	134	Creative Retail Selling	3
ENGL	121	Composition I	3
MATH	120	Business Math or higher	3
OST	101	Computerized Keyboarding	1
MKT	284	Marketing and Management Internship I	1
		TOTAL CREDIT HOURS	17

Second Semester

BUS	140	Principles of Supervision	3
MKT	121	Retail Management	3
BUS	150	Business Communications	3
ACCT	121	Accounting I	3
		or	
ACCT	111	Small Business Accounting	3
DP	124	Introduction to Computing Concepts and Applications	3
MKT	286	Marketing and Management Internship II	1
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	17

Third Semester

BUS	230	Marketing	3
MKT	202	Consumer Behavior	3
HUM	122	Introduction to Humanities	3
PHIL	138	Business Ethics	1
ECON	130	Basic Economic Issues	3
		or	
ECON	230	Economics I	3
MKT	221	Sales Management	3
MKT	288	Marketing and Management Internship III	1
		TOTAL CREDIT HOURS	17

Fourth Semester

BUS	141	Principles of Management	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

The Sales and Customer Relations Certificate program was developed for people now in a sales occupation or contemplating a career in sales. To receive a certificate, you must complete 31 hours of specialized course work leading to competencies in selling and customer relations. The program was designed with a specialized elective option to allow you to select a course that supports your career objective. The program focuses on the selling process and the delivery of effective customer service.

Overall employment in the selling field is expected to increase significantly through the year 2005.

First Semester			**CR**
MKT	134	Creative Retail Selling	3
		or	
MKT	133	Salesmanship	3

BUS	225	Human Relations	3
MATH	120	Business Math or higher	3
BUS	150	Business Communications	3
MKT	121	Retail Management	3
MKT	284	Marketing and Management Internship I	1
		TOTAL CREDIT HOURS	16

Second Semester

MKT	202	Consumer Behavior	3
MKT	221	Sales Management	3
DP	124	Introduction to Computing Concepts and Applications	3
LC	150	Job Search Skills	1
FASH	135	Image Management	1
		Specialty Elective	3
MKT	286	Marketing and Management Internship II	1
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM CREDIT HOURS	31

Recommended Specialty Electives

BUS	120	Management Attitudes and Motivation	3
BUS	121	Introduction to Business	3
BUS	230	Marketing	3
BUS	235	Introduction to International Business	3
FASH	121	Fashion Fundamentals	3
FASH	125	Visual Merchandising	3
FASH	150	Textiles	3
FASH	242	Consumer Product Evaluation	3
ITMD	121	Interior Design I	3
ITMD	125	Interior Textiles	3
ITMD	132	Interior Products	3

Metal Fabrication

The Metal Fabrication Technology program employs a wide variety of industrial-quality equipment to enable students to receive practical experience in welding processes, metal fabrication and related testing procedures.

Growth in population and income is expected to continue the demand for construction, manufacturing, maintenance and repairs that provide employment for welders. The rate of expansion in the industries that produce fabricated products will determine the increase in the number of welders needed.

JCCC provides well-equipped laboratories that enable students to receive instruction in metallurgy, oxyacetylene (gas) welding and cutting, shielded metal arc welding (stick welding), gas metal arc welding (MIG), gas tungsten arc welding (TIG), metal fabrication and allied process (Heliarc, TIG).

Associate of Applied Science Degree

First Semester **CR**

INDT	125	Industrial Safety	1
MFAB	121	Introduction to Welding	4
		or	
MFAB	122	Elements of Welding	3
ENGL	121	Composition I	3
MATH	133	Technical Math I	4
CPCA	105	Introduction to Personal Computing: IBM	1
DRAF	120	Introduction to Drafting	2
		TOTAL CREDIT HOURS	14-15

Second Semester

MFAB	125	Advanced Gas and Arc Welding	4
		or	
MFAB	123	Basic Welding	3
ENGL	123	Technical Writing I	3
PHYS	125	Technical Physics I	4
DRAF	123	Interpreting Machine Drawings	2
MFAB	240	Metallurgy	2
INDT	140	Quality Improvement Using SPC	2
		TOTAL CREDIT HOURS	16-17

Third Semester

MFAB	130	Gas Metal Arc Welding I	4
MFAB	152	Manufacturing Materials and Processes	3
BUS	140	Principles of Supervision	3
		Social Science Elective	3
		Related Elective	3
		TOTAL CREDIT HOURS	16

Fourth Semester

MFAB	160	Gas Tungsten Arc Welding	4
MFAB	291	Independent Study	2
HPER	200	First Aid/CPR	2
		Humanities Elective	3
		Related Electives	5-7
		TOTAL CREDIT HOURS	16-18
		TOTAL PROGRAM CREDIT HOURS	62-66

Related Electives

AUTO	121	Small Engine Service	3
BUS	120	Management Attitudes and Motivation	3
BUS	145	Small Business Management	3
BUSE	138	FastTrac Business Plan	4
CET	105	Construction Methods	2
DRAF	115	Introduction to Computer Graphics Systems	3
DP	124	Introduction to Computing Concepts and Applications	3
ELEC	133	Programmable Controllers	3
ENGL	210	Technical Writing II	3
HVAC	167	Sheet Metal Layout and Fabrication	3
MATH	134	Technical Math II	5
MFAB	137	Structural Welding	3

MFAB	138	Structural Welding FCAW	3
MFAB	139	Structural Welding Pipe	3
MFAB	230	Gas Metal Arc Welding II	4
PHYS	126	Technical Physics II	3

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			**CR**
INDT	125	Industrial Safety	1
DRAF	123	Interpreting Machine Drawings	2
MFAB	121	Introduction to Welding	4
		or	
MFAB	122	Elements of Welding	3
MFAB	125	Advanced Gas and Arc Welding	4
		or	
MFAB	123	Basic Welding	3
MFAB	130	Gas Metal Arc Welding I	4
MFAB	160	Gas Tungsten Arc Welding	4
MFAB	230	Gas Metal Arc Welding II	4
		TOTAL PROGRAM CREDIT HOURS	21-23

Nursing

JCCC offers two programs for individuals interested in nursing as an occupation. The Practical Nursing program is a vocational certificate program that allows program graduates the opportunity to take the national licensing examination for practical nurses. The second program is the Registered Nurse program, a two-year associate degreee nursing program, that allows its graduates the opportunity to take the national licensing exam for registered nurses. Both programs are approved by the Kansas State Board of Nursing. The Associate Degree – RN program is also accredited by the National League for Nursing.

Both nursing programs have a selective admissions process and limited enrollment. Completed applications must be submitted to the program of your choice for consideration. Applications for admission to the Practical Nursing program are accepted up to April 15 for admission. Applications for admission to the Associate Degree – RN program are accepted up to Jan. 15 for admission the following fall semester. If you are interested, application packets, which include deadlines, admission requirements and academic criteria, may be requested from the Admissions Office on the JCCC campus. For information on the vocational certificate program for Practical Nursing, contact the program office at 469-2350. For information on the Associate Degree – Registered Nurse program for registered nursing, contact the program office at 469-8500, ext. 3157.

If you are already a licensed practical nurse, you may wish to apply for admission to the Associate Degree – RN program with advanced standing. You must meet specific criteria to be eligible for admission to the program at an advanced level. Additional information and the application packet are available through the Admissions Office. The deadline for application is Dec. 15.

Nursing
Practical Nursing
Vocational Certificate Program

Fall

AVPN	105	Fundamentals of Nursing	
AVPN	108	Pharmacology	
AVPN	110	Professional Vocational Relationships	
AVPN	112	Nutrition	

Spring

AVPN	106	Medical Surgical Nursing	
AVPN	109	Psychosocial Adaptation	
AVPN	110	Professional Vocational Relationships	
AVPN	111	Maternal Child Nursing	

Summer

AVPN	106	Medical Surgical Nursing	
		TOTAL PROGRAM CONTACT HOURS	1,100

Nursing
Registered Nurse
Associate of Science Degree

Prerequisites			**CR**
Prior to beginning clinical courses			
CHEM	122	Principles of Chemistry	5
		Mathematics Elective (MATH 116 or higher)	3
		TOTAL CREDIT HOURS	8

First Semester

BIOL	140	Human Anatomy	4
PSYC	130	Introduction to Psychology	3
NURS	121	Fundamentals of Nursing	9
		TOTAL CREDIT HOURS	16

Second Semester

BIOL	225	Human Physiology	4
PSYC	218	Human Development	3
NURS	122	Nursing Across the Life Span – Part I	9
		TOTAL CREDIT HOURS	16

Summer

ENGL	121	Composition I	3

Third Semester

NURS	221	Nursing Across the Life Span – Part II	9
SOC	122	Sociology	3
		or	
SOC	125	Social Problems	3
		Communications Elective	3
		TOTAL CREDIT HOURS	15

Fourth Semester

NURS	222	Managing Client Care	9
		Humanities and/or Art Elective	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	13
		TOTAL PROGRAM CREDIT HOURS	71

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 of the American Occupational Therapy Association, located at 4720 Montgomery Lane, P. O. Box 31220, Bethesda, MD 20824-1220. AOTA's phone number is (301) 652-AOTA.

Associate of Applied Science Degree

Degree granted by Penn Valley Community College

Prerequisites			**CR**
ENGL	121	Composition I	3
CHEM	122	Principles of Chemistry	5
LC	130	Medical Terminology	3

Fall I Semester

KOT	102	Basic Emergency Patient Care	1
BIOL	140	Human Anatomy* (option 1)	4
		or	
BIOL	144	Anatomy and Physiology* (option 2)	5
KOT	100	Introduction to Occupational Therapy	5
KOT	103	Clinical Conditions	2
KOT	106	General Treatment Procedures	3
KOT	116	Level I Fieldwork: Introduction to Clinical Experience	5
		TOTAL CREDIT HOURS	25.5

Spring I Semester

PSYC	130	Introduction to Psychology	3
KOT	101	Growth and Development I	3
KOT	111	Level I Fieldwork: Pediatrics	1
KOT	154	Applied Neurology	2
KOT	107	Kinesiology	3
SPD	121	Public Speaking	3
		TOTAL CREDIT HOURS	15

Summer

SOC	122	Sociology	3
KOT	204	Therapeutic Media and Shop Practices	2
		American Institutions**	3
		TOTAL CREDIT HOURS	8

* Students must complete either the option 1 sequence or the option 2 sequence.

Fall II Semester

KOT	105	Growth and Development II	3
KOT	203	Assistive Technology/Orthotics	3
KOT	201	Occupational Therapy in Mental Health	2.5
KOT	202	Occupational Therapy in Physical Disabilities	4
KOT	211	Level I Fieldwork/Mental Health	1
KOT	212	Level I Fieldwork/Physical Disabilities	1
		TOTAL CREDIT HOURS	14.5

Spring II Semester

KOT	221	Level II Fieldwork: Special Interest	4
KOT	222	Level II Fieldwork: Physical Disabilities	4
		TOTAL CREDIT HOURS	8
		TOTAL PROGRAM CREDIT HOURS	71

** All graduates from Penn Valley must meet the American Institutions requirement. See a JCCC counselor about courses.

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 Administrative Office Management, Legal Office Specialist, Medical Office Specialist, Administrative Support Services Certificate, Office Careers Certificate and Office Automation 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 I.

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			**CR**
MATH	120	Business Math	3
ENGL	121	Composition I	3
OST	110	Skillbuilding I	1
OST	125	Document Formatting	1
OST	130	Office Systems Concepts	3
BUS	225	Human Relations	3
CPCA	114	Databases on Microcomputers I	1
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16

Second Semester			
ACCT	121	Accounting I	3
CPCA	110	Spreadsheets on Microcomputers I	1
ELEC	124	Microcomputer Hardware	3
BUS	121	Introduction to Business	3
OST	155	Word Processing Applications I	3
OST	150	Records Management	3
CPCA	138	Windows for Micros	1
		TOTAL CREDIT HOURS	17

Third Semester			
BUS	122	Introduction to Law	3
CPCA	118	Electronic Mail/Calendar Systems	1
CPCA	112	PC Communications	1
BUS	140	Principles of Supervision	3
		or	
BUS	141	Principles of Management	3
OST	255	Word Processing Applications II	3
BUS	150	Business Communications	3
		Humanities or Art Elective	3
		TOTAL CREDIT HOURS	17

Fourth Semester			
ECON	130	Basic Economic Issues	3
		or	
ECON	230	Economics I	3
OST	275	Office Internship I	1
BUS	243	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	66

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
		TOTAL CREDIT HOURS	15

Second Semester

OST	170	Medical Coding and Billing	3
OST	150	Records Management	3
OST	155	Word Processing Applications I	3
MATH	120	Business Math	3
BUS	225	Human Relations	3
OST	115	Electronic Calculators	1
		TOTAL CREDIT HOURS	16

Third Semester

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	3
CPCA	110	Spreadsheets on Microcomputers I	1
CPCA	112	PC Communications	1
		Humanities or Art Elective	3
		TOTAL CREDIT HOURS	17

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
		Elective	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	64

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 documents 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
OST	115	Electronic Calculators	1
CPCA	114	Databases on Microcomputers I	1
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	15

Second Semester

OST	150	Records Management	3
MATH	120	Business Math	3
ACCT	111	Small Business Accounting	3
		or	
ACCT	121	Accounting I	3
OST	155	Word Processing Applications I	3
OST	160	Legal Transcription	3
CPCA	118	Electronic Mail/Calendar Systems	1
		TOTAL CREDIT HOURS	16

Third Semester

PL	171	Law Office Management	
		or other approved course	3
BUS	150	Business Communications	3
BUS	225	Human Relations	3
OST	255	Word Processing Applications II	3
CPCA	112	PC Communications	1
CPCA	110	Spreadsheets on Microcomputers I	1
		General Electives	3
		TOTAL CREDIT HOURS	17

Fourth Semester

ECON	130	Basic Economic Issues	3
		or	
ECON	230	Economics I	3
OST	275	Office Internship I	1
OST	265	Computerized Office Applications	3
BUS	140	Principles of Supervision	3
		or	
BUS	141	Principles of Management	3
		Humanities and/or Art Elective	3
		General Electives	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	64

Office Careers Vocational Certificate

At the completion of this 14-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.

