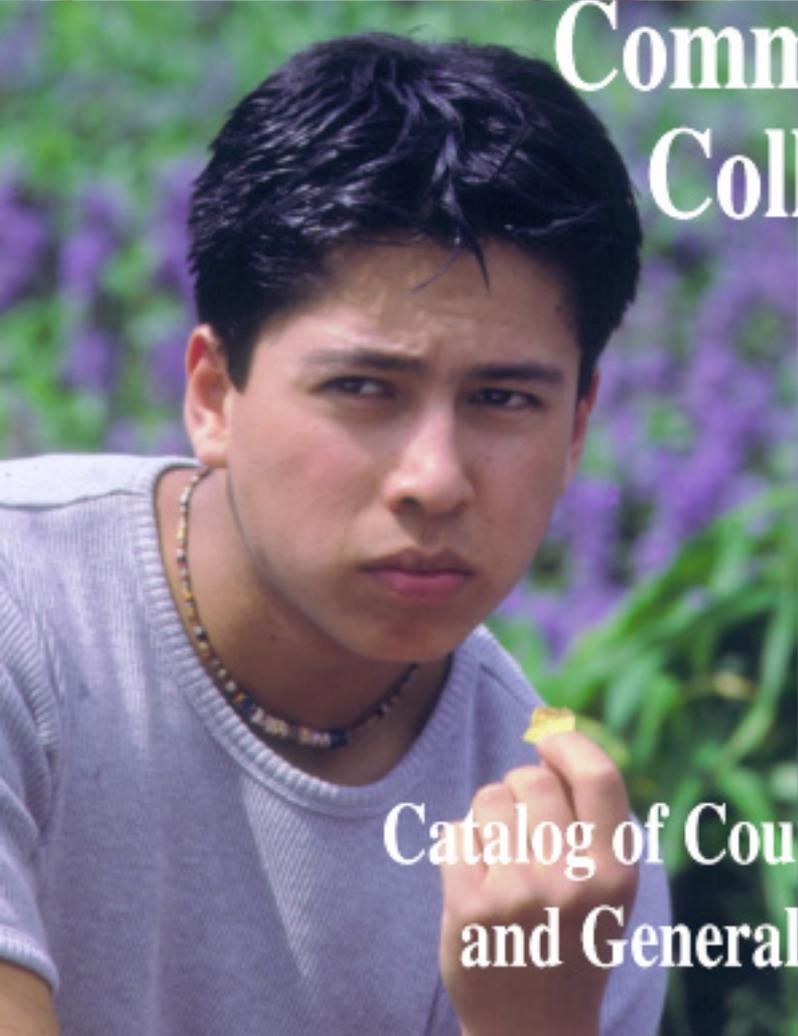




**Johnson
County
Community
College**



**Catalog of Courses 1999-2000
and General Information**

JCCC

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 30 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.

The JCCC Guarantee

For associate of arts and associate of science graduates, JCCC guarantees that course credits taken here will transfer to those Kansas colleges or universities that have articulation agreements with JCCC. If a college or university rejects a course included in that articulation agreement, you may take, tuition-free, alternative courses at JCCC.

Similarly, JCCC guarantees its associate of applied science graduates that they will have the appropriate technical job skills identified in the program outcomes for a specific degree. The guarantee applies to graduates employed on a full-time basis in a job directly related to the program, as certified by the dean of Instruction. If the employer feels you lack technical job skills identified by the program outcomes, you may receive from JCCC up to nine tuition-free credit hours of additional training.

More comprehensive information and specific conditions about The JCCC Guarantee is available from the Admissions Office.

Message from the President

Dear Friends:

Fall 1999 will see the opening of JCCC's newest building — an expansion of the Commons, housing the bookstore, expanded

dining facilities and the college's Student Success Center. The name of that center reflects JCCC's philosophy toward students, supporting the "dignity and growth of each individual, the uniqueness of each individual and the fundamental right of each person to realize his or her fullest potential."

At Johnson County Community College, we're dedicated to helping you succeed. To some, success means completing the first two years of undergraduate work before transferring to a four-year institution. To others, it means learning the skills to enter the workforce or change careers. These days, success means a lifetime of learning, as people update their skills, learn a new software program or finally have the time to take a class for their own personal development. It's all available at JCCC.

This year alone in the United States, one out of every 18 adults — more than 10 million people — will enroll in a community college. At Johnson County Community College, we enroll more than 32,000 students a semester in both our credit and continuing education offerings. That so many people choose to attend a community college is not surprising. The commitment of community colleges like JCCC to student success is real. It is demonstrated in the diversity and flexibility of our programs and services. And it can be found in our affordability.

Charles J. Carlsen

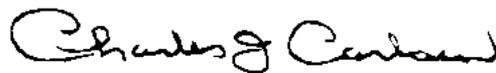
Today, when a year's study for a freshman at a selective private college can cost \$30,000, JCCC can offer virtually the same program, taught by a well-qualified and dedicated faculty, for just \$46 a credit hour, allowing students to remain at home, in our community, as productive citizens. Our programs 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 changes in the economy and countless others with distinctive needs.

To meet your needs, JCCC offers a variety of student development functions, including academic, educational, career and personal counseling; access and support services for students with disabilities; employment opportunities; academic and career assessment; and financial aid. We have caring professors and special centers to help you with writing and math challenges. We have courses to hone your learning skills or to help you brush up on abilities that have grown rusty over the years. We have programs to help you on the job or in the home, to allow you to pursue dreams of creativity or undeveloped talents. Your "fullest potential" is accessible right here.

That's why, in a story published last fall about community colleges, *Rolling Stone* magazine listed JCCC as one of the "most respected" schools in the nation.

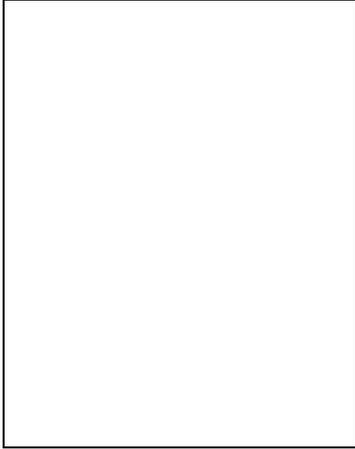
At JCCC, your success is our success. I look forward to seeing you in JCCC's Student Success Center this year.

Sincerely,

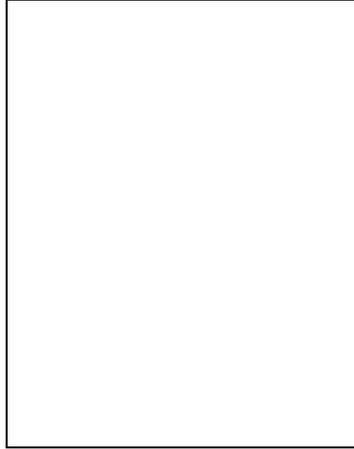


Charles J. Carlsen
President

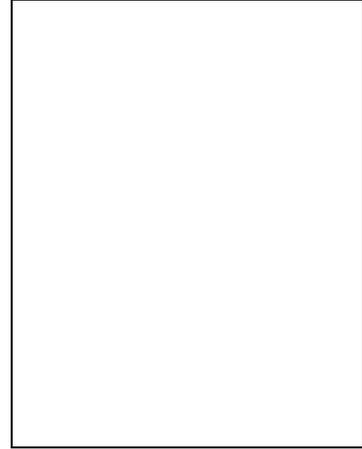
Board of Trustees



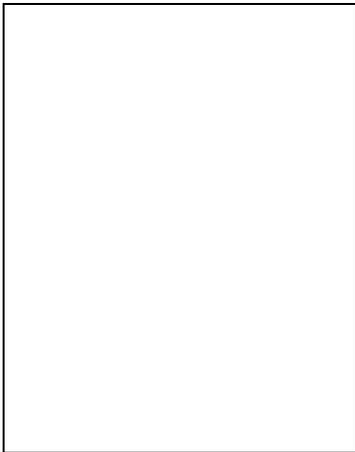
Molly Baumgardner



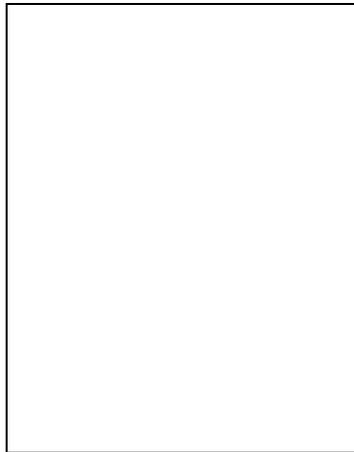
Shirley Brown-VanArsdale



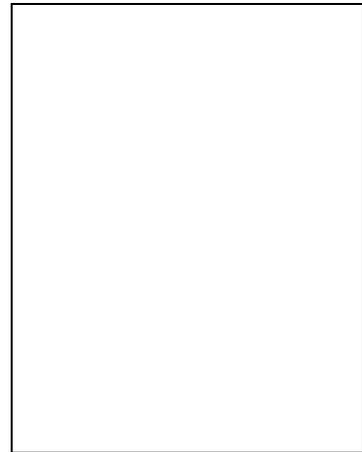
Virginia Krebs



T. Nelson Mann



Lynn Mitchelson



Elaine Perilla

Academic Calendar

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

Summer Session 1999

- June 1 Last day to apply for and be guaranteed consideration for fall 1999 graduation.
- June 7 First day of 8-week and first 4-week classes.
- July 1 Last day of first 4-week classes.
- July 2 Independence Day holiday. Classes not in session. College offices closed.
- July 5 First day of second 4-week classes.
- July 29 Last day of summer session.

Fall Semester 1999

- Aug. 18 First day of fall credit classes.
- Sept. 6 Labor Day. Classes not in session. College offices closed.
- Nov. 1 Last day to apply for spring 2000 graduation.
- Nov. 15 Last day to drop a 16-week class.
- Nov. 24 Classes not in session. College offices closed.
- Nov. 25-26 Thanksgiving holiday. Credit classes not in session. College offices closed.
- Dec. 13 In-service day. Classes not in session. College offices open.
- Dec. 14-17 Final exams.
- Dec. 20 Last day of fall semester.
- Dec. 23-Jan. 1 Winter break. College offices closed.

Note: Saturday and Sunday credit classes begin Aug. 21-22 and end Dec. 11-12. Saturday and Sunday classes will not meet Nov. 27 and 28.

Spring Semester 2000

- Jan. 17 Martin Luther King's birthday. College offices closed.
- Jan. 19 First day of spring credit classes.
- March 13-18 Spring break. Credit classes not in session. College offices open.
- April 3 Last day to apply for summer graduation.
- April 14 Last day to drop a 16-week class.
- May 12 In-service day. Classes not in session. College offices open.
- May 15-18 Final exams.
- May 19 Commencement.
- May 19 Last day of spring semester.
- May 29 Memorial Day holiday. College offices closed.

Note: Saturday and Sunday credit classes begin Jan. 22-23 and end May 13-14. Saturday and Sunday credit classes will not meet March 18 and 19.

Summer Session 2000

- June 1 Last day to apply for and be guaranteed consideration for fall 1999 graduation.
- June 5 First day of 8-week and first 4-week classes.
- June 29 Last day of first 4-week classes.
- July 3 First day of second 4-week classes.
- July 4 Independence Day holiday. College offices closed.
- July 27 Last day of summer session.



Admission



Admission Policies

Admission Procedures – Credit

- New Students
- Residency
- Continuing Students
- Affiliate Programs
- Reverse Affiliate Programs (Cooperative Programs)
- International Students
- Resident Aliens
- JCCC Foreign Students
- Visiting Foreign Students
- Keeping Options Open

Programs with Selective Admission

- Nursing
- Articulation of Licensed Practical Nurses
- Dental Hygiene
- Interpreter Training
- Mobile Intensive Care Technician
- Paralegal
- Railroad Operations
- Respiratory Care

Admission Procedures – Area Vocational School Programs

Registration and Costs



Registration Procedures

- Registration
- Counseling
- Assessment
- Placement Based on Assessment
- Scheduling Classes
- Student Course Load
- Early Registration
- On-campus Registration
- Late Registration
- Registration for Late-start Classes

Adding and Dropping a Class

- Adding a Credit Class
- Dropping a Credit Class
- Adding and Dropping Credit Classes –
Effect on Cost per Credit Hour

- Dropping a Course Required by Assessment
- Adding an Area Vocational Class
- Adding a Continuing Education Class
- Dropping a Continuing Education Class

Costs

- Credit Class Cost per Credit Hour
- Returned Check Policy
- Area Vocational School Registration and Fees
- Continuing Education Class Fees

Refunds

- Credit Class Refunds
- Continuing Education Class Refunds

Textbook Costs

Registration Procedures

Registration

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

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

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

Counseling

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

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

Assessment

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

- If you have 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 or certificate at JCCC, you may enroll in any credit course except mathematics, English or reading without participating in the assessment process.
- If you have ACT scores, you may be exempt from one or more sections of the assessment test. See the current course bulletin or contact Testing/Assessment Services for more information.
- If you plan to enroll in math or English at JCCC and do not have the appropriate ACT scores or prior college-level math or English, you will be required to take the assessment test.

Placement Based on Assessment

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

Scheduling Classes

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

Student Course Load

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

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

If you wish to enroll in more than 18 semester hours of credit for a fall or spring semester or more than nine hours of credit in the summer, you must, before enrolling, receive

written permission from a counselor and have a 2.5 cumulative GPA for all hours attempted in college. All appeals should be made in writing and reviewed by the dean of Student Services for resolution.

Early Registration

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

On-campus Registration

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

Late Registration

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

Registration for Late-start Classes

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

Adding and Dropping a Class

Adding a Credit Class

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

Dropping a Credit Class

16-week Class: You may drop a class up to Nov. 15 for the fall semester and April 14 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 41.

Exceptions to these policies may be authorized by the dean of student services. All appeals must be made in writing.

Adding and Dropping Credit Classes – Effect on Cost per Credit Hour

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

After the expiration of the refund period, an even exchange for tuition purposes may be granted in the following situations:

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

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

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

Dropping a Course Required by Assessment

You will be asked to drop all classes when dropping Reading/English classes you were required to enroll in by the assessment. All appeals should be made in writing and reviewed by the dean of Student Services for resolution.

Adding an Area Vocational Course

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

Adding a Continuing Education Class

You may add a continuing education class up until the day before the class begins.

Dropping a Continuing Education Class

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

Costs

Credit Class Cost per Credit Hour

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

Kansas Residents:

Total per Credit Hour\$46.00

Out-of-state, Foreign and Visiting International Students:

Total per Credit Hour\$122.00

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

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

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

Returned Check Policy

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

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

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

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

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

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

Area Vocational School Registration and Fees

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

Continuing Education Class Fees

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

Refunds

Credit Class Refunds

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

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

Refunds are calculated based on the day you officially drop a class in the Admissions and Records Office, not when you stop attending class.

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

Continuing Education Class Refunds

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

Textbook Costs

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

Admission Policies

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

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

1. If you are under 18 years old and have not received a high school diploma and are currently enrolled in grades 11 or 12 of an accredited high school, you may obtain special student status and be admitted to JCCC with written authorization from your high school. If you are attending a nonaccredited high school and/or are enrolled in an approved "gifted program," you should contact the Admissions Office for specific admission guidelines.
2. If you are 18 or older and do not have a high school diploma or GED certificate, have not completed the student assessment process and are not degree-seeking, you also may be admitted with special student status.

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

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

Admission Procedures — Credit

New Students

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

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

2. Have official copies of your transcripts sent to the Admissions Office at JCCC.

- a. You must submit an official high school transcript, including final grades and graduation date, or the results of the GED exam. (If you graduated more than five years ago or have 15 or more hours of college credit, you may disregard this requirement.)
- b. You must submit an official transcript from each U.S. college or university you have attended.

If you are currently attending another institution, you need to have your transcript sent at the end of the semester. (If you have a bachelor's or higher degree and are not pursuing a degree at JCCC, you may be exempt from this requirement. Admissions will notify you.)

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

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

Residency

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

Continuing Students

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

Affiliate Programs (Cooperative Programs)

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

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

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

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

Reverse Affiliate Programs (Cooperative Programs)

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

To participate, the following requirements must be met:

1. Respiratory Care is a selective admission program. (See page 13 for specific details.)
2. Enrollment in the Hospitality Management/Chef Apprenticeship programs is by approval of the Hospitality Management academic director. Contact the departmental head for more information.
3. Enrollment in the Electronics Technology program is by approval of the Engineering Technologies academic director.
4. Railroad Operations is a selective admission program.

As a Missouri resident, you must apply for and receive all of your financial aid through the Metropolitan Community College District. Missouri residents in the above programs are not eligible for financial aid through Johnson County Community College.

International Students

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

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

Resident Aliens

Resident aliens must meet the following requirements:

1. Provide a "green card" or a copy of the letter from the U.S. Department of Immigration and Naturalization Services that approves your permanent residency status. An employment authorization card is not sufficient. If you cannot provide your permanent residency card, out-of-state tuition will be assessed.
2. Submit official transcripts from all U.S. secondary and postsecondary educational institutions you have attended. The issuing institution must send the transcript directly to the JCCC Admissions Office. Hand-carried transcripts are not acceptable. Transcripts from foreign institutions are not required.* **Note:** If you have been out of high school five or more years, you need not submit your high school transcript.

3. Complete the JCCC assessment and enrollment process.
 - a. Complete the JCCC assessment test.
 - b. Discuss course selection, based on your assessment results, with a JCCC counselor. Course selection may be restricted because of JCCC assessment test results.
 - c. Enroll in classes approved by a counselor.

*If you want your foreign credits evaluated for a JCCC certificate or degree, you should submit transcripts from all foreign postsecondary institutions to Educational Credential Evaluators Inc. in Wisconsin. **Note:** This is not required for admission to JCCC. Applications for Educational Credential Evaluators Inc. are available from the Admissions and Records Office. There is a fee for their services.

JCCC Foreign Students

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

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

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

It is strongly recommended as an international student on an I-20 issued from JCCC that you 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 based upon the I-20 from JCCC 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 F-1 students from another college must meet the following requirements each semester:

1. Complete a foreign student application.
2. Obtain and return the completed Confidential Reference for Visiting Students form, passport, I-94 card and current I-20 to the Admissions Office. A new form, with documentation, must be submitted prior to enrollment each semester.
3. Complete the JCCC assessment and enrollment process as described under “Resident Aliens.” 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.

Keeping Options Open

Keeping Options Open is a collaborative program between area high schools and Johnson County Community College. At the high school level, the program includes career/life planning for sophomores followed by educational preparation and/or experiential learning opportunities for juniors and seniors. During this educational preparation phase, high school students may elect to pursue the following college credit options:

- College Now — This is a college credit program for high school juniors or seniors enrolled in selected high school classes for which college credit equivalency has been established. Approved courses reflect the college’s content, objectives and assignments. Courses are taught on the high school campus by qualified high school teachers. You must submit a JCCC application, a College Now registration form, a \$10 application fee and a check for tuition. Your high school transcript is not required at the time of enrollment. Approval from your high school principal is necessary. A schedule of College Now classes and registration forms are available early each semester at participating high schools. A maximum of 32 College Now credit hours is allowed.

- **Quick Step** — This program is for high school juniors and seniors and/or students identified as gifted with a current Individual Education Plan. Instruction is provided by JCCC faculty and usually held on the college campus. You must submit a JCCC application for admission, a \$10 application fee and a signed Quick Step form at the time of enrollment indicating your high school principal's approval to take college classes. If you are home-schooled or in an approved gifted program, you must contact the Admissions office for complete admission requirements. You will need a high school transcript sent at the time of graduation. You can find a complete list of classes each semester in JCCC's credit class schedule.
- **Technical College Preparation** — This program is for high school students enrolled in articulated technical programs which may also include JCCC advanced standing college credit. Instruction is provided on the high school campus or area vocational centers.

Career programs that have been articulated and may offer advanced standing at JCCC are:

Accounting	Interior Merchandising
Automotive Technology	Metal Fabrication
Communication Design	Nursing
Computer Information Systems	Marketing and Management Office Systems Technology
Drafting Technology	Paralegal
Electronics Technology	Railroad Operations
Fashion Merchandising	Teleservice Representative
Heating, Ventilation and Air Conditioning	

See your high school counselor to learn which courses at your school apply. Credit will be given only for a final grade of "C" or better.

Students may seek employment and/or elect to continue their education after high school in a variety of certificate, associate degree or advanced degree programs. Therefore, Keeping Options Open results in a life-long combination of employment and further education opportunities.

Programs with Selective Admission

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

Registered Nurse

Maximum number selected	55
Application deadline	Jan. 15
Classes begin	Fall semester

Articulation of Licensed Practical Nurses

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	Listed in the current application packet
Classes begin	Fall semester

Mobile Intensive Care Technician (Paramedic)

Maximum number selected	26
Application deadline	Oct. 15
Classes begin	Spring semester

Paralegal*

Maximum number selected	50
Application deadline	April 1 for fall semester Oct. 1 for spring semester

Railroad Operations

Contact the director of Railroad Operations.

Respiratory Care

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

Respiratory Care CRT-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.

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

Admission Procedures — Area Vocational School Programs

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

Health Occupations

Practical Nursing

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

Certified Nurse Aide

Certified Medication Aide

Home Health Aide

Certified Medication Aide Update

I.V. Therapy for Licensed Practical Nurses

Contact 469-8500, ext. 4722, for information on these programs.

Cosmetology

Maximum number selected 25
Application deadline Contact AVS office,
West Park Center
Classes begin Fall and spring

Cosmetology – Nail Technician

Cosmetology – Esthetician

Contact 469-8500, ext. 4722, for information on these programs.

Registration and Costs



Registration Procedures

- Registration
- Counseling
- Assessment
- Placement Based on Assessment
- Scheduling Classes
- Student Course Load
- Early Registration
- On-campus Registration
- Late Registration
- Registration for Late-start Classes

Adding and Dropping a Class

- Adding a Credit Class
- Dropping a Credit Class
- Adding and Dropping Credit Classes –
Effect on Cost per Credit Hour

- Dropping a Course Required by Assessment
- Adding an Area Vocational Class
- Adding a Continuing Education Class
- Dropping a Continuing Education Class

Costs

- Credit Class Cost per Credit Hour
- Returned Check Policy
- Area Vocational School Registration and Fees
- Continuing Education Class Fees

Refunds

- Credit Class Refunds
- Continuing Education Class Refunds

Textbook Costs

Registration Procedures

Registration

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

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

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

Counseling

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

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

Assessment

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

- If you have 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 or certificate at JCCC, you may enroll in any credit course except mathematics, English or reading without participating in the assessment process.
- If you have ACT scores, you may be exempt from one or more sections of the assessment test. See the current course bulletin or contact Testing/Assessment Services for more information.
- If you plan to enroll in math or English at JCCC and do not have the appropriate ACT scores or prior college-level math or English, you will be required to take the assessment test.

Placement Based on Assessment

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

Scheduling Classes

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

Student Course Load

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

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

If you wish to enroll in more than 18 semester hours of credit for a fall or spring semester or more than nine hours of credit in the summer, you must, before enrolling, receive

written permission from a counselor and have a 2.5 cumulative GPA for all hours attempted in college. All appeals should be made in writing and reviewed by the dean of Student Services for resolution.

Early Registration

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

On-campus Registration

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

Late Registration

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

Registration for Late-start Classes

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

Adding and Dropping a Class

Adding a Credit Class

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

Dropping a Credit Class

16-week Class: You may drop a class up to Nov. 15 for the fall semester and April 14 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 41.

Exceptions to these policies may be authorized by the dean of student services. All appeals must be made in writing.

Adding and Dropping Credit Classes – Effect on Cost per Credit Hour

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

After the expiration of the refund period, an even exchange for tuition purposes may be granted in the following situations:

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

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

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

Dropping a Course Required by Assessment

You will be asked to drop all classes when dropping Reading/English classes you were required to enroll in by the assessment. All appeals should be made in writing and reviewed by the dean of Student Services for resolution.

Adding an Area Vocational Course

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

Adding a Continuing Education Class

You may add a continuing education class up until the day before the class begins.

Dropping a Continuing Education Class

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

Costs

Credit Class Cost per Credit Hour

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

Kansas Residents:

Total per Credit Hour\$46.00

Out-of-state, Foreign and Visiting International Students:

Total per Credit Hour\$122.00

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

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

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

Returned Check Policy

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

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

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

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

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

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

Area Vocational School Registration and Fees

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

Continuing Education Class Fees

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

Refunds

Credit Class Refunds

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

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

Refunds are calculated based on the day you officially drop a class in the Admissions and Records Office, not when you stop attending class.

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

Continuing Education Class Refunds

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

Textbook Costs

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

Student Financial Aid

The Purpose of Financial Aid

Financial Aid Eligibility Requirements

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Financial Aid Probation and Ineligibility

New Students

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The Purpose of Financial Aid

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

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

Financial Aid Eligibility Requirements

To be considered for financial aid you must:

- Be enrolled in a program that leads to an associate's degree, an eligible vocational certificate or be in a transfer program that leads to a bachelor's degree at another institution.
- Be a U.S. citizen, an eligible noncitizen or a permanent resident of the United States.
- Maintain satisfactory academic progress according to the JCCC student financial aid policy. See page 25 for more information.
- Not be in default on a student loan or owe a repayment on a grant.
- Sign a Financial Aid Payment Authorization indicating the receipt of financial aid funds will be used only for educational purposes.
- Register with the selective service (if required) and sign a statement of selective service status.
- Have a high school diploma, GED certificate or demonstrate the ability to benefit through the Asset Test (receiving minimum scores designated by the U.S. Department of Education).
- Have a valid Social Security number.

Financial Aid Process

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

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

To Apply for Nonneed-based Financial Aid

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

To Apply for Need-based Financial Aid

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

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

For additional application information, refer to the financial aid brochure and other information available upon request from the Student Financial Aid Office.

Disbursement

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

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

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

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

Types of Financial Assistance

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

Scholarships and Grants

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

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

- **Federal Pell Grant** 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 \$3,125 during the 1999-00 award year. The grant must be applied toward education-related expenses.

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

Student Employment

- **Employment** opportunities, both on-campus and in the community, are available while you attend JCCC. Information concerning employment is available through the JCCC Career Center, 155 GEB.
- **Federal Work-Study** provides jobs for students who have financial need. This gives students the opportunity to earn money during the academic year to help pay for educational expenses.

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

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

Loans

- **Federal Perkins Loan**, a 5-percent interest rate federal government loan, is processed through JCCC. This need-based loan ranges from \$400 to \$2,000 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 8.25 percent; however, it is interest-free while you are enrolled in at least six credit hours if you qualify. Interest begins accruing and you must begin repaying the loan six months after leaving school or being enrolled in school less than half time. The loan is subject to processing fees that are deducted from the loan proceeds.

- **Federal Unsubsidized Stafford Loan** funds are processed through lenders of the student's choice. Eligibility for this loan is determined by the JCCC Student Financial Aid Office. First-year undergraduate JCCC students may borrow up to \$2,625 in an unsubsidized Federal Stafford Loan, or a combination of a Subsidized and Unsubsidized Federal Stafford Loan; second-year undergraduate students may borrow up to \$3,500. This loan has a variable interest rate not to exceed 8.25 percent, and accrual of interest begins immediately. Independent undergraduate students, or dependent students whose parents are unable to obtain a PLUS loan, may be eligible to borrow up to \$4,000 in an additional Unsubsidized Stafford Loan. You must begin repayment of the principal six months after leaving school or dropping below six credit hours. The loan is subject to processing fees that are deducted from the loan proceeds.
- **Federal Parent Loans for Undergraduate Students (PLUS)** are processed through lenders of the parents' choice. Eligibility is determined by the Student Financial Aid Office and is not based upon financial need. Parents of eligible dependent students may borrow up to the yearly cost of education (as determined by JCCC) for each child. The amount borrowed may not exceed the cost of education minus any other financial aid the student is eligible for. This loan has a variable interest rate not to exceed 9 percent, and repayment of the loan begins immediately. PLUS loan checks will be mailed to the school and made co-payable to the school and to the parent.

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, 151 GEB. All applicants for VA educational benefits must have a degree program plan developed and approved (or updated) by a JCCC academic counselor before each registration. JCCC has a dual degree option available for veterans wishing to seek two degrees simultaneously. Contact the Veterans Affairs office, 151 GEB, for current program requirements. Benefit pay is authorized only for those courses specifically listed or indicated on your program plan. We reserve the right to request a program plan on a per need basis. You must maintain enrollment to receive educational benefits. To maintain benefit eligibility, you are required to meet the same published standards of

satisfactory academic progress as all financial aid recipients at JCCC.

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

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

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

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

Refund Policy

A refund 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, a portion of Title IV grant or loan funds, but not federal work-study funds, must be returned to the Title IV programs (includes Federal Pell Grant, Federal SEOG, Federal Perkins Loan, Federal Stafford and Federal PLUS loans) upon a Title IV recipient's (the student's) withdrawal from school. This means that if a federal aid recipient attending JCCC withdraws from all of his/her classes prior to the end of the semester, the Student Financial Aid Office must use a federal formula to determine what percentage of the student's aid must be refunded to the federal government.

Withdrawal date: The day the student withdraws is the date we must use in the calculation. The percentage of the period of enrollment (fall or spring or summer semester) for which assistance was awarded (the entire semester) will be determined. To calculate the amount of Title IV assistance earned by a student, the school must first determine the percentage of the Title IV assistance the student earned. Up through the 60 percent point in time, the percentage of assistance earned is equal to the percentage of the period of enrollment for which it was awarded that was completed as of the day the student withdrew.

If a student has received more grant or loan assistance than the amount earned (percentage of semester student was enrolled), the unearned funds shall be returned to the federal programs. Differences between amounts earned and amounts received by the student will be returned to the Title IV programs. If a student withdraws after completing at least 60 percent of the semester, then it is assumed the student earned 100 percent of the Title IV aid for that semester. Once the calculations are completed by our office, a student will receive written notification of the dollar amounts returned to the federal program and if it is necessary for a student to make any additional payments to the federal government or to JCCC.

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 Perkins Loan
4. Federal PLUS 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

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

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

Johnson County Community College will notify students of any overpayment obligation and it is the student's responsibility to make prompt repayment. Students who fail to repay will not be eligible for additional financial aid funds **at any institution** until this obligation has been met.

Examples of the application of this refund policy will be available to students upon request by contacting the Student Financial Aid Office.

Satisfactory Academic Progress

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

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

The minimum standards of satisfactory academic progress are evaluated by the following criteria:

1. Grade Point Average

Students must attain a minimum cumulative GPA based on the total number of credit hours completed. JCCC and transfer hours are considered. These minimum are:

Number of successfully completed hours	Minimum cumulative GPA
1-30	1.7
31-97	2.0

2. Percentage of Completion

Students must successfully complete 66 percent of all credit hours attempted as appearing on their official academic transcript at JCCC, up to a maximum of 97 attempted credit hours. Students attempting more than 97 credit hours (including JCCC and transfer credits) 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 GPA. Self-paced courses that are not completed by the end of the semester in which the student enrolled will be recorded with a grade of “I” until the course is completed. An incomplete self-paced course may jeopardize financial aid eligibility in future enrollment periods.

Financial Aid Probation and Ineligibility

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

- Reinstatement 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 or 3 credit hours during a summer term), and
 2. Complete all courses with a grade of “D” or better, and
 3. Receive a 2.0 grade point average for the probation term.

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

New Students

All students entering JCCC for the first time will be on a probation status until transcripts arrive and can be evaluated by the Admissions and Records Office.

Note: Probation or ineligible status may be retroactively incurred based on evaluation of the student’s previous JCCC and transfer credit hour academic history. All JCCC courses previously taken, as well as all transfer hours, will be considered in the satisfactory academic progress process.

Classes withdrawn within the first 20 days of class will be included in the attempted hours calculation determining satisfactory academic progress for financial aid eligibility, even though these credit hours will not appear on the student’s official academic transcript.

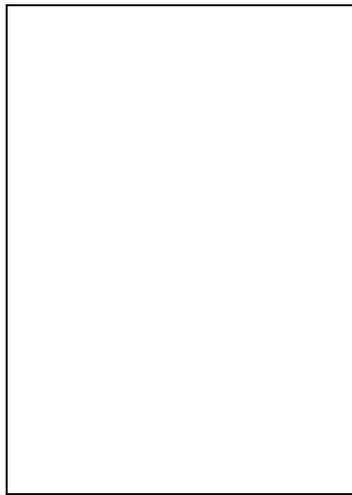
Appeals

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

Changes in Enrollment Status

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

Student Support Services



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

Library
Massage Therapy Clinic
Music Performance Groups
Phi Theta Kappa
Service Learning Program
Student Access Center
Disability Support Services
Deaf/Hard-of-Hearing Student Services
Notice of Nondiscrimination
Student Activities Program
Student Housing
Student Publications
Student Senate
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, soccer, 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. The JCCC bookstore carries all required textbooks, both new and used (when available), as well as a complete selection of optional study guides and reference materials recommended by the teaching staff. Computers and software are available at academic prices. MasterCard, Visa, American Express and Discover cards are accepted for all purchases. Bookstore hours of operation are listed each semester in both the credit and continuing education class schedules.

Brown & Gold Club

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

Membership requirements:

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

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

Career Center

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

1. CHOICES

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

2. Job search preparation

Trained professionals will help you:

- Research occupations in our resource center.
- Write résumés, cover letters and thank you notes.
- Conduct a successful job search.
- Prepare for job interviews.
- Learn about careers by talking with JCCC alumni from our Connections database.

3. Employment services

Need help finding a job? We offer:

- Full- and part-time job listings in various salary ranges.
- Internet access to local, regional and national job listings.
- On-campus recruiting with local employers.
- Kansas City area employer research information.

4. Internships and service learning

- Earn college credit for volunteer work through the service learning program.

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

Walk in 155 GEB for assistance, call us at 469-3870 with questions, or visit us on the Internet at <http://www.jccc.net/acad/studserv/career>.