OST	105	Keyboarding/Formatting I	3
OST	110	Skillbuilding I	1
OST	125	Document Formatting	1
OST	130	Office Systems Concepts	3
OST	155	Word Processing Applications I	3
OST	115	Electronic Calculators	1
OST	120	Machine Transcription	1
		TOTAL PROGRAM CREDIT HOURS	13

Administrative Support Specialist Vocational Certificate Program

The Administrative Support Specialist Vocational Certificate prepares students for executive and/or administrative assistant duties in the office. The program provides training in the latest technical, computer and software skills.

OST	110	Skillbuilding I	1
OST	130	Office Systems Concepts	3
OST	125	Document Formatting	1
CPCA	110	Spreadsheets on Microcomputers I	1
CPCA	114	Databases on Microcomputers I	1
CPCA	138	Windows for Micros	1
BUS	225	Human Relations	3
OST	155	Word Processing Applications I	3
OST	115	Electronic Calculators	1
OST	120	Machine Transcription	1
OST	150	Records Management	3
CPCA	118	Electronic Mail/Calendar Systems	1
CPCA	112	PC Communications	1
OST	255	Word Processing Applications II	3
OST	265	Computerized Office Applications	3
OST	260	Desktop Publishing for the Office	3
OST	275	Office Internship I	1
		TOTAL PROGRAM CREDIT HOURS	31

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 your 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.

OST	155	Word Processing Applications I	3
OST	130	Office Systems Concepts	3
OST	255	Word Processing Applications II	3
OST	260	Desktop Publishing for the Office	3
		TOTAL PROGRAM CREDIT HOURS	12

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			**CR**
CPCA	106	Introduction to Personal Computing: MAC	1
OST	155	Word Processing Applications I	3
OST	130	Office Systems Concepts	3
CPCA	105	Introduction to Personal Computing: IBM	1
ELEC	124	Microcomputer Hardware	3
CPCA	118	Electronic Mail/Calendar Systems	1
DRAF	115	Introduction to Computer Graphics Systems**	3
		TOTAL CREDIT HOURS	15

Second Semester			
OST	255	Word Processing Applications II	3
CPCA	110	Spreadsheets on Microcomputers I*	1
CPCA	114	Databases on Microcomputers*	1
CPCA	138	Windows for Micros	1
CPCA	112	PC Communications	1
OST	260	Desktop Publishing for the Office I	3
OST	270	Office Automation Implementation***	3
		TOTAL CREDIT HOURS	13
		TOTAL PROGRAM CREDIT HOURS	28

* CPCA 128, Integrated Applications I, 3 credits, may be substituted for CPCA 105, CPCA 110 and CPCA 114.
** Prerequisite: MATH 111 or an appropriate score on the math assessment test.
*** Prerequisite: Permission of the program director.

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.

			CR
PL	121	Introduction to Law	3
PL	123	Paralegal Studies	1

First Semester

CPCA	128	Integrated Software	3
		or	
DP	124	Intoduction to Computing Concepts and Applications	3
		or the following three:	
CPCA	108	Word Processing on Microcomputers I	1
		and	
CPCA	110	Spreadsheets on Microcomputers I	1
		and	
CPCA	114	Databases on Microcomputers I	1
		TOTAL CREDIT HOURS	7

Second Semester

Following admission to the Paralegal program

PL	131	Legal Research	3
PL	132	Civil Litigation	3
		Paralegal Electives	7
		TOTAL CREDIT HOURS	13

Third Semester

PL	205	Legal Writing	3
PL	271	Legal Ethics, Interviewing and Investigation	3
		Paralegal Electives	7
		TOTAL CREDIT HOURS	13
		TOTAL PROGRAM CREDIT HOURS	33

Paralegal Electives

PL	148	Criminal Litigation	3
PL	140	Alternative Dispute Resolution	3
PL	142	Torts	3
PL	152	Real Estate Law	3
PL	155	Special Topics in Real Estate	1
PL	162	Family Law	3
PL	165	Special Topics in Family Law	2
PL	171	Law Office Management	3
PL	212	Business Organizations	3
PL	220	Computer-assisted Legal Research	2
PL	223	Computer Applications in the Law Office	3
PL	225	Advanced Computer-assisted Legal Research	2
PL	241	Will, Trusts and Probate Administration	3
PL	245	Elder Law	3
PL	264	Workers' Compensation	2
PL	266	Employment Law	3
PL	268	Bankruptcy	2
PL	275	Paralegal Internship I	1
PL	276	Paralegal Internship II	1
		TOTAL CREDIT HOURS	15

Associate of Arts Degree

The following courses must be completed with a minimum G.P.A. of 2.0 prior to application for admission to the Paralegal program. Upon successful completion of the requirements for the associate of arts degree, you will be eligible to receive an A.A. degree and a Paralegal Certificate.

			CR
ENGL	121	Composition I	3
PL	121	Introduction to Law	3
PL	123	Paralegal Studies	1

First Semester

		Humanities and/or Art Elective	3
SPD	120	Interpersonal Communications	3
		or	
SPD	121	Public Speaking	3
		or	
SPD	125	Personal Communications	3
		Science and Mathematics Elective	3
		TOTAL CREDIT HOURS	16

Second Semester

Following admission to the Paralegal program

ENGL	122	Composition II	3
PL	131	Legal Research	3
PL	132	Civil Litigation	3
CPCA	128	Integrated Software	3
		or	
DP	124	Intoduction to Computing Concepts and Applications	3
		or the following three:	
CPCA	108	Word Processing on Microcomputers I	1
		and	
CPCA	110	Spreadsheets on Microcomputers I	1
		and	
CPCA	114	Databases on Microcomputers I	1
		Social Science and/or Economics Elective	3
		TOTAL CREDIT HOURS	15

Third Semester

PL	205	Legal Writing	3
		Paralegal Electives	6
		Health and/or Physical Education Elective	1
		Humanities and/or Art Elective	3
		Science and Mathematics Elective	3
		TOTAL CREDIT HOURS	16

Fourth Semester

PL	271	Legal Ethics, Interviewing and Investigation	3
		Paralegal Electives	8
		Science and Mathematics Elective	3
		Social Science and/or Economics Elective	3
		TOTAL CREDIT HOURS	17
		TOTAL PROGRAM CREDIT HOURS	64

Paralegal Electives

PL	148	Criminal Litigation	3
PL	140	Alternative Dispute Resolution	3
PL	142	Torts	3
PL	152	Real Estate Law	3
PL	155	Special Topics in Real Estate	1
PL	162	Family Law	3
PL	165	Special Topics in Family Law	2
PL	171	Law Office Management	3
PL	212	Business Organizations	3
PL	220	Computer-assisted Legal Research	2
PL	223	Computer Applications in the Law Office	3
PL	225	Advanced Computer-assisted Legal Research	2
PL	241	Will, Trusts and Probate Administration	3
PL	245	Elder Law	3
PL	264	Workers' Compensation	2
PL	266	Employment Law	3
PL	268	Bankruptcy	2
PL	275	Paralegal Internship I	1
PL	276	Paralegal Internship II	1

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 American Physical Therapy Association. 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			**CR**
KPT	152	Fundamentals of Modalities I	3
PSYC	130	Introduction to Psychology	3
ENGL	121	Composition 1	3
BIOL	225	Human Physiology	4
		American Institutions *	3
		TOTAL CREDIT HOURS	16

Spring Semester

KPT	153	Kinesiology	4
KPT	102	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	4

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 26-month period of study. You must be formally accepted into the program by both JCCC and Penn Valley. Areas 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.

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 biological science 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

Fall Semester			**CR**
KRAD	160	Introduction to Radiologic Technology (beginning the second Monday in July)	2
BIOL	144	Human Anatomy and Physiology	5
LC	130	Medical Terminology	3
KRAD	171	Radiographic Exposures I	3
KRAD	172	Radiographic Positioning I	3
KRAD	173	Clinical Training I	3
		TOTAL CREDIT HOURS	19
Spring Semester			
KRAD	101	Introductory Physics	5
KRAD	162	Image Processing	2
KRAD	174	Radiographic Exposures II	3
KRAD	175	Clinical Training II	3
KRAD	176	Radiographic Positioning II	3
		TOTAL CREDIT HOURS	16
Summer			
KRAD	170	Radiologic Technology	3
KRAD	178	Clinical Training III	3
		TOTAL CREDIT HOURS	6
Fall Semester			
CPCA	128	Personal Computer Applications	3
ENGL	121	Composition I	3
KRAD	280	Clinical Training IV	4
KRAD	281	Physics of X-ray Equipment	3
KRAD	285	Special Procedures	2
		TOTAL CREDIT HOURS	15
Spring Semester			
		American Institutions *	3
PSYC	130	Introduction to Psychology	3
KRAD	278	Imaging Modalities and Pathology	3
KRAD	282	Clinical Training V	4
SPD	121	Public Speaking	3
		TOTAL CREDIT HOURS	16
Summer Semester			
KRAD	283	Final Seminar	3
KRAD	284	Clinical Training VI	2
		TOTAL CREDIT HOURS	5
		TOTAL PROGRAM CREDIT HOURS	77

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 administsrator.

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 Maintenance of Way

JCCC's Railroad Maintenance of Way 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.

As part of JCCC's Metal Fabrication Technology program, the Railroad Maintenance of Way certificate program keeps railroad workers abreast of changing developments in technology and welding techniques. This formal training will help employees keep their careers on the right track.

Enrollment is subject to the approval of the Burlington Northern training director and JCCC division administrator.

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.

MFAB	122	Elements of Welding	3
MFAB	123	Basic Welding	3
MFAB	132	Thermite Welding	3
MFAB	135	Component Welding	3
MFAB	137	Structural Welding	3
MFAB	138	Structural Welding FCAW	3
MFAB	139	Structural Welding Pipe	3
MFAB	145	Frog Welding	3
ENGL	121	Composition I	3
MATH	115	Introduction to Algebra	3
		Technical Electives	2
		TOTAL CREDIT HOURS	32

Technical Electives

MFAB	130	Gas Metal Arc Welding I	4
MFAB	150	Switch Point Repair	2
MFAB	155	Railroad Welding Review	2
MFAB	160	Gas Tungsten Arc Welding	4
MFAB	240	Metallurgy	2
DRAF	120	Introduction to Drafting	2
HVAC	145	Servicing HVAC Equipment	2

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.

MFAB	122	Elements of Welding	3
MFAB	123	Basic Welding	3
MFAB	132	Thermite Welding	3
MFAB	135	Component Welding	3
MFAB	145	Frog Welding	3
		TOTAL CREDIT HOURS	15

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.

MFAB	122	Elements of Welding	3
MFAB	123	Basic Welding	3
MFAB	137	Structural Welding	3
MFAB	138	Structural Welding FCAW	3
MFAB	139	Structural Welding Pipe	3
		TOTAL CREDIT HOURS	15

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.

MFAB	127	Welding Processes	2
MFAB	143	Thermite Welding for Supervisors	2
MFAB	147	Component Welding for Supervisors	2
		TOTAL CREDIT HOURS	6

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 also

are 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			CR
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
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16

Third Semester			
BUS	121	Introduction to Business	3
ECON	130	Basic Economic Issues	3
PHIL	138	Business Ethics	1
RRT	150	Railroad Operations	3
RRT	165	Railroad Safety, Quality and Environment	3
SPD	125	Personal Communication	3
		TOTAL CREDIT HOURS	16

Fourth Semester			
INDT	140	Quality Control Using SPC	2
		Business/Related Electives	6
		Technical/Related Electives	9
		TOTAL CREDIT HOURS	17
		TOTAL PROGRAM CREDIT HOURS	65

Business/Related Electives

ACCT	121	Accounting I	3
BUS	123	Personal Finance	3
BUS	140	Principles of Supervision	3
BUS	141	Principles of Management	3
BUS	221	Principles of Insurance	3
BUS	225	Human Relations	3
BUS	230	Marketing	3
BUS	243	Human Resource Management	3
BUS	261	Business Law I	3
ENGL	210	Technical Writing II	3
OST	101	Computerized Keyboarding	1

Technical/Related Electives

AUTO	125	Introduction to Automotive Shop Practices	3
CET	105	Construction Methods	3
CET	127	Construction Estimating	3
CET	129	Construction Management	3
CPCA	135	M/S DOS	1
CPCA	138	Windows for Micros	1
DRAF	115	Introduction to Computer Graphics Systems	3
DRAF	123	Interpreting Machine Drawings	2
DRAF	129	Interpreting Architectural Drawings	2
ELEC	120	Introduction to Electronics	3
ELEC	124	Microprocessor Hardware	3
ELEC	128	Computer Applications in Electronics	1
ELEC	133	Programmable Controllers	3
ELEC	150	Introduction to Telecommunications	4
ENGR	180	Engineering Land Surveying I	3
GEOS	140	Physical Geography	3
GEOS	141	Physical Geography Lab	2
HVAC	123	Electromechanical Systems	4
HVAC	205	Pneumatic Control Systems	2
HVAC	218	Electronic Control Systems	2
INDT	125	Industrial Safety	1
MFAB	121	Introduction to Welding	4
MFAB	130	MIG and TIG I	3
MFAB	152	Manufacturing Materials and Processes	3
MFAB	240	Metallurgy	1
PHYS	126	Technical Physics II	3

Associate of Science Degree
Conductor Option

Conductors are responsible for supervising over-the-road operation of freight trains and are in demand throughout the railroad industry. Conductors may choose career paths leading to locomotive engineer service or railroad management. The final phase of this program consists of 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
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16

Third Semester

BUS	121	Introduction to Business	3
ECON	130	Basic Economic Issues	3
PHIL	138	Business Ethics	1
RRT	150	Railroad Operations	3
RRT	165	Railroad Safety, Quality and Environment	3
SPD	125	Personal Communication	3
		TOTAL CREDIT HOURS	16

Fourth Semester

RRTC	123	Introduction to Conductor Service	4
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

Dispatcher 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 14 weeks of hands-on training provided in cooperation with the National Academy of Railroad Sciences. Ten weeks of on-the-job training begin 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
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16

Third Semester

BUS	121	Introduction to Business	3
ECON	130	Basic Economic Issues	3
PHIL	138	Business Ethics	1
RRT	150	Railroad Operations	3
RRT	165	Railroad Safety, Quality and Environment	3
SPD	125	Personal Communication	3
		TOTAL CREDIT HOURS	16

Fourth Semester

RRTD	122	Introduction to Railroad Dispatching	2
RRTD	271	Apprentice Railroad Dispatching Training I	6
RRTD	275	Railroad Dispatching Field Observation	3
RRTD	272	Apprentice Railroad Dispatching Training II	6
RRTD	276	Railroad Dispatching Field Application	5
		TOTAL CREDIT HOURS	22
		TOTAL PROGRAM CREDIT HOURS	70

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 upon 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
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16

Third Semester

BUS	121	Introduction to Business	3
ECON	130	Basic Economic Issues	3
PHIL	138	Business Ethics	1
RRT	150	Railroad Operations	3
RRT	165	Railroad Safety, Quality and Environment	3
SPD	125	Personal Communication	3
		TOTAL CREDIT HOURS	16

Fourth Semester

INDT	125	Industrial Safety	1
MFAB	122	Elements of Welding	3
		or	
MFAB	121	Introduction to Welding	4
MFAB	123	Basic Welding	3
MFAB	132	Thermite Welding	3
MFAB	135	Component Welding	3
MFAB	145	Frog Welding	3
		TOTAL CREDIT HOURS	16-17
		TOTAL PROGRAM CREDIT HOURS	64-65

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

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
		Health and/or	
		Physical Education Elective	1
		TOTAL CREDIT HOURS	16

Third Semester

BUS	121	Introduction to Business	3
ECON	130	Basic Economic Issues	3
PHIL	138	Business Ethics	1
RRT	150	Railroad Operations	3
RRT	165	Railroad Safety, Quality and Environment	3
SPD	125	Personal Communication	3
		TOTAL CREDIT HOURS	16

Fourth Semester

MFAB	122	Elements of Welding	3
		or	
MFAB	121	Introduction to Welding	4
MFAB	123	Basic Welding	3
RRTM	124	Orientation to the Railroad Mechanical Craft	2
RRTM	170	Railroad Mechanical Safety and Health	2
RRTM	251	Locomotive Diesel Engine Fundamentals	2
RRTM	253	Freight Car Fundamentals	2
RRTM	254	Basic Locomotive Electricity and Electronics	2
		TOTAL CREDIT HOURS	16-17
		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 examination 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			CR
CHEM	122	Principles of Chemistry *	5
ENGL	121	Composition I *	3
		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
Second Semester			
BIOL	225	Human Physiology *	4
BIOL	230	Microbiology *	3
BIOL	231	Microbiology Lab *	2
		Communications Elective	3
		Humanities and/or Art Elective	3
		TOTAL CREDIT HOURS	15

* Indicates prerequisite courses that must be completed before the clinic year.

Summer (clinic year)			
RC	125	Beginning Principles of Respiratory Therapy	4
RC	130	Respiratory Therapy 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	Respiratory Pharmacology	2
		TOTAL CREDIT HOURS	14
Fourth Semester			
RC	272	Clinical Practice II	4
RC	231	Clinical Topics and Procedures II	4
RC	233	Respiratory Care of Children	2
RC	236	Cardiopulmonary Medicine III	2
		TOTAL CREDIT HOURS	12
		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			CR
CHEM	122	Principles of Chemistry *	5
ENGL	121	Composition I *	3
BIOL	140	Human Anatomy *	4
MATH	116	Intermediate Algebra (or Math Elective 171 or higher)*	3
		TOTAL CREDIT HOURS	15
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
		TOTAL CREDIT HOURS	13

* Indicates prerequisite courses that must be completed before the clinic year.

Summer (clinic year)			
RC	125	Beginning Principles of Respiratory Therapy	4
RC	130	Respiratory Therapy 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
RC	233	Respiratory Care of Children	2
RC	236	Cardiopulmonary Medicine III	2
		TOTAL CREDIT HOURS	12
		TOTAL PROGRAM CREDIT HOURS	64

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.

EMS	121	Basic Rescuer-CPR	1
RC	125	Beginning Principles of Respiratory Therapy	4
RC	130	Respiratory Therapy Equipment	4
RC	135	Cardiopulmonary Medicine I	1
RC	220	Clinical Cardiopulmonary Physiology	2
RC	230	Clinical Topics and Procedures I	4
RC	235	Cardiopulmonary Medicine II	2
RC	236	Cardiopulmonary Medicine III	2
RC	240	Cardiopulmonary Pharmacology	2
RC	271	Clinical Practice I	4
		TOTAL CREDIT HOURS	26

The following are prerequisite course requirements that must be completed prior to enrollment in any respiratory course work.

BIOL	140	Human Anatomy	4
BIOL	225	Human Physiology	4
BIOL	230/1	Microbiology/Lab	3/2
CHEM	122	Principles of Chemistry	5
ENGL	121	Composition I	3
MATH	116	Intermediate Algebra (or Math Elective 171 or higher)*	3
PSCI	120	Physical Science (or a Physics course with a lab)	4
		TOTAL CREDIT HOURS	28

Note: If you are a Missouri resident, contact the JCCC Respiratory Care program director for corresponding course numbers at Penn Valley Community College.

Additional Associate of Science Degree Requirements

		Social Science and/or Economics Elective	3
		Communications Elective	3
		Humanities and/or Art Elective	3
		TOTAL CREDIT HOURS	9

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

RC	233	Respiratory Care of Children	2
RC	245	RRT Clinical Topics and Procedures	4
RC	274	RRT Clinical Practice Transition	4
		TOTAL CREDIT HOURS	10
		TOTAL PROGRAM CREDIT HOURS	73

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			CR
CHEM	123	Principles of Technical Chemistry	6
BIOL	122	Principles of Biology	3
MATH	171	College Algebra	3
ENGL	121	Composition I	3
		TOTAL CREDIT HOURS	15
Second Semester			
CHEM	143	Principles of Technical Organic Chemistry	6
PHYS	125	Technical Physics I	4
PHYS	135	Special Topic Technical Physics I	1
MATH	172	Trigonometry	3
DP	132	BASIC for Engineering Technology	3
		TOTAL CREDIT HOURS	17
Third Semester			
CHEM	223	Technical Analytical Chemistry	4
PHYS	126	Technical Physics II	3
PHYS	136	Special Topics Technical Physics II	2
ENGL	123	Technical Writing I	3
		Humanities and/or Art Elective	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16
Fourth Semester			
CHEM	243	Technical Instrumental Analysis	5
SPD	125	Personal Communications (recommended)	3
		or	
		Speech Elective	3
PSYC	121	Applied Psychology (recommended)	3
		or	
		Psychology Elective	3
ECON	130	Basic Economic Issues (recommended)	3
		or	
		Economics Elective	3
		Humanities and/or Art Elective	3
		TOTAL CREDIT HOURS	17
		TOTAL PROGRAM CREDIT HOURS	65

Associate of Applied Science Degree
Chemical Specialty

First Semester			CR
CHEM	123	Principles of Technical Chemistry	6
BIOL	122	Principles of Biology	3
MATH	133	Technical Math I *	4
ENGL	121	Composition I	3
CPCA	105	Introduction to Personal Computing: IBM	1
		TOTAL CREDIT HOURS	17
Second Semester			
CHEM	143	Principles of Technical Organic Chemistry	6
PHYS	125	Technical Physics I	4
PHYS	135	Special Topic Technical Physics I	1
MATH	134	Technical Math II	5
CPCA	108	Word Processing on Microcomputers	1
		or	
CPCA	114	Databases on Microcomputers I	1
		TOTAL CREDIT HOURS	17
Third Semester			
CHEM	223	Technical Analytical Chemistry	4
PHYS	126	Technical Physics II	3
PHYS	136	Special Topics Technical Physics II	2
ENGL	123	Technical Writing I	3
		Humanities and/or Arts Elective	3
		TOTAL CREDIT HOURS	15
Fourth Semester			
CHEM	243	Technical Instrumental Chemistry	5
SPD	125	Personal Communications (recommended)	3
		or	
SPD	128	Business and Professional Speech (recommended)	3
		or	
		Speech Elective	3
PSYC	121	Applied Psychology (recommended)	3
		or	
		Psychology Elective	3
ECON	130	Basic Economic Issues (recommended)	3
		or	
		Economics Elective	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM CREDIT HOURS	64

* It is recommended that you take this course in the summer before you start the program.

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 are 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			**CR**
MATH	120	Business Math	3
ENGL	121	Composition I	3
BUS	145	Small Business Management	3
KTT	101	Introduction to the Travel Industry	3
KTT	102	Destination Geography	3
		TOTAL CREDIT HOURS	15
Second Semester			
SPD	121	Public Speaking	3
BUS	140	Principles of Supervision	3
		American History Elective	3
KTT	103	Travel Sales and Reservations	3
KTT	127	Management Internship I	3
		TOTAL CREDIT HOURS	15
Summer Semester			
ACCT	121	Accounting I	3
Third Semester			
DP	124	Introduction to Computing Concepts and Applications	3
MKT	133	Salesmanship	3
ENGL	123	Technical Writing	3
KTT	104	Travel Agency Operations	3
KTT	128	Management Internship II	3
		TOTAL CREDIT HOURS	15
Fourth Semester			
BUS	261	Business Law I	3
		General Education Electives	6
KTT	105	Computer Reservations Systems	4
KTT	129	Management Internship III	3
		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 in laboratory care and pharmaceutical animal colonies, or assisting a veterinarian in providing professional services and performing office routines. JCCC's Veterinary Technology program is offered in cooperation with the Veterinary Technology program at Maple Woods Community College. You study sanitation and animal care, the preparation of animals for surgery, and anesthetic management. You also perform lab work and use radiologic techniques. The program features supervised intensive clinical study under the direction of a veterinarian. 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, admission requirements and options for meeting academic criteria.

Associate of Applied Science Degree

Degree granted by Maple Woods Community College

First Semester			**CR**
KSAH	100	Introduction to Veterinary Technology	2
KSAH	101	Principles of Animal Science I	3
BIOL	127	General Zoology	5
KSAH	182	Veterinary Office and Computer Skills	3
ENGL	121	Composition I	3
KSAH	108	Clinical Mathematics	1
		TOTAL CREDIT HOURS	12
Second Semester			
KSAH	110	Principles of Animal Science II	3
KSAH	111	Sanitation and Animal Care	2
KSAH	120	Clinical Pathology Technology I	4
CHEM	122	Principles of Chemistry	5
SPD	121	Public Speaking	3
		TOTAL CREDIT HOURS	17
Summer			
KSAH	214	Veterinary Technician Internship	6
Third Semester			
KSAH	200	Veterinary Hospital Technology I	3
KSAH	202	Veterinary Technology Anatomy	5
KSAH	212	Large Animal Technology	4
BIOL	230	Microbiology	3
BIOL	231	Microbiology Lab	2
		TOTAL CREDIT HOURS	17
Fourth Semester			
KSAH	203	Laboratory Animal Technology	2
KSAH	209	Equine Medicine and Management	3
KSAH	210	Veterinary Hospital Technology II	3
KSAH	211	Clinical Pathology Technology II	5
KSAH	213	Radiology and Electronic Procedures	2
		American Institutions *	3
		TOTAL CREDIT HOURS	18
		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

Honors Program

Admission
Honors Forum
Honors Contracts
Interdisciplinary Courses
Community Service
Graduation from the Honors Program
Scholarships

International Education

Study Abroad

Semester Programs
Travel Courses

Television Courses

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.

Community Service

If you plan to graduate from the Honors Program, you will be expected to perform some volunteer community service. The location and nature of the community service project will be discussed and agreed upon by both you and the Honors Program coordinator.

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 community service.

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 $50 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 $750. 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.

For application deadlines, contact the Honors Office, 237 GEB.

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 19 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. 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 also are 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.

Travel for Credit

In a travel for credit class, you may earn from one to four credits while pursuing special interests through guided travel, reading and instruction. Travel is carefully planned and supervised by instructors. The travel for credit courses offered each semester are listed in the credit class schedule.