Cheerleading

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

Children's Center

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

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

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

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

Clubs and Organizations

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

Clubs and organizations recognized by the college may not discriminate in membership or participation practices based upon factors related to race, religion, sex, place of origin,

age, creed, 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 or applications to form a new club may be obtained from the Student Information Desk, 205 COM.

Cosmetology Salon

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

Counseling Center

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

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

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

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

- **Academic advising.** At JCCC, academic advising plays a significant role in the total process of educating students. Advising at JCCC is conducted in the Counseling Center. The process is ongoing, multifaceted and the responsibility of both the student and the counselor. Advising at JCCC is developmental in nature, helping clarify life and career goals from which educational plans can be developed to realize those goals.
- **Pre-advising.** If you are not currently enrolled at JCCC, you must attend a pre-advising session. A

pre-advising session provides important information that you will need for consulting with a counselor. Schedules for pre-advising sessions are listed in the credit class schedule each semester. They are also available in 155 GEB or by calling the Counseling Center.

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

Debate

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.

Dental Hygiene Clinic

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

Dining Services

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

Instructional Support Services

Academic Achievement Center

The Academic Achievement Center, a Kansas Excellence in Education program, offers credit courses to develop basic skills or enrich present skills through self-paced, individualized instruction. A variety of subject areas are available and students who want to work in several areas may enroll in *Individualized Study*. The

center also offers a 3-credit-hour *Medical Terminology* course that is required in some medical-related programs. In addition, the center offers a 3-credit-hour *Power Spelling* course that benefits students who are learning English or those students who have always had a problem with spelling even basic words. Students may enroll in any of the following courses:

- LC 100 Study Skills (1 hr.)
- LC 104 Reading Comprehension (1 hr.)
- LC 105 Reading Rate (1 hr.)
- LC 106 Vocabulary Development (1 hr.)
- LC 107 Spelling Improvement (1 hr.)
- LC 110 Power Spelling (3 hrs.)
- LC 112 Basic Math Review (1 hr.)
- LC 113 Algebra Preparation (1 hr.)
- LC 114 Chemistry Preparation (1 hr.)
- LC 120 Individualized Instruction (1 hr.)
- LC 130 Medical Terminology (3 hrs.)

English as a Second Language

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

Computer Learning Lab for Basic Skills

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

Learning Strategies Program

This program offers you an opportunity to acquire the thinking and learning skills you need to be a successful learner. A partial list of these skills includes reading college textbooks, taking useful class notes, organizing information, preparing for and taking tests and managing time

for study. The program benefits a variety of students, including successful students who want to improve their learning efficiency as well as those who feel overwhelmed by the demands of college coursework. The information learned in Learning Strategies courses is applied to the other courses you are taking and will improve your performance in those courses. For more information, contact the Learning Strategies instructors.

Math Resource Center

The Math Resource Center provides instructional/tutorial support on a drop-in basis to all JCCC math students. The MRC supervisor and peer tutors are available to help you solve math problems individually or in groups, no matter what your level of math at JCCC. They will recommend appropriate resources such as computer programs, videotapes and group study sessions. If you are enrolled in one of the self-paced, telecourse or Web-based math courses, you may use the MRC computers and equipment as an integral part of your learning. The MRC is open 70 hours a week.

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. Some centers utilize the PLATO multimedia computer-based learning system for basic skills instruction. Basic skills are taught using a real-life application to help learners establish a solid foundation. Instruction is free.

Project Finish centers are located at Roeland Park Community Center, JCCC's Olathe Center, Oak Park Library, Gardner Library, DeSoto Library/Multi-service Center, Spring Hill Library, Antioch Library and Edgerton Community Hall. For information, contact JCCC's Community Services Division.

Writing Center

The nationally recognized Writing Center at JCCC will help you improve your writing skills needed for your academic and work life. Through computerized and individualized instruction, you work at your own pace to enhance your proofreading, editing, revising and researching strategies while improving your ability to write sentences, compose paragraphs and develop essays. JCCC instructors and student tutors provide feedback on writing assignments from any JCCC class. Drop by the center in 308 EMC, call the grammar hotline at 469-4413 or e-mail us at wcenter@jccc.net with your grammar questions. You will receive prompt, reliable, courteous answers. For more information, contact the Writing Center.

Library

The JCCC library is open 80 hours a week while classes are in session. The library collection includes 90,000 books, 600 current periodicals, 400,000 documents on microform and 8,000 audiovisual titles. Online resources include an online catalog, numerous periodical indexes to general and professional literature, basic and advanced reference products and a Web site (<http://gold.jccc.net>) with links to additional Web-based resources and information about the library.

A highly trained staff of librarians and assistants is available to help you locate and use the resources in the library. If you want more in-depth training in the use of library resources, you may wish to enroll in the library's 1-credit-hour course, LIBR 125 *Introduction to Library Research*.

The first floor of the library contains reference books, audiovisual materials, periodicals and online resources. The library's second floor houses the circulating book collection and quiet study areas. Books are arranged in accordance with the Library of Congress (LC) call number system. More information about LC arrangement is available at the reference desk on the first floor.

Books are due 21 days from the day they are checked out. No fines will be assessed for overdue books, but failure to return library materials will result in a hold placed on the student record which will block future enrollment or release of transcripts until the library obligation is met. If library material is lost, the cost of the item plus a \$5 service charge will be assessed.

Massage Therapy Clinic

You and your family members age 18 and older may have a full body massage at the Massage Therapy Clinic. This service is provided for a nominal fee by therapeutic massage students supervised by licensed massage therapists. Contact the Center for Professional Education at 469-4422 for additional information or to make an appointment.

Music Performance Groups

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

Phi Theta Kappa

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

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

Service Learning Program

The Service-Learning Program is curriculum-based and integrates service options (at schools, care facilities, agencies and organizations in the community) with academic coursework and structured reflection. As a form of experiential education, service learning assignments facilitate intellectual, personal, career and civic development.

Student Access Center

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

Disability Support Services

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

Deaf/Hard-of-Hearing Student Services

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

Notice of Nondiscrimination

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

Student Activities Program

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

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

More information can be obtained at the Student Information Desk in the Commons Building (205 COM).

Student Housing

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

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

Student Publications

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

Student Senate

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

Testing/Assessment Services

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

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

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

Theater

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

Volunteer Program

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

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Academic Progress

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

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

Any student whose cumulative grade point average falls below the following guidelines will be placed on academic probation and will remain on probation until the minimum cumulative GPA levels outlined below are met. Cumulative grade point averages include both transfer and JCCC GPA.

Credit Hours Attempted with a Grade of A, B, C, D or F	Cumulative GPA
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 GPA 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 GPA for the current term or raise your GPA 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 GPA to the level required for good standing or achieve a 2.0 GPA in the probationary

semester, you will be suspended from the institution and will not be reinstated until one semester has elapsed.

If you are academically suspended by JCCC, you will not be allowed to re-enter JCCC for at least one semester. You will be readmitted on probationary status and must maintain a 2.0 GPA each semester while on probation or raise your cumulative GPA to the designated level. As a reinstated student, if you are suspended a second time from JCCC, you cannot return for one full year.

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

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

If you are academically suspended from JCCC, you may appeal in writing through the office of the dean of Student Services. All appeals must provide written documentation substantiating your reasons for requesting that you be reinstated on probation and allowed to enroll for the next regular semester.

The Student Affairs Committee will make a determination after review of the appeal and documentation. Written results will be mailed to you 30 business days after receipt of the written appeal. A "business day" is a weekday during which regular classes are being held at the college. The decision of the Student Affairs Committee is final.

Academic Records Retention

When you apply for admission to JCCC, an application file is created for you. This file contains academic transcripts, academic program plans and various other documents. This imaged file is maintained by the Admissions Office indefinitely beginning with the spring 1999 semester. Although your records will be stored in our imaging system, students may need to supply an updated application or transcripts if they do not maintain continuous enrollment.

More information is available from the Admissions 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 GPA, hence overall success. You may apply for academic renewal by submitting a written application according to the following guidelines:

1. All credits taken five or more years ago will not be calculated in the GPA (from all colleges or universities) based on the semester applying for academic renewal.
2. At least 12 semester credits must have been completed at JCCC within the last two years. The GPA for all coursework taken during this time must be at least 2.0.
3. Academic renewal will be granted only once.
4. Academic renewal does not affect or alter your record for financial aid awards or athletic eligibility.
5. 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.
6. Credits not being calculated as a result of academic renewal cannot be used to meet course or program prerequisites or graduation requirements.
7. You must meet with a counselor before applying for academic renewal to ensure that interpretation of this policy is correct.
8. This policy applies at JCCC only. If you transfer from JCCC to another institution, you will have to follow the receiving institution's policy.

Access to Student Information

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

1. Provide you the opportunity to inspect your educational records. If you wish to see your records, you should contact the JCCC Admissions and Records Office.
2. Provide you the opportunity to challenge through a hearing the content of your educational records if you believe the records contain information that is inaccurate, misleading or in violation of the right of privacy. (Grades are not subject to challenge.)

3. Limit disclosure of information from your record to those who have your written consent or to officials specifically permitted within the law, such as college officials and – under certain conditions – local, state and federal officials.

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

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

The college may provide the following information:

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

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

You may obtain a copy of the college's policies on access to student information and implementation of these procedures from the office of the dean of Student Services.

You may file a complaint with the Department of Education if you believe your rights under the law have been violated and if efforts to resolve the situation through JCCC appeal channels have proven unsatisfactory. You should send complaints to: FERPA, Department of Education
Room 514 E
200 Independence Ave. SW
Washington, D.C. 20201

The college will comply with the Kansas Open Records Act, as found in Chapter 171 of the 1983 Kansas Legislative Session Laws. The act is to be liberally construed and applied to promote compliance.

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

Advanced Standing Credit

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

Credit will not be awarded if:

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

Assessment of Prior Learning

Testing/Assessment Services coordinates the programs that lead to advanced standing credit, and maintains current advanced standing credit guidelines for each option. A fee will be charged for all advanced standing credit (APL) evaluation.

Portfolio or Certificate Evaluation

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

Military Credit

You may be granted credit for educational experience completed while in the armed services if you have completed basic training. Applicants submitting DD form 214, 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 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 seven working days to appeal for reinstatement. You will be reinstated only if an instructor or administrative error was made. Appeals for reinstatement must be signed by the appropriate division administrator and submitted to the Admissions and Records Office.

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

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

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

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

Auditing a Class

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

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

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

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

Classes by Arrangement

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

contact is required and how performance is measured. The selection of classes by arrangement is limited.

Independent Study

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

Self-paced Study

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

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

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

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

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

For additional information, contact the appropriate division office.

Credit Transferred from Other Colleges

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

Final Examinations

Final examinations are scheduled during the last week of the semester. The final examination schedule for the fall and spring semesters is available during the last three weeks of the semester in the Student Success Center or in division and program offices.

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 GPA)
- 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 Office, not when you stop attending class.

I – incomplete

You will receive this grade only if special circumstances prevent you from completing the class. You must make arrangements with the instructor before semester grades

are submitted, and you must sign a contract agreeing to complete the class requirements. All class requirements must be completed by the deadline indicated on the contract. An "I" will be changed to an "F" if the student does not successfully complete the work by the deadline established by the instructor, which can be no later than the end of the next full semester following the grading period for 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, the latter grade earned will be used in computing your cumulative GPA. Prior to spring 1995, an "R" replaced the earlier grade on your transcript. Beginning spring 1995, the "R" will no longer be used, the original grade will remain on your transcript with a special notation of an "E" (repeat indicator) which excludes the grade from your cumulative GPA. The latter grade will have an "I" indicator, which includes grade in your cumulative GPA.

A "W" grade will not be changed 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 and the academic director's written approval are required before you may choose the pass/fail option. You must meet with a counselor, complete the appropriate form and submit it to the Admissions Office before the eighth week of the fall and spring semester or the fourth week of the summer session. You will be allowed to enroll in only one class each semester under this option. 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." A program may designate certain courses as unavailable for the pass/fail grading option.

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 GPA or in some other way penalize you. Appeals to this policy should be submitted in writing to the director of Admissions and Records.

Grade Changes

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

Grade Point Average

- A = 4 grade points a semester credit hour
- B = 3 grade points a semester credit hour
- C = 2 grade points a semester credit hour
- D = 1 grade point a semester credit hour
- F = 0 grade points a semester credit hour

In calculating grade point averages, the hours with grades "P," "W," "I" and "X" or designated "R" will not be counted as hours attempted. Beginning spring 1995, the "R" grade will no longer be used; however, the original grade of a repeated course will be excluded from hours attempted. Courses with grades of "F" will be counted when figuring grade point averages.

Honors

Honor Roll

If you enroll in and complete a minimum of six credit hours and earn a GPA 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 GPA 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 GPA of 4.00, your name will appear on the President's List.

Graduation with Honors

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

Recognition of Achievement Award

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

Academic Standards for the Honors Program

For specific information, contact the coordinator of the Honors Program.

Records on Hold

If your records have been placed on hold for any of the following actions (for example – but not limited to): an unsubmitted official transcript, a financial obligation to JCCC, library books due or failure to pay for parking violations, you will not be allowed to do any of the following until the hold is removed:

1. Drop or add any class during the semester.
2. Enroll in courses in subsequent semesters.
3. Obtain a transcript.
4. Receive a diploma or certificate.

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

Transcripts

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

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

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

Verification of Enrollment

Requests for verification of enrollment must be made in writing. You may either fill out a verification of enrollment form on campus or write a letter and mail it to JCCC Records Office with the following information:

1. Your full name
2. Social Security number
3. Date of birth
4. Semester(s) to be verified
5. For health insurance, please provide parent name and Social Security number for identification.
6. Complete address where information must be mailed
7. Your signature

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

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

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

Alcohol and Drugs

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

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

Standards of Conduct

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

Legal Sanctions

Students are reminded that illegal possession or use of drugs or alcohol may also subject individuals to criminal prosecution. The college will refer violations of proscribed conduct to appropriate authorities for prosecution. Kansas law provides that any person who violates the criminal statutes on controlled substances by possessing, offering for sale, distributing or manufacturing opiates and narcotics, such as cocaine and heroin, shall be guilty of a class C felony. For a conviction of a class C felony, the court may sentence a person to a term of imprisonment of a minimum of three to five years, a maximum of 10 to 20 years, and a fine of up to \$15,000. Unlawful possession of

a depressant, stimulant or hallucinogenic drug is punishable as a class A misdemeanor, with a penalty of up to one year in jail and a fine of \$2,500. Depressants include barbiturates, Valium and barbitol. Hallucinogens include LSD, marijuana and psilocybin. State law classifies amphetamines and 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 theft, contact Security and a report will be filed. The college is not responsible for lost or stolen items.

No-smoking Policy

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

Parking

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

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

Motorcycles and 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.

Handicapped Parking

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

Bicycles

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

Security

Students, faculty and staff at Johnson County Community College have access to academic, recreational and administrative facilities on campus. The general public can attend cultural and recreational events on campus, with access limited to the facilities where these events are held. When facilities are not scheduled for use, they are secured and all alarms activated. Access to closed facilities is on an "as needed" basis and incorporates strict key control procedures. Normal hours of operation are 5:30 a.m. to 11 p.m.

Reporting Accidents, Incidents or Crimes

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

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

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

Johnson County Community College Campus Safety and Security Annual Report						
	1996		1997		1998	
	Actual Offenses	Arrests	Actual Offenses	Arrests	Actual Offenses	Arrests
Group A Offenses						
Arson	0	0	0	0	1	0
Assault	4	0	1	0	2	0
Burglary	14	0	20	0	0	0
Counterfeiting/Forgery	0	0	2	0	0	0
Destruction/Damage/ Vandalism of Property	34	1	27	0	11	0
Drug Offenses	0	0	1	0	0	0
Gambling Offenses	0	0	0	0	0	0
Homicides	0	0	0	0	0	0
Larceny/Theft	90	0	79	0	54	0
Motor Vehicle Theft	1	0	4	0	0	0
Robbery	0	0	0	0	0	0
Sex Offenses	0	0	0	0	0	0
Weapon Law Offenses	0	0	0	0	0	0
TOTAL GROUP A OFFENSES	143	1	134	0	68	0
Group B Offenses						
Bad Checks	0	0	0	0	0	0
Curfew/Loitering/Vagrancy	0	0	0	0	0	0
Disorderly Conduct	2	0	4	0	8	0
Driving Under the Influence	0	0	0	0	0	0
Drunkenness	0	0	0	0	0	0
Family Offenses, Nonviolent	0	0	0	0	0	0
Liquor Law Violations	0	0	0	0	0	0
Peeping Tom	0	0	0	0	0	0
Runaway	0	0	0	0	0	0
Trespass of Real Property	0	0	0	0	0	0
All Other Offenses	5	0	0	0	1	0
TOTAL GROUP B OFFENSES	7	0	4	0	9	0
Hate Crimes	0	0	0	0	1	0

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 CC building, or use any of the campus emergency phones located in parking lots and walkways.

Unlawful Discrimination or Harassment Complaint Procedure

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

1. The student should feel free to discuss the issue directly with any party participating in or allowing the conduct to occur. Students are assured that retaliation due to such complaints is also strictly prohibited and that if retaliation occurs, then discipline up to and including expulsion or termination will also occur.
2. If the student does not feel comfortable in addressing this issue directly with the offending party or parties or if such discussions do not produce a result acceptable to the student, then the student should make a written complaint as set forth below:
 - a. The written complaint should include a specific identification of the conduct complained of and of the parties involved. The complaint should also include an explanation of why the student believes that the alleged actions or harassment is based on gender, national origin or race, or other impermissible basis. The complaint should be signed and dated.
 - b. Students should file their written complaint with the dean of Student Services within 30 calendar days of the time the alleged harassment or discrimination took place unless good cause is shown for delay. If the student is not comfortable speaking with the dean of Student Services, then the student may submit the complaint to the director of Human Resources.
3. The person receiving the complaint should proceed under the following guidelines:
 - a. The party receiving the complaint should immediately submit a copy of the complaint to the president of the college for his/her records. The president shall appoint two officers of the college to investigate the complaint and the president shall designate either the vice president for Academic Affairs or the vice president for Administrative Services to review the investigators' findings and determine appropriate action at the conclusion of the investigation. The investigators

shall immediately investigate the complaint by discussing the complaint with the complainant and by interviewing any witnesses with relevant information, including but not limited to parties participating in or observing the conduct. The alleged offending party shall be given a copy of the complaint. Further, the alleged offending party may respond either by a signed written response from such alleged offending party or by a written response from the alleged offending party's attorney. Such written response to be considered by the investigators must be received by the investigator not later than seven (7) calendar days after the alleged offending party is given a copy of the complaint. All parties in the investigation should be advised that information surrounding the complaint should be kept confidential. Witnesses and alleged offending parties should be advised that retaliation against a complainant is strictly prohibited and may lead to discipline up to and including expulsion or termination.

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

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

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

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

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

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

Student Code of Conduct

Students enrolled at Johnson County Community College are expected to conduct themselves as responsible individuals. You are subject to the jurisdic-

tion 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 in the classroom warrants an immediate suspension from the class for the remainder

of the class period, the instructor may do so without a prior hearing. If the student does not voluntarily leave the classroom, campus security officers may remove the student from the classroom upon oral request by the instructor. The instructor shall provide written notice of the suspension to the appropriate program director/division administrator and the dean of Student Services within one work day.

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

- a. meet with the student, the instructor (if consenting) and other appropriate people to explore and adopt nondisciplinary solutions, including the establishment of guidelines for retaining the student in class;
 - b. conduct a meeting with the student and other people appropriate to the case, make a written determination of the facts and take disciplinary 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.

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

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

11. **Smoking** – No student shall be allowed to smoke in any enclosed indoor area of the college.
12. **Unlawful Discrimination or Harassment** – No student shall engage in harassment of another student, instructor or staff member of the college. This shall include harassment based on gender, race, age, disability, national origin or other basis impermissible under the law. Sexual harassment is defined as conduct involving unwelcome sexual advances, requests for sexual favors or other verbal or physical conduct of a sexual or gender-based nature.
- A. Harassment based on race, ancestry, age, disability or national origin includes verbal, physical or other conduct of a nature specifically offensive to a person because of race, age, disability, ancestry or national origin.
 - B. Harassment based on gender, race, age, ancestry, disability, national origin or other bases protected by law is strictly prohibited when:
 1. submission to such conduct is made either explicitly or implicitly a term or condition of academic success; or
 2. submission to or rejection of such conduct by an individual is used as the basis for academic decisions affecting either the instructor, student or staff member; or
 3. such conduct has the purpose or effect of unreasonably interfering with the instructor, student or staff member's performance or creating an intimidating, hostile or offensive environment.
- Persons violating this policy will face student discipline up to and including suspension or expulsion. Any person believing that he or she has been subject to unlawful harassment as set forth in this policy should utilize the unlawful discrimination or harassment complaint procedure as found on page 44 of this catalog.
13. **Theft/Vandalism** – No person nor persons shall engage in the theft of or damage to property belonging to another person or to the college. This includes tampering with coin-operated machines.
14. **Use of College Facilities** – No student shall be in campus buildings except during days established in the academic calendar and on campus during normal college hours of operation. Students wishing to use college facilities at times outside of normal hours of operation must secure permission from the director of student life. For purpose of this policy, normal hours of operation will be 5:30 a.m. through 11 p.m.

15. **Weapons** – No student, except authorized law enforcement officers or security personnel, shall possess, use or threaten to use:
- 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;
 - any explosives, including but not limited to dynamite, nitroglycerin or any other combustible, blasting caps, fireworks, firebombs, grenades, plastic charges or devices intended for detonation purposes, and/or any other similar devices or compounds used for detonation or blasting;

on any college-owned or college-operated property or at any college-sponsored event either on or off campus.

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

16. **Safety** – No student shall engage in behavior that violates any safety rules of any classroom, laboratory or other college premises, whether such procedures be written or oral rules or directions. This shall include, but not be limited to, the wearing of any required personal protective equipment and the following of prescribed methods and procedures for handling and disposing of certain materials that may be hazardous, unstable, infectious, etc.
17. **Student Electronic Mail** – No student shall deviate from acceptable standards of ethics and conduct in the use of computing resources as outlined in the guidelines given to the student at the time of electronic mail account registration.
18. **No student shall willfully violate any published regulation for student conduct adopted or approved by the board of trustees.**

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

Appeals of Disciplinary Action

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

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

- 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:
 - one dean or assistant dean selected by the president who shall act as chair, shall conduct the hearing and shall not vote; and
 - two students selected by the Student Senate; and
 - 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.

- 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.

- 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.
- 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.
- You and the administration shall have the following rights during the hearing:
 - 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 investigated by the designated officer who will make a report to the president.

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

Student Career Development Policy

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

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

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

Student Health

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

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

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

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

Student Right to Know

In 1996-1997, the completion or graduation rate for students who entered Johnson County Community College in fall 1994 as first-time, full-time, degree-seeking students was 10.5 percent. Fifteen and a half percent of these students were still attending JCCC in fall 1997.

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

Continuing Education Courses/Special Events

Project Finish: Adult Basic Education

ABE/GED/ESL Program

Intensive English Program

Business and Industry Institute

Center for Professional Education

Center for Literary Culture

Citizens Forums

CLEAR Program

Community Services Courses

Cultural Education

Vol-Stars, JCCC's Cultural Volunteers

Speakers Bureau

Special Events

Youth Program

Continuing Education

Continuing Education Courses/Special Events

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

Project Finish: Adult Basic Education

ABE/GED/ESL Program

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

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

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

Intensive English Program

The Intensive English program offers preacademic English language study for students who wish to improve and strengthen their language skills for college or university academic preparation, personal fulfillment or career. The program offers beginning, intermediate and advanced pre-academic listening, speaking, vocabulary, pronunciation, grammar, reading, writing and conversation classes.

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 skill-based needs. Among the services offered are:

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

- **On-campus Training.** Seminars, workshops and programs in technology and business are offered at JCCC. Courses and programs can be designed to meet the specifications of your individual business.
- **Business and Office Skills.** Skill-oriented seminars and workshops are available both on campus and on-site at company locations.
- **Economic Development.** The institute is active in helping new and expanding industries obtain state funding to pay for training and job skills development.
- **Management and Professional Development.** Professional, skill-oriented management and supervisory seminars and workshops are offered both on campus and on site at company locations.
- **Computer Learning Program.** Employees are trained in business applications, using much of today's best-selling software. The clearly written manuals and concentrated hands-on experience significantly reduce the time required for you to become productive. The training labs are continuously upgraded with the latest equipment and the newest versions of software. A mobile laptop lab is available for on-site computer training.
- **Academy for Information Technology.** High-end computer users can now study at the academy for continuing education or college credits.
- **Small Business Development Center.** The Small Business Development Center offers a wide range of small business services, including training programs, counseling, applied research and a library for small business owners and potential owners in Johnson, Wyandotte and Miami counties. There is no charge for the counseling service, and results are strictly confidential.
- **Workplace Skills Enhancement.** JCCC provides workplace skill assessment and training customized to meet your company's objectives. Our strategy is based on the premise that all employees need job-related functional skills to enable their companies to maintain high quality standards and remain competitive. For more information, contact Phil Wegman at 469-4446. Specific services include:
 - Job profiling — (job analysis) to help employers develop skill profiles for individual jobs.
 - New Employee Assessment Screening — to use in hiring individuals who demonstrate skill competencies at the required level necessary to perform the job.
 - Skill Assessment — to determine the skill levels of current employees for use in developing training programs

- Skill Enhancement Training — to enable current employees to meet the skill level demands of their present positions and perform at the level required.
- **Supervisory Skills Assessment Center.** Supervisors are assessed against 10 dimensions. A plan is then created for focused development.
- **Certificate Programs.**
 - Supervisory Skills
 - Team Leader Facilitator
 - Master Team Facilitator

Center for Professional Education

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

- **On-campus Training.** Continuing education courses, seminars and workshops, most of which are approved by state licensing boards in Kansas and Missouri for continuing education credit.
- **On-site Training.** Courses and programs that are custom-designed to meet the special needs of the institution, agency or company. These courses are offered at your workplace and are scheduled at times convenient to you.
- **Open Computer Lab.** Computerized independent study modules approved for RN, LPN and LMHT relicensure credit in Kansas are offered in JCCC's open computer lab. Also offered are computerized studies for real estate relicensure credit.
- **Cosmetology.** This program provides theory and skill development in hair care, nail technology, skin care and makeup application. Three options are available in the cosmetology program: nail technologist, cosmetologist and esthetician.
- **Cosponsorships.** The center works cooperatively with a variety of associations, institutions and agencies to provide high-quality continuing education programs at JCCC and elsewhere in the metropolitan area.
- **Videoconferences.** High-quality videoconferences are offered for a wide range of professionals, including offerings of the American Law Institute, American 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, nursing home administrators, physical therapists, occupational therapists, respiratory care practitioners and other health care professionals. Self-study modules are also available.
- **The Insurance Institute.** Semester-length courses leading to professional designations in the insurance industry, including chartered property and casualty underwriter, associate in claims, chartered life underwriters, associate in risk management, associate in underwriting and certified professional insurance woman/man. Seminars and workshops are offered to meet the Kansas and Missouri continuing education requirements of licensed property/casualty, life/health and title insurance agents.
- **Law.** Seminars, workshops and videoconferences for attorneys and paralegals.
- **Mediation.** Training and professional development courses for mediation certification in the state of Kansas are offered every semester. Upon completion of JCCC's training and practicum experience, a participant is eligible to apply for certification with the Kansas Supreme Court.
- **The Police Academy.** The regional police academy offers 500 hours of instruction to full-time law enforcement officers in order to meet the Kansas state mandate for basic police certification. The academy is offered in cooperation with area law enforcement agencies and serves more than 16 police jurisdictions in Kansas.
- **Public Safety Training.** Training and professional development courses for public safety professionals, including law enforcement officers, emergency medical technicians, mobile intensive care technicians and firefighters.
- **The Real Estate Institute.** Prelicense instruction to prepare you to sit for the Kansas real estate salesperson's license examination. Approved continuing education for relicensure of Kansas and Missouri real estate agents and brokers. Courses leading to professional designations and state relicensure/certification in real estate appraisal.

- **Technical Training.** Hands-on technical training for code enforcement officers, plumbers, electricians, pest control and water quality inspectors and HVAC technicians.
- **Therapeutic Massage.** Classroom and clinical instruction in therapeutic massage, which satisfies the education and training requirements for licensure established by the city of Overland Park. The 500-hour curriculum includes classes in massage theory and technique, human sciences, professional business, ethics and movement.

Center for Literary Culture

The Center for Literary Culture is a national, award-winning program for writers and those who love to read. 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

CLEAR (College Learning Experiences, Activities and Resources) provides noncredit continuing education classes for adults with developmental disabilities or severe learning disabilities. The program, sponsored by JCCC, is designed to teach independent living skills and provide life-enhancing experiences.

All classes are held on the JCCC campus. A full range of classes is offered each spring and fall semester, with an abbreviated schedule offered in the summer. Contact the CLEAR office at 469-8500, ext. 3247, with questions.

Community Services Courses

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

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	House and Garden
Arts and Crafts	Literature and Writing
Aviation	Money Management
Career Planning	Personal Development
Computers	Music
(home use and SeniorNet)	Photography
Cultural Education	Practical Know-how
Citizens' Forums	Home Ownership
Dance	Sign Language
Developmental Education	Special Interests
English as a Second	Special Events
Language	Sports and Recreation
Foreign Language	Tours and Travel
Health and Lifestyles	Youth Program
Home Ownership	Youth Sports Clinics

Also offered are:

- **Computer Learning Lab.** Computerized instruction in basic skills, including reading, writing, computational skills and preparation for the GED, is available in our all-computerized learning lab.
- **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.

Cultural Education

The Carlsen 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 Carlsen Center was designed to meet the needs of all special patrons.

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

The ticket buyers for events in the CC 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 are sponsored by community groups or local arts presenters. These are just a few of the organizations and types of events they present:

- The Kansas City Symphony, including the annual *SummerFare* and *FamilyFare* concerts.

- Kansas Regional Ballet holiday performances of *Sleeping Beauty* and *Cinderella*
- Overland Park Arts Commission presenting the Kansas City Symphony featuring Dudley Moore, Doc Severinsen, Manhattan Transfer
- Barbershop quartet, Sweet Adelines and Shriners regional competitions
- Overland Park Regional Medical Center presentations
- The U.S. Air Force Airlift Command Band
- Quality Hill Playhouse Concerts
- Kansas City Civic Orchestra concerts
- The UMKC Conservatory of Music
- Kansas City Youth Symphony
- KU Alumni Association

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

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

Approximately 23 percent of CC 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 *Celebrity Series*, with classically themed music and dance performances by artists of international renown
- *The Metropolitan Performing Arts Collaborative*, 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
- Partnerships with more than 50 community organizations that have produced many projects

Vol-Stars, JCCC's Cultural Volunteers

The Carlsen Center volunteers, or Vol-Stars, have served as ushers for all events in the center 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 200 Vol-Stars serve at 150 to 200 events each year.

Speakers Bureau

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

Special Events

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

Youth Program

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



Graduation, Degree and Certificate Programs

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Certificate of Completion

Graduation Requirements

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

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

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

Thus, Johnson County Community College's philosophy of general education combines two traditional approaches, one based on distribution requirements and the other based on student achievement of outcomes. **Distribution:** All programs of substantial length require students to complete a certain number of general education hours, depending upon the particular degree or certificate.

Courses are identified by the Educational Affairs Committee as general education courses if they address in a substantial manner those outcomes expressed in the Aims of General Education in the curriculum handbook.

Outcomes: The General Education and Outcomes Assessment Subcommittee of the Educational Affairs Committee has developed the process by which general education outcomes are defined and assessed at JCCC.

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

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

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

Written appeals for deadline extensions may be made to the director of Admissions and Records. If you apply after the deadline, you will not receive notification of your degree status until all grades have been posted for the semester in which you applied to graduate. Appeals for spring graduation will not be considered after Feb. 15, 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.

A student must earn a minimum of 15 credit hours in residence at Johnson County Community College. Advanced standing credit will NOT count toward satisfying this credit hour requirement. In addition, a student must have earned BOTH a 2.0 grade point average or better AT JCCC and have a cumulative grade point average of 2.0 or better on all completed course work. 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 mailed shortly after degree and/or certificate verifications are completed.