Course Prefix Listing

Academic Achievement Center	LC
Accounting	ACCT
Administration of Justice	ADMJ
Agribusiness	AGRI
Anthropology	ANTH
Architecture	ARCH
Art	ART
Astronomy	ASTR
Automotive Technology	AUTO
Aviation	KAV
Banking and Finance	AIB
Biology	BIOL
Business Administration	BUS
Business Entrepreneurship	BUSE
Chemistry	CHEM
Civil Engineering Technology	CET
Communication Design	CD
Computer Science	CS
Computers: Personal Computer Applications	CPCA
Desktop Publishing	CDTP
Correctional Services	KADJ
Data Processing	DP
Dental Hygiene	DHYG
Drafting Technology	DRAF
Economics	ECON
Education	EDUC
Electrical Technology	ELTE
Electronics Technology	ELEC
Emergency Medical Science	EMS
Engineering	ENGR
English	ENGL
Fashion Merchandising	FASH
Fire Services Administration	FIRE
Foreign Language	FL
Geoscience	GEOS
Grounds and Turf Management	KAGB
Health Information Technology	KMRT
Health, Physical Education and Recreation	HPER
Hearing Impaired	HRIM
Heating, Ventilation and Air Conditioning Technology	HVAC
History	HIST
Home Economics	HMEC
Honors Program	HON
Horticulture	HORT
Hospitality Management	HMGT
Humanities	HUM
Industrial Technology	INDT
Information Technology	IT
Interdisciplinary Study	IDSP
Interior Merchandising	ITMD
Interpreter Training	INTR
Journalism and Media Communications	JOUR
Learning Strategies	LS
Marketing Management	MKT
Mathematics	MATH
Metal Fabrication	MFAB
Music	MUS
Nursing	NURS
Occupational Therapy Assistant	KOT
Office Systems Technology	OST
Paralegal	PL
Philosophy	PHIL
Photography	PHOT
Physical Education	HPER
Physical Science	PSCI
Physical Therapist Assistant	KPT
Physics	PHYS
Political Science	POLS
Psychology	PSYC
Radiologic Technology	KRAD
Railroad Operations	RRT
Railroad Operations Conductor Option	RRTC
Railroad Operations Dispatcher Option	RRTD
Railroad Operations Mechanical Option	RRMT
Religion	REL
Respiratory Care	RC
Sociology	SOC
Speech	SPD
Theater	THEA
Travel and Tourism Management	KTT
Veterinary Technology	KSAH

Courses by Division Listing

Arts, Humanities and Social Science Division

Administration of Justice
Agribusiness
Anthropology
Architecture
Art
Correctional Services
Education
Fire Services Administration
Grounds and Turf Management
History
Humanities
Music
Philosophy
Photography
Political Science
Religion
Sociology
Theater

Business, Technology and Computer Instruction Division

Accounting
Automotive Technology
Aviation Maintenance
Business Administration
Business Entrepreneurship
Civil Engineering Technology
Communication Design
Computer Science
Computers: Personal Computer Application
Data Processing
Drafting Technology
Economics
Electrical Technology
Electronics Technology
Engineering
Fashion Merchandising
Heating, Ventilation and Air Conditioning
Home Economics
Hospitality Management
Industrial Technology
Interior Merchandising
Marketing and Management
Metal Fabrication
Office Systems Technology
Paralegal
Railroad Operations
Travel and Tourism Management

Communications Division

Academic Achievement Center
English
Foreign Language
Honors
Interpreter Training
Journalism
Learning Strategies
Speech and Debate

Physical Education Division

Physical Education

Science, Health Care and Math Division

Astronomy
Biology
Chemistry
Cosmetology
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
Veterinary Technology

Student Development Division

Hearing Impaired

Johnson County Area Vocational School

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

to meet the requirements of the general algebra course. 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. Students will master a variety of concepts, including the terminology of mathematics and algebra, simplifying open expressions, solving linear equations, etc. By arrangement.

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 chemical symbols and formulas, valences, the metric system and scientific notation. 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 ANDREADING SKILLS (3CR)

Prerequisite: Appropriate assessment score

This reading course focuses on techniques for building a functional vocabulary and for increasing comprehension on the sentence, paragraph and multi-paragraph levels. 3 hrs./wk.

LC 125
FUNDAMENTALS OF READING (3CR)

Prerequisite: Appropriate assessment score

This course is the first of a two-semester sequence that includes LC 126 Reading Skills Improvement. 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 designed for students who need to improve their understanding of written expression. Concepts of *Fundamentals of Reading* will be reviewed; however, 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. Concepts of *Reading Skills Improvement* will be reviewed; however, the focus of the course is on critical and interpretive reading skills, developing reading techniques appropriate to material and purpose, increasing vocabulary level and improving written expression. 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.

Accounting

ACCT 111
SMALL BUSINESS ACCOUNTING (3CR)

Corequisite: MATH 120 or credit by examination

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. This course will not be offered every semester. Spring

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 and the partnership. 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 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. This course will not be offered every semester. Spring.

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

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)

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 AGRIBUSINESS (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. 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 or corequisite: ARCH 131

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 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
WESTERN ART HISTORY I (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
WESTERN ART HISTORY II (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 231
LIFE DRAWING I (3CR)
Prerequisite: ART 130

This is a study of the fundamentals of figure drawing. Students will work from live models, skeletons and other presentations. 6 hrs./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. 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. 1 hr. lecture, 3 hrs. lab/wk.

AUTO 125
INTRODUCTION TO
AUTOMOTIVE SHOP PRACTICES (3CR)
Corequisite: MATH 111 or a satisfactory score on the math assessment exam

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. 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
AUTOMOTIVE DIESEL (2CR)
Prerequisite: AUTO 125 and AUTO 165

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. 1 hr. lecture, 3 hrs. lab/wk.

AUTO 163
AUTOMOTIVE STEERING AND SUSPENSION (3CR)

Prerequisite: 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. 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. 2 hrs. lecture, 6 hrs. lab/wk.

AUTO 167
AUTOMOTIVE BRAKE SYSTEMS (2CR)

Prerequisite: 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. 1 hr. lecture, 3 hrs. lab/wk.

AUTO 168
AUTOMOTIVE DRIVE TRAIN AND AXLES (2CR)

Prerequisite: 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, inspect, adjust and replace all cluth components and service all front- and rear-wheel drive shaft components. 1 hr. lecture, 3 hrs. lab/wk.

AUTO 230
AUTOMOTIVE HEATING AND AIR CONDITIONING (3CR)

Prerequisite: AUTO 165

Upon successful completion of this course, the student should be able to construct, operate and diagnose auto air conditioning, lighting systems and power accessories such as power windows, speed control and instrument panel components. 2 hrs. lecture, 3 hrs. lab/wk.

AUTO 234
AUTOMOTIVE ELECTRICAL SYSTEMS (4CR)

Prerequisite: AUTO 165

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. 3 hrs. lecture, 3 hrs. lab/wk.

AUTO 250
AUTOMATIC TRANSMISSIONS AND TRANSAXLES (4CR)

Prerequisite: 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. 3 hrs. lecture-demonstration, 3 hrs. lab/wk.

AUTO 254
AUTOMOTIVE ENGINE PERFORMANCE (5CR)

Prerequisite: AUTO 165

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. 3 hrs. lecture, 6 hrs. lab/wk.

AUTO 260
AUTOMOTIVE SERVICE MANAGEMENT AND TECHNIQUES (7CR)

Prerequisites: AUTO 163, 167, 168, 230, 234, 250, 254

Upon successful completion of this course, the student should become proficient in ordering 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 staff-owned vehicles. 4 hrs. lecture, 9 hrs. lab/wk.

AUTO 271
AUTOMOTIVE TECHNOLOGY INTERNSHIP I (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.

AUTO 272
AUTOMOTIVE TECHNOLOGY INTERNSHIP II (3CR)
Prerequisite: AUTO 271 and 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
CARBURETION 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 will 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 MATH (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 student 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.

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 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 205
GENERAL GENETICS (3CR)

Prerequisite: BIOL 122 or the equivalent

Heredity and variation of plants and animals will be studied, including classical and molecular genetics. 3 hrs./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 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 effects 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 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 (4CR)

Upon successful completion of this course, the student should be able to write a sound business plan. Students should be able to assess their strengths and weaknesses as business entrepreneurs; 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 tailor their business plans based on the intended use of each plan (internal management, raising investment capital, borrowing money); and identify and evaluate various resources available for funding small businesses. 4 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 feasbility analysis. This course is designed for participants who are in the concept or very early start-up stage of a 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)

Corequisite: BUSE 180 or BUSE 190

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)

Corequisite: BUSE 180 or BUSE 190

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.

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 chem-ical 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 127
CONSTRUCTION ESTIMATING (3CR)

Prerequisite: DRAF 129 or competence in reading building drawings

This is an introductory course for drafting and civil engineering technology students and others interested in learning the basic principles of construction estimating. 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. format in performing estimates. Students will use industry standard software for construction estimating. 2 hrs.lecture, 2 hrs. lab/wk.

CET 129
CONSTRUCTION MANAGEMENT (3CR)

This course is for students interested in learning management principles for construction projects. 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. Computers will be used to 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 or equivalent

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. Design standards include AISC and NDS. 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

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 chromatec. 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 231 and CD 235

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: Completion of all third-semester program courses

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)

Prerequisite: Completion of all third-semester program courses

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 instrurction 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 indentation 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 the 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: ILLUSTRATOR(1CR)

Prerequisite: CPCA 105 or CPCA 106, or equivalent experience

This course is designed to teach students to create 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 style linking, creating custom leaders, distibuting 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. 1 hr. lecture/wk.

CDTP 151
DESKTOP PUBLISHING II: QUARKXPRESS (1CR)

Prerequisites: CDTP 131 or equivalent experience

This course covers the intermediate 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 170
DESKTOP PUBLISHING III: PAGEMAKER (1CR)

Prerequisites: CPCA 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 on-line 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 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 PROJECTMANAGEMENT (1CR)

Prerequisite: CPCA 105

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, Gannt 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 MICROS (1CR)

Prerequisite: CPCA 105 or equivalent experience

This course introduces the student to a powerful graphical microcomputer windowing environment. By learning to work within windows, students should find it easy to start and work with software applications, transfer information between applications and organize and manage files created with applications. 1 hr. lecture/wk.

CPCA 139
UNIX (1CR)

Prerequisite: CPCA 105 or equivalent

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

Students in this course will be given instruction in the commands and techniques required to access the resources of the Internet. How to browse the Internet, locate information, download files, send and receive electronic mail and use listservs 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)

Prerequisites: CPCA 112 and CPCA 141

This course will cover the commands and techniques required to effectively use various Internet application tools. The setup of a computer for remote dial-up connection, using Windows and non-Windows applications to locate information, downloading files, chat, reading news and creating a Web page will be covered. 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.

CPCA 180
OS/2 (1CR)

Prerequisite: CPCA 105 or equivalent

This course introduces the student to a powerful operating system with a graphic interface. How to start and work with software applications, run more than one application at a time, transfer information between applications and organize and manage files created with applications will be covered. 1 hr. lecture/wk.

Computer Science

CS 180
INTRODUCTION TO ARTIFICIAL INTELLIGENCE (3CR)

Prerequisite: A computer programming course or equivalent

Upon successful completion of this course, students will be able to use a computer to program introductory exercises in an object-oriented language and to build a small expert system, define terms and application areas of the field, and describe knowledge representation and problem-resolution techniques used in artificial intelligence. 3 hrs. lecture/wk.

CS 200
CONCEPTS OF PROGRAMMING ALGORITHMS (4CR)

Prerequisite: DP 134, 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 160.)

Construction Management

(See Civil Engineering Technology, page 141.)

Core Curriculum

ANTH 210
PEOPLES OF THE WORLD (3CR)

Prerequisites: POLS 130 and SOC 160. Available to noncore students with the instructor'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 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.

COM 125
ORAL AND WRITTEN COMMUNICATIONS (6CR)

Prerequisite: ENGL 106 or the appropriate assessment test score

This course will combine the two primary modes of communication (writing and speaking) to demonstrate their natural connections. Students will learn research skills and apply them to significant topics in written papers and speeches. Critical thinking, group process and argumentation will be employed to further this process. 6 hrs./wk.

HIST 124
COMMUNITY LIFE AND VALUES (3CR)

This course will study 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, and the values revealed will be compared to those of a modern community/city. 3 hrs./wk.

HLT 260
LIFETIME WELLNESS: A PERSONAL GOAL (3CR)

This course will offer an overall view of health care trends today. Specific areas will include exercise, nutrition, stress management, illness risk factors and holistic health. The primary focus will deal with health maintenance, and participants will be entered into a personalized Life Inventory Computer Program to provide information for their plan to improve and maintain their own lifetime fitness and wellness. 4 hrs. lecture, lab/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./wk.

MATH 165
FINITE MATH, A CULTURAL APPROACH (3CR)

Prerequisite: MATH 116 or the 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, topology, noneuclidian geometry, probability, statistics, matrices, exponential and logarithmic functions and math induction. The common themes throughout the course will be innovations in personal computers, related mathematical and cultural history and reasoning ability. 3 hrs./wk.

MATH 175
DISCRETE MATH AND ITS APPLICATIONS (3CR)

Prerequisite: MATH 165

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. Some of the topics covered will be 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 while learning to use computer software to do the calculations. 3 hrs./wk.

POLS 130
POLITICAL ECONOMY: POWER IN SOCIETY (3CR)

This course will examine the economic and political dimensions of social power as a vehicle for introducing students to the social sciences. The concept of power will be used to show commonalities and differences in the social sciences and examine the language, methods, scope and insights of political and economic studies. Through examination of the manifestations of power through authority, force and influence, the significance of political economy will be revealed. 3 hrs./wk.

SCI 121
SCIENCE: A DYNAMIC PROCESS (4CR)

This course is an introduction to the process of learning about the natural world through science. Hands-on experiments will be done in the laboratory. Development of conceptual schemes will be seen in case studies in biology, chemistry, physics and geology. The course leads into Physical Science or Principles of Biology. 3 hrs. lecture, 3 hrs. lab/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.

TECH 220
TECHNOLOGICAL LITERACY (3CR)

Prerequisites: SCI 121 and PSCI 120 or BIOL 122. Available to noncore students with the program director's permission.

This course is an overview of technology in our society. Upon successful completion of this course, the student will be able to define what technology is and detail a historical perspective of technological trends. Major course components also will include in-depth looks at energy, manufactured materials, electronics and computers, and transportation. The impact of these on society and individuals will be assessed. 3 hrs./wk.

Correctional Services

KADJ 185
PRINCIPLES OF CORRECTIONS (3CR)

Prerequisite: Approval the 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 the 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, makeup and business practices. This course prepares the student for the Kansas State Board of Cosmetology esthetician examination.

Data Processing

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 processsing and library calls. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 148
COBOL I (4CR)
Prerequisites: DP 134 and DP 140 for COBOL. DP 140 may be taken as a corequisite.

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)
Prerequisites: DP 134 and DP 140 for COBOL. DP 140 may be taken as a corequisite. 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 will study the data file utility (DFU), screen design aid (SDA), structured query language, Office/Vision/400 and data definition specifications (DDS) for an IBM AS/400. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 190
INTRODUCTION TO REXX (4CR)

Prerequisite: DP 134 or the equivalent

Corequisite: CPCA 180

This course covers the use of the OS/2 edition of REXX to create, modify and debug application programs and custom system utilities. Instruction will be provided on how to write and execute applications, trace operating environment and process large amounts of data by using program stacks, queues and external files. The course will include project programs that utilize standard programming logic and constructs, built-in REXXUtil functions and techniques for creating and manipulating objects in the OS/2 workplace shell. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 204
UNIX OPERATING SYSTEM (3CR)

Prerequisite: CS 200 using C++

Corequisite: CPCA 180

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 Windows environment will be emphasized. 3 hrs. lecture, 2 hrs. lab by arrangement/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
SYSTEMS ANALYSIS AND DESIGN USING COMPUTER-AIDED SOFTWARE ENGINEERING (CASE) (4CR)

Prerequisites: DP 242 or equivalent experience

The students will gain practical experience in using the tools and techniques of structured systems analysis and design. Methodologies will be introduced for defining end-user requirements, data modeling, process modeling and peer reviews. The student will learn the basics of a computer-aided software engineering (CASE) tool, then apply the tool in developing a fully functional business area information system. Emphasis is placed on the human factors and end-user involvement necessary in building modern information systems. 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 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 248 or DP 257 or CS 250

Students will study characteristics and objectives of database management systems versus traditional file management systems. Topics include relational, hierarchical and network models; data modeling using the entity-relational model; normalization to avoid modification anomalies; and operational considerations. Students will learn the use of a relational DBMS (Oracle) and a standard structured query language. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 264
APPLICATION DEVELOPMENT AND PROGRAMMING (4CR)

Prerequisites: DP 242; and DP 260 or DP 162
Corequisite: DP 269 or DP 257 or DP 253; 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 267
ADVANCED CICS (5CR)

Prerequisite: DP 253

This course covers the use of advanced BMS techniques, the linkage section for I/O, CICS system commands, CEDF and debugging transaction. Reading CICS dumps, working with other CICS system transactions and using multiple data sets, transient data and alternate indexes will be covered. 3 hrs. lecture, 4 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
DATA PROCESSING INTERNSHIP (1CR)

Prerequisites or corequisites: DP 248 and division administrator approval

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 data processing courses. 15 hrs. on-the-job training/wk.

DP 272
INTERMEDIATE POWERBUILDER ENTERPRISE (4CR)

Prerequisites: DP 172, DP 260 or equivalent, and one programming class beyond DP 134

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.

Dental Hygiene

DHYG 121
CLINICAL DENTAL HYGIENE I (6CR)

Prerequisites: Admission to the Dental Hygiene Program and CHEM 122, ENGL 121 and SOC 122 (minimum 2.0 G.P.A.)
Corequisites: BIOL 146, DHYG 125 and PSYC 130

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 PSYC 130

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 140
CLINICAL DENTAL HYGIENE II (5CR)

Prerequisite: DHYG 121
Corequisites: DHYG 142, DHYG 146, DHYG 148, BIOL 225, BIOL 230 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 140, BIOL 225, BIOL 230, 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 (2CR)

Prerequisites: DHYG 121 and no grade below a "C" in DHYG courses
Corequisites: 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 and an in-depth study of the inflammatory process and its relationship to periodontal disease. 2 hrs. lecture/wk.

DHYG 148
DENTAL HEALTH EDUCATION (1CR)

Prerequisites: DHYG 121 and no grade below a "C" in DHYG courses
Corequisites: BIOL 225, BIOL 230, DHYG 140, DHYG 142 and DHYG 146

Students will study health and apply educational methods for individuals and groups with special emphasis on psychological, social and economic factors. In addition, research and dental literature will be evaluated.
2 hrs. lab/wk.

DHYG 221
CLINICAL DENTAL HYGIENE III (7CR)

Prerequisites: DHYG 140, BIOL 235, DHYG 142 and no grade below a "C" in DHYG courses
Corequisites: BIOL 225, DHYG 230, DHYG 235 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, DHYG 235 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, DHYG 235 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. 3 hrs. lecture, 1 hr. lab/wk. for 8 wks.

DHYG 235
DENTAL MATERIALS (2CR)

Prerequisites: DHYG 140, BIOL 235 and no grade below a "C" in DHYG courses
Corequisites: DHYG 221, DHYG 225, DHYG 230 and DHYG 240

This course deals with specific dental materials relative to the dental hygiene profession. Instruction will include procedures, properties and manipulation of these dental materials. 1 hr. lecture, 3 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, DHYG 230 and DHYG 235

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 (7CR)

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 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 teachniques 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 or MATH 172 or MATH 173

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 or MATH 172 or MATH 173

This course is part of the Drafting Technology – Machine Option. Students successfully completing this course will 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, pressure vessels and injection mold inserts. Important concepts include dimensioning, form and position tolerancing, coordinate tolerancing and calculations related to material allowances. Project assignments will be completed using CAD. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 225
CIVIL DRAFTING (3CR)

Prerequisite: DRAF 230 or ENGR 131
Corequisite: MATH 134 or MATH 172 or MATH 173

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 (4CR)

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 include pumping systems, material handling systems, jigs and fixtures and gauges. Team project/ protocol will be used to develop graphic, ISO and ANSI-approved solutions. Three industrial field trips with subsequent journals are required. 2 hrs. lecture, 6 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. Additional 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 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 ele-

vations 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.

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 government 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 macro-economic 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

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 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/others who desire to develop an intellecturally 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 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 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.

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/others who desire to develop an intellecturally challenging environment for young children. The focus of the course is on 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.

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. 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. 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. 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 the casual student. 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)

Prerequisites: ELEC 120 and MATH 133

This course covers resistive circuits having DC sources. Analysis topics include Ohm's law, Kirchoff'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 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)

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)

Upon successful completion of this course, the student should be able to use the electronics department's computers to run the CAI programs, perform basic DOS functions using a shell program, write a report using a word processing program, draw schematics using a schematic capture program, make bills of material and parts lists using a spreadsheet and database program, draw simple printed circuit boards using a printed circuit board layout program and identify various hardware components of a personal computer. 1 hr. lecture/wk.

ELEC 130
ELECTRONIC DEVICES I (3CR)
Prerequisite: ELEC 122
This is the first course in electronic devices. Principal topics include diodes and transistors, special-purpose diodes and diode application circuits. Both bipolar junction transistors and field effect transistors are examined, and application circuits for both transistor types are constructed. 2 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. Operation of AC and DC motor drives will also be covered as well as wiring and troubleshooting of sensors and actuators. Lecture topics will be supported with hands-on laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 133
PROGRAMMABLE CONTROLLERS (3CR)
Upon completion of this course, the student should be able to identify the hardware components of programmable controllers, apply basic programming concepts, control functions using symbols and follow operation procedures. The student should be able to enter, edit and test controller programs. 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. Upon successful completion of this course, the student will be able to use an oscilloscope, function generator, DC power supply, digital multi-meter and watt-meter. The course will also include 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 students learned in Circuit Analysis I will be applied to complex circuits have AC sources. The AC and pulse responses of circuits having resistance, inductance and capacitance are analyzed. Other topics students will study include transformer and frequency response of 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)
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 both voice and data communications. Topics include voiceband communications, digital transmission, switching and signaling and future technologies. 3 hrs. lecture/wk.

ELEC 165
ADVANCED PROGRAMMABLE CONTROLLERS (3CR)

Prerequisite: ELEC 133 or the equivalent

This course is a continuation of programmable controller application and concepts. Upon successful completion of this course, the student should be able to program a file-organized programmable controller using software and menu-driven terminals. Also, the student should be able to use more advanced controller programs such as sequencers, file and block transfers and analog control function and understand programmable controller networking. 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 130

Upon successful completion of this course, the student should be able to explain telecommunications in terms of the hardware functions of an entire system. This system includes both voice and data: terminals, telephone sets, interfaces, networks, modems, protocols and the media used to interconnect the system. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 180
INTRODUCTION TO RAILROAD ELECTRONICS (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 the railroad electronic maintainers. Upon successful completion of this course, the student should be able to identify and use fundamental DC circuit concepts such as Kirchhoff's laws, power and energy formulas, Ohm's Law, Thevenin'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 deliver/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 the 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 or MATH 172 or MATH 173

Topics covered in this introductory course on GPS will include navigational history, 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 130

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

Corequisite: ELEC 230

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 is the second course in digital electronics. Students will complete 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 in the laboratory part of the course. Each student will build a simple computer in the laboratory. 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 and differentiators and active filters. Additional topics include frequence response with respect to discrete and operational amplifiers. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 240
ELECTRONIC COMMUNICATION SYSTEMS (3CR)

Corequisites: ELEC 230

Upon successful completion of this course, the student should be able to apply theory and practical applications of relevant aspects of electrical communication systems and components. 2 hrs. lecture, 2 hrs. lab/wk.

ELEC 245
MICROPROCESSORS (3CR)

Prerequisite: ELEC 225

This is a basic course on microprocessors and microprocessor systems. Principle topics include machine language and the interfacing of memory, input devices and output devices. All topics are supported by laboratory projects. Troubleshooting is emphasized in the laboratory. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 250
MICROCOMPUTER MAINTENANCE (3CR)

Prerequisite: ELEC 225

Upon successful completion of this course, the student should be able to maintain, upgrade and repair personal computers and peripherals. Students will configure, build, add cards, test, troubleshoot and repair IBM clone computers. Topics will include diagnotic 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. 18 hrs. 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. 18 hrs. 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. 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 RESCUER (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/or 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 Technology Program. 2.5 hrs. lecture, lab/wk. for 8 wks.

EMS 128
EMS FIRST RESPONDER (3CR)

This course provides training in emergency medical care for those who may be the first responding to a medical incident. The student will receive both classroom and psychomotor skills training in CPR, patient assessment and fracture, airway 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. 5 hrs. lecture, 2 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 the Kansas EMT state certification examination, which is administered by the Board of Emergency Medical Services. 7 hrs. lecture, 4 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)

Prerequisites: High school geometry and trigonometry or 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 132
ENGINEERING GRAPHICS II (3CR)

Prerequisite: ENGR 131

Upon successful completion of this course, the student should be able to apply techniques in detail and assembly drawing, dimensioning, auxiliary view, sectioning and developments. Emphasis will be on creative design processes and visualization. 2 hrs. lecture, 3 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 FORTRAN programming language to develop programming techniques 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 I (3CR)

Prerequisite or corequisite: MATH 172 or MATH 134 or the equivalent

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 and competence in computer programming
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 and competence in computer programming

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 252
MECHANICS OF MATERIALS (3CR)

Prerequisites: ENGR 251 and competence in computer programming

Upon successful completion of this course, the student should be able to apply the principles of mechanics related to the strength of materials. This course is a continuation of Statics with the basic principles covered including simple stress and strain, torsion, shear, bending and deflection. Applications will be considered for beams, columns and beam-column members. 3 hrs. lecture/wk.

ENGR 254
DYNAMICS (3CR)

Prerequisites: ENGR 251 and competence in computer programming

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.

English

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 assessing and 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 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

Intended for reluctant writers, this course is designed to develop their confidence and competence. 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 101. 3 hrs./wk.

ENGL 103
PRACTICAL WRITING SKILLS (1CR)

A practical writing course in English for nonnative 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 PATTERN 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 112
RESEARCH SKILLS (1CR)

This course is a review of the research process, beginning with limiting the subject and moving to revising the finished product. Emphasis will be on the gathering of resource material and correctly documenting it into a scholarly paper. Students will receive individualized tutoring and practice in research writing. By arrangement.

ENGL 115
REVISION SKILLS (1CR)

This course is designed to instruct the practicing writer in skills needed to revise all writing, including business, college and personal. Students will use a variety of computer programs and self-paced materials. The course is individualized and will include instructor feedback. By arrangement.

ENGL 120
WRITING IN THE DISCIPLINES (1CR)

This course is designed to provide the student with a process for complementing the variety of written assignments typically assigned in classes other than composition. The student will practice writing a variety of short papers using a prescribed process for each assignment. The course is individualized and will include instructor feedback and models for each assignment. 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, business report and memorandum writing, and science, analysis and critical writing. 3 hrs./wk.

ENGL 223
CREATIVE WRITING (3CR)

Prerequisite: ENGL 122

Students will study and practice poetry, fiction and 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
DRAMA AS 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
APPAREL 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 completes 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 nontextile 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)

Prerequisite: Permission of division administrator

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 will cover the organization and function of fire prevention, inspections, surveying and mapping, recognizing life and fire hazards, eliminating fire hazards and public relations. 3 hrs./wk.

FIRE 125
BUILDING CONSTRUCTION FOR FIRE SERVICE (3CR)

Students will explore how to classify buildings by occupancy and type of construction. Emphasis will be on fire protection features, including building equipment, facilities, fire-resistive materials and high-rise considerations. 3 hrs./wk.

FIRE 130
FIRE INVESTIGATION (3CR)

How to determine the cause of a fire will be explained in this introductory course. The course does not deal with 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 will be covered in this class for advanced students. Topics will include evidence preservation, interviewing and courtroom procedures. 3 hrs./wk.