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	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 – 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		C. Political Science	
HIST 124	Community Life/Values3	POLS 122	Political Science.....3
HIST 125	Western Civilization I.....3	POLS 124	American National Government.3
HIST 126	Western Civilization II3	POLS 126	State and Local Government....3
HIST 130	European History from 1750.....3	POLS 132	Introduction to Comparative Government.....3
HIST 135	Eastern Civilization.....3	POLS 135	International Relations.....3
HIST 140	U.S. History to 18773	D. Psychology	
HIST 141	U.S. History Since 18773	PSYC 121	Applied Psychology.....3
HIST 151	World History I: The Traditional World.....3	PSYC 130	Introduction to Psychology.....3
HIST 152	World History II: The Modern World.....3	E. Sociology	
HIST 160	Modern Russian History3	SOC 122	Sociology.....3
HIST 162	Modern Latin America3	SOC 125	Social Problems.....3
D. Humanities		SOC 131	Marriage and the Family3
ART 180	Art History: Ancient/Renaissance.3	SOC 160	Social Power: Motivation and Action3
ART 182	Art History: Renaissance/Modern.3	IV. Science and/or Mathematics – 9 hours	
HUM 122	Introduction to Humanities.....3	Must include one course from a lab science and one from mathematics.	
HUM 136	The Human Experience3	A. Life Science	
HUM 145	World Humanities I3	BIOL 122/3	Principles of Biology/Lab3/1
HUM 146	World Humanities II.....3	BIOL 124	Oceanus: The Marine Environment.....3
HUM 164	Civilisation.....3	BIOL 125	General Botany5
MUS 121	Introduction to Music Listening...3	BIOL 127	General Zoology.....5
MUS 125	Introduction to Jazz Listening...3	BIOL 130/1	Environmental Science/Lab ...3/1
PHOT 140	History of Photography3	BIOL 140	Human Anatomy4
PHOT 141	Issues of Contemporary Photography3	BIOL 144	Human Anatomy/Physiology....5
REL 120	Exploring World Religions.....3	BIOL 150	Biology of Organisms5
E. Philosophy		BIOL 225	Human Physiology4
PHIL 121	Introduction to Philosophy.....3	BIOL 230/1	Microbiology/Lab3/2
PHIL 124	Logic and Critical Thinking3	B. Physical Science	
PHIL 143	Ethics.....3	ASTR 122	Astronomy.....4
PHIL 154	History of Ancient Philosophy...3	CHEM 120/1	The World of Chemistry/Lab..3/1
PHIL 176	Philosophy of Religion.....3	CHEM 122	Principles of Chemistry.....5
III. Social Science/Economics – 6 hours		CHEM 124/5	General Chemistry I/Lab4/1
No more than one course from each of the five areas may count toward the six required hours.		CHEM 131/2	General Chemistry II/Lab.....4/1
A. Anthropology		CHEM 140	Principles of Organic Chemistry...5
ANTH 125	Cultural Anthropology3	CHEM 227	Introduction to Quantitative Analysis.....5
ANTH 126	Physical Anthropology.....3	GEOS 130	General Geology5
ANTH 130	World Cultures.....3	GEOS 132	Historical Geology5
ANTH 210	Peoples of the World3	GEOS 140/1	Physical Geography/Lab3/2
B. Economics		IDSP 175	Global Resources from Geologic and Economic Viewpoints3 (Nonlab science)
ECON 130	Basic Economics.....3	PHYS 130	General Physics I.....5
ECON 132	Survey of Economics3	PHYS 131	General Physics II5
ECON 230	Economics I3	PHYS 220	Engineering Physics I5
ECON 231	Economics II.....3	PHYS 221	Engineering Physics II.....5
IDSP 175	Global Resources from Geologic and Economic Viewpoints3	PSCI 120	Physical Science.....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 University
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.
Business Administration, A.A.S.
Business Entrepreneurship, A.A.S.
Chef Apprenticeship, A.A.S.
Civil Engineering Technology, A.A.S.
Communication Design, A.A.S.
Computer Information Systems, A.A.S.
Cosmetology
Dental Assisting
Dental Hygiene, A.A.S.
Drafting Technology, A.A.S.
 Civil Option
 Machine Option
Early Childhood Education, A.S.
Electrical Technology, A.A.S.
Electronics Technology, A.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.
 Commercial Service Technician Option
 Residential Service Technician Option
Hospitality Management, A.A.S.
 Food and Beverage Management
 Hotel/Motel Management
Information Technology, A.A.S.
Interior Merchandising, A.A.S.
Interpreter Training, A.A.S.
Marketing and Management, A.A.S.
Metal Fabrication Technology, A.A.S.
Nursing, A.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.A.S.

Conductor Option

Dispatcher Option

General Option

Maintenance of Way Welding Option

Mechanical Option

Respiratory Care, A.A.S.

Science Technology, A.S., A.A.S.

Chemical Specialty Option

Surgical Technology Vocational Certificate*

Travel and Tourism Management, A.A.S.*

Veterinary Technology, A.A.S.*

* Cooperative program

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

Associate of Science Degree

(available for career programs only)

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

- Communications6 hours
Humanities3 hours
Social Science and/or Economics.....3 hours
Science and Mathematics12 hours
Health and/or Physical Education1 hour

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

I. Communications – 6 hours

- A. ENGL 121 Composition I3
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 II3
ENGL 123 Technical Writing I.....3
BUS 150 Business Communications3
SPD 120 Interpersonal Communications ..3
SPD 121 Public Speaking.....3
SPD 125 Personal Communication3

II. Humanities – 3 hours

One course from any of the following categories may count toward the three required hours.

A. Literature/Theater

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

Note: These courses have a prerequisite of ENGL 122.

- ENGL 230 Introduction to Fiction3
ENGL 231 American Prose3
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 Poetry3
THEA 120 Introduction to Theater.....3

B. Foreign Language

Note: These courses have prerequisites.

- FL 178 Intermediate Russian I3
FL 179 Intermediate Russian II.....3
FL 190 Intermediate Japanese I.....3
FL 191 Intermediate Japanese II3
FL 220 Intermediate German I3
FL 221 Intermediate German II.....3
FL 230 Intermediate Spanish I.....3
FL 231 Intermediate Spanish II3
FL 240 Intermediate French I3
FL 241 Intermediate French II.....3

C. History

- HIST 124 Community Life/Values3
HIST 125 Western Civilization I.....3
HIST 126 Western Civilization II3
HIST 130 European History from 1750.....3
HIST 135 Eastern Civilization.....3
HIST 140 U.S. History to 18773
HIST 141 U.S. History Since 18773
HIST 151 World History I:
The Traditional World.....3
HIST 152 World History II:
The Modern World.....3
HIST 160 Modern Russian History3
HIST 162 Modern Latin America3

D. Humanities

- ART 180 Art History: Ancient/Renaissance .3
ART 182 Art History: Renaissance/Modern .3
HUM 122 Introduction to Humanities.....3
HUM 136 The Human Experience3
HUM 145 World Humanities I3
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 Photography3
PHOT 141 Issues of Contemporary
Photography3
REL 120 Exploring World Religions.....3

E. Philosophy	
PHIL 121	Introduction to Philosophy.....3
PHIL 124	Logic and Critical Thinking.....3
PHIL 143	Ethics.....3
PHIL 154	History of Ancient Philosophy.....3
PHIL 176	Philosophy of Religion.....3
III. Social Science and/or Economics – 3 hours	
One course from any of the following categories may count toward the three required hours.	
A. Anthropology	
ANTH 125	Cultural Anthropology3
ANTH 126	Physical Anthropology.....3
ANTH 130	World Cultures.....3
ANTH 210	Peoples of the World3
B. Economics	
ECON 130	Basic Economics.....3
ECON 132	Survey of Economics.....3
ECON 230	Economics I3
ECON 231	Economics II.....3
IDSP 175	Global Resources from Geologic and Economic Viewpoints3
C. Political Science	
POLS 122	Political Science.....3
POLS 124	American National Government...3
POLS 126	State and Local Government...3
POLS 132	Introduction to Comparative Government.....3
POLS 135	International Relations.....3
D. Psychology	
PSYC 121	Applied Psychology.....3
PSYC 130	Introduction to Psychology.....3
E. Sociology	
SOC 122	Sociology.....3
SOC 125	Social Problems.....3
SOC 131	Marriage and the Family3
SOC 160	Social Power: Motivation and Action3
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 Zoology5
BIOL 130/1	Environmental Science/Lab.3/1

BIOL 140	Human Anatomy.....4
BIOL 144	Human Anatomy/Physiology ..5
BIOL 150	Biology of Organisms5
BIOL 225	Human Physiology4
BIOL 230/1	Microbiology/Lab.....3/2
2. Physical Science	
ASTR 122	Astronomy4
CHEM 120/1	The World of Chemistry/Lab.3/1
CHEM 122	Principles of Chemistry5
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/Lab3/2
IDSP 175	Global Resources from Geologic and Economic Viewpoints (Nonlab science) ..3
PHYS 125	Technical Physics I4
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 II5
PSCI 120	Physical Science4

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 Wellness3
HMEC 151	Nutrition and Meal Planning3
HPER 192	Wellness for Life.....1
HPER 200	First Aid/CPR2
HPER 202	Personal/Community Health.....3
HPER 205	Individual Lifetime Sports2
HPER 240	Lifetime Fitness.....1
HPER 255	Introduction to Physical Education3

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 15 credits of general education distribution requirements plus the courses listed for the specific career program. At a minimum, the distribution must include:

Communications3 hours
 Humanities3 hours
 Social Science and/or Economics.....3 hours
 Science and/or Mathematics.....3 hours
 Health and/or Physical Education.....1 hour

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

I. Communications – 3 hours

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

* Satisfies both the Composition I and Oral Communication requirements.

B. Communications Elective – 3 hours (one of the following)

ENGL 122 Composition II.....3
 ENGL 123 Technical Writing I.....3
 BUS 150 Business Communications.....3
 SPD 120 Interpersonal Communications ..3
 SPD 121 Public Speaking.....3
 SPD 125 Personal Communication3

II. Humanities – 3 hours

One course from any of the following categories may count toward the three required hours.

A. Literature/Theater

Note: This course has a prerequisite of ENGL 121.
 ENGL 130 Introduction to Literature.....3
Note: These courses have a prerequisite of ENGL 122.
 ENGL 230 Introduction to Fiction.....3
 ENGL 231 American Prose.....3
 ENGL 235 Drama as Literature3
 ENGL 241 British Writers3
 ENGL 250 World Masterpieces3
 ENGL 254 Masterpieces of the Cinema .3
 ENGL 256 American Poetry.....3
 THEA 120 Introduction to Theater3

B. Foreign Language

Note: These courses have prerequisites.
 FL 178 Intermediate Russian I.....3
 FL 179 Intermediate Russian II3
 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 I3
 FL 231 Intermediate Spanish II.....3
 FL 240 Intermediate French I.....3
 FL 241 Intermediate French II.....3

C. History

HIST 124 Community Life/Values3
 HIST 125 Western Civilization I3
 HIST 126 Western Civilization II3
 HIST 130 European History from 1750.3
 HIST 135 Eastern Civilization3
 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 History3
 HIST 162 Modern Latin America.....3

D. Humanities

ART 180 Art History: Ancient/Renaissance .3
 ART 182 Art History: Renaissance/Modern .3
 HUM 122 Introduction to Humanities .3
 HUM 136 The Human Experience3
 HUM 145 World Humanities I.....3
 HUM 146 World Humanities II.....3
 HUM 164 Civilisation3
 MUS 121 Introduction to Music3
 Listening3
 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 Ethics3
 PHIL 154 History of Ancient Philosophy ..3
 PHIL 176 Philosophy of Religion.....3

III. Social Science and/or Economics – 3 hours

One course from any of the following categories may count toward the three required hours.

A. Anthropology

ANTH 125 Cultural Anthropology3
 ANTH 126 Physical Anthropology3
 ANTH 130 World Cultures3
 ANTH 210 Peoples of the World3

B. Economics

ECON 130 Basic Economics3
 ECON 132 Survey of Economics.....3
 ECON 230 Economics I3
 ECON 231 Economics II3

IDSP	175	Global Resources from Geologic and Economic Viewpoints	3
C. Political Science			
POLS	122	Political Science	3
POLS	124	American National Government.....	3
POLS	126	State and Local Government..	3
POLS	132	Introduction to Comparative Government.....	3
POLS	135	International Relations.....	3
D. Psychology			
PSYC	121	Applied Psychology	3
PSYC	130	Introduction to Psychology ..	3
E. Sociology			
SOC	122	Sociology.....	3
SOC	125	Social Problems.....	3
SOC	131	Marriage and the Family.....	3
SOC	160	Social Power: Motivation and Action	3
IV. Science and Mathematics – 3 hours			
Any mathematics course except Fundamentals of Mathematics or Introduction to Algebra will satisfy this requirement, or the requirement can be satisfied by any of the following courses.			
A. Life Science			
BIOL	122/3	Principles of Biology/Lab ..	3/1
BIOL	124	Oceanus: The Marine Environment	3
BIOL	125	General Botany	5
BIOL	127	General Zoology.....	5
BIOL	130/1	Environmental Science/Lab..	3/1
BIOL	140	Human Anatomy	4
BIOL	144	Human Anatomy/Physiology..	5
BIOL	150	Biology of Organisms	5
BIOL	230/1	Microbiology/Lab	3/2
B. Physical Science			
ASTR	122	Astronomy.....	4
CHEM	120/1	The World of Chemistry/Lab.	3/1
CHEM	122	Principles of Chemistry	5
CHEM	124/5	General Chemistry I/Lab ..	4/1
CHEM	131/2	General Chemistry II/Lab..	4/1
CHEM	140	Principles of Organic Chemistry	5
CHEM	227	Introduction to Quantitative Analysis	5
GEOS	130	General Geology	5
GEOS	132	Historical Geology	5
GEOS	140/1	Physical Geography/Lab ...	3/2
IDSP	175	Global Resources from Geologic and Economic Viewpoints (Non-lab science)	3
PHYS	125	Technical Physics I.....	4
PHYS	126	Technical Physics II	3
PHYS	130	General Physics I.....	5

PHYS	131	General Physics II	5
PHYS	220	Engineering Physics I.....	5
PHYS	221	Engineering Physics II.....	5
PSCI	120	Physical Science.....	4
V. Health and/or Physical Education – 1 hour			
HPER		Any Activity Course.....	1
EMS	121	CPR I – Basic Rescuer.....	1
HLT	260	Lifetime Wellness	3
HMEC	151	Nutrition and Meal Planning ...	3
HPER	192	Wellness for Life.....	1
HPER	200	First Aid/CPR.....	2
HPER	202	Personal and Community Health	3
HPER	205	Individual Lifetime Sports	2
HPER	240	Lifetime Fitness	1
HPER	255	Introduction to Physical Education	3

Certificate of Completion

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

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

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

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

Approved certificate programs are:

- Administration of Justice
- Emergency Services Dispatcher
- Postsecondary Certificate*
- Automotive Technology
- Automotive Technology Vocational Certificate

Business Entrepreneurship
Business Entrepreneurship Vocational Certificate
The Business Plan Vocational Certificate

Civil Engineering Technology
Construction Management Vocational Certificate

Communication Design
Interactive Media Vocational Certificate

Computer Information Systems
AS/400 Operations Vocational Certificate
Mainframe Programmer/Analyst Vocational Certificate
Microcomputer Programmer/Analyst
Vocational Certificate
Desktop Publishing Applications Specialist
Vocational Certificate
Personal Computer Applications Specialist Certificate
Web Master Advanced Vocational Certificate

Cosmetology
Cosmetology Vocational Certificate
Esthetics Vocational Certificate
Nail Technology Vocational Certificate

Dental Assisting Vocational Certificate*

Drafting
Computer-Aided Drafting (CAD) Vocational Certificate
CAD Network Administrator Vocational Certificate

Electrical Technology
Electrical Technology Vocational Certificate
Industrial Maintenance Vocational Certificate

Electronics
Industrial Controls Vocational Certificate
Medical Electronics Vocational Certificate
Communications Electronics Vocational Certificate

Emergency Medical
Emergency Medical Technician Vocational Certificate
MICT Vocational Certificate

Health Occupations
Certified Nurse Aide
Certified Medication Aide
Home Health Aide
Certified Medication Aide Update
I.V. Therapy

Heating, Ventilation and Air Conditioning
Commercial Service Technician
Postsecondary Certificate
Residential Service Technician
Postsecondary Certificate
Installation Technician Vocational Certificate

Hospitality Management Postsecondary Certificate

Information Technology
Networking Administration: Windows NT
Vocational Certificate
Networking Administration: Netware
Vocational Certificate

Marketing and Management
Retail Sales Representative Vocational Certificate
Sales and Customer Relations Vocational Certificate
Teleservice Representative Vocational Certificate
TeleTrac Vocational Certificate

Metal Fabrication
Metal Fabrication Vocational Certificate

Nursing-Practical Nursing
Practical Nursing Vocational Certificate

Office Systems Technology
Office Careers Vocational Certificate
Administrative Support Specialist
Vocational Certificate
Office Automation Skills Vocational Certificate
Office Automation Technology Vocational Certificate
Medical Office Assistant Vocational Certificate

Paralegal
Paralegal Postsecondary Certificate
Legal Nurse Consultant Postsecondary Certificate

Railroad Electronics
Railroad Electronics Vocational Certificate

Railroad Industrial Technology
Maintenance of Way Welding Postsecondary Certificate
Railroad Carman Welding Vocational Certificate
Railroad Machinist Welding Vocational Certificate
Structural Welding Vocational Certificate
Supervisors Welding Vocational Certificate
Track Welding Vocational Certificate
Welding Postsecondary Certificate

Respiratory Care
Respiratory Care Postsecondary Certificate Program
Certified Respiratory Therapist (CRT)
Transition Postsecondary Certificate

Surgical Technology Vocational Certificate*

*Cooperative program

Career and Certificate Programs



Accounting
Administration of Justice/Law Enforcement
Automotive Technology
Business Administration
Business Entrepreneurship
Chef Apprenticeship
Civil Engineering Technology
Communication Design
 Computer Interactive Media
Computer Information Systems
Construction Management
Cosmetology
Dental Assisting
Dental Hygiene
Drafting Technology
Early Childhood Education
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
Information Technology
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
Surgical 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

<i>First Semester</i>		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: Win..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

<i>First Semester</i>		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	3
		(Cannot be a philosophy course)	
		Science and/or Mathematics	
		Elective **	3
		Health and/or Physical Education Elective 1	
ADMJ		Program Electives	9
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	64

Required Program Electives (9 hours – any three courses)

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

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

Group 1:

American National Government
State and Local Government

Group 2:

Introduction to Psychology

Group 3:

Social Problems or Sociology

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

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

Correctional Services Option

Offered at Longview Community College

Through a cooperative agreement with Longview Community College, you may take all or some of your nine program elective credits in Correctional Services. The following courses are taught at Longview

Community College. You should contact a JCCC counselor for information about enrolling.

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

Emergency Services Dispatcher

Postsecondary Certificate

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

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

Automotive Technology

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

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

Associate of Applied Science Degree

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

AUTO	125	Introduction to Automotive Shop Practices	3
		or	
		Approval of division administrator	

<i>First Semester</i>		CR
AUTO	163 Automotive Steering and Suspension.....	3
AUTO	234 Automotive Electrical Systems	4
INDT	125 Industrial Safety.....	1
MATH	120 Business Math.....	3
ENGL	121 Composition I.....	3
	Social Science and/or Economics Elective	3
	TOTAL CREDIT HOURS	17

<i>Second Semester</i>		
AUTO	165 Automotive Engine Repair	4
AUTO	167 Automotive Brake Systems	2
AUTO	168 Automotive Manual Drivetrain and Axles.....	3
ENGL	123 Technical Writing I.....	3
	Technical/Related Electives	3
	Health and/or Physical Education Elective 1	1
	TOTAL CREDIT HOURS	16

<i>Third Semester</i>		
AUTO	250 Automatic Transmissions and Transaxles ..	4
AUTO	254 Automotive Engine Performance.....	5
MFAB	121 Introduction to Welding	4
	Humanities Elective	3
	TOTAL CREDIT HOURS	16

<i>Fourth Semester</i>		
AUTO	230 Automotive Heating and Air Conditioning..	3
AUTO	260 Automotive Service Management	3
AUTO	261 Automotive Service Techniques.....	3
BUS	140 Principles of Supervision.....	3
	Technical/Related Electives	3
	TOTAL CREDIT HOURS	15
	TOTAL PROGRAM	
	CREDIT HOURS.....	64

Technical/Related Electives		
AUTO	121 Small Engine Service	3
AUTO	122 Introduction to Auto Glass.....	3
AUTO	123 Motorcycle Maintenance and Repair	2
AUTO	128 Automotive Parts Specialist.....	2
AUTO	130 Diesel Fundamentals	2
AUTO	201 ASE Certification Seminar	1
AUTO	210 Advanced Engine Repair	3
AUTO	271 Automotive Technology Internship	3
AUTO	291 Independent Study.....	1-4
MATH	133 Technical Math I.....	4
PHYS	125 Technical Physics I.....	4
BUSE	140 FastTrac Feasibility Plan.....	2
BUSE	142 FastTrac Business Plan.....	3
CPCA	105 Introduction to Personal Computing: Win. 1	
DP	124 Introduction to Computing Concepts and Applications	3
ELEC	120 Introduction to Electronics	3
RRT	165 Railroad Safety, Quality and Environment..	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 and independent service personnel. Completion of courses should assist students in preparing for ASE certification tests. Most automotive trades expect applicants to pass one or more of the ASE tests, which will enable them to qualify for technical positions in service repair.

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

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

Required Courses

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 Drivetrain and Axles.....	3
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	33

Business Administration

Business is more competitive than ever before. People running businesses will be judged by how well they manage change, stay ahead of trends and learn the latest theories. JCCC's Business Administration career program can train you in the many skills required to manage a variety of businesses.

Focusing on the development of decision-making, organizational and supervisory skills, the program offers professional courses in management, marketing, economics, accounting, finance, communications, business law and data processing. These are combined with a core of general education courses to ensure that students receive a well-rounded curriculum.

Graduates have opportunities in entry-level management and supervisory positions in a variety of businesses. Johnson County's continued growth as the business center for the area means job opportunities are available.

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
DP	124 Introduction to Computing Concepts and Applications.....	3
CPCA or CDTP	Choose 1 credit hour from CPCA or CDTP course selections higher than CPCA 105 and 106 or	
CPCA or CDTP	Any 4 credit hours from the CPCA or CDTP course selections or	
DP	134 Programming Fundamentals.....	4
		TOTAL CREDIT HOURS16

Second Semester		
ACCT	121 Accounting I.....	3
BUS	141 Principles of Management.....	3
or		
BUS	145 Small Business Management.....	3
BUS	150 Business Communications.....	3
ECON	230 Economics I.....	3
HIST	141 U.S. History Since 1877.....	3
Health and/or Physical Education Elective.....		1
		TOTAL CREDIT HOURS16

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 HOURS16

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.....	1
TOTAL CREDIT HOURS	16
TOTAL PROGRAM	
CREDIT HOURS.....	64

Recommended Electives

BUS	120 Management Attitudes and Motivation ..3
BUS	140 Principles of Supervision.....3

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 to grow your business.

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 an entrepreneurial business. Course work covers evaluating a business opportunity, preparing a business plan, obtaining financing, planning advertising and sales promotions, marketing a product or service and developing an 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.

Associate of Applied Science Degree

First Semester		CR
BUSE	140 FastTrac Feasibility Plan.....	2
BUSE	180 Seminar: Opportunity Analysis.....	2
ENGL	121 Composition I or higher.....	3
MATH	120 Business Math or higher.....	3
BUS	230 Marketing.....	3
BUS	225 Human Relations.....	3
		TOTAL CREDIT HOURS16

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
or		
ECON	132 Survey of Economics.....	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
		or	
MKT	234	Services Marketing.....	3
		TOTAL CREDIT HOURS	17

Third Semester

BUS	150	Business Communications.....	3
DP	124	Introduction to Computing Concepts and Applications	3
		AND choose 1 credit hour from CPCA or CDTP course selections higher than CPCA 105 and CPCA 106;	1
		OR any four 1-credit-hour courses from the CPCA or CDTP course selections....	4
BUSE	210	Entrepreneurship Internship I.....	1
BUSE	131	Financial Management/Small Business ...	2
PHIL	138	Business Ethics	1
HPER		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	142	FastTrac Business Plan.....	3
HIST	141	U.S. History Since 1877.....	3
		Humanities Elective	3
		Electives.....	4
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM	
		CREDIT HOURS.....	64

Recommended Electives

BUS	120	Management Attitudes and Motivation ..	3
BUS	121	Introduction to Business	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
CPCA	105	Introduction to Personal Computing: Win ..	1
CPCA	108	Word Processing on Microcomputers I....	1
CPCA	110	Spreadsheets on Microcomputers I.....	1
CPCA	111	Spreadsheets on Microcomputers II.....	1
CPCA	114	Databases on Microcomputers I.....	1
CPCA	115	Databases on Microcomputers II.....	2
CPCA	141	Internet I	1
CPCA	148	Financial Applications – Business.....	1
CPCA	151	Internet II	1
FASH	132	Marketing Communications	3
FASH	231	Merchandising Planning and Control	3

HMGT	121	Hospitality Management Fundamentals ..	3
MKT	121	Retail Management	3
SPD	120	Interpersonal Communications.....	3
SPD	121	Public Speaking.....	3

**Business Entrepreneurship
Vocational Certificate Program**

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

First Semester

ACCT	111	Small Business Accounting.....	3
		or	
ACCT	121	Accounting I	3
BUSE	131	Financial Management/Small Business ...	2
BUSE	140	FastTrac Feasibility Plan.....	2
BUSE	180	Seminar: Opportunity Analysis.....	2
BUS	230	Marketing.....	3
DP	124	Introduction to Computing Concepts and Applications*	3
		or	
		Any three 1-credit-hour courses from CPCA or CDTP course selections.....	3
MATH	120	Business Math or higher	3
		TOTAL CREDIT HOURS	16

Second Semester

BUS	145	Small Business Management	3
BUSE	160	Legal Issues for Small Businesses.....	2
BUSE	190	Entrepreneurship Seminar: Small Business Analysis	2
BUSE	210	Entrepreneurship Internship I.....	1
		or	
BUSE	211	Entrepreneurship Internship II.....	1
BUSE	142	FastTrac Business Plan	3
MKT	133	Salesmanship	3
		or	
MKT	134	Creative Retail Selling.....	3
		or	
MKT	234	Services Marketing.....	3
		TOTAL CREDIT HOURS	14
		TOTAL PROGRAM	
		CREDIT HOURS.....	30

The Business Plan Vocational Certificate Program

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

BUSE	140	FastTrac Feasibility Plan.....	2
BUSE	142	FastTrac Business Plan.....	3
TOTAL PROGRAM			
CREDIT HOURS.....			5

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: Win .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	120	Interpersonal Communication.....	3
or			
SPD	125	Personal Communication.....	3
TOTAL CREDIT HOURS.....			6

Third Semester

HMGT	130	Hospitality Law	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
HMGT	277	Seminar in Hospitality Management: Menu Planning	3
HMGT	286	Culinary Practicum IV	2
TOTAL CREDIT HOURS			11

Fifth Semester

HMGT	231	Advanced Food Preparation	4
HMGT	279	Beverage Control.....	3
PSYC	121	Applied Psychology	3
or			
PSYC	130	Introduction to Psychology	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 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 applied science degree.

Associate of Applied 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	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 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	Calculus II.....	5
ELEC	200	Introduction to GPS.....	3
GEOS	140/1	Physical Geography/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 encountered by small- to medium-sized contractors.

First Semester

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

CR

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: Win.1	1
CPCA	108	Word Processing on Microcomputers I...1	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	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)

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

First Semester (fall)

ART	129	Design Color.....	3
CD	130	Representational Drawing I	3
CD	132	Typography	3
PHOT	121	Fundamentals of Photography.....	3
ENGL	121	Composition I.....	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 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

Technical/Studio Electives

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

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

Part-time Students

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

CD	120	Introduction to Communication Design ..	3
ART	124	Design 2-D.....	3
CDTP	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	Communication 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.....	69

Computer Interactive Media Vocational Certificate

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

	CR	
CIM 130	Interactive Media Concepts.....	4
CIM 140	Interactive Media Assets.....	4
CIM 200	Interactive Communication Forms.....	3
CIM 230	Interactive Media Development	4
CIM 250	Interface Design.....	4
CIM 270	Interactive Media Project.....	4
CIM	Authoring Elective.....	4
CIM	Asset Elective.....	3-4
TOTAL PROGRAM		
CREDIT HOURS		30-31

Authoring Elective

CIM 152	Interactive Authoring I: Authorware	4
CIM 154	Interactive Authoring I: Director I.....	4

Asset Electives

MUS 156	MIDI Music Composition I.....	3
MUS 157	MIDI Music Composition II	3
CIM 135	Electronic Photography/Digital Video....	3

Computer Information Systems

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

JCCC's Information Systems program focuses on developing the skills needed for entry-level programmer analysts and related positions. The associate of applied science degree in information systems offers an integrated program of study designed to prepare professionals with skills that are equally applicable to the different hardware platforms – microcomputer, mainframe computer or minicomputer. With its emphasis on practical

experience and on currency in the areas of software and curriculum, the program has much to offer the information systems professional who wishes to upgrade or broaden his/her knowledge of the field.

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

Associate of Applied Science Degree

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

	CR	
DP 134	Programming Fundamentals.....	4

Required Courses

First Semester

CS 200	Concepts of Programming Algorithms (C++)	4
DP 148	Cobol I.....	4
DP 140	Editor	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
TOTAL CREDIT HOURS		18

Second Semester

	Intermediate Programming Language	4
CS 210	Discrete Structures I.....	3
DP 162	Database Programming.....	4
	Humanities Elective	3
SPD 125	Personal Communication.....	3
	or	
ENGL 123	Technical Writing	3
TOTAL CREDIT HOURS		17

Third Semester

	Advanced Programming Language	4
DP 242	System Analysis and Design	3
	or	
DP 243	Object-Oriented Analysis and Design	4
	IS Elective	4
	Social Science and/or	
	Economic Elective.....	3
	Health and/or	
	Physical Education Elective	1
TOTAL CREDIT HOURS.....		15-16

Fourth Semester

DP	258	Operating Systems.....	3
DP	264	Application Development and Programming	4
CPCA	121	Introduction to Project Management	1
DP	260	Database Management	4
		IS Elective	4
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM	
		CREDIT HOURS	66-67

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

Intermediate Programming Language

Select from one of the following option areas

Microcomputer¹

- DP 235 Object-Oriented Programming Using C++ and
- CS 250 Basic Programming Structures

Mainframe

- DP 248 Cobol II

Client/Server

- DP 172 Introduction to PowerBuilder Enterprise

Application Integration

- DP 138 Visual Basic for Windows

Advanced Programming Language

Select from one of the option areas listed below:

Microcomputer

- DP 269 GUI Programming
- or
- DP 240 JAVA I

Mainframe

- DP 253 CICS

Client/Server

- DP 272 Intermediate PowerBuilder Enterprise

Application Integration

- DP 238 Visual Basic Intermediate Topics

¹Students electing the Microcomputer option area must complete both CS 250 and DP 235. One of these courses will count as an IS elective.

Technical Electives

Eight hours of Information Systems electives are to be selected from the following list:

CS	250	Basic Programming Structures*	4
CS	211	Discrete Structures II.....	3
DP	138	Visual Basic for Windows	4
DP	145	Assembler Language for Microcomputers*	4
DP	150	Assembler Language I*	4

DP	157	RPG III Beginning	4
DP	172	Introduction to PowerBuilder Enterprise ..	4
DP	178	AS/400 CL Programming.....	4
DP	180	AS/400 Utilities	4
DP	204	Unix Operating System and PERL	4
DP	215	OS/VS Job Control Language	3
DP	235	Object-Oriented Programming Using C++*	4
DP	238	Visual Basic Intermediate Topics	4
DP	240	JAVA I	4
DP	248	Cobol II	4
DP	253	Customer Information Control System Command Level Cobol.....	4
DP	254	Unix System Administration.....	4
DP	257	RPG III Advanced	4
DP	258	Operating Systems.....	3
DP	269	GUI Programming.....	4
DP	270	Information Systems Internship.....	3
DP	272	Intermediate PowerBuilder Enterprise ...	4
DP	275	Database Connectivity with Dynamic Web Pages.....	4
DP	280	JAVA II.....	4
IT	200	Introduction to Information Technology...3	
IT	210	Local Area Networking Systems.....	4

*Suggested Information Systems electives

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
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Required Courses

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

Second Semester

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

Third Semester

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

AS/400 Operations Vocational Certificate

Prior to admission in the AS/400 Operations vocational certificate program, the student must take the following prerequisite or have taken an equivalent transfer course:

DP 134 Programming Fundamentals.....4

Required Courses

First Semester CR

DP 140 Editor for RPG.....1
DP 157 RPG III Beginning4
IT 200 Introduction to Information Technology..3
TOTAL CREDIT HOURS.....8

Second Semester

DP 178 AS/400 CL Programming.....4
DP 242 Introduction to System Design
and Analysis3
DP 257 RPG III Advanced4
TOTAL CREDIT HOURS11

Third Semester

DP 180 AS/400 Utilities4
CPCA 121 Introduction to Project Management1
TOTAL CREDIT HOURS.....5
TOTAL PROGRAM
CREDIT HOURS.....24

Microcomputer Programmer/Analyst Vocational Certificate

Prior to admission in the Microcomputer Programmer/Analyst vocational certificate program, the student must take the following prerequisite or have taken an equivalent transfer course:

DP 134 Programming Fundamentals.....4

Required Courses

First Semester CR

CS 200 Concepts of Programming Algorithms
(C++)4
CS 210 Discrete Structures3
DP 162 Database Programming.....4
TOTAL CREDIT HOURS11

Second Semester

DP 235 Object-Oriented Programming Using C++ 4
or
CS 250 Basic Programming Structures Using C++..4
DP 242 Introduction to System Design
and Analysis3
or
DP 243 Object-Oriented Analysis and Design4
DP 204 UNIX Operating System and PERL.....3
TOTAL CREDIT HOURS.....10-11

Third Semester

CR

DP 269 GUI Programming.....4
or
DP 240 JAVA I4
CPCA 121 Introduction to Project Management1
DP 260 Database Management4
TOTAL CREDIT HOURS.....9
TOTAL PROGRAM
CREDIT HOURS30-31

Web Master Advanced Vocational Certificate

Prior to admission, students must have completed the following courses:

DP 134 Programming Fundamentals 4
DP 162 Database Programming 4
CS 200 Concepts of Programming Algorithms . . 4
DP 235 Object-Oriented Programming
Using C++ 4

First Semester

CPCA 158 Internet Applications and Utilities . . . 3
DP 204 Unix Operating System with Perl 3
DP 240 Java I 4
DP 260 Database Management 4
TOTAL CREDIT HOURS14

Second Semester

CIM 130 Interactive Media Concepts 4
DP 254 Unix System and Web Administration .4
DP 280 Java II 4
DP 275 Database Connectivity with Dynamic
Web Pages 4
TOTAL CREDIT HOURS16
TOTAL PROGRAM
CREDIT HOURS.....30

Desktop Publishing Applications Specialist Vocational Certificate

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

Required Courses

CPCA 105 Introduction to Personal Computing: Win .1
CPCA 106 Introduction to Personal Computing: Mac....1
CPCA 134 Managing Your Macintosh.....1
or
CPCA 138 Windows for Microcomputers1

CPCA	123	Presentation Graphics: PowerPoint	1
CDTP	135	Desktop Photo Manipulations I: Photoshop1	
CDTP	145	Desktop Illustration I: Illustrator	1

Select four courses of the following six:

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

Select two courses of the following 13:

CPCA	108	Word Processing on Microcomputers I...1	
CPCA	125	Word Processing on Microcomputers II..1	
CPCA	134	Managing Your Macintosh.....	1
CPCA	138	Windows for Microcomputers	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
CDTP	165	Desktop Illustration II: Illustrator	1
CPCA	118	Groupware	1
CPCA	121	Introduction to Project Management	1
CPCA	141	Internet I	1
CPCA	151	Internet II	1
CPCA	161	Introduction to Web Pages.....	1

**TOTAL PROGRAM
CREDIT HOURS.....14**

**Personal Computer Applications Specialist
Vocational Certificate**

Individuals with or without a college degree whose goal is to acquire or improve their personal computer applications 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 and take MOUS (Microsoft Office User Specialist) certification tests. It provides employers and current or prospective employees with tangible evidence of computer competencies.

Required Courses

First Semester

CPCA	105	Introduction to Personal Computing: Win .1 or	
CPCA	106	Introduction to Personal Computing: Mac .1	
CPCA	108	Word Processing on Microcomputers I1	
CPCA	110	Spreadsheets on Microcomputers I	1
CPCA	114	Databases on Microcomputers I: Access ..1 or	
CPCA	116	Databases on Microcomputers I: Filemaker Pro.....	1

CPCA	134	Managing Your Mac	1
		or	
CPCA	138	Windows for Microcomputers	1

Second Semester

CPCA	111	Spreadsheets on Microcomputers II.....	1
CPCA	115	Databases on Microcomputers II: Access..2	
CPCA	123	Presentation Graphics.....	1
CPCA	125	Word Processing on Microcomputers II..1	
CPCA	141	Internet I	1
		CPCA Elective	
		TOTAL CREDIT HOURS	12

CPCA Electives

CPCA	118	Groupware	1
CPCA	121	Introduction to Project Management	1
CPCA	151	Internet II	1
CPCA	161	Introduction to Web Pages.....	1

A student can elect to take CPCA 128 Personal Computer Applications in lieu of CPCA 108, CPCA 110 and CPCA 123. An additional elective can then be substituted to CPCA 105 or CPCA 106.

Construction Management

(See Civil Engineering Technology, page 75.)

Cosmetology

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

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

Three options are available in the cosmetology program: nail technologist, cosmetologist and esthetician. Enrollment is limited in these programs. 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
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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

(See Computer Information Systems, page 78.)

Dental Assisting

One of the most exciting features of a dental assistant career is the variety of work experiences you'll have including working chairside with dentists, taking radiographs, mixing dental materials, performing laboratory procedures, taking dental impressions, creating models, fabricating bleaching trays and mouth guards. The demand for dental assistants and other professionals that dentists rely on to serve patients has increased dramatically. JCCC offers the cooperative dental assisting certificate program with Penn Valley Community College. The Dental Assistant program at Penn Valley Community College has accreditation from the American Dental Association (ADA), Commission on Dental Accreditation. Graduating from an ADA-accredited dental assisting program allows you to take the Dental Assisting National Board examination without the two years of full-time work experience that would otherwise be required.

You must be accepted into the program and must complete registration at both JCCC and Penn Valley Community College. Contact Penn Valley Community College for an application packet. Program courses and credit hours are subject to change by the certificate granting institution. It is your responsibility to check with a JCCC counselor before enrollment.

Dental Assisting Vocational Certificate

Prerequisite

Admission to the Dental Assisting program

First Semester, Fall

KDA	100	Dental Science I.....	3
KDA	105	Dental Materials I.....	2
KDA	110	Chairside Assisting I.....	4
KDA	115	Dental Radiology.....	3
KDA	125	Clinical Practice I.....	3
SPD		(look at contract).....	
		TOTAL CREDIT HOURS.....	18

Second Semester, Spring

KDA	200	Dental Science II.....	2
KDA	205	Dental Materials II.....	2
KDA	210	Chairside Assisting II.....	3
KDA	215	Dental Radiology II.....	1
KDA	225	Dental Office Management.....	2
KDA	250	Clinical Practice II.....	4
KDA	260	Dental Assisting Seminar.....	1
		TOTAL CREDIT HOURS.....	15
		TOTAL CERTIFICATE	
		CREDIT HOURS.....	33

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 health through good oral health. 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 licensed dentists 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 semesters and a summer session, totaling 80 credit hours, leading to an associate of applied science degree. The program Web page can be found at www.jccc.net/acad/dh.

Associate of Applied Science Degree

Before beginning clinical courses	CR
CHEM 122 Principles of Chemistry	5
ENGL 121 Composition I.....	3
SOC 122 Sociology	3
PSYC 130 Introduction to Psychology	3
BIOL 230 Microbiology*.....	3
TOTAL CREDIT HOURS	17

* Prerequisite: CHEM 122

NOTE: CHEM 122 or BIOL 230 and one of the other prerequisites must be completed by Feb. 1.

First Semester

DHYG 121 Clinical Dental Hygiene I.....	5
DHYG 125 Developmental Dentistry.....	2
DHYG 135 Dental Materials.....	2
BIOL 146 General/Head and Neck Anatomy	4
TOTAL CREDIT HOURS	13

Second Semester

DHYG 136 Dental Materials Laboratory	1
DHYG 140 Clinical Dental Hygiene II.....	4
DHYG 142 Dental Radiology.....	2
DHYG 146 Periodontics.....	3
DHYG 148 Dental Health Education	2
BIOL 225 Human Physiology**.....	4
TOTAL CREDIT HOURS	16

** Prerequisite: BIOL 140 or BIOL 146

Summer

BIOL 235 General Nutrition***	3
Humanities Elective	3
Mathematics Elective (MATH 116 or higher)	3
TOTAL CREDIT HOURS.....	9

*** Corequisite: BIOL 225

Third Semester

DHYG 221 Clinical Dental Hygiene III	6
DHYG 225 Pathology.....	3
DHYG 230 Dental Therapeutics.....	3
DHYG 240 Community Dental Health.....	2
TOTAL CREDIT HOURS	14

Fourth Semester

DHYG 245 Nitrous Oxide Analgesia.....	1
DHYG 250 Clinical Dental Hygiene IV.....	6
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 applied science degree is awarded upon successful completion of 65 credit hours.

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

Prerequisites

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

DRAF 120 Introduction to Drafting	2
OST 101 Computerized Keyboarding.....	1

Associate of Applied Science Degree – Civil Option

First Semester

DRAF 124 Technical Drafting.....	4
DRAF 130 Introduction to CAD Concepts.....	3
CPCA 105 Introduction to Personal Computing: Win..	1
CPCA 138 Windows for Microcomputers	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 Elective	3
		Health and/or Physical Education	
		Elective	1
		Technical Elective	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM	
		CREDIT HOURS	65

Associate of Applied 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: Win	1
CPCA	138	Windows for Microcomputers	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	3
		Humanities Elective	3
		Health and/or Physical Education	
		Elective	1
		Technical Elective	2
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM	
		CREDIT HOURS	65

CPCA Electives

CPCA	108	Word Processing on Microcomputers I	1
CPCA	110	Spreadsheet on Microcomputers I	1
CPCA	114	Database on Microcomputers I	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	140	Topics in CAD I	2
DRAF	232	CAD Applications Workstation	
		Environment	2
DRAF	242	Topics in CAD II	2
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	140	Topics in CAD I	2
DRAF	225	Civil Drafting	3
DRAF	232	CAD Applications Workstation	
		Environment	2
DRAF	242	Topics in CAD II	2
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 admission to the certificate program, 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: Win..1	
CPCA	138	Windows for Microcomputers.....1	
DRAF	130	Introduction to CAD Concepts.....3	
DRAF	230	Intermediate Computer-aided Drafting3	
DRAF	231	Computer-aided Drafting 3-D.....3	
TOTAL PROGRAM			
CREDIT HOURS.....12			

Computer-aided Drafting (CAD) Network Administrator Vocational Certificate

This certificate is designed to cover the duties of a local area network administrator in a computer-aided drafting and design environment. It is directed toward the individual who has other primary job responsibilities but also must support the network. It provides instruction in specific network products, as well as hands-on investigation of utilities and tools not permissible in a production environment. It provides instruction on topics, procedures and issues necessary for someone to manage a CAD department.

Prerequisite

Prior admission to the certificate program, the student must have completed the 12-credit-hour computer-aided drafting vocational certificate or have division administrator approval.

Required Courses

IT	200	Introduction to Information Technology....3	
ELEC	124	Microcomputer Hardware3	
IT	205	Windows 95/98 Installation and Support .3	
or			
IT	220	Windows NT Workstation Installation and Support.....3	
IT	221	Windows NT Server.....3	
DRAF	232	CAD Applications Workstation Environment.....2	
DRAF	233	CAD Administration.....2	
TOTAL PROGRAM			
CREDIT HOURS.....16			

Early Childhood Education

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

Associate of Science Degree

Prerequisite

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

First Semester CR

EDUC	130	Foundations of Early Childhood Education.....3	
ENGL	121	Composition I.....3	
		Math*3	
PSYC	130	Introduction to Psychology3	
SPD	121	Public Speaking.....3	
TOTAL CREDIT HOURS15			

Second Semester

EDUC	131	Early Childhood Curriculum I3	
EDUC	250	Child Health, Safety, Nutrition3	
		Health and/or Physical Education** ...1-2	
		Science course with Lab***4-5	
PSYC	215	Child Development.....3	
		or	
PSYC	218	Human Development.....3	
TOTAL CREDIT HOURS.....14-16			

Summer

ENGL	122	Composition II3	
		Humanities Elective3	
TOTAL CREDIT HOURS.....6			

Third Semester

EDUC	231	Early Childhood Curriculum II.....3	
EDUC	210	Creative Experiences for Young Children.3	
EDUC	260	Observing and Interacting with Young Children.....3	
ANTH	130	World Cultures3	
		or	
ANTH	125	Cultural Anthropology.....3	
		or	
SOC	131	Marriage and Family.....3	
		Science or Math3-5	
TOTAL CREDIT HOURS.....15-17			

Fourth Semester

EDUC	235	Parenting2	
EDUC	284	Seminar: Early Childhood.....3	
EDUC	285	Internship: Early Childhood3	
		Humanities Elective3	
		Specialization courses.....6	
TOTAL CREDIT HOURS17			
TOTAL PROGRAM			
CREDIT HOURS69-70			

Area of Specialization (select one)

Child Care Administration

ACCT	121	Accounting I	3
EDUC	280	Administration of Early Childhood Programs	3

Children with Special Needs

EDUC	220	Survey of the Exceptional Child	3
EDUC	215	Young Children with Special Needs	3

Infant and Toddler Care and Education

EDUC	270	Early Childhood Development	3
EDUC	225	Infant and Toddler Education and Care	3

Recommended Courses

* The mathematics requirement will be satisfied by any mathematics course except MATH 111 Fundamentals of Mathematics and MATH 115 Introduction to Algebra.

Recommended:

MATH	171	College Algebra	3
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** Recommended if the student is not certified in CPR:

HPER	200	First Aid/CPR	2
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*** Recommended

Life Science

BIOL	122/123	Principles of Biology/Lab	3/1
BIOL	130/131	Environmental Science/Lab	3/1

Physical Science

ASTR	122	Astronomy	4
GEOS	130	General Geology	5
GEOS	140/141	Physical Geography/Lab	3/2
PSCI	120	Physical Science	4

Electrical Technology

The use of electrical technology in residential, commercial and industrial applications continues to grow rapidly. Electricians install and maintain electrical systems for a variety of purposes, including lighting, appliances, climate control, security and communications.

JCCC offers a 64-credit-hour associate of applied science degree program and a 26-credit-hour vocational certificate program. Both programs emphasize hands-on training integrated with a knowledge of theory and study of the National Electrical Code that prepares students to take a national licensure exam.

The associate of applied science degree program prepares students to enter the electrical trade in four types of electrical occupations: residential, commercial, industrial and maintenance. The program also prepares students for continued education in electrical contracting/management, electrical design and industrial/electronic controls.

Associate of Applied Science Degree

First Semester

			CR
ELTE	122	National Electrical Code I	4
ELTE	125	Residential Wiring	4
HVAC	123	Electromechanical Systems	4
INDT	125	Industrial Safety	1
ENGL	121	Composition I	3
TOTAL CREDIT HOURS			16

Second Semester

ELTE	200	Commercial Wiring	4
ELTE	210	Code Certification Review	3
MATH	133	Technical Math I	4
CPCA	105	Introduction to Personal Computing: Win	1
Related Electives			4
TOTAL CREDIT HOURS			16

Third Semester

DRAF	129	Interpreting Architectural Drawings	2
ELTE	271	Electrical Internship I	3
HPER	200	First Aid/CPR	2
Social Science and/or Economics Elective			3
Related Electives			6
TOTAL CREDIT HOURS			16

Fourth Semester

ELTE	205	Industrial Electrical Wiring	4
ENGL	123	Technical Writing I	3
CET	105	Construction Methods	3
Humanities Elective			3
Related Electives			3
TOTAL CREDIT HOURS			16
TOTAL PROGRAM			
CREDIT HOURS			64

Related Electives

ELTE	272	Electrical Internship II	3
ELTE	291	Independent Study	1-4
CPCA	128	Personal Computer Applications	3
CPCA	135	M/S DOS	1
DRAF	120	Introduction to Drafting	2
DRAF	130	Introduction to CAD Concepts	3
DRAF	150	Electrical Drafting	3
ELEC	120	Introduction to Electronics	3
ELEC	125	Digital Electronics I	3
ELEC	131	Introduction to Sensors and Actuators	3
ELEC	133	Programmable Controllers	3
ELEC	165	Advanced Programmable Controllers	3
HVAC	121	Basic Principles of HVAC	4
IT	160	Local Area Networking Fundamentals	1
MFAB	121	Introduction to Welding	4
BUS	140	Principles of Supervision	3
BUS	145	Small Business Management	3
BUSE	140	Fast Trac Feasibility Plan	2
BUSE	142	Fast Trac Business Plan	3

PHYS	125	Technical Physics	4
RRT	165	Railroad Safety, Quality and Environment...	3

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.

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
ELTE	291	Independent Study.....	1-4
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	131	Introduction to Sensors and Actuators	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

Industrial Maintenance Vocational Certificate

The certificate is designed for students who want to enter the field of industrial maintenance and those individuals employed in industrial maintenance who need to upgrade their skills.

Required Courses			
DRAF	123	Interpreting Machine Drawings.....	2
ELEC	147	Fluid Power Systems	2
HVAC	123	Electromechanical Systems.....	4
INDT	125	Industrial Safety.....	1
MFAB	121	Introduction to Welding	4
			Technical Electives.....
			11
			TOTAL PROGRAM
			CREDIT HOURS.....
			24

Technical Electives

ELEC	120	Introduction to Electronics	3
ELEC	133	Programmable Controllers	3
ELEC	165	Advanced Programmable Controllers.....	3
ELTE	122	National Electrical Code.....	4
ELTE	200	Commercial Wiring Methods	4
ELTE	205	Industrial Wiring Methods.....	4
HVAC	121	Basic Principles of HVAC	4
CET	105	Construction Methods	3
MFAB	125	Advanced Gas and Arc Welding	4
MFAB	170	Basic Machine Tool Processes	4
MFAB	240	Metallurgy.....	2

Electronics Technology

Electronics technology influences almost every aspect of modern life. Skilled electronics technicians are needed to support growth in this industry. These technicians must be able to fabricate, test, install, operate and maintain highly technical systems such as communications systems networks, medical delivery systems, computers and computer networks and industrial process control systems. The Electronics Technology program is designed to prepare students to meet the demanding needs of today's electronics industry. The program focuses on the underlying principles of electronic devices, circuit analysis and digital electronics and will provide a broad systems view of electronics.

The program requires 67 credit hours and leads to an associate of applied science degree. Students are provided a flexible curriculum which may reflect their individual interests and needs. Students may choose one of five options within the electronics program. These options are general electronics, microcomputer maintenance, communications, industrial controls and medical electronics. Students in the Electronics Technology program will work with outstanding facilities and the latest laboratory equipment. Graduates of the program will have the opportunity for employment in one of today's most challenging and exciting career fields.

Program graduates also have the opportunity to pursue a baccalaureate degree (B.S.E.E.T.) in electronics engineering technology through the transfer of JCCC Electronics Technology and other courses to participating four-year institutions. Students contemplating this option should seek early counseling and prepare a program plan with specific course selections in anticipation of four-year institution requirements. Students should be prepared to enroll in higher-level math and physics courses when compared to current Electronics Technology program requirements. Examples of alternative courses include MATH 171 and 172 or MATH 173 instead of MATH 133 and 134; PHYS 130 instead of PHYS 125.

Students who are transferring to JCCC with significant numbers of electronic technology credits should be aware that at least 9 credit hours of approved electronic technology courses must be completed at JCCC before the A.A.S. degree will be awarded. In addition, because of changes in technology, students desiring to graduate utilizing electronics technology courses completed more than seven years ago should seek counseling regarding the current relevance of those courses.

Associate of Applied 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: Win..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.....4
 Programming Elective.....3
 TOTAL CREDIT HOURS.....16

Third Semester
 ELEC 230 Electronic Devices II.....3
 ELEC 245 Microprocessors.....3
 PHYS 125 Technical Physics I.....4
 (medical electronics students will
 take BIOL 144 instead of PHYS 125)
 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 Elective.....3
 Health and/or Physical Education Elective .1
 TOTAL CREDIT HOURS.....16
**TOTAL PROGRAM
 CREDIT HOURS.....67**

General Electronics Option

This degree option will be awarded to those completing the Electronics Technology curriculum and nine credit hours from the following list of approved technical electives.

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
 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 technical electives:

ELEC 250 Microcomputer Maintenance.....3
 And a minimum of 6 hours from the following:
 ELEC 271 Electronics Internship I.....1-3
 ELEC 272 Electronics Internship II.....1-3
 IT 160 Local Area Network Fundamentals.....1
 IT 210 Local Area Networking Systems.....4

Communications Option

This degree option will be awarded to those completing the Electronics Technology curriculum and the following technical electives:

ELEC 175 Telecommunications.....3
 ELEC 240 Electronic Communications Systems.....3
 And a minimum of 3 hours from the following:
 ELEC 200 Introduction to GPS.....3
 ELEC 250 Microcomputer Maintenance.....3
 ELEC 271 Electronics Internship I.....1-3
 ELEC 272 Electronics Internship II.....1-3

Industrial Controls Option

This degree option will be awarded to those completing the Electronics Technology curriculum and the following technical electives:

ELEC 133 Programmable Controllers.....3
 ELEC 165 Advanced Programmable Controllers....3
 And a minimum of 3 hours from the following:
 ELEC 131 Introduction to Sensors and Actuators...3
 ELEC 250 Microcomputer Maintenance.....3
 ELEC 271 Electronics Internship I.....1-3
 ELEC 272 Electronics Internship II.....1-3

Medical Electronics Option

This degree option will be awarded to those completing the Electronics Technology curriculum and the following technical electives:

ELEC 210 Medical Electronics Principles.....3
 ELEC 211 Medical Electronics Applications.....3

And a minimum of 2 hours from the following:

ELEC	250	Microcomputer Maintenance	3
ELEC	271	Electronics Internship I.....	1-3
ELEC	272	Electronics Internship II	1-3

Approved Programming Electives

CS	200	Concepts of Programming Algorithms Using C++	4
DP	134	Programming Fundamentals.....	4
DP	138	Visual Basic for Windows	4
ENGR	171	Programming for Engineering and Science .	3

Industrial Controls Vocational Certificate

This certificate is designed to focus on programmable logic controllers and a variety of input and output devices. The certificate is a 9-credit-hour, three-course sequence involving both the hardware and programming aspects of controllers used in industrial processes. Lectures provide a theoretical basis, and laboratory projects offer experience in controller program planning, documentation and troubleshooting.

Required Courses

ELEC	131	Introduction to Sensors and Actuators...3	
ELEC	133	Programmable Controllers	3
ELEC	165	Advanced Programmable Controllers.....3	
TOTAL PROGRAM			
CREDIT HOURS			9

Medical Electronics Vocational Certificate

This vocational certificate program is designed for individuals already possessing a background in electronics technology and want to obtain a credential in medical electronics. In addition, individuals currently working in this field may find the preparation provided by this program of value in preparing for the national AAMI certification examination. An associate's degree in electronics or current employment in medical electronics or the necessary course prerequisites are required.

Required Courses

BIOL	144	Human Anatomy and Physiology	5
LC	130	Medical Terminology.....	3
ELEC	210	Medical Electronics Principles.....	3
ELEC	211	Medical Electronics Applications	3
TOTAL PROGRAM			
CREDIT HOURS			14

Communications Electronics Vocational Certificate

This certificate is designed for those students who already have an electronics degree or have completed the necessary prerequisite courses. The courses that are required cover the core skills necessary for someone seeking to upgrade their job skills as a communication technician and become more knowledgeable in communications systems.

Prerequisites

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

Emergency Medical Science

People who work in the field of Emergency Medical Science (EMS) often enter people's lives during critical times of illness and injury. Their ability to act knowledgeably, compassionately, quickly and calmly can stabilize chaotic, frightening situations.

JCCC offers three progressively intensive options for learning the skills of emergency medical science. All three options prepare you for state certification examinations.

JCCC's financial aid program includes scholarships, grants and loans if you are eligible. Financial aid is particularly important in the MICT program, since long hours usually prohibit you from holding a full-time job.

EMS First Responder Course

EMS First Responder students receive classroom and skills training in cardiopulmonary resuscitation (CPR), patient assessment and fracture and airway management. This class is recommended for:

- people without a medical background who wish to enter the EMT program;
- anyone who wishes to learn basics of emergency medical care;
- firefighters, police officers, lifeguards and others from agencies involved in public safety;
- employees involved in company safety programs.

Students successfully completing this course will be allowed to sit for the certification examination administered by the Kansas Board of Emergency Medical Services.

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

EMS	128 EMS First Responder.....	5
TOTAL CREDIT HOURS.....		5

Emergency Medical Technician Course

This program is designed for individuals interested in providing medical care to patients in the pre-hospital setting. It will provide the participants with opportunities to gain information, skills and attitudes necessary for certification and practice as an emergency medical technician (EMT) in the state of Kansas.

This program has been approved by the Kansas Board of Emergency Medical Services. It addresses information and techniques currently considered to be the responsibility of the EMT according to the United States Department of Transportation, National Standard Curriculum. The program consists of lecture instruction, practical skill training and clinical experience.

Classroom instruction includes anatomy, physiology, recognition and care of actual medical emergencies and trauma-related injuries. Skills in performing CPR, bandaging, splinting, childbirth techniques and other emergency care procedures are taught. An extrication session will give students hands-on experience with auto accident situations and provide the opportunity to observe an air evacuation of a patient. Upon instructor recommendation, students will participate in a 10-hour clinical observation in a hospital setting. Additionally, students will arrange to participate as an observer with a local EMS service. Students participate in seven hours of lecture and four hours of lab a week. Students are also required to attend approximately four Saturday classes lasting between four and eight hours each. Saturday dates and times will be announced during the first class session.

Students successfully completing this course will be allowed to sit for the certification examinations administered by the Kansas Board of Emergency Medical Services.

Prerequisites

EMS 128 or equivalent, or be an active member in a health-related occupation (firefighter, rescue, ambulance, law enforcement, industrial first aid personnel or other health-related field), or attained the minimum of an associate's degree

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 certification examinations, and most have been professionally employed shortly after graduation.

To apply for the MICT program, you must have completed EMT training, as well as a college-level course in anatomy or physiology. This is a selective admission program with limited enrollment. If you are interested, contact the Admissions Office for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria. If you are accepted into the program, you take classes in the spring, summer and fall, completing the program in December. You may continue your studies to earn an associate's degree.

Students successfully completing this program will be allowed to sit for the certification examinations administered by the Kansas Board of Emergency Medical Services.

MICT Vocational Certificate

Prerequisites

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

Spring Semester		CR
EMS	220 MICT I.....	10
EMS	225 MICT II.....	10
TOTAL CREDIT HOURS.....		20

Summer Session

EMS	230 MICT III (clinical).....	12
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Fall Semester

EMS	271 MICT IV (field internship).....	15
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TOTAL PROGRAM CREDIT HOURS.....		47
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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

<i>First Semester (Spring)</i>		CR
EMS	220 MICT I	10
EMS	225 MICT II	10
	TOTAL CREDIT HOURS	20
<i>Second Semester (Summer)</i>		
EMS	230 MICT III (clinical)	12
<i>Third Semester (Fall)</i>		
EMS	271 MICT IV (field internship)	15
<i>Fourth Semester</i>		
ENGL	121 Composition I	3
SOC	125 Social Problems	3
	or	
	Social Science and/or Economics	
	Elective	3
PHIL	143 Ethics	3
	or	
	Humanities 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

<i>First Semester</i>		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
	Communications Elective	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 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
		Communications Elective.....	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 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 Johnson County Community College is a comprehensive program committed to providing training and education specifically designed to: (1) promote the academic and professional development of fire service company-level officers; (2) prepare persons seeking employment with fire service agencies of Johnson County. The program serves to provide higher academic education, technical training and lifelong learning for members of Johnson County fire related organizations and those seeking employment in those organizations.

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 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 education, and is built around a core of fire science courses carefully selected by the members of the Fire Science Advisory Committee to prepare you for career growth. Technical electives may be pursued through courses available under a continuing cooperative agreement between area fire science programs or through other degree granting institutions that are accredited by the International Fire Service Accreditation Congress. The transfer of credit from other institutions is governed by JCCC policy. You may fulfill technical education requirements through the advanced standing credit process (see page 33).

JCCC also offers course work that will prepare you to take the Fire Fighter I and II certification examinations offered by the University of Kansas Fire Service Training program. This course work includes FIRE 175 Essentials of Fire Fighting, EMS 130 Emergency Medical Technician and HPER 240 Lifetime Fitness I or equivalent.

Note: Mechanisms have been developed to compensate for the impact of student working 24-hour shifts.

Associate of Arts Degree

Prerequisite

Prior to admission into any FIRE course, the student must possess an International Fire Service Accreditation Congress certification as a fire fighter or be an active member in a fire-related occupation.

<i>First Semester</i>			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

<i>Second Semester</i>			
ENGL	122	Composition II.....	3
BUS	141	Principles of Management.....	3
FIRE	224	Incident Command Systems.....	3
		Humanities Elective.....	3
		Physical Science, with lab.....	4
		TOTAL CREDIT HOURS.....	16

<i>Third Semester</i>			
FIRE	135	Building and Fire Codes.....	3
FIRE	130	Fire Investigation.....	1
FIRE	222	Fire Law.....	3
		Technical Electives*.....	3
		Oral Communication.....	3
		Science and/or Math Elective.....	3
		TOTAL CREDIT HOURS.....	16

Fourth Semester

FIRE	220	Fire Administration.....	3
FIRE	250	Instructional Methods.....	3
		Technical Electives*.....	4
		Humanities Elective.....	3
		Social Science Elective.....	3
		TOTAL CREDIT HOURS.....	16
		TOTAL PROGRAM	
		CREDIT HOURS.....	64

Technical Electives

All Emergency Medical Science courses

All Fire Science courses from any institution accredited by the International Fire Service Accreditation Congress

All Computer Information Systems courses

All management-related courses

Food and Beverage Management

(See Hospitality Management, page 96.)

Grounds and Turf Management

The Grounds and Turf Management program is a cooperative program with Longview Community College leading to a certificate and/or an associate of applied science degree. The degree is granted by Longview Community College. The program offers training in professional grounds management and golf course management, providing a study of soils, fertilizers, grasses, trees and pesticide application procedures. The program also prepares grounds professionals to take the state of Kansas pesticide applicator's exam.

You must be formally accepted by both JCCC and Longview to be admitted to this program.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact Longview Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria. It is your responsibility to check with a JCCC counselor before enrollment.

Associate of Applied Science Degree

Degree granted by Longview Community College

First Semester

AGRI	107	Turfgrass Management I.....	3	CR
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
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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
BIOL	250	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 69-credit-hour program has been completed and the associate of applied science degree obtained, you will be eligible to take the accreditation examination of the American Association of Health Information Management. Contact Penn Valley Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. It is your responsibility to check with a JCCC counselor before enrollment.

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	3.5
KMRT	151 Medical Terminology for Medical Records ..	3
	TOTAL CREDIT HOURS	16.5

Second Semester		
BIOL	210 Pathophysiology	4
ENGL	121 Composition I	3
KMRT	162 Health Care Statistics	3
KMRT	184 Introduction to Medical Transcription ..	3
KMRT	169 Legal Aspects of Medical Records	2
KMRT	166 Directed Practice I	2.5
	TOTAL CREDIT HOURS	17.5

Summer		
SPD	121 Public Speaking	3
KMRT	200 Introduction to Classification Systems ...	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	69

You may be a full-time or part-time student. The sequencing given above is required in order to complete the program in four semesters.

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

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 continued 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 for Licensed Practical Nurses

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 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.

Associate of Applied Science Degree

Commercial Service Technician

First Semester **CR**

HVAC	121	Basic Principles of HVAC	4
HVAC	123	Electromechanical Systems	4
HVAC	143	Reading Blueprint and Ladder Diagrams	2
HVAC	155	Workplace Skills	1
INDT	125	Industrial Safety	1
ENGL	121	Composition I	3
EMS	121	CPR I-Basic Rescuer	1
TOTAL CREDIT HOURS			16

Second Semester

HVAC	146	Plumbing Systems Applications	3
HVAC	150	Refrigerant Management and Certification	1
HVAC	205	Pneumatic Control Systems	2
HVAC	218	Electronic Control Systems	2
HVAC	221	Commercial Systems: Air Conditioning	4
HVAC	231	HVAC Rooftop Systems	3
TOTAL CREDIT HOURS			15

Third Semester

MATH	133	Technical Math I	4
		Social Science and/or Economics Elective	3
HVAC	223	Commercial Systems: Heating	4
ELTE	122	National Electrical Code I	4
CPCA	105	Introduction to Personal Computing: Win	1
TOTAL CREDIT HOURS			16

Fourth Semester

HVAC	228	DDC/Microprocessor-based Controls	3
ELTE	205	Industrial Electrical Wiring	4
		Technical Elective	4
		Humanities Elective	3
		General Education Elective	3
TOTAL CREDIT HOURS			17
TOTAL PROGRAM CREDIT HOURS			64

Technical Electives

HVAC	125	Energy Alternatives	2
HVAC	271	HVAC Internship	3
HVAC	291	Independent Study	1
ELTE	125	Residential Wiring Methods	4

General Education Electives

ENGL	123	Technical Writing I	3
SPD	120	Interpersonal Communication	3

Associate of Applied Science Degree

Residential Service Technician

First Semester **CR**

HVAC	121	Basic Principles of HVAC	4
HVAC	123	Electromechanical Systems	4
HVAC	143	Reading Blueprint and Ladder Diagrams	2
HVAC	155	Workplace Skills	1
INDT	125	Industrial Safety	1
ENGL	121	Composition I	3
EMS	121	CPR I-Basic Rescuer	1
TOTAL CREDIT HOURS			16

Second Semester

HVAC	146	Plumbing Systems Applications	3
HVAC	150	Refrigerant Management and Certification	1
HVAC	137	Residential Systems: Air Conditioning	4
HVAC	124	Equipment Selection and Duct Design	4
HVAC	167	Sheet Metal Layout and Fabrication	3
TOTAL CREDIT HOURS			15

Third Semester

MATH	133	Technical Math I	4
		Social Science and/or Economics Elective	3
HVAC	127	Residential Systems: Heating	4
HVAC	148	HVAC Installation and Start-up Procedures	3
		Technical Elective	3
TOTAL CREDIT HOURS			17

Fourth Semester

HVAC	235	Residential Heat Pump Systems	4
		Humanities Elective	3
		Technical Electives	6
		General Education Elective	3
TOTAL CREDIT HOURS			16
TOTAL PROGRAM CREDIT HOURS			64

Technical Electives

HVAC	125	Energy Alternatives	2
HVAC	271	HVAC Internship	3
HVAC	291	Independent Study	1
ELTE	125	Residential Wiring Methods	4

General Education Electives

ENGL	123	Technical Writing I	3
SPD	120	Interpersonal Communication	3

Commercial Service Technician

Postsecondary Certificate Program

The postsecondary certificate program is designed to prepare you for the basic job skills needed to service and maintain heating and air conditioning equipment. Students who elect the commercial service technician certificate option learn the theory of operation and how to service, repair and design rooftop air conditioners, cooling towers, steam boilers and commercial systems air

conditioners. This knowledge is reinforced by working on actual equipment in the laboratory. Completion of this program will allow the student to seek employment as a commercial 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	143 Reading Blueprint and Ladder Diagrams..	2
HVAC	150 Refrigerant Management and Certification	1
HVAC	218 Electronic Control Systems.....	2
HVAC	221 Commercial Systems: Air Conditioning..	4
HVAC	223 Commercial Systems: Heating.....	4
HVAC	228 DDC Microprocessor-based Controls	3
HVAC	205 Pneumatic Control Systems.....	2
HVAC	231 HVAC Rooftop Systems	3
INDT	125 Industrial Safety.....	1
HVAC	155 Workplace Skills.....	1
MATH	115 Introduction to Algebra	3
TOTAL PROGRAM		
CREDIT HOURS.....		37

Residential Service Technician Postsecondary Certificate Program

The postsecondary certificate program is designed to prepare you for the basic job skills needed to service residential heating and air conditioning equipment. Students who elect the residential service technician certificate option learn the theory of operation and how to service, repair and design gas furnaces, central air conditioners, heat pumps and rooftop air conditioning systems. This knowledge is reinforced by working on actual equipment in the laboratory. Completion of this program will allow the student to seek employment as a residential 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	150 Refrigerant Management and Certification	1
HVAC	137 Residential Systems: Air Conditioning..	4
HVAC	127 Residential Systems: Heating.....	4
HVAC	235 Residential Heat Pump Systems.....	4
INDT	125 Industrial Safety.....	1
HVAC	155 Workplace Skills.....	1
MATH	115 Introduction to Algebra	3
Technical Electives.....		6
TOTAL PROGRAM		
CREDIT HOURS.....		39

Technical Electives

HVAC	125 Energy Alternatives.....	2
HVAC	143 Reading Blueprints/Ladder Diagrams.....	2
HVAC	271 Internship	3
HVAC	291 Independent Study	1
CPCA	105 Introduction to Personal Computing: Win.1	

Installation Technician Vocational Certificate Program

The heating, ventilation and air conditioning vocational certificate program is a one-year program you can complete in two semesters. The program is designed as a fast track to employment for both new students into the job market and those who have been displaced from their jobs due to changes in the employment market. Upon successful completion of the program, you will be equipped with the entry-level technical skills necessary to enter the job market as an installation technician in the heating/air conditioning trade.