FIRE 135
BUILDING AND FIRE CODES (3CR)

Advanced students will study how to read and interpret codes and ordinances, especially the Life Safety Codes that are used extensively in fire prevention. 3 hrs./wk.

FIRE 137
EXTINGUISHING, DETECTION AND ALARM SYSTEMS (3CR)

This introductory course for advanced students will cover types of extinguishing, detection and alarm systems and how they operate. This course does not include in-depth discussions of fire sprinkler and standpipe systems. 3 hrs./wk.

FIRE 140
RECOGNITION AND IDENTIFICATION OF HAZARDOUS MATERIALS (1CR)

This course is a study of the recognition of hazardous materials, incidents and methods of identification of the substances involved. 1 hr./wk.

FIRE 143
PROPERTIES AND CHARACTERISTICS OF HAZARDOUS MATERIALS (1CR)

Prerequisite: FIRE 140

This course is a study of the general properties and characteristics of hazardous materials. 1 hr./wk.

FIRE 145
FIRE DEPARTMENT INITIAL RESPONSE – HAZARDOUS MATERIALS (1CR)

Prerequisite: FIRE 143

This course is a study of the techniques and methods initially employed by the fire department to manage hazardous materials incidents. 1 hr./wk.

FIRE 150
INTRODUCTION TO FIRE SCIENCE (3CR)

Topics covered in this course will include 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)

This course will include a study of hydraulic principles and formulas. Hydraulic experiments will emphasize fire service applications. 4 hrs./wk.

FIRE 160
FIRE APPARATUS AND EQUIPMENT (3CR)

Fire apparatus design, specifications, capabilities and use in emergencies will be discussed. 3 hrs./wk.

FIRE 162
FIRE TACTICS AND STRATEGY (3CR)

Fire control through manpower, equipment and extinguishing agents will be explored. 3 hrs./wk.

FIRE 169
RESCUE TECHNIQUES (4CR)

This course offers a study of rescue techniques. Students will discuss and participate in simulated rescue situations. 5 hrs./wk.

FIRE 170
SPRINKLER AND STANDPIPE SYSTEMS (3CR)

This advanced course will explain the types of sprinkler and standpipe systems used in fire protection and how they operate. 3 hrs./wk.

FIRE 175
ESSENTIALS OF FIREFIGHTING (4CR)

This first-year class will explain basic firefighting skills with emphasis on the theory of fire protection and

identifying and using equipment safely. This course meets NFPA 1001 minimum qualifications for Fire Fighter I certification. 6 hrs./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 will be 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 will be covered. 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 their individual areas 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.

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. 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)

Areas 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 190
INTERMEDIATE JAPANESE I (3CR)

Prerequisite: FL 171 or two 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 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 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 250
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 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 222.)

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, stratagraphic-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 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, student 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 (3CR)

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. Abstraction 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 ASSURANCE (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
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 FORAMBULATORY CARE (3CR)

Prerequisites: BIOL 137and 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 LPNs 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)

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 Beginning Ballet, 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 162
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 TAC 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. 1hr./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, American Red Cross certification in responding to emergencies and community cardiopulmonary resuscitation may be earned. 2 hrs./wk.

HPER 202
PERSONAL AND COMMUNITY HEALTH (3CR)

Students will discuss the maintenance of good health. Discussion topics will include exercise and fitness, drug abuse, emotional health, proper nutrition, alcohol, tobacco, chronic and communicable disease, 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.

HPER 224
OUTDOOR RECREATION (3CR)

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.

HPER 240
LIFETIME FITNESS I (1CR)

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.

HPER 241
LIFETIME FITNESS II (1CR)

Prerequisite: HPER 240

This course is a continuation and expansion of Lifetime Fitness I. Students will receive additional beneficial information. 2 hrs. lecture, lab/wk., open lab format by arrangement.

HPER 242
LIFETIME FITNESS III (1CR)

Prerequisite: HPER 241

This course is a continuation and expansion of Lifetime Fitness II. 2 hrs. lecture, lab/wk, open lab format by arrangement.

HPER 243
LIFETIME FITNESS IV (1CR)

Prerequisite: HPER 242

This course is a continuation and expansion of Lifetime Fitness III. The goal of this process is to develop in each student the desire and challenge to continue a daily fitness plan. 2 hrs. lecture, lab/wk, open lab format by arrangement.

HPER 245
ELEMENTARY PHYSICAL EDUCATION (3CR)

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.

HPER 255
INTRODUCTION TO PHYSICAL EDUCATION (3CR)

This course is an introduction to physical education, its history, philosophy, theory and practice. 3 hrs./wk. Spring.

Hearing Impaired

HRIM 100
BASIC ENGLISH
FOR HEARING-IMPAIRED PERSONS (HIP) I (3CR)

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.

HRIM 101
BASIC ENGLISH FOR HIP II (3CR)

Prerequisite: HRIM 100

In this continuation of HRIM 100, the emphasis will be on clear, written communication: grammar, organization, idiomatic usage, spelling and vocabulary. 5 hrs./wk.

HRIM 102
BASIC ENGLISH FOR HIP III (3CR)

Prerequisite: HRIM 101

Students will practice expression through writing compositions. Emphasis will be on organization, clarity of expression and style. 5 hrs./wk.

HRIM 105
ADJUSTMENTS INTO ADULT LIVING (HIP) (3CR)

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.

HRIM 110
DEVELOPMENTAL READING
FOR THE HEARING IMPAIRED I (2CR)

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.

HRIM 111
DEVELOPMENTAL READING
FOR THE HEARING IMPAIRED II (3CR)

Prerequisite: HRIM 110

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.

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 condensors and evaporators, aluminum coil repair, properties of gas, metering devices, gas combustion, gas burners, ventilation and combustion air. 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. 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 troubleshooting 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 appli-

cation of electrical theory as well as the interconnection of components of air conditioning and refrigeration systems. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 124
EQUIPMENT SELECTION AND DUCT DESIGN (4CR)

Prerequisites: HVAC 121 and HVAC 123

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. 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 conditioning 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. 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 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. 2 hrs. lecture, 3 hrs. lab/wk.

HVAC 205
PNEUMATIC CONTROL SYSTEMS (2CR)

Prerequisites: HVAC 123 or the equivalent

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. 1.5 hrs. lecture, 1.5 hrs. lab/wk.

HVAC 218
ELECTRONIC CONTROL SYSTEMS (2CR)

Prerequisites: HVAC 123 or the equivalent

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. 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. 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. 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. 2 hrs. lecture, 3 hrs. lab/wk.

HVAC 228
DDC AND MICROPROCESSOR-BASED CONTROLS (2CR)

Prerequisite: HVAC 123 or the equivalent

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. 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 directly 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 the 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 the 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)

Prerequisite: None (HIST 151 is recommended)

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 – 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 topic affects 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. Students will study this issue 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. In this course, the process of reflecting, researching, analyzing and evaluating is as important as the content. As points of view concerning the 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 practicess will be described, including pest control, mineral nutrition and plant propagation. 3 hrs. lecture, 2 hrs. lab/wk.

Hospitality Management (Chef Apprenticeship)

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, sauteing, 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 223, 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 219
HOTEL-MOTEL OPERATIONS (3CR)

The management of public lodging establishments will be the focus of this course. Upon successful completion of this course, the student should be able to demonstrate an understanding of front office procedures, rental of rooms, reception of guests, handling reservations, guest requests and complaints, convention and meeting procedures, guest records, mail and other routine procedures. 3 hrs./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)

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 pates, terrines, ballotines, pate 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)
Prerequisites: HMGT 123 and HMGT 145

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 alse 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, HMGT 273 and admission to the Hospitality Management program

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

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. This 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 133
COMPARATIVE CULTURES (3CR)

This course will trace the development of the humanities in classical Greece, medieval Europe and a selected Asian culture. 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 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.

HUM 297
CLASSICAL GREECE (3CR)

In this travel-for-credit study of classical Greek culture and its beginnings in the Minoan and Mycenaean period, students will spend 15 hours in the classroom exploring the architectural and artistic treasures of ancient Greece. Students will visit important archaeological sites and museums in Greece. 1 hr. lecture/wk. and 15 travel days.

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)

Prerequisites: Background in manufacturing processes and/or basic math

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 oof 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)

Prerequisite: CPCA 135
Corequisites: CPCA 137, CPCA 138 and two hours of CPCA application courses

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 and CPCA 137; 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. Students completing this course should be able to accomplish basic fundamental network management tasks. Topics include planning and managing the network file system, implementing log-in and file system security, implementing network printing and managing network servers. 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 adminisstration, 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 is 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 215.)

Interdisciplinary Studies

IDSP 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.

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)

Prerequisite: Approval of the division administrator

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 predeparture 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 SEC 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. Classtime 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 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.

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.

Marketing 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./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./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./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./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./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./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./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./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, fomulate 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

This course will cover simplifying numerical and algebraic expressions, including polynomials, rational expressions, exponential expressions and radical expressions; solving equations and inequalities, including linear equations, quadratic equations and equations containing rational expressions; and analysis and graphing of 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, logarithms 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 appropriate score on the math assessment test

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 the equivalent

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.

MATH 165
FINITE MATH, 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, topology, noneuclidian geometry, probability, statistics, matrices, exponential and logarithmic functions and math induction. The common themes throughout the course will be innovations in personal computers, related mathematical and cultural history and reasoning ability. 3 hrs./wk.

MATH 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 173. 3 or 5 hrs./wk.

MATH 172
TRIGONOMETRY (3CR)

Prerequisite: MATH 171 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.

MATH 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.

MATH 175
DISCRETE MATH AND ITS APPLICATIONS (3CR)

Prerequisite: MATH 171 or MATH 173

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. Some of the topics covered will be 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 while learning to use computer software to do the calculations. 3 hrs./wk.

MATH 181
STATISTICS (3CR)

Prerequisite: MATH 171 MATH 173 or appropriate score on the math assessment test

This is a beginning course in statistical analysis. Topics will include descriptive statistics, probability, sampling, distributions, estimation, hypothesis testing, regression and correlation. Computer/calculator applications will be incorporated into course topics. 3 hrs./wk.

MATH 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.

MATH 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 differential equations. 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 equivalent

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.

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. 1 hr. lecture, 6 hrs. lab/wk.

MFAB 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.

MFAB 123
BASIC WELDING (3CR)

Prerequisites: MFAB 122 or a pproval 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 (AAC). 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.

MFAB 125
ADVANCED GAS AND ARC WELDING (4CR)

Prerequisite: MFAB 121 or approval of the division administrator

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. 1 hr. lecture, 6 hrs. lab/wk.

MFAB 127
WELDING PROCESSES (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 various welding processes used by railroads and industry. All standard shop and maintenance welding processes will be taught and demonstrated. Students will be required to participate. 1 hr. lecture, 1.5 hrs. lab/wk.

MFAB 130
GAS METAL ARC WELDING I (4CR)

Prerequisite: MFAB 121 or approval of the division administrator

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. 1 hr. lecture, 6 hrs. lab/wk.

MFAB 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.

MFAB 135
COMPONENT WELDING (3CR)

Prerequisites: MFAB 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.

MFAB 137
STRUCTURAL WELDING SMAW (3CR)

Prerequisites: MFAB 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.

MFAB 138
STRUCTURAL WELDING FCAW (3CR)

Prerequisites: MFAB 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.

MFAB 139
STRUCTURAL WELDING PIPE (3CR)

Prerequisites: MFAB 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.

MFAB 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.

MFAB 145
FROG WELDING (3CR)

Prerequisites: MFAB 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.

MFAB 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.

MFAB 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.

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 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. 1.5 hrs. lecture, 1 hr. lab/wk.

MFAB 160
GAS TUNGSTEN ARC WELDING (4CR)

Prerequisite: MFAB 121 or approval of the division administrator

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 GTAW process, with u-bend test being performed on mild steel. 1 hrs. lecture, 6 hrs. lab/wk.

MFAB 230
GAS METAL ARC WELDING II (4CR)

Prerequisite: MFAB 130 or approval of the division administrator

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. 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.

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.

MUS 133
SIGHT-SINGING AND EAR TRAINING III (2CR)

Prerequisite: MUS 132

This is a continued advanced study of melodic, harmonic and rhythmic elements of music. 2 hrs./wk.

MUS 134
SIGHT-SINGING AND EAR TRAINING IV (2CR)

Prerequisite: MUS 133

In this advanced study, students will continue working on aural and sight-reading skills through melodic and harmonic dictation. 2 hrs./wk.

MUS 141
MUSIC THEORY: HARMONY I (3CR)

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 progression on the piano. Students will gain further understanding of harmonic practices through selected software programs. 3 hrs./wk.

MUS 142
MUSIC THEORY: HARMONY II (3CR)

Prerequisite: MUS 141

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 nonharmonic tones, proper usage of the supertonic and dominant sevenths, correct use of the submediant 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.

MUS 143
MUSIC THEORY: HARMONY III (3CR)

Prerequisite: MUS 142

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.

MUS 144
MUSIC THEORY: HARMONY IV (3CR)

Prerequisite: MUS 143

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.

MUS 151
MIXED VOCAL ENSEMBLE I (1CR)
Open to both majors and nonmajors, this class involves rehearsal and performance of a wide range of vocal music. 3 hrs./wk.

MUS 152
MIXED VOCAL ENSEMBLE II (1CR)
Prerequisite: MUS 151
This is a continuation of Mixed Vocal Ensemble I. 3 hrs./wk.

MUS 153
MIXED VOCAL ENSEMBLE III (1CR)
Prerequisite: MUS 152
This is a continuation of Mixed Vocal Ensemble II. 3 hrs./wk.

MUS 154
MIXED VOCAL ENSEMBLE IV (1CR)
Prerequisite: MUS 153
This is a continuation of Mixed Vocal Ensemble III. 3 hrs./wk.

MUS 156
MIDI MUSIC COMPOSITION (3CR)
Prerequisite: MUS 142 or approval of the program director
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.