Required Courses		CR
HVAC	121 Basic Principles of HVAC.....	4
HVAC	123 Electromechanical Systems.....	4
HVAC	167 Sheet Metal Layout and Fabrication.....	3
HVAC	155 Workplace Skills.....	1
INDT	125 Industrial Safety.....	1
HVAC	148 HVAC Installation and Start-up Procedures	3
HVAC	146 Plumbing Systems Applications.....	3
HVAC	143 Reading Blueprint and Ladder Diagrams..	2
HVAC	124 Equipment Selection and Duct Design	4
HVAC	150 Refrigerant Management and Certification	1
TOTAL PROGRAM		
CREDIT HOURS.....		26

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: Win	.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 120	Interpersonal Communication	.3
	or	
SPD 125	Personal Communication	.3
	Humanities 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: Win	.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 120	Interpersonal Communication	.3
	or	
SPD 125	Personal Communication	.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 Requirement	3
HMGT	268	Hotel Accounting	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM	
		CREDIT HOURS	68

Information Systems

(See Computer Information Systems, page 78.)

Information Technology

Information Technology connects people, departments and companies for communication purposes. The technology of local area networks gives employees the ability to share and retrieve information at the group level.

Combining local area networks with the Internet and telecommunications resources gives employees unlimited intranet access to information throughout the company and beyond. The associate of applied science degree in Information Technology provides students with a foundation in designing, installing and implementing computer networking resources. Course requirements include network operations and product-specific requirements for Netware, Windows NT, Unix and Cisco.

Associate of Applied Science Degree

Prerequisites

First Semester

			<i>CR</i>
IT	200	Networking Technologies	3
IT	205	Implementing Windows 95/98	3
		or	
IT	220	Windows NT Workstation.....	3
ELEC	124	Microcomputer Hardware	3
ENGL	121	Composition I.....	3
MATH	171	College Algebra.....	3
		Health and/or Physical Education Elective .1	
		TOTAL CREDIT HOURS	16

Second Semester

IT	210	Netware Administration	3
IT	221	Windows NT Server.....	3
IT	240	LAN Cabling and Installation	3
ELEC	120	Introduction to Electronics	3
ENGL	122	Composition II	3
		or	
ENGL	123	Technical Writing I.....	3
		TOTAL CREDIT HOURS	15

Third Semester

IT	211	Netware Advanced Administration.....	3
IT	222	Windows NT Server in the Enterprise....	3
IT	230	Unix Network Administration	3
DP	134	Programming Fundamentals.....	4
		Humanities Elective	3
		TOTAL CREDIT HOURS	16

Fourth Semester

IT	245	TCP/IP Internetworking	3
IT	250	Networking Seminar	3
SPD	121	Public Speaking.....	3
		or	
SPD	125	Personal Communications	3
		Social Science and/or	
		Economics Elective	3
		Technical Electives.....	5
		TOTAL CREDIT HOURS	17
		TOTAL PROGRAM	
		CREDIT HOURS	64

Technical Electives

IT	205	Implementing Windows 95/98.....	3
IT	212	Netware NDS Design	3
IT	214	Novell GroupWise Administration	3
IT	220	Windows NT Workstation.....	3
IT	246	Introduction to Routers.....	3
IT	271	Internship I.....	3
IT	272	Internship II.....	3
ELEC	150	Introduction to Telecommunications	3
CS	200	Concepts in Programming Algorithms...4	
DP	138	Visual Basic for Windows	4
DP	162	Database Programming: VBA Access	4
DP	172	Introduction to Powerbuilder Enterprise...4	
DP	204	Unix Operating System.....	3
DP	238	Visual Basic Intermediate Topics	4
CPCA		Any CPCA course (except CPCA 105)	

Networking Administration: Windows NT

Vocational Certificate

The Networking Administration Windows NT vocational certificate is a 27-credit-hour program that students can complete in three semesters. Designed to give students the hands-on skills needed to install, troubleshoot and administer a Windows NT based local area network, the course work parallels the requirements for the Microsoft Certified Systems Engineer (MCSE) certification exams.

IT	200	Networking Technologies	3
IT	205	Implementing Windows 95/98	3
		or	
IT	220	Windows NT Workstation.....	3
ELEC	124	Microcomputer Hardware	3
IT	221	Windows NT Server	3
IT	222	Windows NT Server in the Enterprise....	3

IT	240	LAN Cabling and Installation	3
IT	245	TCP/IP Internetworking	3
		Technical Electives.....	6
		TOTAL PROGRAM	
		CREDIT HOURS	27

Technical Electives

IT	205	Implementing Windows 95/98	3
IT	210	NetWare Administration	3
IT	211	NetWare Advanced Administration	3
IT	212	Netware NDS Design	3
IT	214	Novell GroupWise Administration	3
IT	220	Windows NT Workstation	3
IT	230	Unix Network Administration	3
IT	246	Introduction to Routers.....	3
IT	250	Networking Seminar	3
IT	271	Internship I.....	3
IT	272	Internship II.....	3
ELEC	120	Introduction to Electronics	3
ELEC	150	Introduction to Telecommunications	3
CS	200	Concepts in Programming Algorithms ...	4
DP	134	Programming Fundamentals.....	4
DP	138	Visual Basic for Windows	4
DP	162	Database Programming: VBA Access	4
DP	172	Introduction to Powerbuilder Enterprise...4	
DP	204	Unix Operating System.....	3
DP	238	Visual Basic Intermediate Topics	4
CPCA		Any CPCA course (except CPCA 105)	

Networking Administration: Netware Vocational Certificate

The Networking Administration: Novell NetWare vocational certificate is a 27-credit-hour program that students can complete in three semesters. Designed to give students the hands-on skills needed to install, troubleshoot and administer a Novell NetWare-based local area network, the course work parallels the requirements for Certified NetWare Engineer (CNE) certification exams.

IT	200	Networking Technologies	3
IT	205	Implementing Windows 95/98	3
		or	
IT	220	Windows NT Workstation	3
ELEC	124	Microcomputer Hardware	3
IT	210	NetWare Administration	3
IT	211	NetWare Advanced Administration	3
IT	240	LAN Cabling and Installation	3
IT	245	TCP/IP Internetworking	3
		Technical Electives	6
		TOTAL PROGRAM	
		CREDIT HOURS	27

Technical Electives

IT	205	Implementing Windows 95/98	3
IT	212	Netware NDS Design	3

IT	214	Novell GroupWise Administration	3
IT	220	Windows NT Workstation	3
IT	221	Windows NT Server	3
IT	222	Windows NT Server in the Enterprise....3	
IT	230	Unix Network Administration	3
IT	246	Introduction to Routers.....	3
IT	250	Networking Seminar	3
IT	271	Internship I.....	3
IT	272	Internship II.....	3
ELEC	120	Introduction to Electronics	3
ELEC	150	Introduction to Telecommunications	3
CS	200	Concepts in Programming Algorithms ...4	
DP	134	Programming Fundamentals.....	4
DP	138	Visual Basic for Windows	4
DP	162	Database Programming: VBA Access	4
DP	172	Introduction to Powerbuilder Enterprise...4	
DP	204	Unix Operating System.....	3
DP	238	Visual Basic Intermediate Topics	4
CPCA		Any CPCA course (except CPCA 105)	

Information/Word Processing

(See Office Systems Technology, page 106.)

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

		<i>First Semester</i>	CR
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
ITMD	133	Furniture and Ornamentation/ Antiquity to Renaissance	3
		TOTAL CREDIT HOURS	18

Second Semester

ITMD	122	Interior Design II.....	3
DRAF	264	CAD: Interior Design.....	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 Century	3
MKT	134	Creative Retail Selling.....	3
ITMD	132	Interior Products.....	3
BUS	150	Business Communications.....	3
ITMD	223	Contract Design	3

ECON	130	Basic Economic Issues	3
		or	
ECON	230	Economics I	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
DRAF	266	Graphic Communications for Interior Design	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
		Electives	
ITMD	127	Floral Design.....	1
ITMD	295	Field Study: Design and Merchandising ..	3

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 Feb. 15. If you are interested, contact the Admissions office for an application packet, which includes prerequisites, deadlines, admission requirements and academic criteria.

Associate of Applied Science Degree

First Semester

			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 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
MKT	284	Marketing and Management Internship I..	1
		TOTAL CREDIT HOURS	16

Second Semester

BUS	150	Business Communications*.....	3
BUS	230	Marketing.....	3
MKT	121	Retail Management.....	3
ACCT	121	Accounting I	3
		or	
ACCT	111	Small Business Accounting**	3
DP	124	Introduction to Computing Concepts and Applications***	3
		and	
CPCA or CDTP:		Choose one 1-credit-hour course from CPCA or CDTP selections higher than CPCA 105 or CPCA 106.....	1

OR

CPCA and/or CDTP:

Choose four 1-credit-hour courses from CPCA
or CDTP selections higher than CPCA 105 or
CPCA 106.....

HPER		Health and/or Physical Education Elective .	1
MKT	286	Marketing and Management Internship II	1
		TOTAL CREDIT HOURS	18

Third Semester

BUS	141	Principles of Management.....	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
		or	
ECON	132	Survey of Economics	3
MKT	221	Sales Management.....	3
MKT	288	Marketing and Management Internship III.....	1
		TOTAL CREDIT HOURS	17

Fourth Semester

MKT	234	Services Marketing*	3
HIST	141	U. S. History Since 1877	3
BUS	261	Business Law I.....	3
LC	150	Job Search Skills.....	1
MKT	289	Marketing and Management Internship IV..	1

MKT	290	Capstone: Marketing and Management Case Studies*	3
		TOTAL CREDIT HOURS	14
		TOTAL PROGRAM CREDIT HOURS	65

- * Course has a prerequisite
- ** Course has a corequisite
- *** Recommended for students who intend to transfer to a baccalaureate degree program

Sales and Customer Relations Vocational Certificate Program

JCCC's Sales and Customer Relations program is designed for people employed in sales who wish to refine their skills, or people who are contemplating a career in sales. The program focuses on the steps involved in the selling process and the delivery of effective customer service. Students who complete the program may find careers in sales (retail, wholesale or manufacturing) or in customer service departments of stores, businesses and manufacturers.

Thirty-three of the 35 credit hours required for the Sales and Customer Relations certificate apply toward JCCC's 65-credit-hour Marketing and Management associate of applied science degree.

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	230 Marketing	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	1
	TOTAL CREDIT HOURS	16

Second Semester

BUS	225 Human Relations	3
MKT	202 Consumer Behavior	3
MKT	221 Sales Management	3
DP	124 Introduction to Computing Concepts and Applications	3
	AND choose 1 credit hour from CPCA or CDTP course selections higher than CPCA 105 and CPCA 106;	1
	OR	
	any four 1-credit-hour courses from the CPCA or CDTP course selections higher than CPCA 105 and CPCA 106	4
MKT	234 Services Marketing	3
LC	150 Job Search Skills	1

FASH	135	Image Management	1
MKT	286	Marketing and Management Internship II.1	1
		TOTAL CREDIT HOURS	19
		TOTAL PROGRAM CREDIT HOURS	35

- * Course has a prerequisite
- ** Course has a corequisite
- *** Recommended for students who intend to transfer to a baccalaureate degree program

Other Recommended Courses

BUS	120	Management Attitudes and Motivation	3
BUS	121	Introduction to Business	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

Retail Sales Representative Vocational Certificate

This retail sales representative certificate is designed for students seeking positions in the growing retail industry in Johnson County.

BUS	230	Marketing	3
FASH	135	Image Management	1
MKT	121	Retail Management	3
MKT	134	Creative Retail Selling	3
MKT	202	Consumer Behavior*	3
MKT	234	Services Marketing**	3
MKT	284	Marketing and Management Internship I.1	1
		TOTAL PROGRAM CREDIT HOURS	17

* Prerequisite/corequisite MKT 134

** Prerequisite BUS 230

All 17 credit hours in the Retail Sales Representative certificate program apply to the 35 credit-hour Sales and Customer Relations certificate.

Teleservice Representative Vocational Certificate Program

The Teleservice Representative certificate program at JCCC was developed in conjunction with the Kansas City Area Call Center Managers Users Group with the objective of providing students with business and practical skills that will help make them successful in the teleservice industry. Twenty-four of the 33 credit hours required for the Teleservice Representative certificate apply toward JCCC's 65-credit-hour Marketing and Management associate of applied science degree.

First Semester

BUS	121	Introduction to Business	3
BUS	150	Business Communications.....	3
BUS	230	Marketing	3
MKT	140	Teleservice Communication Skills.....	3
MATH	120	Business Math.....	3
MKT	284	Marketing and Management Internship I.1	
		TOTAL CREDIT HOURS.....	16

Second Semester

BUS	123	Personal Finance	3
MKT	202	Consumer Behavior.....	3
MKT	234	Services Marketing.....	3
OST	130	Office Systems Concepts.....	3
DP	124	Introduction to Computing Concepts and Applications*	3

CPCA or CDTP:

Choose one 1-credit-hour course from CPCA or CDTP selections higher than CPCA 105 or CPCA 106

1

CPCA and/or CDTP:

Choose four 1-credit-hour courses from CPCA or CDTP selections higher than CPCA 105 or CPCA 106

4

MKT	286	Marketing and Management Internship II.1	
		TOTAL CREDIT HOURS.....	17

TOTAL PROGRAM

CREDIT HOURS.....33

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

TeleTrac Vocational Certificate Program

This certificate program meets the core competencies outlined by the Call Center User's Group, a group of area business leaders in the teleservice industry. This certificate program includes one internship during which students will learn through hands-on industry experience. All 14 credit hours in this certificate can be applied toward the 33-credit-hour teleservice representative certificate program.

BUS	121	Introduction to Business	3
MKT	140	Teleservice Communication Skills.....	3
MKT	202	Consumer Behavior*	3
MATH	120	Business Math.....	3
OST	101	Computerized Keyboarding**	1
MKT	284	Marketing and Mgmt. Internship I	1
		(in teleservice industry)	

TOTAL PROGRAM

CREDIT HOURS.....14

* Prerequisite/corequisite MKT 140

** Student may satisfy this course requirement via an assessment test.

Metal Fabrication

The Metal Fabrication Technology program provides students the opportunity to learn practical knowledge and skill competencies associated with welding, metal fabrication and related processes. Opportunities for those who wish to become welders, cutters and machine operators should be good through the year 2005, as the number of qualified (certified) welders graduating from technical schools and community colleges is expected to be in balance with the number of job openings.

JCCC provides well-equipped laboratories that enable students to receive instruction in oxyacetylene welding and cutting, shielded metal arc welding (SMAW), gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), basic machining, metallurgy and allied processes. The program is accredited as an American Welding Society Participating Organization in the Training and Testing of Entry Level Welders. Eligible students may elect to test under AWS QC10 certification guidelines and, if successful, be listed in the AWS National Registry of Entry Level Welders.

Associate of Applied Science Degree

First Semester

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

Second Semester

MFAB	125	Advanced Gas and Arc Welding	4
		or	
RRIT	123	Basic Welding.....	3
ENGL	123	Technical Writing I	3
PHYS	125	Technical Physics I.....	4
DRAF	123	Interpreting Machine Drawings.....	2
MFAB	152	Manufacturing Materials and Processes ..	3
		TOTAL CREDIT HOURS.....	15-16

Third Semester

MFAB	130	Gas Metal Arc Welding I.....	4
MFAB	170	Basic Machine Tool Processes	4
BUS	140	Principles of Supervision	3
		Social Science Elective	3
		Related Elective.....	3
		TOTAL CREDIT HOURS	17

Fourth Semester

MFAB	160	Gas Tungsten Arc Welding	4
MFAB	240	Metallurgy.....	2

HPER	200	First Aid/CPR.....	2
		Humanities Elective.....	3
		Related Electives.....	5-7
		TOTAL CREDIT HOURS.....	16-18
		TOTAL PROGRAM	
		CREDIT HOURS.....	64

Related Electives

AUTO	121	Small Engine Service	3
BUS	120	Management Attitudes and Motivation.....	3
BUS	145	Small Business Management.....	3
BUSE	140	FastTrac Feasibility Plan.....	2
BUSE	142	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	131	Introduction to Sensors and Actuators.....	3
ELEC	133	Programmable Controllers	3
ENGL	210	Technical Writing II.....	3
HVAC	167	Sheet Metal Layout and Fabrication.....	3
INDT	140	Quality Control Using SPC.....	2
MATH	134	Technical Math II.....	5
RRIT	137	Structural Welding.....	3
RRIT	138	Structural Welding FCAW.....	3
RRIT	139	Structural Welding Pipe	3
MFAB	230	Gas Metal Arc Welding II.....	4
MFAB	271	Metal Fabrication Internship	3
MFAB	291	Independent Study.....	1-4
PHYS	126	Technical Physics II.....	3
RRT	165	Railroad Safety, Quality and Environment.....	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	
RRIT	122	Elements of Welding	3

MFAB	125	Advanced Gas and Arc Welding.....	4
		or	
RRIT	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 10-month 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 degree 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 Accrediting Commission (61 Broadway, New York, NY 10006).

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 30 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 Jan. 15.

Nursing – Practical Nursing Vocational Certificate Program

Prerequisites:

CNA certification, BIOL 140, PSYC 130, CPCA 105, MATH 111

Fall

AVPN 115 Nursing I

Spring

AVPN	117	Nursing II	
			TOTAL PROGRAM
			CONTACT HOURS...1,100 minimum

**Nursing – Registered Nurse
Associate of Applied Science Degree**

Prerequisite: Prior to enrolling in NURS 121

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
			TOTAL CREDIT HOURS
			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 Elective
			3
			Health and/or Physical Education Elective
			1
			TOTAL CREDIT HOURS
			13
			TOTAL PROGRAM
			CREDIT HOURS
			71

**Associate of Applied Science Degree
PN to RN Transition**

Prerequisite: Prior to enrolling in NURS 221

BIOL	140	Human Anatomy	4
CHEM	122	Principles of Chemistry	5
BIOL	225	Human Physiology	4
ENGL	121	Composition I	3
PSYC	130	Introduction to Psychology	3
PSYC	218	Human Development	3
			Mathematics Elective
			(MATH 116 or higher)
			3
			TOTAL CREDIT HOURS
			25

Summer

NURS	123	PN-RN Transition course	6
			TOTAL CREDIT HOURS
			6

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
NURS	222	Managing Client Care	9
			Humanities Elective
			3
			Health and/or Physical Education Elective
			1
			TOTAL CREDIT HOURS
			13
			TOTAL PROGRAM
			CREDIT HOURS
			59

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 more 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

JCCC students must also complete the first course of a two-course sequence before the fall I semester. Two options are available. Choose either option 1 or option 2.

BIOL	140	Human Anatomy* (option 1, course 1)...	4
		or	
BIOL	144	Anatomy and Physiology* (option 2, course 2)	5

* Students must complete the second course of the chosen option during the fall I semester.

Fall I Semester

KOT	102	Basic Emergency Patient Care	1
BIOL	140	Human Anatomy (option 1, course 2)....	4
		or	
BIOL	144	Anatomy and Physiology (option 2, course 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	Pediatrics	3
KOT	111	Level I Fieldwork: Pediatrics.....	5
KOT	154	Applied Neurology	2
KOT	109	Kinesiology	3
SPD	121	Public Speaking.....	3
		TOTAL CREDIT HOURS	14.5

Summer

SOC	122	Sociology	3
KOT	204	Therapeutic Media and Fabrication Techniques	2
		American Institutions**	3
		TOTAL CREDIT HOURS.....	8

Fall II Semester

KOT	105	Gerontology.....	3
KOT	203	Assistive Technology/Splinting.....	3
KOT	201	Occupational Therapy in Mental Health.....	2.5
KOT	202	Occupational Therapy in Physical Dysfunctions	4
KOT	212	Level I Fieldwork/Physical/Psychosocial Dysfunctions	2
		TOTAL CREDIT HOURS	14.5

Spring II Semester

KOT	222	Level II Fieldwork.....	8
		TOTAL CREDIT HOURS.....	8
		TOTAL PROGRAM CREDIT HOURS.....	70.5

** 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 positions 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, Office Automation Certificate and Medical Office Assistant Certificate.

Prerequisite

Prior to admission to the Office Systems Technology Vocational Certificate programs or associate of applied science degree, you must have completed OST 105 Keyboarding/Formatting I or equivalent.

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	155	Word Processing Applications I*	2
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	125	Document Formatting*	1
OST	150	Records Management	3
CPCA	138	Windows for Micros*	1
TOTAL CREDIT HOURS			16

Third Semester

BUS	122	Introduction to Law	3
CPCA	118	Groupware*	1
CPCA	141	Internet I*	1
BUS	140	Principles of Supervision	3
or			
BUS	141	Principles of Management	3
OST	255	Word Processing Applications II*	2
BUS	150	Business Communications*	3
CPCA	123	Presentation Graphics I	1
Humanities 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	260	Desktop Publishing for the Office*	3
OST Electives			3
TOTAL CREDIT HOURS			16
TOTAL PROGRAM			
CREDIT HOURS			65

Associate of Applied Science Degree**Medical Office Specialist**

The Medical Office Specialist prepares students to pursue an administrative career in the medical profession. The program combines training in the latest technical and computer skills with specialized coursework unique to the medical profession. Beginning students and employed medical personnel will find this program invaluable for career advancement.

First Semester

LC	130	Medical Terminology	3
ENGL	121	Composition I	3
OST	155	Word Processing Applications I*	2
OST	130	Office Systems Concepts	3
CPCA	138	Windows for Micros*	1
CPCA	118	Groupware*	1
CPCA	114	Databases on Microcomputers I*	1
Health and/or Physical Education Elective			1
OST Elective			1
TOTAL CREDIT HOURS			16

CR**Second Semester**

OST	110	Skillbuilding I*	3
OST	170	Medical Coding and Billing*	3
OST	150	Records Management	3
OST	125	Document Formatting*	1
MATH	120	Business Math	3
BUS	225	Human Relations	3
OST	115	Electronic Calculators	1
OST Elective			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*	2
CPCA	110	Spreadsheets on Microcomputers I*	1
CPCA	141	Internet I*	1
Humanities Elective			3
TOTAL CREDIT HOURS			16

Fourth Semester

ECON	130	Basic Economic Issues	3
or			
ECON	230	Economics I	3
OST	165	Medical Transcription*	3
OST	265	Computerized Office Applications*	3
OST	275	Office Internship I*	1
BUS	140	Principles of Supervision	3
or			
BUS	141	Principles of Management	3
OST Electives			3
TOTAL CREDIT HOURS			16
TOTAL PROGRAM			
CREDIT HOURS			64

* Courses with prerequisites/corequisites

Associate of Applied Science Degree**Legal Office Specialist**

The Legal Office Specialist program prepares students for administrative duties in the law office and other legal settings. The program combines training in the latest technical and computer skills with specialized coursework unique to the legal profession, including exposure to legal practices, preparation and practical application of documents and terminology used in the legal office.

First Semester

BUS	122	Introduction to Law	3
OST	155	Word Processing Applications I*	2
OST	130	Office Systems Concepts	3
ENGL	121	Composition I	3
CPCA	138	Windows for Micros	1
OST	115	Electronic Calculators	1

CR

CPCA	114	Databases on Microcomputers I*	1
		Health and/or Physical Education Elective	1
		OST Elective	1
		TOTAL CREDIT HOURS	16

Second Semester

OST	110	Skillbuilding I*	1
OST	150	Records Management	3
MATH	120	Business Math	3
ACCT	111	Small Business Accounting	3
		or	
ACCT	121	Accounting I	3
OST	125	Document Formatting*	1
OST	160	Legal Transcription*	3
CPCA	118	Groupware	1
		OST Elective	1
		TOTAL CREDIT HOURS	16

Third Semester

PL	223	Computer Applications in the Law Office	3
BUS	150	Business Communications	3
BUS	225	Human Relations	3
OST	255	Word Processing Applications II*	2
CPCA	141	Internet I*	1
CPCA	110	Spreadsheets on Microcomputers I*	1
		OST Electives	3
		TOTAL CREDIT HOURS	16

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 Elective	3
		General Electives	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM	
		CREDIT HOURS	64

Office Careers Vocational Certificate

At the completion of this 13-credit-hour certificate, students demonstrate proficiency in office skills, including computer and word processing knowledge. This certificate program prepares students to enter an office career in a minimal time period.

OST	102	Business English	1
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*	2

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*	2
OST	115	Electronic Calculators	1
OST	120	Machine Transcription*	1
OST	150	Records Management	3
CPCA	118	Groupware*	1
CPCA	141	Internet 1*	1
OST	255	Word Processing Applications II*	2
OST	265	Computerized Office Applications*	3
OST	260	Desktop Publishing for the Office*	3
OST	275	Office Internship I*	1
		OST Electives	2
		TOTAL PROGRAM	
		CREDIT HOURS	31

* Courses with prerequisites/corequisites

Office Automation Skills Vocational Certificate

The 12-hour certificate is designed to quickly teach the basic and intermediate concepts of word processing and desktop publishing. In addition, students are given an overview of the field of office automation and how it will affect their future.

Prerequisite

Prior to admission to the Office Automation Skills Vocational Certificate program, you must be able to type at least 35 words a minute.

OST	155	Word Processing Applications I*	2
OST	130	Office Systems Concepts	3
OST	255	Word Processing Applications II*	2
OST	260	Desktop Publishing for the Office*	3
		OST Electives	2
		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.

<i>First Semester</i>		CR
CPCA	106 Introduction to Personal Computing: Mac	.1
OST	155 Word Processing Applications I*	2
OST	130 Office Systems Concepts	3
CPCA	105 Introduction to Personal Computing: Win	.1
ELEC	124 Microcomputer Hardware*	3
CPCA	118 Groupware*	1
DRAF	115 Introduction to Computer Graphics Systems*	3
TOTAL CREDIT HOURS		14

Second Semester

OST	255 Word Processing Applications II*	2
CPCA	110 Spreadsheets on Microcomputers I*	1
CPCA	114 Databases on Microcomputers*	1
CPCA	138 Windows for Micros*	1
CPCA	141 Internet 1*	1
OST	260 Desktop Publishing for the Office I*	3
OST	265 Computerized Office Applications*	3
CPCA	123 Presentation Graphics	1
	OST Electives	1
TOTAL CREDIT HOURS		14
TOTAL PROGRAM CREDIT HOURS		28

Medical Office Assistant Vocational Certificate

This certificate program is designed for students desiring to work in doctors' offices and hospital offices. This program will provide training for students going into entry-level positions or those upgrading existing skills.

Required Courses

LC	130 Medical Terminology	3
OST	102 Business English	1
OST	110 Skillbuilding I	1
OST	125 Document Formatting	1
OST	155 Word Processing Application I	2
OST	165 Medical Transcription	3
OST	170 Medical Billing and Coding	3
TOTAL PROGRAM CREDIT HOURS		14

OST Electives

OST	102 Business English	1
OST	118 Skillbuilding II*	1
OST	175 Conflict in the Workplace	1
OST	180 Business Spreadsheet Applications*	1
OST	185 Business Database Applications*	1
OST	205 Professional Image Development	1
OST	210 Working in Teams	1
OST	280 Office Internship II*	1

* Courses with prerequisites/corequisites

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 and American Bar Association general education requirements prior to admission. Students will have fulfilled these general education requirements if they have 18 hours of general education credit, including Composition I and Introduction to Algebra or a higher math course.

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	Personal Computer Applications.....	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 GPA 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.

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

First Semester

		Humanities 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 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

Legal Nurse Consultant Postsecondary Certificate

A legal nurse consultant (LNC) is a registered nurse who possesses both medical and legal knowledge. The LNC assists members of the legal profession with medical malpractice, personal injury and workers' compensation cases. The LNC functions in two roles: a consulting expert and a testifying expert.

Prior to admission, you must have earned a registered nurse degree and have satisfied JCCC and American Bar Association general education requirements. Students will have fulfilled these general education requirements if they have 18 hours of general education. LNC applicants must also possess a current state license to practice nursing and have completed 2,500 hours of clinical work as a registered nurse.

LNC	220	Legal Nurse Consultant	3
LNC	230	Foundations of Law	3
LNC	240	Legal/Medical Research.....	3
LNC	250	Legal/Medical Writing	3
LNC	260	Personal Injury Law.....	3
LNC	270	Administrative Law.....	3
TOTAL PROGRAM CREDIT HOURS.....			18

Physical Therapist Assistant

The physical therapist assistant, under the supervision of a licensed physical therapist, performs direct patient care. The therapist uses physical agents such as heat, light, sound, water, cold, massage, exercise and rehabilitation techniques as prescribed by a physician. JCCC offers a

cooperative program with Penn Valley Community College. The Physical Therapy Assistant program at Penn Valley is accredited by the Commission on Accreditation in Physical Therapy Education. The support courses are held at JCCC and the clinical courses at Penn Valley and affiliated clinical agencies. You must be accepted into the program and must complete registration at both JCCC and Penn Valley. Contact PVCC for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria. Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. It is your responsibility to check with a JCCC counselor before enrollment.

Associate of Applied Science Degree

Degree granted by Penn Valley Community College

Prerequisites

CHEM	122	Principles of Chemistry	5
BIOL	140	Human Anatomy.....	4
LC	130	Medical Terminology.....	3
KPT	151	Introduction to Physical Therapy	2

Fall Semester

KPT	152	Fundamentals of Modalities I.....	3
PSYC	130	Introduction to Psychology	3
ENGL	121	Composition 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 24-month period of study. You must be formally accepted into the program by Penn Valley and must complete registration at both Penn Valley and JCCC. 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. The Radiologic Technology program at PVCC is accredited by the Joint Review Committee on Education in Radiologic Technology.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact Penn Valley Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria. It is your responsibility to check with a JCCC counselor before enrollment.

Admission requirement: College general biology/human anatomy with laboratory (4-5 credit hours) or one year of high school biology with a minimum grade of "C" in the last five years and MATH 115 or higher level college math course or two semesters of high school algebra with a minimum grade of "C" within the last five years.

Associate of Applied Science Degree

Degree granted by Penn Valley Community College

Summer Semester

KRAD	160	Introduction to Radiologic Technology..4 (beginning the second Monday in July)	
		TOTAL CREDIT HOURS.....	4

CR

Fall Semester

BIOL	144	Human Anatomy and Physiology	5
KRAD	165	Patient Care.....	3
KRAD	170	Radiation Biology and Protection.....	3
KRAD	172	Radiographic Positioning I.....	3
KRAD	173	Clinical Training I.....	3
		TOTAL CREDIT HOURS	17

Spring Semester

LC	130	Medical Terminology.....	3
ENGL	121	Composition 1	3
KRAD	162	Image Processing	2
KRAD	171	Radiographic Exposures I.....	3
KRAD	175	Clinical Training II.....	4
KRAD	176	Radiographic Positioning II	3
		TOTAL CREDIT HOURS	18

Summer

KRAD	178	Clinical Training III	4
		TOTAL CREDIT HOURS.....	4

Fall Semester

PSYC	130	Introduction to Psychology	3
KRAD	174	Radiographic Exposures II.....	3
KRAD	279	Radiographic Positioning III	2
KRAD	280	Clinical Training IV	4
KRAD	281	Radiation Physics	3
KRAD	285	Special Procedures.....	2
		TOTAL CREDIT HOURS	17

Spring Semester

		American Institutions *	3
KRAD	278	Imaging Modalities and Pathology.....	3
KRAD	282	Clinical Training V	4
SPD	121	Public Speaking	3
KRAD	283	Final Seminar	2
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM	
		CREDIT HOURS.....	75

Electives

KRAD	201	Mammography.....	3
KRAD	288	Specialty Training	9

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

Railroad Electronics

Vocational Certificate

This certificate is a comprehensive program of study that covers the fundamental electronic principles used by railroad signal control systems technicians. Upon successful completion of this program, the student should be able to apply basic digital and analog theory required in the maintenance of right-of-way crossing and train control systems.

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

ELEC	180	Introduction to Railroad Electronics . . .	1
ELEC	181	Circuit Analysis DC/AC	6
ELEC	182	Semiconductor Devices and Circuits . . .	6
ELEC	183	Digital Techniques	6

ELEC	284	Electronic Communications	6
ELEC	285	Microprocessor Techniques	6
TOTAL PROGRAM			
CREDIT HOURS			31

Railroad Industrial Technology

JCCC's Railroad Industrial Technology certificate program prepares workers to use the latest equipment and technology to keep the nation's rail system in top condition. Railroad companies are facing increased pressure to improve efficiency and on-time performance; employers must recruit and rely upon employees who possess the knowledge and skills necessary to maintain the system with a minimum of service interruption.