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 beginning 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)
The ensemble will perform jazz and popular music at festivals, public concerts and college functions. 3 hrs./wk.

MUS 177
EVENING JAZZ ENSEMBLE II (1CR)
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)
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)
This class will consist of continued performances of jazz and popular music at festivals, public concerts and college functions. 3 hrs./wk.

MUS 181
STUDENT JAZZ ENSEMBLE I (2CR)
Prerequisite: Audition
The ensemble will perform jazz and popular music at festivals, public concerts and college functions. 6 hrs./wk.

MUS 182
STUDENT JAZZ ENSEMBLE II (2CR)
Prerequisite: MUS 176 or MUS 181
This class will consist of continued performances of jazz and popular music at festivals, public concerts and college functions. 6 hrs./wk.

MUS 183
STUDENT JAZZ ENSEMBLE III (2CR)
Prerequisite: MUS 177 or MUS 182
This class will consist of continued performances of jazz and popular music at festivals, public concerts and college functions. 6 hrs./wk.

MUS 184
STUDENT JAZZ ENSEMBLE IV (2CR)
Prerequisite: MUS 178 or MUS 183
This class will consist of continued performances of jazz and popular music at festivals, public concerts and college functions. 6 hrs./wk.

MUS 187
JAZZ IMPROVISATION I (2CR)
Prerequisite: High school playing experience
This is a fundamental approach to the rhythm and melodic lines involved in creative improvisation. Basic procedures for analyzing 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: High school playing experience
Concert band repertoire – 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 or by permission
This is a continuation of Band I. 3 hrs./wk.

MUS 193
BAND III (1CR)
Prerequisite: MUS 192 or by permission
This is a continuation of Band II. 3 hrs./wk.

MUS 194
BAND IV (1CR)
Prerequisite: MUS 193 or by permission
This is a continuation of Band III. 3 hrs./wk.

MUS 201
CHAMBER ENSEMBLE I (1CR)
Prerequisite: High school playing or the equivalent
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 or audition
This is a continuation of Orchestra I. 2 hrs. (1 evening)/wk.

MUS 213
ORCHESTRA III (1CR)
Prerequisite: MUS 212 or audition
This is a continuation of Orchestra II. 2 hrs. (1 evening)/wk.

MUS 214
ORCHESTRA IV (1CR)
Prerequisite: MUS 213 or audition
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
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
Advanced private instruction on playing the piano will be offered in this course.

MUS 238
APPLIED PIANO III (Private) (1CR)
Prerequisite: MUS 237
Advanced 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, CHEM 122, MATH 116 or higher and CPR certification
Corequisites: BIOL 140 and PSYC 130

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, minimum of six months' clinical nursing experience in a hospital or nursing home setting, and admission with advanced standing to the Nursing Program

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 maladaptation 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 (365 CONTACT HOURS)

Prerequisite: Admission to the Practical Nursing program

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 (217 CONTACT HOURS)

Prerequisite: Admission to the Practical Nursing program

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)

Prerequisite: Admission to the Practical Nursing program

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 CONTACTHOURS)

Prerequisite: Admission to the Practical Nursing program

Students will explore the adaptive capacity of clients with emotional stresses 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)

Prerequisite: Admission to the Practical Nursing program

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)

Prerequisite: Admission to the Practical Nursing program

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 stages is 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)

Prerequisite: Admission to the Practical Nursing program

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
GROWTH AND DEVELOPMENT I (3CR)

Prerequisite: Formal admission to the program

Physical, perceptual, cognitive, social, intellectual and emotional development during normal growth from prenatal stages to later adolescence will be covered.

KOT 103
CLINICAL CONDITIONS I (2CR)

Prerequisite: Formal admission to the program

This course will cover pediatric psychosocial dysfunctions commonly referred to and treated by occupational therapists.

KOT 105
GROWTH AND DEVELOPMENT II (3CR)

Prerequisite: KOT 101 with a minimum grade of "C"

The role of the occupational therapy assistant will be explored. Included will be physical and psychosocial aging, treatment approaches and service management. Physical, perceptual, cognitive, social, intellectual and emotional development of human beings during normal growth and development from later adolescence to death will be covered.

KOT 106
GENERAL TREATMENT PROCEDURES (3CR)

Prerequisites: Formal admission to the program and concurrent enrollment in KOT 116

From the general treatment procedures presented in this class, students will learn the use of adaptive equipment, adaptive techniques for home and work, and general treatment procedures that are used in clinical settings.

KOT 107
KINESIOLOGY (3CR)

Prerequisite: BIOL 144 with a minimum grade of "C"

The study and analysis of movement as it pertains to the clinical practice of occupational therapy will be covered in this class.

KOT 111
LEVEL I FIELDWORK: PEDIATRICS (1CR)

Prerequisites: KOT 100, KOT 106 and KOT 116, each with a minimum grade of "C" and concurrent enrollment in KOT 101

This course is an introduction to the medical setting through observations and clinical experience with the pediatric population.

KOT 112
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 116
LEVEL I FIELDWORK: INTRODUCTION TO CLINICAL EXPERIENCE (.5CR)

Prerequisites: Formal admission to the program and concurrent enrollment in KOT 100 and KOT 106

In this class, students will be introduced to the medical setting through observation and clinical experience.

KOT 154
APPLIED NEUROLOGY (2CR)

Prerequisites: Formal admission to the program and BIOL 110 and KOT 100 with a minimum grade of "C"

This course will present the student with the foundations of neuroscience necessary to practice as an OTA. The student will learn anatomy, physiology and function of the nervous system as well as correlation of clinical problems with the pathology of the nervous system.

KOT 201
OCCUPATIONAL THERAPY IN MENTAL HEALTH (2.5CR)

Prerequisites: PSYC 130 and KOT 107 with a minimum grade of "C" and concurrent enrollment in KOT 211

This is a study of occupational therapy in mental health settings. Discussion will cover assessment and treatment techniques used by the occupational therapist in the psychiatric setting.

KOT 202
OCCUPATIONAL THERAPY IN PHYSICAL DISABILITIES (4CR)

Prerequisites: KOT 107 with a minimum grade of "C" and concurrent enrollment in KOT 212

Areas covered will include occupational therapy treatment techniques and assessment used with the physically disabled.

KOT 203
ASSISTIVE TECHNOLOGY/ORTHOTICS (3CR)

Prerequisites: KOT 100, KOT 103, KOT 106 and KOT 107 with a minimum grade of "C" and admission to the program

This course will include the demonstration of assistive technology used for treatment and adaptations of patients with disabilities, along with fabrication of splints commonly used in OT treatment.

KOT 204
THERAPEUTIC MEDIA AND SHOP PRACTICES (2CR)

Prerequisite: KOT 107 with a minimum grade of "C"

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 211
LEVEL I FIELDWORK: MENTAL HEALTH (1CR)

Corequisites: Concurrent enrollment in KOT 201

This class will introduce students to the mental health setting through observation and clinical experience.

KOT 212
LEVEL I FIELDWORK: PHYSICAL DISABILITIES (1CR)

Prerequisites: KOT 107 with a minimum grade of "C," formal admission to the program and concurrent enrollment in KOT 202

This class will introduce students to the physical disability setting through observation and clinical experience.

KOT 221
LEVEL II FIELDWORK: SPECIAL INTEREST (4CR)

Prerequisite: Successful completion of all Occupational Therapy Assistant courses except KOT 222

This course will offer directed occupational therapy fieldwork in the area of special interest.

KOT 222
LEVEL II FIELDWORK/ PHYSICAL DISABILITIES (4CR)

Prerequisite: Successful completion of all Occupational Therapy Assistant courses except KOT 221

Directed occupational therapy fieldwork in the physical disability specialty 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 (3CR)

Upon successful completion of this course, the student should be able to develop business documents that demonstrate correct sentence and paragraph development and accurate English grammar and mechanics principles. Students should also apply standard formats for letters, memos and reports through the processes of composition, production and editing. Students should be able to proofread all of their written work using standard proofreading symbols. 3 hrs./wk.

OST 103
SHORTHAND I (3CR)

Prerequisite or corequisite: OST 105 or the equivalent

Upon successful completion of this course, the student should be able to learn the principles of Gregg shorthand theory; develop the ability to read and write brief forms and outline symbols; write simple unpreviewed material; and transcribe mailable copy by applying the skills of proofreading, error correction, letter placement, letter styles, word division, spelling and punctuation. 3 hrs./wk.

OST 104
SHORTHAND II (3CR)

Prerequisite: OST 103

The focus of this course will be on reading and writing Gregg shorthand symbols at a faster rate. Upon successful completion of this course, the student should be able to write unpreviewed dictated material at higher rates of speed, construct outlines for unfamiliar words during dictation, transcribe mailable correspondence and handle simple problems of office-style dictation. 3 hrs./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 106
SPEEDWRITING I (3CR)

Prerequisite or corequisite: OST 105 or the equivalent

Upon successful completion of this course, the student should be able to develop fluency in reading and writing notes in abbreviated longhand; develop the ability to construct outlines and take dictation; improve English, spelling and punctuation skills; and transcribe notes into mailable copy. 3 hrs./wk.

OST 107
SPEEDWRITING II (3CR)

Prerequisite: OST 106

Upon successful completion of this course, the student should be able to increase speedwriting vocabulary, take dictation at higher speeds for sustained periods of time, increase accuracy and speed in reading, writing and transcribing speedwriting notes and produce mailable transcripts. Students will review speedwriting theory. 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 that includes WordPerfect experience

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 105 or equivalent that includes WordPerfect experience

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 WordPerfect 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)

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)

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 ble 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 (3CR)

Prerequisite: Average touch-typing skill

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. 3 hrs. lecture-demonstration/wk.

OST 160
LEGAL TRANSCRIPTION (3CR)

Prerequisite: OST 125 or equivalent that includes WordPerfect experience

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 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 that includes WordPerfect experience

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.

OST 255
WORD PROCESSING APPLICATIONS II (3CR)

Prerequisite(s): 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 advanced word processing skills using a designated word processing package. Desktop publishing, macros and styles will also be introduced as part of the advanced features of word processing. 3 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: OST 130 and OST 125

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): Program facilitator approval. This course is designed to be taken near the end of the degree or certificate program.

Upon successful completion of this capstone course for the Office Automation Technology degree or vocational certificate programs, 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. 180 hrs./semester.

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. Students will explore the nature of conflict and the principles of negotiation and will review the traditional litigation system. The course will concentrate on the major alternatives to litigation, including mediation, arbitration, summary jury trials, mini-trials, the moderated settlement conferences. Other alternatives that will be addressed include med/arb, med/rec, "rent-a-judge," neutral evaluation, facilitated case management, negotiated rule making and the use of ombudspersons. 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 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 convoyances. 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 and PL 205 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: PL 132 and three hours of either CPCA 108 (IBM-WP), CPCA 110 (IBM-Lotus 1-2-3) and CPCA 114 (Database); or CPCA 128; or DP 124; or division administrator approval

Upon successful completion of this course, the student should be able to evaluate and use specific legal software to perform customary law office procedures, including drafting and editing documents, document and file management, time keeping and billing, docket control, forms generation and electronic communications. 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. Students will also study employee benefits plans, including medical, disability income, death, pension and profit-sharing programs. 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
Prerequisite or 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)

Students will examine basic issues of philosophy including the nature of being, methods of acquiring knowledge and the foundation of moral, religious and political beliefs. Emphasis will be on the value of philosophical inquiry in today's 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)

The great problems of ethics, including free will and determinism, relativism and absolutism, and the relationship between individuals and society, will be examined. The instructor will explain traditional positions, helping students to understand contemporary social and moral issues. 3 hrs./wk.

PHIL 154
HISTORY OF ANCIENT PHILOSOPHY (3CR)

Greek and Roman thought ranging from speculation about the universe and theories of natural selection and atomism to treatises about the nature of individual existence and society will be examined. Selections from ancient texts will be used with commentaries where appropriate. 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 165
PHILOSOPHY OF CURRENT CIVILIZATION (3CR)

This is a systematic and critical analysis of selected current issues in American civilization and the philosophies presupposed by these issues. Students will refer to philosophical articles and the news media. 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 commerical 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 180.)

Physical Science

(Also see Geoscience, page 177.)

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.

Physical Therapist Assistant

KPT 100
MOLECULAR BASIS OF LIVING SYSTEMS (3CR)

This course will introduce students to the fundamental concepts of chemistry, physics, morphology and physiology as they apply to the cell and the human body in preparation for the study of physiology and microbiology. 3 hrs./wk.

KPT 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. 1 hr./wk.

KPT 151
INTRODUCTION TO PHYSICAL THERAPY (2CR)

This course will introduce the basic concepts of the function of a physical therapist and physical therapist assistant as members of the health care team and the interaction of other health disciplines in the care of the patient. Students learn medical terminology related to the specific discipline and spend four hours observing the practice of physical therapy in area hospitals. 2 hrs. lecture/wk.

KPT 152
FUNDAMENTALS OF MODALITIES I (3CR)

Prerequisite: BIOL 110 and KPT 151 with a minimum grade of "C" and acceptance into the program

This course will present basic medical terminology, documentation, modality and therapeutic measures used in the physical treatment of various injuries and diseases, as well as departmental organization and orientation to position duties. The course also includes field trips to an area hospital to gain exposure to the clinic and its modalities. 2 hrs. lecture, 2 hrs. lab./wk

KPT 153
KINESIOLOGY (4CR)

Prerequisites: BIOL 110 and KPT 151 with a minimum grade of "C" and acceptance into the program

Students will analyze muscles and their functions, the biomechanics of human motion, the activities of joints and the functions of the musculoskeletal system. 5 hrs./wk.