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

Maintenance of Way Welding Postsecondary Certificate Program

This certificate is a comprehensive course of study addressing those skills associated with maintenance and repair of railway fixed facilities. Upon successful completion of this program, the student should be able to perform basic and advanced welding operations, complete specialized welding procedures involving maintenance and repair of railway track, perform structural welding applications involving code-quality work according to AWS D1.5 and perform tasks associated with most aspects of welding in maintenance of way applications.

RRIT	122	Elements of Welding	3
RRIT	123	Basic Welding	3
RRIT	132	Thermite Welding	3
RRIT	135	Component Welding	3
RRIT	137	Structural Welding	3
RRIT	138	Structural Welding FCAW	3
RRIT	139	Structural Welding Pipe	3
RRIT	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
RRIT	150	Switch Point Repair	2
RRIT	155	Railroad Welding Review	2
RRT	120	History of Railroad	3
RRT	121	Railroad Technical Careers	3
RRT	150	Railroad Operations	3
RRT	165	Railroad Safety, Quality and Environment	3
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.

RRIT	122	Elements of Welding	3
RRIT	123	Basic Welding	3
RRIT	132	Thermite Welding	3
RRIT	135	Component Welding	3
RRIT	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.

RRIT	122	Elements of Welding	3
RRIT	123	Basic Welding	3
RRIT	137	Structural Welding	3
RRIT	138	Structural Welding FCAW	3
RRIT	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.

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

Railroad Carman Welding Vocational Certificate Program

The railroad carman welding vocational certificate is designed to provide students with training in welding and cutting operations used by carmen employed in the railroad industry. Students completing the program should be able to demonstrate safe operating procedures for welding and cutting applications and perform skill competencies involving oxyacetylene cutting, shielded metal arc welding, gas metal arc welding and flux cored arc welding. Students should also be able to complete

qualification tests according to industry standards.	
RRIT	127 Welding Processes2
RRIT	140 Structural Quality SMAW3
RRIT	141 Structural Quality GMAW 3
TOTAL PROGRAM	
CREDIT HOURS.....8	

**Railroad Machinist Welding
Vocational Certificate Program**

The railroad machinist welding vocational certificate is designed to provide students with training in welding and cutting operations used by machinists employed in the railroad industry. Students completing the program should be able to demonstrate safe operating procedures for welding and cutting applications and perform skill competencies involving oxyacetylene cutting and shielded metal arc welding. Students should also be able to complete qualification tests according to industry standards.

RRIT	127 Welding Processes2
RRIT	140 Structural Quality SMAW3
TOTAL PROGRAM	
CREDIT HOURS.....5	

Railroad Operations

JCCC's associate degree program in railroad operations can prepare you for an exciting and well-paying career. The more than 500 companies that make up the United States railroad industry provide the country's freight and passenger transportation service on a network of some 300,000 route-miles of track. Railroads employ a substantial work force to service, maintain and manage this extensive transportation network. JCCC's program offers five options. The general option requires 65 credit hours, the conductor option 69 credit hours, the dispatcher option 70 credit hours, the mechanical option 64 credit hours and the maintenance of way welding option 64 credit hours.

Associate of Applied 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: Win .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 Thinking3
RRT	120 History of Railroading3
TOTAL CREDIT HOURS16	

Second Semester

ENGL	123 Technical Writing I3
MATH	134 Technical Math II.....5
PHYS	125 Technical Physics I.....4
RRT	121 Railroad Technical Careers3
	Health and/or Physical Education Elective .1
TOTAL CREDIT HOURS16	

Third Semester

BUS	121 Introduction to Business3
ECON	130 Basic Economic Issues3
PHIL	138 Business Ethics.....1
RRT	150 Railroad Operations3
RRT	165 Railroad Safety, Quality and Environment.....3
SPD	125 Personal Communication.....3
TOTAL CREDIT HOURS16	

Fourth Semester

INDT	140 Quality Control Using SPC2
	Business/Related Electives.....6
	Technical/Related Electives9
TOTAL CREDIT HOURS17	
TOTAL PROGRAM	
CREDIT HOURS.....65	

Business/Related Electives

ACCT	121 Accounting I3
BUS	123 Personal Finance3
BUS	140 Principles of Supervision3
BUS	141 Principles of Management.....3
BUS	221 Principles of Insurance3
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 Keyboarding1

Technical/Related Electives

AUTO	125 Introduction to Automotive Shop Practices3
AUTO	165 Auto Engine Repair.....4
CET	105 Construction Methods3
CET	127 Construction Estimating3
CET	129 Construction Management3
CPCA	135 M/S DOS1
CPCA	138 Windows for Micros1
DRAF	115 Introduction to Computer Graphics Systems.....3
DRAF	123 Interpreting Machine Drawings.....2
DRAF	129 Interpreting Architectural Drawings2

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 Applied 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: Win	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 Applied Science Degree

Dispatcher Option

Railroad dispatchers control and ensure the safe and efficient movement of trains, on-track equipment and employees.

Classes are currently taught at Tarrant County Junior College, Ft. Worth, Tex.

First Semester

CPCA	105	Introduction to Personal Computing: Win	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 Applied 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: Win .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
RRIT	122	Elements of Welding	3
		or	
MFAB	121	Introduction to Welding	4
RRIT	123	Basic Welding.....	3
RRIT	132	Thermite Welding	3
RRIT	135	Component Welding.....	3
RRIT	145	Frog Welding	3
		TOTAL CREDIT HOURS.....	16-17
		TOTAL PROGRAM	
		CREDIT HOURS	64-65

Associate of Applied 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: Win .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

RRIT	122	Elements of Welding	3
		or	
MFAB	121	Introduction to Welding	4
RRIT	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 applied science degree or a certificate of completion, depending on the general education requirements completed. You will be eligible for the National Board for Respiratory Care examinations after graduation. You will first earn the Certified Respiratory Therapist (CRT) 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 Applied Science Degree

<i>Summer</i>		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 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 Care	4
RC	130 Respiratory Care Equipment	4
RC	135 Cardiopulmonary Medicine I	1
EMS	121 CPR I Basic Rescuer	1
TOTAL CREDIT HOURS		10

Third Semester

RC	220 Clinical Cardiopulmonary Physiology	2
RC	271 Clinical Practice I	4
RC	230 Clinical Topics and Procedures I	4
RC	235 Cardiopulmonary Medicine II	2
RC	240 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 applied science degree, especially if you plan to continue your education. The difference between the postsecondary certificate curriculum and the associate of applied science degree is the nine hours of electives required for the associate of applied 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 Care	4
RC	130	Respiratory Care Equipment	4
RC	135	Cardiopulmonary Medicine I	1
EMS	121	CPR I Basic Rescuer	1
TOTAL CREDIT HOURS			10

Third Semester

RC	220	Clinical Cardiopulmonary Physiology	4
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 Therapist (CRT) 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 therapist (CRT). 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.

CRT-RRT Transition Curriculum Requirements

Associate of Applied Science Degree

Prerequisites

The following are prerequisite courses that must be completed prior to enrollment in any respiratory course work. Candidates may apply to the program before these requirements are completed and are encouraged to meet with program personnel prior to beginning any course work to insure proper matriculation.

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
BIOL	140	Human Anatomy	4
BIOL	225	Human Physiology	4
BIOL	230/1	Microbiology/Lab	3/2
		Social Science Elective	3
		Communications Elective	3
		Humanities Elective	3
TOTAL CREDIT HOURS			37

Respiratory Care Course Requirements

The following courses must be completed to receive the degree. The courses preceded by an "*" indicate that course credit may be possible through Assessment of Prior Learning evaluation. To obtain credits through the APL program for prior respiratory care training and work experiences, each candidate would need to work with the JCCC Testing/Assessment office to prepare a portfolio in which information and documentation is provided to support the request for college credit for specific courses. There are enrollment requirements and fees for this evaluation.

* RC	125	Beginning Principles of Respiratory Care	4
* RC	130	Respiratory Care 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
* EMS	121	Basic Rescuer-CPR	1
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			36
TOTAL PROGRAM CREDIT HOURS			73

Note: Metropolitan Community College students may seek an associate of applied science degree through Penn Valley Community College. Students should seek specific counsel through PVCC counselors or the the JCCC program director for appropriate course plan and numbers.

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 applied science degree. The difference between the postsecondary certificate for the CRT transition curriculum and the associate of applied science degree for the CRT transition curriculum is the nine hours of electives required for the associate of applied 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

<i>First Semester</i>		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 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 Elective	3
TOTAL CREDIT HOURS		17
TOTAL PROGRAM		
CREDIT HOURS.....		65

Associate of Applied Science Degree

Chemical Specialty

<i>First Semester</i>		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: Win .	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 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 Elective.....	3
TOTAL CREDIT HOURS		15

Fourth Semester

CHEM	243	Technical Instrumental Chemistry	5
SPD	125	Personal Communications	3
		(recommended)	
		or	
SPD	128	Business and Professional Speech	3
		(recommended)	
		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.

Surgical Technology

This certificate program is designed to produce competent operating room technicians for immediate entry-level employment. Students are required to meet minimum entrance requirements on academic assessment and HOBET examinations.

Surgical Technology Vocational Certificate

Certificate granted by Penn Valley Community College

First Semester **CR**

KSUR	100	Introduction to Surgical Technology	2
KSUR	102	Fundamentals of Operating Room	
		Techniques.....	11
KSUR	104	Body Structure and Function	2
KSUR	106	Aseptic Technique	
		for the Surgical Technologist	2
		TOTAL CREDIT HOURS	17

Second Semester

KSUR	105	Pharmacology for the Surgical Technologist	2
KSUR	109	Principles of Surgical Procedures I.....	8
KSUR	110	Principles of Surgical Procedures II.....	7
		TOTAL CREDIT HOURS	17

Third Semester

KSUR	111	Career Development	
		for the Surgical Technologist.....	2
KSUR	114	Principles of Surgical Procedures III	7
		TOTAL CREDIT HOURS.....	9
		TOTAL PROGRAM	
		CREDIT HOURS.....	43

Travel and Tourism Management

This program, designed to provide the knowledge and skills needed for an entry-level position in the travel industry, focuses 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. Support courses are held at JCCC and 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 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
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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 with veterinarians, assisting them in providing professional services and performing veterinary-related tasks. Opportunities are also available with pharmaceutical companies in technical services or laboratory animal care. JCCC's Veterinary Technology program is offered in cooperation with the Veterinary Technology program at Maple Woods Community College. Students study sanitation and animal care, the preparation of animals for surgery and anesthetic management, as well as laboratory techniques and radiology. The program features supervised intensive clinical study under the direction of a licensed veterinarian and is fully accredited by the American Veterinary Medical Association. You must be accepted into the program by both JCCC and Maple Woods Community College.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact Maple Woods Community College for an application packet, which includes deadlines, program prerequisites and admission requirements.

Associate of Applied Science Degree

Degree granted by Maple Woods Community College

Prior to the beginning of the fall semester, the student must have successfully completed:

BIOL	127	General Zoology	5
		or	
BIOL	122/123	Biology with lab	3/1

First Semester CR

KSAH	100	Introduction to Veterinary Technology	2
KSAH	101	Principles of Animal Science I	3
KSAH	182	Veterinary Office and Computer Skills	3
ENGL	121	Composition I	3
KSAH	108	Clinical Mathematics	1
SPD	121	Public Speaking	3
		TOTAL CREDIT HOURS	15

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
		American Institutions *	3
		TOTAL CREDIT HOURS	17

Summer

KSAH	214	Veterinary Technician Internship	6
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Third Semester

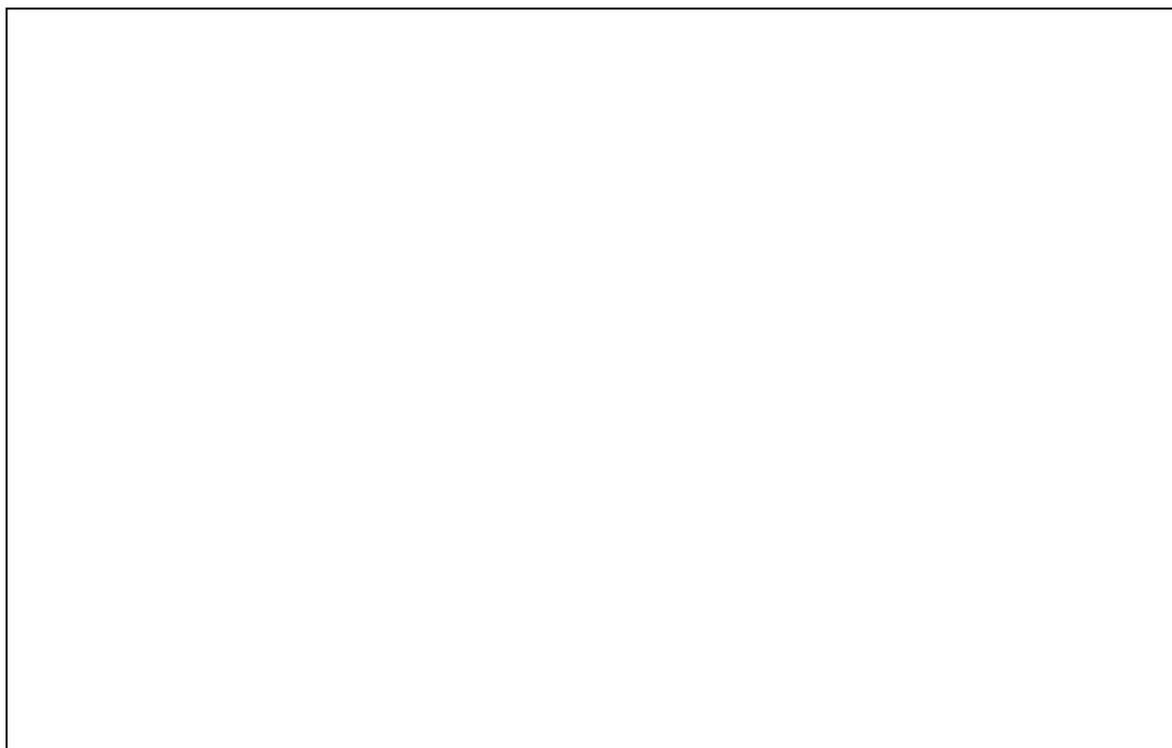
KSAH	200	Veterinary Hospital Technology I	3
KSAH	202	Veterinary Technology Anatomy	5
KSAH	212	Large Animal Technology	4
BIOL	230	Microbiology	3
BIOL	231	Microbiology Lab	2
		TOTAL CREDIT HOURS	17

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
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM CREDIT HOURS	75

* All graduates from Maple Woods must meet the American Institutions requirement. If you are a JCCC student, see a counselor about courses.

Nontraditional Programs of Study



Honors Program

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

Distance Learning

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 GPA or a 3.5 college GPA 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 GPA to remain in the program.

Honors Forum

The Honors Forum focuses on a current issue that affects the local, national and global communities. It will complement other courses in the curriculum by combining an emphasis on both specific content and skill development in interaction, analysis, synthesis and conflict resolution. The process of reflecting, researching, analyzing and evaluating will be as important as the content. As you develop points of view concerning the issue, you must articulate and defend those points as they are challenged by others and make judgments among alternative options.

Honors Contracts

Each academic division at JCCC offers Honors contracts developed by individual faculty members for selected courses. The contracts, offered for one hour of additional credit, are designed as extensions to the regularly scheduled courses. In order to complete the contract, you are required to meet on a regularly scheduled basis with the instructor offering the contact for mentor-student tutorial sessions. The work in the contract may include additional reading and writing assignments, expanded field or laboratory work and writing term papers and other suitable assignments.

Interdisciplinary Courses

These courses cover a broad area of knowledge and emphasize inquiry, discovery, critical thinking and

discussion methods that stress student participation. You will be asked to read primary and secondary sources, take initiative in course-related activities, use analytical and evaluative skills and complete an Honors term project.

Service Learning

If you plan to graduate from the Honors Program, you will be expected to perform some volunteer community service. This can be done independently or through a service learning course.

Graduation from the Honors Program

You may elect to participate in any part of the Honors Program; however, if you plan to graduate from the program, you must:

- Meet all requirements for a two-year degree with a 3.5 GPA.
- Complete four Honors contracts.
- Complete one Honors Forum class.
- Complete one interdisciplinary class.
- Perform specified service learning.

If you plan to graduate from the program, you should complete an Honors graduation completion form.

Scholarships

General guidelines

1. The purpose of the Honors Program scholarship is to encourage students to complete the requirements to graduate from the Honors Program. The intent of the scholarship is to help cover tuition, fees and books.
2. Scholarship amounts, with increments of \$60 a credit hour, are based on a minimum enrollment of six credit hours and a maximum enrollment of 15 credit hours. Scholarship recipients may enroll in more than 15 credit hours, but the maximum scholarship per semester will be \$900. The scholarship is awarded on a semester basis.
3. Scholarship recipients will be funded for succeeding semesters if they meet all of the requirements and have completed all of the course work attempted. The scholarship can cover a maximum of 52 attempted semester hours or until the requirements for the Honors Program are completed, whichever comes first. All scholarship recipients who drop a course are required to reapply for the scholarship for the following semester.
4. The number of new scholarships awarded each semester is determined by the funds available.

Requirements

To apply for an Honors Program scholarship, you must meet the following requirements:

1. Complete a minimum of 12 semester hours of course work at JCCC before applying.
2. Be working on the requirements to graduate from the Honors Program.
3. Have a minimum GPA of 3.5 at JCCC.

Preference is given to students who have taken course work in the Honors Program, *i.e.*, Honors contracts, Honors Forum or one of the interdisciplinary courses.

How to Apply

If you meet the requirements, you may pick up application forms in the Honors Office, 237 GEB.

The application process includes these steps:

1. Complete an application form.
2. Submit at least two letters of recommendation from instructors of your JCCC classes.
3. Write an essay describing your educational and career goals.
4. If you are a finalist, interview with the Honors scholarship committee.

Application deadlines are Oct. 15 for the spring semester and March 15 for the fall semester.

Distance Learning

At JCCC, not all classes are taught in the traditional classroom. Students may also enroll in courses taught by computer, over the World Wide Web or on TV. Each class is equivalent to the sections of the same course taught on campus in terms of objectives and content. The courses can be applied toward a degree and are as easily transferred as any other JCCC course.

Many students appreciate the convenience of computer, Internet and TV classes, which allow them to complete their classwork according to their own schedule and with only occasional visits to campus. However, to be successful in these nontraditional courses, students must be highly motivated, goal-oriented and willing to study independently.

You can enroll for a computer, Internet or TV course just as you do a regular course. Tuition for these courses is the same as for other credit courses. Textbooks, study guides and telecourse information packets are available at the JCCC bookstore. Exams for many of the courses are administered through the Testing/Assessment Center on campus.

With the exception of on-campus examinations taken at JCCC's Testing Center for most classes and an introductory session for selected classes, all student-teacher in-

teraction in the CPCA and DP distance learning classes is conducted via your personal computer and modem through your Internet provider. For more information, contact the Computer and Information Systems program, 355 EMC, 469-3881.

International Education

International education at JCCC spans the entire range of college activities from credit and continuing education courses to student clubs and special events. The college curriculum includes seven foreign languages and such courses as Eastern Civilization, International Relations, Global Resources, Cultural Anthropology, Introduction to International Business, Intercultural Communications, World Cultures and Russian, European, Latin American and World History. In addition, international and intercultural approaches are evident in many courses in the humanities, social sciences and communications classes.

JCCC maintains strong relationships with universities in China, Russia and the United Kingdom and has an active exchange program that brings faculty and students from other countries to the JCCC classrooms.

Study Abroad

Semester Programs

Through the College Consortium for International Studies, JCCC students have an opportunity to study in any one of 22 countries for a semester or a year. Programs exist in countries in Europe, Latin America, the Middle East and Asia that focus on liberal arts, language and culture, business, performing and visual arts. Through the Partnership for Service Learning, students can both study and perform community service in several nations. Eligibility and fees vary with the country. Many participants qualify for financial aid awards that allow them to participate. The application deadline for the spring semester is in October. For the fall semester, applications are due in April.

Travel Courses

JCCC offers short-term travel courses to various countries around the world. These courses usually run from one to three weeks, and the travel is carefully planned and supervised by instructors. Opportunities are available for credit or through the community education program. For additional information about all study abroad, contact the International Education office, 333 GEB, 469-8500, ext. 3496.

Television Courses

Telecourses are available on free-loan VCR cassettes. Students enrolled in a TV course may check out complete sets of course cassettes from the JCCC library. Telecourses may also be viewed in the JCCC library and on Time Warner Cable, channel 4A. Broadcast schedules are available from JCCC.

Open-captioned videocassettes for the *Composition I*, *Introduction to Computers*, *Cultural Anthropology*, *Personal and Community Health*, *General Geology*, *Introduction to Psychology* and *Environmental Science* telecourses are also available. *American National Government* is adapted for hearing-impaired students. The cassettes may be borrowed without charge from the reserve desk in the JCCC library.

Course Prefix

Listing

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

Courses by Division Listing

Business and Technology Division

Accounting
Automotive Technology
Business Administration
Business Entrepreneurship
Drafting Technology
Economics
Electrical Technology
Electronics Technology
Engineering
Fashion Merchandising
Heating, Ventilation and Air Conditioning
Home Economics
Hospitality Management
Industrial Technology
Information Technology
Interior Merchandising
Legal Nurse Consultant
Marketing and Management
Metal Fabrication
Office Systems Technology
Paralegal
Railroad Operations
Travel and Tourism Management

Computer Instruction and Media Resources Division

Communication Design
Computer Information Systems
Computer Interactive Media
Computers: Personal Computer Applications
Computer Science
Library

Liberal Arts Division

Academic Achievement Center
Administration of Justice
Agribusiness
Anthropology
Architecture
Art
Correctional Services
Early Childhood Education
Education
English
Fire Services Administration
Foreign Language
Grounds and Turf Management

History
Honors
Humanities
Interpreter Training
Journalism
Learning Strategies
Music
Philosophy
Photography
Political Science
Religion
Sociology
Speech and Debate
Theater

Physical Education Division

Physical Education

Science, Health Care and Math Division

Astronomy
Biology
Chemistry
Dental Assisting
Dental Hygiene
Emergency Medical Science
Geoscience
Health Information Technology
Health Occupations
Horticulture
Mathematics
Nursing
Occupational Therapy Assistant
Physical Science
Physical Therapist Assistant
Physics
Radiologic Technology
Respiratory Care
Surgical Technology
Veterinary Technology

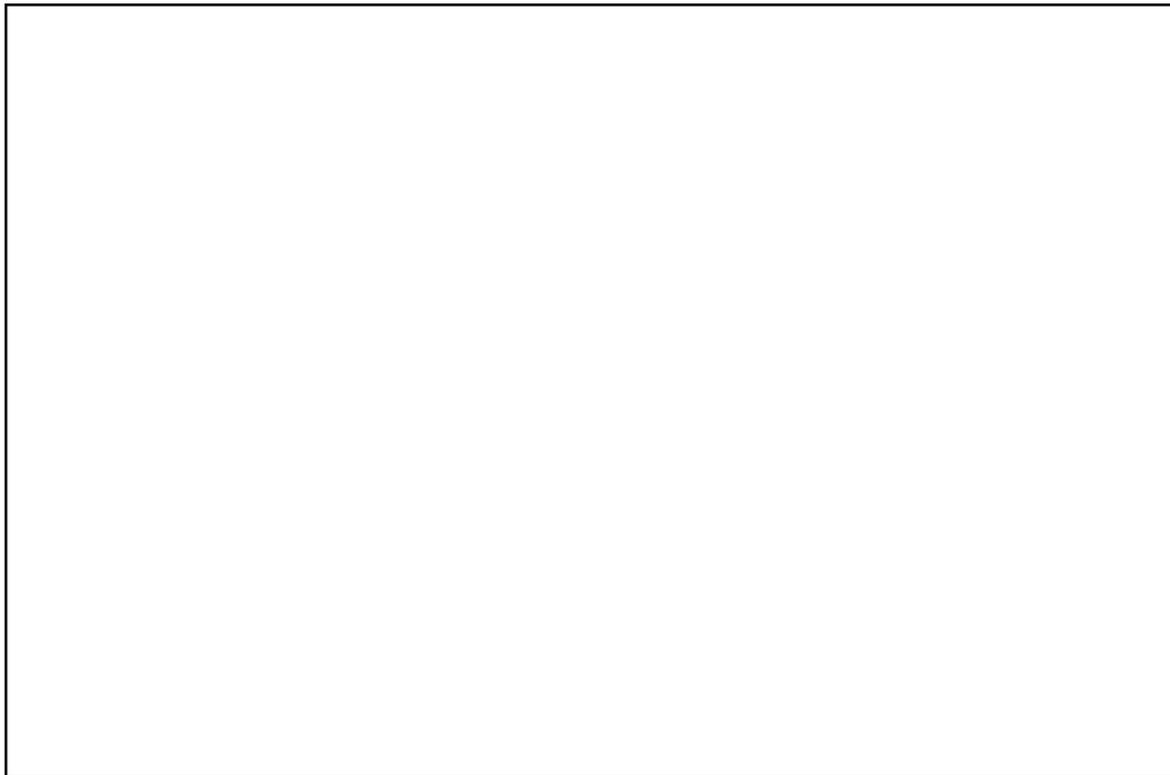
Student Development Division

Hearing Impaired

Continuing Education

Cosmetology

Academic Offerings



JCCC Course Listings

Academic Achievement Center

DEVELOPMENTAL COURSES

The following courses are designed to help students develop and enhance the skills necessary for successful completion of college-level requirements. Study skills, reading comprehension and other basic needs will be addressed through individualized instruction, small classes or self-paced programs. These courses do not fulfill degree requirements. **Note:** Students enrolled in LC prefix classes that indicate the time is to be arranged (TBA) should report to the center during the first week of the semester or within one week of enrollment.

LC 100

STUDY SKILLS (1CR)

This course is designed for students who wish to improve their college study skills. Students will take a survey test to determine strengths and potential problem areas and will receive an individualized program of study that will utilize textbooks, computer software and videos. Previewing academic reading, note taking from text and lecture, time management and test preparation techniques, along with related concepts will be included. By arrangement.

LC 101

STUDY SKILLS MINI-COURSE (1CR)

This class will focus on test-taking skills, taking notes, using a textbook, critical reading and memory recall, effective listening and classroom strategies, and support services. The format will include reading, discussion and practice exercises. 3 hrs./wk. for 5 wks.

LC 104

READING COMPREHENSION (1CR)

This course is designed for students who wish to improve their understanding of written language. Students will take a survey test to establish a baseline reading comprehension level and will receive an individualized program of study that will utilize textbooks, computer software and videos. Students will learn techniques for increasing comprehension, such as previewing, questioning, careful reading with note taking, reciting and reviewing. By arrangement.

LC 105

READING RATE (1CR)

This course is designed for students who wish to improve the rate at which they process written language. Students will take a pretest to determine a baseline reading efficiency rate and will receive an individualized program of study that will utilize textbooks,

computer software and handouts. Students will learn techniques for increasing reading rate and improving skimming and scanning levels. By arrangement.

LC 106

VOCABULARY DEVELOPMENT (1CR)

This course is designed for students who wish to expand their vocabulary levels. Students will take a placement test to determine an appropriate instructional level and will receive an individualized program of study that will utilize textbooks, computer software and handouts. A variety of approaches will be used to acquire and utilize a powerful, up-to-date vocabulary. By arrangement.

LC 107

SPELLING IMPROVEMENT (1CR)

This course is designed for students who wish to improve their level of spelling mastery. Students will take a placement test to determine the appropriate instructional level and will receive an individualized program of study that will utilize textbooks and computer software. Students will master a variety of spelling concepts and will monitor and correct misspellings that occur in their own writings. By arrangement.

LC 110

POWER SPELLING (3CR)

Prerequisite: Appropriate score on the placement test

This course is designed for students who wish to improve their spelling but have not been successful in traditional spelling programs. This course provides a highly structured approach to spelling improvement through mastery of morphographs (units of meaning) and guidelines for combining morphographs in order to correctly spell hundreds of words. By arrangement.

LC 112

BASIC MATH REVIEW (1CR)

This course is designed for students who need to review or learn the basic mathematical concepts. Students will take a placement test to determine an appropriate instructional level and will receive an individualized program of study that will utilize textbooks, computer software and videos. Students will learn basic math concepts (whole numbers, fractions, decimals, etc.) and will learn to apply these concepts to solve problems. By arrangement.

LC 113

ALGEBRA PREPARATION (1CR)

This course is designed for students who wish to review or learn the basic concepts of algebra in order

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 AND READING SKILLS (3CR)

Prerequisite: Appropriate assessment score

This reading course is the first in a mandatory sequence of reading courses. It focuses on techniques for building a functional vocabulary and for increasing comprehension on the sentence, paragraph and multi-paragraph levels. The course is designed for those students who have difficulty understanding English in print. 3 hrs./wk.

LC 125

FUNDAMENTALS OF READING (3CR)

Prerequisite: LC 124 or appropriate assessment score

This course is the second in a mandatory sequence of reading courses. It is designed for students who need to improve their understanding of written expression. The focus of the course is on vocabulary, dictionary usage, literal comprehension and written communication. 3 hrs./wk.

LC 126

READING SKILLS IMPROVEMENT (3CR)

Prerequisite: LC 125 or appropriate assessment score

This intermediate reading course is the third in a mandatory sequence, designed for students who need to improve their understanding of written expression. The focus of the course is on higher-level comprehension and vocabulary skills. Students use Time magazine to apply and practice skills learned in the class and to provide a background for written assignments. 3 hrs./wk.

LC 127

COLLEGE READING SKILLS (3CR)

Prerequisite: LC 126 or appropriate assessment score

This advanced reading course is designed for students who wish to improve their ability to process written expression. The focus of the course is on critical and interpretive reading skills, developing reading techniques appropriate to material and purpose, increasing vocabulary level, improving written expression and increasing reading rate. Students use National Geographic and Atlantic Monthly to apply and practice skills learned in the class and to provide a background for written assignments. 3 hrs./wk.

LC 130

MEDICAL TERMINOLOGY (3CR)

This self-instructional course is designed for students who want to learn a systematic format for acquiring a medical vocabulary. The course begins with a study of prefixes, combining forms and suffixes, along with guidelines for building medical words. This is followed by a study of each of the body systems. Computer software is available to support the textbooks. Students planning a career in any facet of the health care industry will find this course beneficial. By arrangement.

LC 135**CAREER/LIFE PLANNING (3CR)**

This is a systematic approach to career and life planning. Students will focus on a process for making occupational decisions at any point in their lives. 3 hrs./wk.

LC 150**JOB SEARCH SKILLS (1CR)**

Job-hunting techniques will be explored in this class. The class will consist of lecture, assignments and role playing. In class, students will develop a résumé, complete job applications and practice interviewing. 1 hr./wk.

ABLE: Academic Bridges to Learning Effectiveness

ABLE is an award-winning program that teaches students with learning disabilities or brain injury how to become independent learners. ABLE students take courses and attend study sessions and weekly support group meetings to build a firm foundation for college, vocational programs or the workplace. Students should contact Longview Community College at 672-2053 for information regarding enrollment and courses available.

Accounting

ACCT 111**SMALL BUSINESS ACCOUNTING (3CR)**

This course will introduce the basic accounting procedures needed to maintain daily records for a small business and the use of such records in the decision-making process. Upon successful completion of the course, the student will be able to maintain a set of financial records with the occasional help of an outside accountant. This course does not prepare the student for Accounting II. 3 hrs./wk.

ACCT 115**ACCOUNTING FOR
NONPROFIT ORGANIZATIONS (3CR)**

Prerequisite: ACCT 121

This course is a three-hour survey course of not-for-profit accounting and its primary users: federal, state and local governments, hospitals and schools. Upon successful completion of the course, the student should be able to effectively deal with the primary funds and accounting groups, assist in the budget process, and practice variances among the major nonprofit organizations accord-

ing 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. 3 hrs./wk.

ACCT 122**ACCOUNTING II (3CR)**

Prerequisite: ACCT 121

This course is a continuation of ACCT 121. Upon successful completion of this course, the student should be able to prepare and use financial statements with increased emphasis on interpretation and use of accounting data peculiar to partnerships, corporations and manufacturing firms. 3 hrs./wk.

ACCT 131**FEDERAL INCOME TAXES I (3CR)**

This course teaches the student federal income tax rules and the procedures for reporting federal income tax. Upon completion of this course, the student should be able to do short- and long-range tax planning and keep records that will provide appropriate information for use in preparing federal income tax. The student should also be able to prepare the standard individual federal income tax return. 3 hrs./wk.

ACCT 135**COMPUTERIZED
ACCOUNTING APPLICATIONS (3CR)**

Prerequisites: ACCT 121

Corequisite: CPCA 105

This course will provide a hands-on approach to learning how computerized integrated accounting systems function. Upon successful completion of the course, students should be able to use a microcomputer to create charts of accounts, accounts receivable and payable subsidiary ledgers, transaction journals, general ledgers, financial statements, reports and forecasts. 3 hrs./wk.

ACCT 221**COST ACCOUNTING (3CR)**

Prerequisite: ACCT 122

Upon completion of this course, the student should be able to use accounting information to plan and control operations, value inventory, determine income in a manufacturing environment and evaluate subsequent results. 3 hrs./wk.

ACCT 222
MANAGERIAL ACCOUNTING (3CR)

Prerequisite: ACCT 122

Upon completion of this course, the student should be able to develop and use accounting information as an instrument of management control. Material covered includes financial statement analysis, cost application and budgeting reports to management. 3 hrs./wk.

ACCT 231
INTERMEDIATE ACCOUNTING I (3CR)

Prerequisite: ACCT 122

The course will present the use of accounting theory in the preparation of financial reports. Upon successful completion of this course, the student should be able to solve problems that arise in the presentation of cash, receivables, inventories, tangible and intangible assets on the statement of financial position, and their related effect on the statement of income. 3 hrs./wk. This course will not be offered every semester. Fall.

ACCT 232
INTERMEDIATE ACCOUNTING II (3CR)

Prerequisite: ACCT 122

Accounting theory learned through the study of accounting concepts and technical procedures will be presented in this course. Upon completion, the student should be able to solve problems in the presentation of capital structures, long-term investments, debts, leases, pensions, the analysis of financial statements, and price-level and fair value accounting and reporting. 3 hrs./wk. This course will not be offered every semester. Spring.

ACCT 278
ACCOUNTING INTERNSHIP I (1CR)

Prerequisite: ACCT 121

This internship is designed to enable students to use skills learned in accounting courses. Students will work in an approved training situation under instructional supervision. There will be a minimum of 15 hours each week of on-the-job training.

ACCT 285
ACCOUNTING CAPSTONE I (3CR)

Prerequisites or corequisites: ACCT 122, 15 hours of accounting courses and permission of the division administrator

This course is designed to serve as a capstone experience prior to entering the workplace. Students will maintain a complete set of books and related financial statements, both manually and electronically, through an accounting cycle. Students will use previously prepared financial statements to make informed judgments and solve

problems, identify and apply ethical positions and effectively communicate this information to others, orally and in writing. 3 hrs. lecture/wk. This course will not be offered every semester. Spring

Administration of Justice

ADMJ 121
INTRODUCTION TO
ADMINISTRATION OF JUSTICE (3CR)

Emphasis will be on the historical and philosophical development of the criminal justice system. This course includes participation in the field as well as classroom experience. 3 hrs./wk.

ADMJ 124
CRIMINAL JUSTICE SYSTEM (3CR)

Subsystems of the criminal justice system will be analyzed and identified. 3 hrs./wk.

ADMJ 127
CRIMINOLOGY (3CR)

This class will explore theories of criminal behavior, treatment, correction, crime prevention and control. Contemporary trends will be highlighted. 3 hrs./wk.

ADMJ 130
CRIME PREVENTION (3CR)

Topics of special interest include the techniques public service agencies use to operate crime-prevention programs and to provide technically accurate, cost-effective security recommendations to the community. 3 hrs./wk.

ADMJ 133
JUVENILE DELINQUENCY (3CR)

This class will provide an analysis of detention procedures, disposition, custody and treatment of juvenile offenders throughout the United States with a specific interest in area systems. The origin and development of juvenile agencies, as well as the organization, functions and jurisdiction of juvenile courts, will be studied. 3 hrs./wk.

ADMJ 136
POLICE AND THE PUBLIC (3CR)

This course will identify and analyze conflict that arises between police and the communities they serve. 3 hrs./wk.

ADMJ 140
CONSTITUTIONAL CASE LAW (3CR)

Students will study Supreme Court decisions that have had significant impact on law enforcement techniques and procedures. 3 hrs./wk.

ADMJ 141**CRIMINAL LAW (3CR)**

Prerequisite: ADMJ 124 or PL 121

The Kansas Criminal Code will be the focus of this class, which emphasizes elements of crimes and criminal procedure. 3 hrs./wk.

ADMJ 145**FUNDAMENTALS OF PRIVATE SECURITY (3CR)**

This overview of the private security field will include a look at how industry, business, government and institutions handle security. 3 hrs./wk.

ADMJ 146**RETAIL SECURITY (3CR)**

This is a study of retail security supervision and management. Topics will include employment practices, employee dishonesty, controlling shoplifters and building and perimeter protection. 3 hrs./wk.

ADMJ 148**FAMILY VIOLENCE AND SEXUAL ABUSE (3CR)**

A description and causal analysis of the different physical, psychological and sexual abuse acts that may occur within the primary family unit will be provided in this course. The study will include possible causative factors; psychological and social impact on the various family members; psychological, social and legal implications; treatments; and the relationship between abuse and crime. 3 hrs./wk.

ADMJ 154**FUNDAMENTALS OF
CRIMINAL INVESTIGATION (3CR)**

Prerequisite: ADMJ 124

Topics covered in this course will include crime-scene search techniques, collection and preservation of evidence, interviewing, and logical reconstruction of the crime. 3 hrs./wk.

ADMJ 157**PATROL PROCEDURES (3CR)**

Prerequisite: ADMJ 124

This course will cover basic police patrol functions including report writing, traffic law enforcement, arrest, search and seizure, patrol and peacekeeping. 3 hrs./wk.

ADMJ 164**SUPERVISORY TECHNIQUES FOR POLICE (3CR)**

Prerequisite: ADMJ 124 or approval of the program director

Current theory and practice of the supervisor's role in the police service will be discussed. 3 hrs./wk.

ADMJ 166**POLICE ORGANIZATION AND MANAGEMENT (3CR)**

Prerequisite: ADMJ 124 or approval of the program director

The organization of a police department will be the focus of this class. Emphasis will be on achieving departmental objectives through the management of people, money and materials. 3 hrs./wk.

ADMJ 221**INTRODUCTION TO CRIMINALISTICS (3CR)**

Prerequisite: ADMJ 154 or approval of the program director

This course will provide training in the techniques and methods used to establish the identity and individualization of persons and things in a criminalistic laboratory. 3 hrs./wk.

ADMJ 225**DEFENSIVE TACTICS FOR POLICE (3CR)**

Prerequisite: ADMJ 124 and ADMJ 136

Subjects covered in this class will include the use of the baton and service revolver and constitutional limitations on the use of force. Students will be required to furnish ammunition for the service revolver. 3 hrs./wk.

ADMJ 265**ADVANCED POLICE TRAINING (12CR)**

Prerequisite: Open only to currently employed, full-time police officers attending the Police Academy under sponsorship of a law enforcement agency

This course consists of 180 clock hours of law enforcement training provided in addition to the 320 hours required by the Kansas Minimum Standards Training Act for recruits attending the Police Academy. While the required 320-hour curriculum is provided without fee, enrollment in advanced training is required of all those attending the academy. The curriculum covers law, criminal investigations, patrol procedures, defensive tactics, report writing and specialized training required by local law enforcement agencies.

ADMJ 271**EMERGENCY DISPATCHER FIELD STUDY (3CR)**

Prerequisite: Only students in appropriate programs will be accepted. Approval of the program director is required.

Students will gain on-the-job training under the supervision of a qualified dispatcher in law enforcement, fire protection or emergency medical services. The field study will be conducted at an approved dispatching station and arranged by the JCCC program coordinator. By arrangement.

ADMJ 281**READINGS IN POLICE SCIENCE (3CR)**

Prerequisite: 15 credit hours in ADMJ courses

The class will consist of selected readings in police science on topics such as police administration, criminal investigation, criminology, corrections, juvenile problems and evidence. By arrangement.

Agribusiness

(Also see *Grounds and Turf Management*, page 186.)

AGRI 107**TURFGRASS MANAGEMENT I (3CR)**

This course is designed to familiarize students with all of the major cool- and warm-season turfgrasses and to familiarize students with the adaptation and tolerances, cultural management and major disease and insect pests of each major category of turfgrass. Upon successful completion of this course, students should be able to demonstrate the ability to properly identify the major categories of turfgrass and to establish a turfgrass based on their knowledge of seeding, sodding, sprigging, plugging and past establishment procedures. Students should also be able to develop a pest and disease control program for each major category of turfgrass. 3 hrs./wk.

AGRI 109**TURFGRASS MANAGEMENT II (3CR)**

Prerequisite: AGRI 107

This course provides more specific information on turfgrass management. Topics include green construction, topdressing, sprayer calibration, management programs (setting up a lawn-care program) and the influence environment has on turfgrass growth. 3 hrs./wk.

AGRI 115**TURF AND ORNAMENTAL PLANTS:
PEST MANAGEMENT (3CR)**

This course will explore the concepts of turf and ornamental plant identification, description, establishment, growth, care, maintenance and pest control in the local area. The student will become familiar with federal and state regulations pertaining to horticulture chemical application. Upon successful completion of this course, the student will be prepared to take the Kansas or Missouri licensing examination to become a certified applicator of restricted horticulture pesticides and herbicides. 3 hrs./wk.

AGRI 120**INTRODUCTION TO URBAN 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: ARCH 130

This course introduces the student to the process and vocabulary of design. The purpose of the content is to develop the ability to solve two- and three-dimensional design problems with basic methods, vocabulary and media appropriate to the architectural profession. 6 hrs. integrated lecture, studio/wk.

Art

ART 123
ELEMENTARY ART METHODS (3CR)

This is an exploration of art activities for children from preschool through sixth grade. 6 hrs./wk.

ART 124
DESIGN 2-D (3CR)

This is an introductory study of the principles of visual perception, two-dimensional space organization and the visual elements of line, shape, value and texture. Concepts, materials and processes necessary to an understanding of two-dimensional form are explored using traditional and digital tools and techniques. 6 hrs./wk.

ART 127
DESIGN 3-D (3CR)

Prerequisite: ART 124

This is a study of the function of three-dimensional organization in the development of visual ideas. Concepts, materials and processes necessary to an understanding of the three-dimensional relationships of space, form, form evolution and the dynamics of structure are explored. 6 hrs./wk.

ART 129**DESIGN, COLOR (3CR)**

This is a study of the nature of color, its physical properties and visual qualities. Basic theories, phenomena and their applications will be explored using pigment, colored paper and digital color systems. 6 hrs./wk.

ART 130**DRAWING I (3CR)**

This is an introductory course with an emphasis on the development of fundamental drawing skills, increased power of observation and an awareness of the personally expressive and compositional aspects of drawing. 6 hrs./wk.

ART 131**DRAWING II (3CR)**

Prerequisite: ART 130

Advanced problems with an emphasis on conceptual and mixed media drawing will be explored. 6 hrs./wk.

ART 135**PAINTING I (3CR)**

This is an introductory course with emphasis on the development of visual perception and creative response through studies of still life, landscape and human form. 6 hrs./wk.

ART 136**PAINTING II (3CR)**

Prerequisite: ART 135

This course will offer a stronger emphasis on the perceptual and conceptual problems in painting and the development of an individual direction. 6 hrs./wk.

ART 138**DIGITAL IMAGING FOR ARTISTS (3CR)**

In this introductory course in the use of the computer as a medium for making fine art, emphasis will be on developing the student's skill in making expressive visual statements utilizing computer technology. 6 hrs. lecture, studio/wk.

ART 142**CERAMICS I (3CR)**

This course is designed to build a conceptual and manual foundation for future ceramics education. Students will study the properties of clay, its preparation, hand and wheel techniques, surface design, firing methods, fundamental ceramic terms, principles of design, introductory ceramic history and orientation to safe practices for the ceramic artist. Emphasis will be on developing skills appropriate to the beginning student for the purpose of creative and technical expression. 6 hrs./wk.

ART 143**CERAMICS II (3CR)**

Prerequisite: ART 142

This course will deal with more advanced methods and studio experiences in ceramic wheel techniques, creative expression and glaze formulation. Emphasis will be on development of a sense of thrown form and creative decoration. 6 hrs./wk.

ART 145**SCULPTURE I (3CR)**

Students will explore and study natural and synthetic sculptural forms as they create work using traditional or contemporary media and techniques. 6 hrs./wk.

ART 146**SCULPTURE II (3CR)**

Prerequisite: ART 145

This continuation of ART 145 will focus on advanced methods and techniques with emphasis on materials, forms and the student's selection of an individual direction. 6 hrs./wk.

ART 148**METAL AND SILVERSMITHING I (3CR)**

The metalsmithing techniques of casting and constructing using brass, copper and silver will be studied along with buffing, sawing, filing and soldering processes. 6 hrs./wk.

ART 149**METAL AND SILVERSMITHING II (3CR)**

Prerequisite: ART 148

Students will study advanced metalsmithing techniques of casting, constructing and etching using copper, brass, bronze, silver and other materials. 6 hrs./wk.

ART 166**RAKU CERAMICS (3CR)**

This course will deal with the oriental process of making and firing Raku pottery – a spontaneous, low-fire approach to a finished product involving the rapid firing and cooling of the pottery. Hand-formed (pinched and slab) as well as wheel-thrown forms will be researched. Emphasis will be on nonwheel manipulations of form. Students will be encouraged to develop a personal philosophical basis for their creative process and product. 6 hrs./wk.

ART 172**WATERCOLOR PAINTING (3CR)**

This is an introductory course in transparent water media with emphasis on fundamental painting skills; color, value and composition; increased visual perception; and an awareness of personal expression. 6 hrs./wk.

ART 180**ART HISTORY: ANCIENT/RENAISSANCE (3CR)**

This course will acquaint students with the arts and ideas of world civilizations from the prehistoric period to the beginning of the Italian Renaissance. The course will examine the aesthetic elements that mark the styles of major periods in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs./wk.

ART 182**ART HISTORY: RENAISSANCE/MODERN (3CR)**

This course will acquaint students with the arts and ideas of western cultures from the beginning of the Italian Renaissance to the present. The course will examine the aesthetic elements that mark the styles of major periods in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs./wk.

ART 184**ART HISTORY: TWENTIETH CENTURY (3CR)**

This course introduces the student to the arts and ideas of western Europe and the United States from the late 19th century to the present. The course will examine the aesthetic elements which mark the styles of major movements in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs. lecture/wk.

ART 186**ART HISTORY: INTRODUCTION TO ASIAN ART (3CR)**

This course introduces students to the architecture, sculpture and painting of India, China and Japan. The course will examine those elements that mark the styles of major regions and time periods within the cultures to be studied. The course will focus on the interrelationships between artistic forms and their various cultural, social and historical contexts. Special attention will be given to the role of religion, especially Buddhism, in that it is the primary thread that interconnects the cultures of India, China and Japan. 3 hrs. lecture/wk.

ART 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. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

AUTO 122 INTRODUCTION TO AUTO GLASS (3CR)

Upon successful completion of this course, the student should be able to diagnose, service and repair various automotive glass problems, provide professional service to customers, manage and supervise jobs and employees. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 1½ hrs. lab/wk.

AUTO 123 MOTORCYCLE MAINTENANCE AND REPAIR (2CR)

Upon successful completion of this course, the student should be able to demonstrate the proper use of tools and equipment used in servicing motorcycles. Two- and four-stroke cycle designs will be studied. Overhaul procedures will be demonstrated. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

AUTO 125 INTRODUCTION TO AUTOMOTIVE SHOP PRACTICES (3CR)

Upon successful completion of this course, the student should be able to develop shop safety habits and become proficient in tire, battery, cooling system, lubrication service and minor electrical diagnosis. This course is an introductory course required for all students in the Automotive Technology program. Emphasis will be placed on learning basic skills needed to enter advanced automotive classes. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

AUTO 128 AUTOMOTIVE PARTS SPECIALIST (2CR)

Upon successful completion of this course, the student should be able to demonstrate good communication and

basic math skills. Ordering and maintaining correct inventory, as well as displaying and selling automotive parts for a fair profit, will be studied. 2 hrs. lecture/wk.

AUTO 130 DIESEL FUNDAMENTALS (2CR)

Corequisite: AUTO 125

Upon successful completion of this course, the student should be able to identify diesel component design differences from gasoline engines. The student will also be required to troubleshoot and service all external components with emphasis on glow plugs, injectors and injector pumps. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

AUTO 163 AUTOMOTIVE STEERING AND SUSPENSION (3CR)

Corequisite: AUTO 125

Upon successful completion of this course, the student should be able to describe manual and power steering component operation, summarize construction and operation of front and rear suspension systems, perform four-wheel alignment on current vehicles and service steering and suspension components. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk. Spring.

AUTO 165 AUTOMOTIVE ENGINE REPAIR (4CR)

Corequisite: AUTO 125

Upon successful completion of this course, the student should be able to demonstrate an understanding of the four-stroke-cycle internal combustion engine, calculating compression ratio, piston displacement, horsepower and torque, and correcting internal engine malfunctions. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 6 hrs. lab/wk.

AUTO 167 AUTOMOTIVE BRAKE SYSTEMS (2CR)

Corequisite: AUTO 125

Upon successful completion of this course, the student should be able to summarize disc and drum brake construction and operation, service all brake system components and describe anti-lock brake system services. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

AUTO 168**AUTOMOTIVE MANUAL DRIVETRAIN AND AXLES (3CR)**

Corequisite: AUTO 125

Upon successful completion of this course, the student should be able to work safely in the shop, service the typical manual transmission/transaxle, service typical transfer cases, inspect, adjust and replace all clutch components, disassemble, reassemble and set up a differential and service all front- and rear-wheel drive shaft components. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

AUTO 201**ASE CERTIFICATION SEMINAR (1CR)**

This course should prepare an experienced automotive technician to take four of the eight basic National Institute for Automotive Service Excellence (ASE) automotive certification tests, or the Advanced Engine Performance Specialist (L1) test, or the three ASE Engine Machinist tests. 1 hr. lecture/wk.

AUTO 210**ADVANCED ENGINE REPAIR (3CR)**

Prerequisite: AUTO 165

Upon successful completion of this course, the student should be able to plan, design, and build a performance engine. The student will also demonstrate knowledge of the relationships between displacement, horsepower and torque; regulations governing performance engines; and current trends in engine modification. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

AUTO 230**AUTOMOTIVE HEATING AND AIR CONDITIONING (3CR)**

Corequisite: AUTO 125

Upon successful completion of this course, the student should be able to operate, service and diagnose automotive heating, ventilation and air conditioning systems. The course will cover the theory and operation of these systems, major components, testing, recycling and other service procedures. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

AUTO 234**AUTOMOTIVE ELECTRICAL SYSTEMS (4CR)**

Corequisite: AUTO 125

Upon successful completion of this course, the student should be able to service starting and charging system components; describe the operation and construction of starters, alternators and controlling devices; describe various lighting systems used in current automotive vehicles; and repair electrical lighting and accessory systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

AUTO 250**AUTOMATIC TRANSMISSIONS AND TRANSAXLES (4CR)**

Corequisite: AUTO 125

Upon completion of this course, the student should be able to diagnose, service and repair various automatic transmissions and progress to automatic transaxles, including computer-controlled systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture-demonstration, 3 hrs. lab/wk.

AUTO 254**AUTOMOTIVE ENGINE PERFORMANCE (5CR)**

Prerequisite: AUTO 165 and AUTO 234

Upon successful completion of this course, the student should be able to describe the operation and construction of automotive fuel system components such as carburetors, pumps, injectors and controlling devices. The student should also be able to describe the operation and construction of ignition circuits to include computer-controlled systems. Finally, students should be able to service all performance systems on the automobile. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 6 hrs. lab/wk.

AUTO 260**AUTOMOTIVE SERVICE MANAGEMENT (3CR)**

Corequisite: AUTO 254

Upon successful completion of this course, the student should understand the automotive service manager's job. The manager's job includes: planning for inevitable change, maintaining flexibility, site planning, customer satisfaction, employee practices, meeting financial goals and managing time, conflict and stress. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

AUTO 261**AUTOMOTIVE SERVICE TECHNIQUES (3CR)**

Corequisite: AUTO 254

Upon successful completion of this course, the student should become proficient in ordering of parts, writing repair orders, presenting work orders to customers, questioning customers about automobile service problems, answering the telephone and supervising work loads. Students will also diagnose and perform service work on student and staff vehicles. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

AUTO 271**AUTOMOTIVE TECHNOLOGY INTERNSHIP (3CR)**

Prerequisite: Division administrator approval

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 1 hr. lecture, 15 hrs. work min./wk.

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. 2 Saturday 7-hr. labs required.

BIOL 122

PRINCIPLES OF BIOLOGY (3CR)

Students will explore selected concepts and principles important to an understanding of how biological systems operate. They also will examine the world of both plants and animals. This course is not open to students who have taken BIOL 120 Life Science. 3 hrs./wk.

BIOL 123

PRINCIPLES OF BIOLOGY LAB (1CR)

Prerequisite or corequisite: BIOL 122 or the equivalent

This introductory lab will focus on the structures and functions of plants and animals. 2 hrs./wk.

BIOL 124

OCEANUS: THE MARINE ENVIRONMENT (3CR)

This course will focus on the marine environment as a unique feature of the planet Earth and investigate areas of intense scientific and public concern: the physical size and diversity of contained life forms; the marine environment's contribution to the physical and historical development of man; its impact on geopolitical and economic matters; the impact of oceanic pollutants; and the potential exploitation of marine resources. 3 hrs. lecture/wk.

BIOL 125

GENERAL BOTANY (5CR)

This is a survey of the life, structure and growth of plants. Divisions of the plant kingdom will be presented with emphasis on the life cycles, anatomy, physiology and ecology of major groups. 3 hrs. lecture, 4 hrs. lab/wk.

BIOL 127

GENERAL ZOOLOGY (5CR)

This is a survey of the life, structure and growth of animals. Students will concentrate on identifying animals by their structural characteristics and will look at the role adaptation plays in anatomical and physiological features. 3 hrs. lecture, 4 hrs. lab/wk.

BIOL 130

ENVIRONMENTAL SCIENCE (3CR)

Students will study the human population's impact on the environment. Topics will include population, air and water pollution, hazardous wastes, land use and energy. 3 hrs./wk.

BIOL 131

ENVIRONMENTAL SCIENCE LAB (1CR)

Prerequisite or corequisite: BIOL 130

Students will sample the local environment for air, water and noise pollution. Field trips will include visits to a local industry to observe pollution control and to a sewage treatment plant. 2 hrs. lab/wk. plus up to three field trips.

BIOL 135

PRINCIPLES OF CELL AND MOLECULAR BIOLOGY (4CR)

This course is an integrated lecture and laboratory course for biology majors and students planning to take additional courses in biology. Basic biochemistry, cell structure and function, molecular biology, genetics, physiology, and development of plants and animals will be studied. 3 hrs. lecture, 2 hrs. lab/wk.

BIOL 140

HUMAN ANATOMY (4CR)

Students will study gross and microscopic aspects of cells, tissues and organ systems of the human body. They will concentrate on a detailed analysis of the structure of each body system. 3 hrs. lecture, 3 hrs. lab/wk.

BIOL 144

HUMAN ANATOMY AND PHYSIOLOGY (5CR)

Students will study the relationship of structure to function in the organ systems of the human body. Emphasis will be on the location of anatomical features and their functions. 3 hrs. lecture, 4 hrs. lab/wk.

BIOL 145

HUMAN ANATOMY/PHYSIOLOGY DISSECTION (1CR)

Prerequisites: BIOL 144 and approval of the division administrator

Students will dissect the fetal pig and study the organ systems and their functions. The bovine uterus, heart and brain and the porcine testis and kidney will also be dis-

sected. 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 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; 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 140**FASTTRAC FEASIBILITY PLAN (2CR)**

Upon successful completion of this course, the student should be able to prepare a feasibility plan for a business. In addition, the student will conduct market research on the business and prepare a financial feasibility analysis. This course is designed for participants who are in the concept or very early start-up stage of business development. 2 hrs. lecture/wk.

BUSE 142**FASTTRAC BUSINESS PLAN (3CR)**

Prerequisite: BUSE 140 or approval of division administrator

Upon successful completion of this course, the student should be able to write a sound business plan. Students should be able to assess strengths and weaknesses of a business; collect, analyze and organize market research data into a marketing plan; and prepare the financial projections for their business. In addition, students should be able to identify and evaluate various resources available for funding small businesses. 3 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:
OPPORTUNITY ANALYSIS (2CR)**

Upon successful completion of this course, the student should be able to identify opportunities for small business start-up and/or growth. The student should also 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. This course is required for the associate of applied science degree in business entrepreneurship. 2 hrs./wk.

BUSE 190**ENTREPRENEURSHIP SEMINAR:
SMALL BUSINESS ANALYSIS (2CR)**

Prerequisite: BUSE 131, BUSE 140, 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)**

Prerequisite: BUSE 140

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)**

Prerequisite: BUSE 140

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. A minimum of 15 hours each week on-the-job training is required.

Chemistry

CHEM 120**THE WORLD OF CHEMISTRY (3CR)**

This course is for students who will benefit from an understanding of the concepts of chemistry without emphasis on mathematical problem solving. Historical foundations of chemistry, application to industrial processes and current research topics will be covered. Demonstrations and computer graphics will illustrate and model accepted theories. 3 hrs. lecture/wk. Fall

CHEM 121**THE WORLD OF CHEMISTRY LAB (1CR)**

Corequisite: CHEM 120

This optional laboratory course is designed to accompany CHEM 120. The course includes the careful observation and recording of data, both qualitatively and quantitatively. Results are interpreted in terms of current models for chemical systems. The experiments are selected to illustrate chemical principles. 3 hrs. lab/wk. Fall

CHEM 122**PRINCIPLES OF CHEMISTRY (5CR)**

This is an introduction to the fundamentals of chemistry. It will cover the general concepts of inorganic chemistry with some organic chemistry and biochemistry. 4 hrs. lecture, 3 hrs. lab/wk.

CHEM 123**PRINCIPLES OF TECHNICAL CHEMISTRY (6CR)**

Corequisite: MATH 133

This introduction to the fundamental concepts of chemistry will emphasize the general concepts of inorganic chemistry with sufficient study of organic chemistry to introduce the student to biochemistry. Labs will introduce students to the processes and expectations of an industrial laboratory. 4 hrs. lecture, 6 hrs. lab/wk.

CHEM 124**GENERAL CHEMISTRY I LECTURE (4CR)**

Corequisites: CHEM 125 and MATH 171

Students will relate atomic structure to chemical systems, calculate the amount of material used in chemical reactions, use the periodic table as an aid to understanding chemical systems and interpret chemical reactions. 5 hrs./wk.

CHEM 125**GENERAL CHEMISTRY I LAB (1CR)**

Corequisite: CHEM 124

Experiments of a qualitative and quantitative nature that support topics from General Chemistry I Lecture will be carried out. 3 hrs./wk.

CHEM 131
GENERAL CHEMISTRY II LECTURE (4CR)

Prerequisites: CHEM 124 and CHEM 125
Corequisite: CHEM 132

In this continuation of CHEM 124, topics will include kinetics, acid-base chemistry, equilibrium, chemical thermodynamics and electro-chemistry. 4 hrs./wk.

CHEM 132
GENERAL CHEMISTRY II LAB (1CR)

Prerequisite: CHEM 124 and CHEM 125
Corequisite: CHEM 131

The laboratory consists of qualitative and quantitative experiments designed to parallel and support General Chemistry II Lecture. 3 hrs./wk.

CHEM 140
PRINCIPLES OF ORGANIC CHEMISTRY (5CR)

Prerequisite: CHEM 122 or CHEM 131 and CHEM 132

Nomenclature, theory and applications of basic organic chemistry will be covered. Functional group reactions will lead into a study of carbohydrates, proteins, lipids and other biochemical topics. 4 hrs. lecture, 3 hrs. lab/wk.

CHEM 143
PRINCIPLES OF
TECHNICAL ORGANIC CHEMISTRY (6CR)

Prerequisite: CHEM 123

This course is a continuation of the study of organic and biochemistry initiated in CHEM 123. Biologically important concepts will be introduced in the study of basic functional group chemistry and extended into traditional biochemical topics such as carbohydrates, enzymes, lipids and proteins. The labs will emphasize the synthesis, separation, identification and characterization techniques common to the technician's role. 4 hrs. lecture, 6 hrs. lab/wk.

CHEM 220
ORGANIC CHEMISTRY I (5CR)

Prerequisites: CHEM 131 and CHEM 132

Electronic theories and reaction mechanisms of organic compounds will be the major focus of this course. Students will work on techniques in the lab and will prepare representative compounds. 3 hrs. lecture, 6 hrs. lab/wk.

CHEM 221
ORGANIC CHEMISTRY II (5CR)

Prerequisite: CHEM 220

In this continuation of Organic Chemistry I, organic qualitative analysis will be introduced. 3 hrs. lecture, 6 hrs. lab/wk.

CHEM 223
TECHNICAL ANALYTICAL CHEMISTRY (4 CR)

Prerequisites: CHEM 143, PHYS 135 and MATH 134 or MATH 171

This course will introduce students to the fundamentals of modern wet quantitative chemical analysis. The topics of data analysis, quality control, gravimetric, titrimetric and potentiometric analysis will be related to the industrial environment through extensive supportive labs. 3 hrs. lecture, 5 hrs. lab/wk.

CHEM 227
INTRODUCTION TO QUANTITATIVE ANALYSIS (5CR)

Prerequisites: CHEM 131 and CHEM 132

This is an introduction to the concepts of acid-base, chromatography, coulometry, equilibrium, oxidation-reduction and spectrophotometry as they apply to quantitative chemical analysis. The lab will introduce modern quantitative experimental techniques. 3 hrs. lecture, 6 hrs. lab/wk.

CHEM 243
TECHNICAL INSTRUMENTAL CHEMISTRY (5CR)

Prerequisites: CHEM 223, PHYS 136 and MATH 134 or MATH 172

This course will introduce students to the fundamentals of modern instrumental quantitative analysis. The topics of spectrophotometry, fluorometry, chromatography and polarography will be related to the technician's role in the industrial environment through intensive supportive labs. 3 hrs. lecture, 6 hrs. lab/wk. Spring.

CHEM 250
BIOCHEMISTRY (4CR)

Prerequisites: CHEM 131, CHEM 132, CHEM 140 or CHEM 220

This course is an introduction to the major topics in biochemistry. Topics include the major classes of biological molecules, such as proteins, lipids and nucleic acid; an overview of the major metabolic pathways; and developments and topics relating to molecular biology. 4 hrs. lecture/wk.

CHEM 251
BIOCHEMISTRY LABORATORY (2CR)

Prerequisites: CHEM 131, CHEM 132, CHEM 140 or CHEM 220

Corequisite: CHEM 250

The laboratory will consist of qualitative and quantitative experiments using biological molecules. Particular emphasis is on biochemistry laboratory techniques including chromatography and spectroscopy will be used. 3 hrs. lab, 1 hr. recitation/wk.

Civil Engineering Technology

CET 105

CONSTRUCTION METHODS (3CR)

Upon successful completion of this course, the student should be able to understand terminologies, methods, procedures, sequences of operation and types of construction and planning in civil and building construction. 3 hrs./wk.

CET 125

CONSTRUCTION SPECIFICATIONS (2CR)

Prerequisite: CET 105 or equivalent

Upon successful completion of this course, the student will be able to describe the phases of a project, identify the bidding requirements, explain contractual relationships between parties, categorize the drawings, write specifications, list warranties and explain contract modifications. 2 hrs. lecture/wk.

CET 127

CONSTRUCTION ESTIMATING (3CR)

Prerequisite: DRAF 129 or competence in reading building drawings

Upon successful completion of this course, the student should be able to take off quantities of materials from drawings and use reference books, tables and the C.S.I. procedures in performing estimates. Students will use industry standard software for construction estimating. 2 hrs. lecture, 2 hrs. lab/wk.

CET 129

CONSTRUCTION MANAGEMENT (3CR)

Upon successful completion of this course, the student should be able to perform many processes associated with construction projects and complete forms typically used in project management. Topics will include contract documents, shop drawings, scheduling, job costs and management issues. Project management software will be used to schedule and track project resources and progress. 2 hrs. lecture, 3 hrs. lab/wk.

CET 140

CIVIL ENGINEERING MATERIALS (3CR)

Corequisite: MATH 133

Upon successful completion of this course, the student will be able to analyze materials commonly used in civil engineering construction projects. Common properties of soil, concrete and asphalt will be studied for classification as engineering materials. Students will learn to perform typical materials tests in accordance with ASTM guidelines. 2 hrs. lecture, 3 hrs. lab/wk.

CET 211

TECHNICAL STATICS AND MECHANICS (3CR)

Prerequisite: MATH 134 or MATH 172

Upon successful completion of this course, the student should be able to evaluate force systems in equilibrium, centroids, moment of inertia, trusses, frames and friction. The topics of elastic stress and strain, torsion, and beam and column behavior also will be covered. Computer applications will be included. 3 hrs. lecture/wk.

CET 258

STRUCTURAL DESIGN (3CR)

Prerequisite: CET 211 or ENGR 252

Upon successful completion of this course, the student should be able to analyze and design simple structural systems. Structural members and systems composed of steel and wood will be investigated with regard to strength and structural behavior. AISC design standards will be used. Computer analysis of structures will be introduced. 3 hrs. lecture/wk.

CET 270

FLUID MECHANICS (3CR)

Prerequisites: MATH 172 or MATH 134

Upon successful completion of this course, the student should be able to analyze fluid systems using the fundamental properties of pressure, hydrostatic force, buoyancy, flow in pipes, open channel flow and flow measuring devices. The student should also be able to solve practical problems related to engineering technology. Computer applications will be included. 3 hrs. lecture/wk.

Communication Design

(Also see **Computer Interactive Media**, page 159.)

CD 120

INTRODUCTION TO COMMUNICATION DESIGN (3CR)

This course is designed to acquaint the student with the various aspects of the communication design field. Topics include the ways in which visual messages are used in society, the skills needed by a communication designer and the potential areas of specialization and employment. Emphasis will be on assisting the student to make an informed decision about communication design as a career. 3 hrs. lecture/wk.

CD 130

REPRESENTATIONAL DRAWING I (3CR)

Prerequisites: ART 124, CD 120

This course will provide instruction in both theoretical and perceptual techniques and processes relating to the visual analysis of three-dimensional form and its accu-

rate 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: CD 131

This course will provide an understanding of the work of the professional illustrator. Processes involved in effective research, creative visual problem solving and image production utilizing both digital and traditional applications will be explored. 6 hrs./wk.

**CD 231
ADVANCED TYPOGRAPHY (3CR)**

Prerequisite: CD 134

This course is a continuation of Layout Design. Emphasis will be on typographic solutions that explore verbal/visual messages. Projects include designs for publication such as posters, brochures, packaging and graphic campaigns. Typography as a functional and experimental medium will be stressed. Design problem solving for a diverse range of specifications including audience, client needs and budget constraints are included. Traditional and digital tools will be incorporated to produce comprehensives. 6 hrs./wk.