KPT 154
APPLIED NEUROLOGY (2CR)

Prerequisites: BIOL 110 and KPT 151 with a minimum grade of "C" and acceptance into the program

This course will present the student with the foundations of neuroscience necessary for practice as a P.T.A. The student will learn anatomy, physiology 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, KPT 162 and KPT 164 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, KPT 162 and KPT 164 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 seen by the physical therapist assistant. Field trips are scheduled during the semester so students may learn various specialized techniques. 2 hrs. lecture, 6 hrs. lab/wk.

KPT 159
ORTHOPEDIC PATHOLOGY (2CR)

Prerequisite: BIOL 110 and KPT 151 with a minimum grade of "C" and acceptance into the program

Students will study general pathology with detailed emphasis on the study of diseases and disease processes. 2 hrs./wk.

KPT 160
MEDICAL DISEASES (2CR)

Prerequisites: KPT 152, KPT 153, KPT 154, KPT 159 and KPT 161 with a minimum grade of "C"

The student will be introduced medical diseases commonly seen in physical therapy practice, with emphasis on diagnosis, signs and symptoms, physiologic factors and treatment.. 2 hrs. lecture, 2 hrs. lab/wk.

KPT 161
FUNDAMENTALS OF MODALITIES II (4CR)

Prerequisites: KPT 151 with a minimum grade of "C"

The student will be introduced to the theory and practical application of electrotherapy, traction and therapeutic massage, including the indications and contraindications for use. The student also will observe the clinical practice of physical therapy at area clinical sites. 2.5 hrs. lecture, 3 hrs. lab/wk.

KPT 162
CLINICAL EXPERIENCE I (2CR)

Prerequisites: KPT 152, KPT 153, KPT 154, KPT 159 and KPT 161 with a minimum grade of "C"

The student will observe the practice of physical therapy in various settings, with emphasis on medical chart review, documentation and physical therapist-patient rapport. Correlation of patient condition and treatment regimens will be examined. 30 lab hrs.

KPT 164
PEDIATRICS AND GERONTOLOGY (2CR)

Prerequisites: KPT 152, KPT 153, KPT 154, KPT 159 and KPT 161 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)

Prerequisite: KPT 160, KPT 162 and KPT 164 with a minimum grade of "C"
Corequisite: 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 in the Kansas City area. 14 hrs. clinic/wk.

KPT 171
CLINICAL SEMINAR (2CR)

Corequisite: KPT 170

Students will discuss their experiences in KPT 170, with emphasis on current issues regarding the practice of physical therapy, ethics, third-party payment, departmental organization, etc. 2 hrs. lecture/wk.

KPT 172
CLINICAL EXPERIENCE III (8CR)

Prerequisites: Completion of all other required courses in the KPT program except KPT 175 with a minimum grade of "C"

The student will experience practical application of principles learned in all prior didactic course work. Students will rotate internships in selected hospitals and clinic sites throughout the United States under the guidance of a physical therapist or physical therapist assistant.
40 hrs. clinic/wk.

KPT 175
SPECIAL TOPICS (1CR)

Prerequisites: BIOL 210, KPT 155, KPT 158, KPT 170 and KPT 171 with a minimum grade of "C"

The student will be introducted to specialized topics in physical therapy and the administration of health care.
1 hr. lecture/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 mechanics, wave motion and thermodynamics. 4 hrs. lecture, 3 hrs. lab/wk.

PHYS 221
ENGINEERING PHYSICS II (5CR)
Prerequisite: PHYS 220
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 class surveys the politics of national policy making. Students examine bureaucratic power, avenues of influence, political and economic assumptions, policy-making institutions, taxing and spending policies and the role individuals can play in national political policy. 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 130
POLITICAL ECONOMY: POWER IN SOCIETY (3CR)
This course examines the economic and political dimensions of social power as a vehicle for introducing students to the social sciences. The concept of power will be used to show commonalities and differences in the social sciences and to examine the language, methods, scope and insights of political and economic studies. Through examination of the manifestations of power through authority, force and influence, the significance of political economy will be revealed. 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.

POLS 295
CONTEMPORARY CHINA (3CR)
This travel course to the People's Republic of China explores the social and political developments in China since 1949. Continuing changes in the economy, political leadership, sex roles, education, crime and health care will be the focus of student projects. Class meetings on campus will be supplemented by lectures and seminars while in China.

POLS 298
U.S. AND RUSSIA: TRAVEL FOR CREDIT (3CR)
By traveling to Russia, students compare and contrast the historical, political, social and cultural traditions of this major world power with those of the United States. 15 hrs. lecture, 160 hrs. travel.

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 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. Areas 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 101
INTRODUCTORY PHYSICS (5CR)

This nonmathematical survey of physics emphasizes mechanics, heat, light, sound, electricity, magnetism and atomic physics. The emphasis is on the concepts of physics. 4 hrs. lecture, 2 hrs. lab/wk.

KRAD 160
INTRODUCTION TO RADIOLOGIC TECHNOLOGY (2CR)

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 160 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 170
RADIOLOGIC TECHNOLOGY (3CR)

Prerequisite: KRAD 174 and BIOL 144, each 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: Admission to the program

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 160, KRAD 162, KRAD 171, KRAD 172 and KRAD 173, each 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 (3CR)

Prerequisites: KRAD 160, KRAD 162, KRAD 171, KRAD 172 and KRAD 173, each 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 160, KRAD 162, KRAD 171, KRAD 172 and KRAD 173, each 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 (1CR)

Prerequisites: BIOL 144, KRAD 174, KRAD 175 and KRAD 176, each 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: BIOL 144 and LC 130, each 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 280
CLINICAL TRAINING IV (4CR)
Prerequisite: KRAD 170 and KRAD 178, each 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
PHYSICS OF X-RAY EQUIPMENT (3CR)
Prerequisites: PSCI 120 and KRAD 174, each 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 (3CR)
Prerequisites: KRAD 278, KRAD 281, KRAD 282 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 284
CLINICAL TRAINING VI (2CR)
Prerequisites: KRAD 278, KRAD 281 and KRAD 282, each with a minimum grade of "C"

Students will perform patient examinations in a clinical setting with the supervision of a radiologic technologist. 14 hrs./wk.

KRAD 285
SPECIAL PROCEDURES (2CR)
Prerequisites: KRAD 170 and KRAD 178, each 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 288
SPECIALTY TRAINING (9CR)
Prerequisite: Approval of the director of the PVCC Radiography Program

This class will offer additional training in one of the following: nuclear medicine, ultrasound, radiation therapy or computer-assisted tomography. 1 hr. lecture, 16 hrs. lab/wk.

KRAD 289
MAMMOGRAPHY (3CR)
Prerequisite: Registry eligible 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 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
RAILROADDISPATCHING 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
RAILROADDISPATCHING 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 THERAILROAD 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
RAILROADMECHANICALSAFETYANDHEALTH (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 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, hazard communications, lockout/tagout procedures and hearing 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 and RRTM 170 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
BASICLOCOMOTIVE 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.

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, Taosim, 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, patho-physiology 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: RESP 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: RESP 233 and RESP 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.

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 125
THEATER FOR CHILDREN (3CR)

Students with no acting experience can explore children's theater in this class. They will study the difference between theater for and by children and the adaptation of various forms of children's literature. Performances will be held at area grade schools. 3 hrs./wk. plus rehearsals and performances.

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 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 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 258
THE SHAKESPEARE PLAYS (3CR)

This course will introduce the plays of Shakespeare. Students will read and view on cable videotaped performances of selected plays. By arrangement.

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 127
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 128
MANAGEMENT INTERNSHIP II (1CR)

Prerequisite: KTT 127 and approval of the instructor

On-the-job training takes place in a field directly related to the management program. 15 hrs./wk.

KTT 129
MANAGEMENT INTERNSHIP III (1CR)

Prerequisite: KTT 128 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)

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)

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)

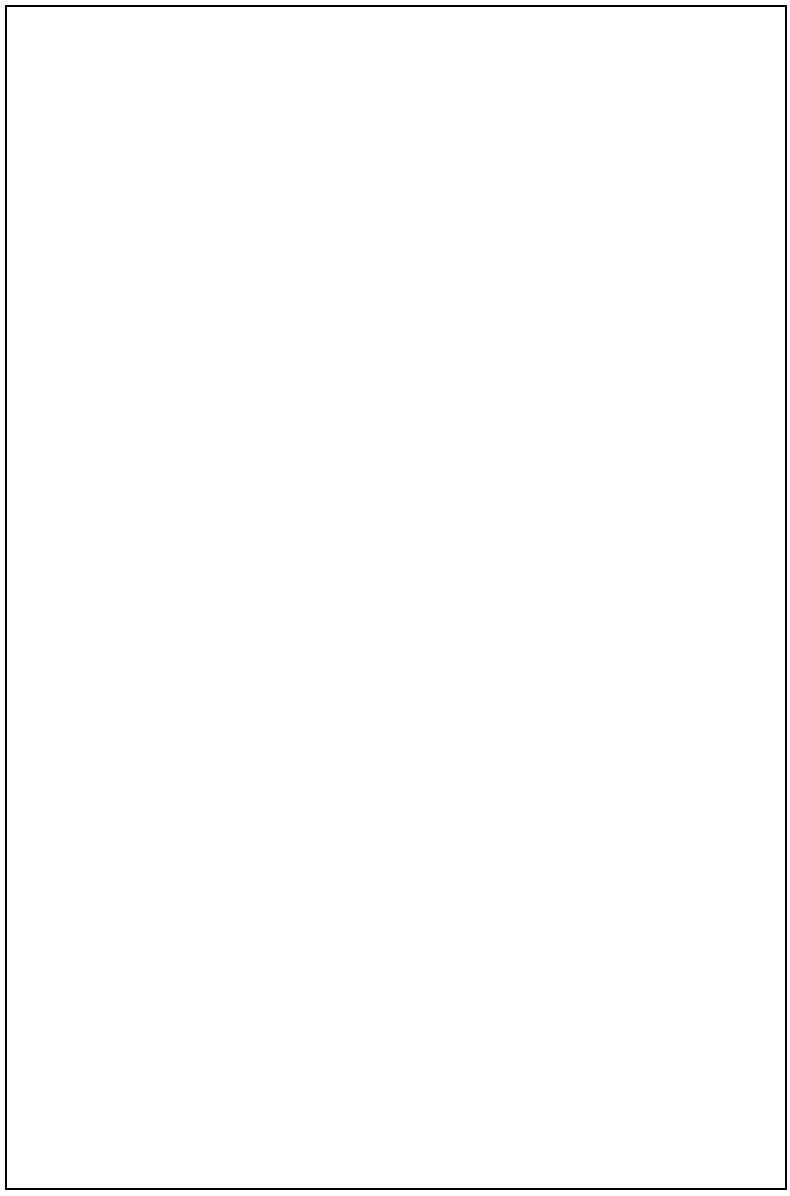
This course is an intensive study providing practice in radiological techniques, radiographic exposure techniques, film processing, contrast radiography and machine electronics. 1 hr. lecture, 2 hrs. lab/wk.

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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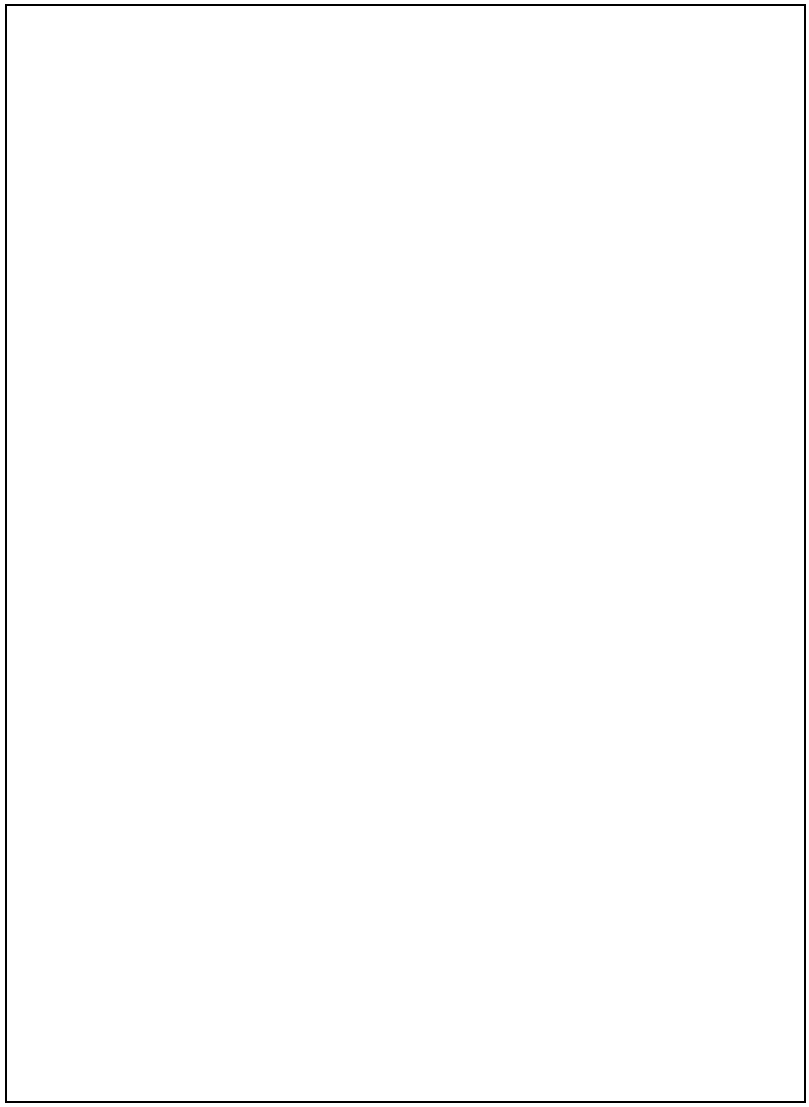

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