**CD 235
PRODUCTION METHODS (3CR)**

Prerequisites: CD 134 and CD 140

This course will provide the fundamentals of preparing art for reproduction. Traditional camera-ready art techniques and digital prepress production methods will be emphasized. 6 hrs./wk.

**CD 236
ELECTRONIC PRODUCTION (3CR)**

Prerequisites: CD 230, CD 231, CD 235 and PHOT 123

This course is a continuation of the Production Methods course. It will provide experience in digital prepress and other electronic production techniques. The student will apply production skills to problems of professional scope and complexity. 6 hrs./wk.

**CD 244
COMMUNICATION SYSTEMS (3CR)**

Prerequisites: CD 230, CD 231, CD 235 and PHOT 123

This course will explore the scope and potential of graphic design as a vehicle for visual communication in contemporary society. Signs and symbols, as well as the communicative power of typographic, hand graphic and photographic modes, will be studied. Traditional and electronic methods will be used to develop projects. 6 hrs./wk.

**CD 245
ADVANCED DESIGN PRACTICE (3CR)**

Prerequisites: CD 230, CD 231, CD 235 and PHOT 123

This course will focus on the utilization of the student's total design capability and technical knowledge in solving graphic design problems of professional scope and complexity. Students will have the opportunity to work with three art directors and produce three professional projects for potential inclusion in his/her portfolio. 6 hrs./wk.

CD 272**PROFESSIONAL PREPARATION (3CR)**

Prerequisites: The student must have completed all required studio courses in the Communication Design program prior to the semester for which he/she is enrolling in this course, or be co-enrolled in all fourth-semester studio courses.

This course will provide Communication Design majors instruction in the organization and presentation of his/her work in a portfolio format of professional quality. A slide portfolio and résumé will be produced. Instruction in interviewing techniques and employment searches will also be provided. 6 hrs./wk.

CD 275**COMMUNICATION DESIGN INTERNSHIP (1CR)**

Prerequisites: Approval by the Communication Design faculty review committee

Students will work in an approved training situation under instructional supervision. The internship is designed to give the student the opportunity to use the skills learned in the Communication Design program. Student interns will complete a minimum of 180 hours on the job and will be compensated with at least the minimum hourly wage.

Computers: Personal Computer Applications

CDTP 130**DESKTOP PUBLISHING I: PAGEMAKER (1CR)**

Prerequisite: CPCA 105 or CPCA 106 or equivalent experience

This course covers the basic features and techniques of the PageMaker desktop publishing program. Emphasis will be on the production of text material with complex tab and 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 I: ILLUSTRATOR(1CR)**

Prerequisite: CPCA 105 or CPCA 106 or equivalent experience

This course covers the creation of computer-generated illustrations using a variety of techniques. Topics include managing multiple items, creating line drawings, creating blends with objects and typography, working with layers and creating layouts using type. 1 hr. lecture/wk.

CDTP 150**DESKTOP PUBLISHING II: PAGEMAKER (1CR)**

Prerequisite: CDTP 130 or equivalent experience

This course covers the intermediate-level features and techniques of the PageMaker desktop publishing program. Topics include producing documents using typographic techniques such as style linking, creating custom leaders, distributing graphic elements, working with graphics in layers, EPS manipulation and production techniques. The creation of multiple design applications with final art markup and spot color separations will be covered. 1 hr. lecture/wk.

CDTP 151**DESKTOP PUBLISHING II: QUARKXPRESS (1CR)**

Prerequisites: CDTP 131 or equivalent experience

This course covers the intermediate-level features and techniques of the QuarkXPress desktop publishing program. Topics include producing documents using typographic techniques such as layering, skewing, blending, distributing, multiple rotations, embossing, EPS manipulation and scanning. The creation of multiple design applications with final art markup and spot color separations will be covered. 1 hr. lecture/wk.

CDTP 155**DESKTOP PHOTO MANIPULATION II: PHOTOSHOP (1CR)**

Prerequisite: CDTP 135 or equivalent experience

This course presents advanced techniques of Photoshop. Topics covered include creating and manipulating text, importing existing images and creating new images. Other topics will include applying filter effect, correcting color, retouching and repairing images, adding special effects and preparing art for the Web. Students will explore solutions to specific Photoshop problems and will plan and create individual projects. 1 hr. lecture-demo/wk.

CDTP 165**DESKTOP ILLUSTRATION II: ILLUSTRATOR (1CR)**

Prerequisite: CDTP 145

This course covers the creation of advanced computer-generated illustrations using a variety of techniques. Topics to be covered include using plug-in filters, creating graphs, formulating custom colors and preparing spot color separations. 1 hr. lecture/wk.

CDTP 170**DESKTOP PUBLISHING III: PAGEMAKER (1CR)**

Prerequisites: CDTP 150 or equivalent experience

This course covers the advanced features and techniques of the PageMaker desktop publishing program. The production of complex documents using sophisticated typographic techniques that include wrapping text within a graphic element, distributing text, multiple rotations, embossing and EPS manipulation will be emphasized. The creation of multiple design applications with final art markup and spot color separations will be covered in greater detail. 1 hr. lecture/wk.

CDTP 171**DESKTOP PUBLISHING III: QUARKXPRESS (1CR)**

Prerequisite: CDTP 151 or equivalent experience

This course covers the advanced features and techniques of the QuarkXPress desktop publishing program. The production of complex documents that include sophisticated graphic techniques such as layering, skewing, blending, distributing, multiple rotations, embossing, EPS manipulation and scanning will be emphasized. The creation of multiple design applications with final art markup and spot color separations will be covered in greater detail. 1 hr. lecture/wk.

CDTP 185**DESKTOP ILLUSTRATION III: ILLUSTRATOR (1 CR)**

Prerequisites: CPCA 105 or CPCA 106 and CDTP 145 and CDTP 165

In this career-related course, students will create advanced computer generated illustrations using a variety of techniques on either the Macintosh or PC computer platform. Students will create charts, autotrace scanned images, fill objects with a various pen and ink filter effects and create an imagemap for the Web. 1 hr. lecture wk.

CPCA 105**INTRODUCTION TO PERSONAL COMPUTING: WIN (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 a Windows-based microcomputer system and its primary uses. Topics include computer software, hardware and terminology; introduction to microcomputer operating systems and the graphical user interface. 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 spreadsheets; introduction to database and introduction to drawing and graphical user interface. 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 114**DATABASES ON MICROCOMPUTERS I (1CR)**

Prerequisite: CPCA 105 or CPCA 106 or equivalent experience

This course is an introduction to the concepts and uses of database software. Functions such as building, loading, entering, changing, deleting, sorting, calculating and reporting will be used. The use of a database to solve typical business applications will be covered. 1 hr. lecture/wk.

CPCA 115**DATABASES ON MICROCOMPUTERS II (2CR)**

Prerequisite: CPCA 114 using the same software

This course covers how to design and define a relational database, create custom screens for data entry and updating, transfer files to and from the database and manipulate data with a relational database language. An introduction to object-oriented programming will be included. 2 hrs. lecture/wk.

CPCA 116**DATABASE: FILEMAKER PRO (1CR)**

Prerequisite: CPCA 105 or CPCA 106

This course provides relatively easy access to the essential concepts of data management. It enables students to store, organize and synthesize information for effective

use in the day-to-day business needs of a medium size organization. The information can also be arranged in a variety of visual formats for even more effective communication. Students will complete a series of practical projects, using either the Macintosh or Windows 95 operating system in the Mac-Win dual-platform computing laboratory. 1 hr. lecture/wk.

CPCA 118**GROUPWARE (1CR)**

Prerequisite: CPCA 105 or equivalent experience

This course will cover the traditional features of groupware projects, including e-mail, discussion groups, time management and contact management features. 1 hr. lecture/wk.

CPCA 121**INTRODUCTION TO PROJECTMANAGEMENT (1CR)**

Prerequisite: CPCA 105 or equivalent experience

This course covers how to effectively manage projects based on proven project management techniques and methodologies. The development and management of projects using the critical path method, program evaluation review technique charts, resource loading and leveling, sub-projects, Gantt charts and allowances for planned, changed and actual activities will be covered. 1 hr. lecture/wk.

CPCA 123**PRESENTATION GRAPHICS (1CR)**

Prerequisite: CPCA 105 or CPCA 106 or equivalent experience

This course covers how to organize and produce an effective on-computer or slide-generated presentation, complete with printed speaker notes, handouts and overhead transparencies, using the basic features of a presentation graphics program. The use of master pages, template files, text formatting, color schemes, various drawing tools, the automated outline feature, animation dissolve sequences and the integration of scanned photographs will be covered. 1 hr. lecture/wk.

CPCA 125**WORD PROCESSING ON MICROCOMPUTERS II (1CR)**

Prerequisite: CPCA 108 using the same application software or equivalent experience

This is an intermediate-level course covering the concepts and applications of word processing software. Topics include the use of data files, spell checking, print controls, footnotes, headers, footers, styles, table of contents, lists, indexes and graphics. 1 hr. lecture/wk.

CPCA 128**PERSONAL COMPUTER APPLICATIONS (3CR)**

Upon successful completion of this course, the student should be able to use Windows to create and organize files and folders and to perform essential file management procedures such as copying, moving, deleting and renaming files and folders. An in-depth proficiency will also be attained with the use of word processing, spreadsheet, presentation graphics and Internet browser applications. Hands-on, practical projects will be performed to reinforce the concepts taught. 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 138**WINDOWS FOR MICROS (1CR)**

Prerequisite: CPCA 105 or equivalent experience

Upon successful completion of this course, the student will be able to manage the operation of a Windows-based personal computer. Students will start and run multiple software applications, transfer information between applications, create folder systems and manage files. Customization and efficient use of the Windows environment will be emphasized through construction of desktop objects and customized menus. Students will use the DOS mode to run programs and manage files. Enabling the active desktop and customizing the Web view for integration with the World Wide Web will also be performed. 1 hr. lecture/wk.

CPCA 139**UNIX (1CR)**

Prerequisite: CPCA 105 or equivalent experience

This course covers the major commands of the UNIX operating system. Basic file and disk management projects will be completed in this course. 1 hr. lecture/wk.

CPCA 141**INTERNET I (1CR)**

Prerequisite: CPCA 105 or CPCA 106 or equivalent experience

This course will introduce the student to the commands and techniques required to effectively access the resources of the Internet. Windows applications to browse the Internet, locate and retrieve information and send and receive electronic mail will be covered. 1 hr. lecture/wk.

CPCA 148**FINANCIAL APPLICATIONS – BUSINESS (1CR)**

Prerequisites: CPCA 105 and CPCA 138; or CPCA 106 and CPCA 134; or equivalent experience

This course introduces software that will perform basic financial processing using a microcomputer. Financial microcomputer applications are used to manage the financial transactions of a small business or corporate department. 1 hr. lecture/wk.

CPCA 151**INTERNET II (1CR)**

Prerequisite: CPCA 141

This course will cover the commands and techniques required to effectively use various Internet application tools. The student will also use Windows and non-Windows applications to locate information, download and upload files, chat, read news and create a Web page. 1 hr. lecture/wk.

CPCA 158**INTERNET APPLICATIONS AND UTILITIES (3CR)**

Prerequisite: CPCA 141

This course will introduce the student to the commands and techniques required to effectively access the resources of the Internet. Windows and non-Windows applications will be used to locate, retrieve and disseminate essential information. This course will cover the techniques required to create and publish World Wide Web pages using HTML. 3 hrs. lecture-demo/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) or Web page application software. Topics to be covered include basic text layout, background colors, formatting, ordered and unordered lists, tables, frames that include graphic images in a page and linking to other Web pages. 1 hr./wk.

Computer Information Systems

DP 110

INTRODUCTION TO COMPUTERS (2CR)

This television course features a survey of electronic data processing and computer hardware and software systems and developments that will provide the student with a background in information processing. 2 hrs. lecture/wk.

DP 124

INTRODUCTION TO COMPUTING CONCEPTS AND APPLICATIONS (3CR)

In this introductory, nontechnical computer course, students will study computer concepts, terminology, issues and uses. Extensive hands-on experience with the microcomputer is provided in word processing, spreadsheets, database and the operating system to reinforce the concepts. 3 hrs. lecture/wk.

DP 134

PROGRAMMING FUNDAMENTALS (4CR)

This course covers the elementary concepts of computers, including several number systems. The design, development and writing of modular programs on a microcomputer in a structured programming language using standard structured concepts will be covered. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 138

VISUAL BASIC FOR WINDOWS (4CR)

Prerequisite: DP 134 or the equivalent

This course introduces the Visual Basic programming environment, with an emphasis on identifying the controls and objects available for creating Windows applications. Creating forms, drawing controls for each form, designing menu bars, setting form and control properties, writing event and general procedures and testing and debugging applications will be emphasized. Projects using multiple forms, file manipulation and the data control will be covered. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 140

EDITOR (1CR)

This course covers the use of an editor to create and manipulate files on a computer. Submitting a computer program for execution will also be covered. 1 hr. lecture, lab/wk.

DP 145

ASSEMBLER LANGUAGE FOR MICROCOMPUTERS (4CR)

Prerequisite: DP 134 or ENGR 171 or the equivalent. It is recommended that this course be taken after completion of CS 200 or an equivalent programming course beyond DP 134 or ENGR 171.

Students will study the use of assembler language for a microcomputer in order to understand the basic concepts of the personal computer and its use in problem solving. Topics include the CPU, registers and memory segmentation. Practical applications will include DOS and BIOS systems services, array and bit processing and library calls. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 148

COBOL I (4CR)

Prerequisite: DP 134

Corequisite: DP 140 for COBOL

Students will study the use of the COBOL programming language to solve business-related problems. Emphasis will be on the function and use of statements in the four divisions of ANSI COBOL. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 150

ASSEMBLER LANGUAGE I (4CR)

Prerequisite: DP 134

Corequisite: DP 140 for COBOL

It is recommended that this class be taken after DP 148.

Students will use assembler language in order to understand the basic concepts of the IBM mainframe. Topics include the CPU, registers and memory fetching. Practical applications include I/O, array processing and bit manipulation. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 157

RPG III BEGINNING (4CR)

Prerequisite: DP 134 or the equivalent

Corequisite: DP 140 for RPG III

Students will study the RPG III programming language. Emphasis will be on coding, testing, debugging and documenting programs with math calculations, subroutines and/or level breaks on an IBM AS/400 computer. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 162**DATABASE PROGRAMMING (4CR)**

Prerequisite: DP 134 or the equivalent

This course covers the use of a database language to create, maintain and manipulate databases. The use of a command level database programming language to custom design business systems and selectively retrieve information using single or multiple databases also will be studied. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 172**INTRODUCTION TO POWERBUILDER ENTERPRISE (4CR)**

Prerequisite: DP 134 or the equivalent

This course includes information and materials that will enable the student to understand the client-server paradigm, distributed data, process modeling, basic data modeling and the basic PowerBuilder tool set. Concepts involving effective GUI and object-oriented design will be discussed. The creation of basic PowerBuilder objects such as windows, data windows, controls, menus and databases and the combination of these elements into a complete and functional application that can be tested and debugged using PowerBuilder debugging tools will be covered. A distributable executable file will then be generated from the completed application. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 178**AS/400 CL PROGRAMMING (4CR)**

Prerequisite: DP 134 or the equivalent

Corequisite: DP 140 for RPG III

This course will cover the use of control language commands in programs at the command line. The course will also cover the use of variables, expressions, CL as input and output, logic control, passing control, data areas and built-in functions. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 180**AS/400 UTILITIES (4CR)**

Prerequisite: DP 134 or the equivalent

Corequisite: DP 140 for RPG III

This course teaches AS/400 concepts and how to use some of the programming facilities of the system, including Program Development Manager, Source Entry Utility, Screen Design Aid, Data File Utility and Query/400. Lab exercises give the student the opportunity to use these facilities. 3 hrs. lecture, 3 hrs. lab/wk.

DP 184**LOTUS NOTES: APPLICATION DEVELOPMENT I (4CR)**

Prerequisites: DP 134 and CPCA 118 or equivalent experience and at least 3 months' experience working in a Lotus Notes application.

Students will study the basic principles, concepts and tasks of Lotus Notes application development. Students will gain hands-on experience in designing, building, and testing a single database Notes application. Students will enhance and modify the application to incorporate increasingly advanced Notes features and functionality. 4 hrs. lecture-demo/wk.

DP 195**INTRODUCTION TO PERL (4CR)**

Prerequisites: DP 134 and CPCA 139

This course is an in-depth introduction to the Perl scripting language. Upon successful completion of this course, students should be familiar with the most common operations and language idioms used in Perl programs and should be able to produce useful basic Perl scripts. In addition, students will have been introduced to the more powerful and rich elements of the language. The lectures and laboratory projects will cover the many features of the Perl language. 3 hrs. lecture, 2 hrs. lab/wk.

DP 204**UNIX OPERATING SYSTEM AND PERL(3CR)**

Prerequisite: CS 200 using C++

This course will cover beginning concepts and principles of the multi-user, multi-tasking Unix operating system. Students will complete projects in Unix ranging from simple commands to writing shell scripts and PERL scripts. 2 hrs. lecture, 2 hrs. lab/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 240**JAVA I (4CR)**

Prerequisites: CS 250 or DP 235

Upon successful completion of this course, the student should be able to create Java applications and applets appropriate for implementation on the Internet and World Wide Web. The student will complete projects using Java's built-in features. The course will include graphics, graphical user interfaces, exception handling, multithreading and interactive media. 3 hrs. lecture, 2 hrs. lab/wk.

DP 242**INTRODUCTION TO SYSTEM DESIGN AND ANALYSIS (3CR)**

Prerequisite: One semester of a computer language beyond DP 134 or ENGR 171

Students will study the basic philosophy and techniques of developing and using business information systems. The emphasis will be on the human involvement necessary in systems design and implementation. The course will address the use of specific technical approaches available in information processing. 3 hrs. lecture/wk.

DP 243**OBJECT-ORIENTED ANALYSIS AND DESIGN (4CR)**

Prerequisites and/or corequisites: One programming course using an object-oriented programming language, or equivalent experience

This course includes information and materials that will introduce the student to an object-oriented analysis and design methodology suitable for designing systems that can be implemented in any object-oriented programming language. Experience in using specific techniques and tools will be gained through the completion of real-world projects. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 248**COBOL II (4CR)**

Prerequisite: DP 148

In this advanced COBOL programming class, students will use ANSI COBOL to solve problems with data on a direct access device. The sort feature of COBOL and methods for building, maintaining and using files in a sequential, random and indexed manner will be covered. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 250**ASSEMBLER LANGUAGE II (4CR)**

Prerequisite: DP 150

Advanced features of assembler language for the IBM 370 will be covered. Topics will include macros, subprograms, table handling, file access and a complete set of ALC instructions. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 253**CUSTOMER INFORMATION CONTROL SYSTEM COMMAND LEVEL COBOL (4CR)**

Prerequisite: DP 248

This is an introduction to command level CICS using the COBOL language. The class will cover the basic CICS commands and their uses as well as CICS management modules and their functions, including program control, terminal control, basic mapping support, file control and temporary storage. Debugging on the transaction level will be discussed. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 254**UNIX SYSTEM ADMINISTRATION (4CR)**

Prerequisite: DP 204

This course is designed to present the skills and provide the hands-on experience required to be a UNIX system administrator. Typical system administration duties to be covered include: installation, backup, restoration and routine maintenance, including adding/removing users, managing system resources, monitoring and optimizing system activity and automating activities. 3 hrs. lecture, 2 hrs. lab/wk.

DP 257**RPG III ADVANCED (4CR)**

Prerequisite: DP 157

The advanced features of the RPG III language will be explored. Topics will include creating physical and logical files using the DDS utility, table and array methodology, subfiles, and programming an interactive computer system. An IBM AS/400 minicomputer will be used in compiling and executing programs. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 258**OPERATING SYSTEMS (3CR)**

Prerequisite: DP 145 or DP 148 or DP 150 or DP 157 or CS 200

The basic concepts and principles of digital computer operating systems will be explained. Also explored through a study of typical digital computer operating systems such as MVS, OS/2, UNIX and DOS will be the relationships between hardware and software. 3 hrs. lecture/wk.

DP 260**DATABASE MANAGEMENT (4CR)**

Prerequisite: DP 235 or DP 248 or CS 250 or DP 172 or DP 238

Characteristics and objectives of database management systems versus traditional file management systems are discussed. Relational, hierarchical and network models; data modeling using entity-relational model; normalization to avoid modification anomalies; and operational considerations are covered. Students will create and use a relational DBMS (currently Oracle) and a standard structured query language (SQL). Embedded SQL will be used in programs. 3 hrs. lecture, 2 hrs. lab/wk.

DP 264**APPLICATION DEVELOPMENT AND PROGRAMMING (4CR)**

Prerequisites: DP 242; and DP 260 or DP 162
Corequisite: DP 238 or DP 253 or DP 269 or DP 272; and CPCA 121

This capstone course is designed to allow students to apply the foundation of systems analysis and design, database design and programming to a significant data processing system. A team approach to problem analysis, the development and presentation of a proposed data processing solution, the building of a demonstrable prototype of the system and the development of a significant portion of the system will be emphasized. Periodic and timely progress reports to the class, the development of job search, written and oral communication skills will be expected. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 269**GUI PROGRAMMING (4CR)**

Prerequisites: DP 235 using C++ or CS 250 using C++

Upon completion of this course, students should be able to demonstrate applications in the Graphical User Interface programming language and use the appropriate GUI library. Techniques of object-oriented programming developed in DP 235 will be applied to problems involving user interaction. The common user access standards of GUI programming will be used throughout the course. The message queue and ordered linked lists objects used

in DP 235 will be applied to problems involving user selection and updating information in a database. Students will make extensive use of the application framework for the GUI environment provided by the GUI language compiler. It is strongly recommended that students be familiar with common user programs that run under the chosen operating system (Windows, OS/2, X-Windows, Windows 95) before taking the course. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 270**INFORMATION SYSTEMS INTERNSHIP (3CR)**

Prerequisite: DP 148 or CS 200

Students will work in an approved training situation under instructional supervision. The internship is designed to give the student the opportunity to use the skills learned in information systems courses, use different information systems skills applications and an opportunity to gain experience in the field. 15 hrs. on-the-job training/wk.

DP 272**INTERMEDIATE POWERBUILDER ENTERPRISE (4CR)**

Prerequisites: DP 172

This course includes information and materials that should enable the student to incorporate into projects the more advanced features of PowerBuilder, including embedded SQL, advanced DataWindow techniques, user objects, external and user-defined functions, the Data Pipeline, managing multiple simultaneous database connections and drag and drop functionality. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

DP 275**DATABASE CONNECTIVITY WITH DYNAMIC WEB PAGES (4CR)**

Prerequisites: CS 200, DP 162, CPCA 139, or DP 204 and CPCA 161

Upon successful completion of this course, the student should be able to create Dynamic Web Pages containing information access from a database for implementation on the Internet and World-Wide-Web. The student will complete projects using Dynamic HTML and a scripting language that can interface with a database. The course will include graphics, graphical user interfaces, exception handling, database and interactive media. 3 hrs. lecture, 2 hrs. lab/wk.

DP 279**ENTERPRISE GUI PROGRAMMING IN C++ (4CR)**

Prerequisite: CS 200

Upon successful completion of this course, students will be able to use advanced programming techniques for Windows, including enterprise software tools, advanced user interface techniques, multimedia, Active X and

Internet programming. The course project provides students with real-world development experience covering analysis, design and implementation of a large-scale development project using an object-oriented software development methodology, version control technique, advanced testing techniques, defect tracking and technical documentation. 3 hrs. lecture, 2 hrs. lab/wk.

DP 280

JAVA II (4 CR)

Prerequisite: DP 240

Upon successful completion of this course, the student should be able to create Java applications and applets that link to databases, and provide the security and advanced GUI features appropriate for implementation on the Internet and World Wide Web. The student will complete projects using Java's built-in features. The course will include techniques for graphics optimization, building components for graphical user interfaces, client-server database connections in Java, handling security managers, building JAR files, using Java's remote objects and linking to other applications. 3 hrs. lecture, 2 hrs. lab/wk.

Computer Interactive Media

CIM 130

INTERACTIVE MEDIA CONCEPTS (4CR)

Prerequisites: CPCA 138 or CPCA 134 and CPCA 141 or CPCA 158

This course provides an introduction to the interactive media field. Topics to be covered include the definition of interactive media, the basic stages of interactive media creation, project management fundamentals, plus current and future trends in interactive media. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 135

ELECTRONIC PHOTOGRAPHY/DIGITAL VIDEO (3CR)

Prerequisite: CDTP 135

This course provides an introduction to electronically mediated photography, including digital video. The course covers basic concepts of photographic communication and design; basic techniques of electronic photography, including operation of input devices, two-dimensional and time-based computer imaging and digital video production software programs and output devices. Recommended prior courses are Fundamentals of Photography and Introduction to Photoshop. 6 hrs. integrated lecture, lab/wk.

CIM 140

INTERACTIVE MEDIA ASSETS (4CR)

Corequisite: CIM 130

This course explores the creation, acquisition and management of assets for use in the development of interactive media. Assets to be covered include digital graphics, digital sound, digital video and computer-based animation. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 152

INTERACTIVE AUTHORING I: AUTHORWARE (4CR)

Prerequisites: CPCA 105 or CPCA 106

This course will provide a hands-on approach to authoring/programming using icon-based scripting. Upon successful completion of this course, the student should be able to produce interactive media pieces which include text, graphics, sound, movies and animation. Creating buttons, menus, hypertext and navigational strategies will be covered. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 154

INTERACTIVE AUTHORING: DIRECTOR I (4CR)

Prerequisites or Corequisites: CIM 130 and CIM 140

This course will provide a hands-on approach to authoring/programming. Upon completion of this course, the student should be able to produce a Director interactive media or Internet presentation, which includes text, graphics, sound, movies and animation. The student will have the skills needed to create both a linear presentation and an interactive presentation. Navigational strategies for CD-ROM and Internet will be discussed. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 156

INTERACTIVE AUTHORING: WEB AUTHORING I (4CR)

Prerequisite: CIM 130

This course will focus on the front-end aspects of Web design, HTML, authoring, graphics production and media development. The course will introduce concepts about the way the World Wide Web works, which will orient students to the peculiarities of the Web and introduce them to new technologies that are destined to have an important impact on the Web's future but are currently in various stages of development. Students will examine specifications for each project, carefully analyze individual sites and, as a class, establish a set of criteria that define what works, what does not and why. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 200**INTERACTIVE COMMUNICATION FORMS (3CR)**

Corequisites: CIM 130 and CIM 140

This course presents and explores the concepts and forms of human communication historically, in our current society and in our future culture. Immediate and mediated forms of communication such as lecture, telephony, television, print and computer interaction will be explored. Particular attention will be given to how communication form affects content. Emphasis will be on the integration of communication forms as demonstrated by interactive media applications. 3 hrs. lecture/wk.

CIM 230**INTERACTIVE MEDIA DEVELOPMENT (4CR)**

Prerequisites: CIM 200 and approval by the CIM review committee

The course will provide a conceptual, as well as, a hands-on exploration of the development process for interactive media. Information design, interaction design and presentation design will be equally emphasized. Students will produce a series of projects starting with the use of text and graphics and building toward more complex projects employing animation and video. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 250**INTERFACE DESIGN (4CR)**

Prerequisites: CIM 200 and approval by the CIM review committee

Corequisite: CIM 230

This course will specifically focus on the issues and complexity of interface design for interactive media applications. Students will be provided an in-depth study in the use of the building blocks of interface design: backgrounds, windows and panels, buttons and controls, text, images, sound, video and animation. Through readings, critiques, exercises and discussions, students will explore what makes the interface of an interactive media application successful. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 254**INTERACTIVE AUTHORING: DIRECTOR II (4CR)**

Prerequisite: CIM 154

Upon successful completion of this course, the student should be able to create Director applications using Director's scripting language and the Internet capabilities of Macromedia Director. The primary emphasis of the course is hands-on experience with the Lingo, Behaviors, Shockwave and scripts of Director. During the course, students will be involved in learning advanced Lingo. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 270**INTERACTIVE MEDIA PROJECT (4CR)**

Prerequisites: CIM 200 and approval by the CIM review committee

Corequisites: CIM 230 and CIM 250

This project course will require students to actively participate in a group interactive media project that will require each student to analyze the problem, write a project proposal, design, produce and gather assets for the project, prototype, create a project, and test and evaluate the final product. 3 hrs. lecture, 2 hrs. lab/wk.

Computer Science

CS 180**INTRODUCTION TO ARTIFICIAL INTELLIGENCE (3CR)**

Prerequisites: CS 200, DP 138, DP 145, DP 148, DP 150, DP 157, DP 162, DP 172

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

CS 200**CONCEPTS OF PROGRAMMING ALGORITHMS (4CR)**

Prerequisite: DP 134 or ENGR 171 or equivalent experience

This course emphasizes programming methodology and problem solving. Algorithm design and development, data abstraction, good programming style, testing and debugging will be presented. An appropriate block-structured high-level programming language will be studied and used to implement algorithms. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CS 210**DISCRETE STRUCTURES I (3CR)**

Prerequisite: MATH 171; or both MATH 116 and DP 134

This course offers an introduction to the topics of discrete structures, including switching circuits, Boolean algebra, logic, set theory and mathematical induction. 3 hrs. lecture/wk.

CS 211**DISCRETE STRUCTURES II (3CR)**

Prerequisite: CS 210

This course will provide continued study of topics in discrete structures, including relations, functions, partitions, orderings, graphs and techniques of proving

theorems. 3 hrs. lecture/wk.

CS 250

BASIC PROGRAMMING STRUCTURES (4CR)

Prerequisite: CS 200 using C++

Corequisite: CS 210 for students transferring to most four-year computer science programs

This course will cover advanced programming topics using C++. Files, recursion, data structures and large program organization will be used in projects. Students will write programs using the concepts covered in the lecture.

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

Computer Systems Technology

(See Electronics Technology, page 172.)

Construction Management

(See Civil Engineering Technology, page 149.)

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

(600 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 (300 CONTACT HOURS)

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. Summer only.

AVCO 114

ADVANCED COSMETOLOGY (600 CONTACT HOURS)

Prerequisite: AVCO 110

This course provides advanced instruction in shampooing, cutting, shaping, curling and coloring. This course prepares the student for the Kansas State Board of Cosmetology examination.

AVCO 118

ESTHETICS (650 CONTACT HOURS)

This course provides skill instruction in skin care. Topics include sanitation, skin sciences, skin treatments, make-up and business practices. This course prepares the student for the Kansas State Board of Cosmetology esthetician examination.

Data Processing

(See Computer Information Systems, page 155.)

Dental Assisting

KDA 100

DENTAL SCIENCE I (3 CR)

Prerequisite: Admission to the Dental Assisting program

The emphasis in this course will be on head and neck anatomy, histology, oral embryology and tooth morphology, management of medical emergencies, overview of nutrition and dietary counseling as it may relate to the dental patient. 3 hrs. lecture/wk.

KDA 105

DENTAL MATERIALS I (3 CR)

Prerequisite: Admission to the Dental Assisting program

This course will cover basic physics and chemistry, actions, reactions and physical properties of dental materi-

als. Emphasis will be on waxes, fluorides, temporary crowns, baseplate, bite rims, custom trays, and alginate materials. 1 hr. lecture, 3 hrs. lab/wk.

KDA 110

CHAIRSIDE ASSISTING (4 CR)

Prerequisite: Admission to the Dental Assisting program

Topics covered in this course are, dental terminology and responsibilities of the dental assistant in the dental operator, patient preparation, instrument identification, charting, sterilization techniques and basic operative chairside skills, ethics and jurisprudence. 2 hrs. lecture, 6 hrs. lab/wk.

KDA 115

DENTAL RADIOLOGY I (3 CR)

Prerequisite: Admission to the Dental Assisting program

This course will cover radiography history, characteristics of radiation and radiation production, film composition, x-radiation terminology, effects of radiation exposure and protection, exposing and processing and mounting of radiographs taken on a radiographic manikin. 2 hrs. lecture, 3 hrs. lab/wk.

KDA 125

CLINICAL PRACTICE I (3 CR)

Prerequisite: Concurrent enrollment in the Dental Assisting program

Clinical experience in operative and oral hygiene procedures utilizing four-handed dentistry will be held in the dental hygiene clinic at the University of Missouri-Kansas City School of Dentistry. 1 hr. lecture, 6 hrs. clinic/wk.

KDA 200

DENTAL SCIENCE II (2 CR)

Prerequisite: KDA 100

Basic anatomy and physiology of human body, oral pathology, pharmacology, principles of disease processes and micrology will be studied in this course. 2 hrs. lecture/wk.

KDA 205

DENTAL MATERIALS II (2 CR)

Prerequisite: KDA 105

This course will cover manipulation of dental cements, amalgam, esthetic restoratives, alginate and gypsum products, and sealants. 1 hr. lecture/wk.

KDA 210

CHAIRSIDE ASSISTING II (3 CR)

Prerequisite: KDA 110

This course will emphasize dental specialties including the theory of orthodontics, periodontics, prosthodon-

tics, oral surgery and, endodontics. There will be the application of the concepts of chairside assisting to these specialties. 3 hrs lecture, 6 hrs. lab/wk.

KDA 215
DENTAL RADIOLOGY II (1 CR)

Prerequisite: KDA 115

The course will emphasize radiographic techniques, procedures and hygiene. The student will have practical experience in exposing, processing and mounting radiographs taken on patients and radiographic manikins. 3 hrs. lab/wk.

KDA 225
DENTAL OFFICE MANAGEMENT (2 CR)

Prerequisite: Admission to the Dental Hygiene program

This course will cover the principles of business management in the dental office. Topics covered include the control of the appointment book, filing, financial management, insurance forms, supply inventory and recall systems by conventional and computerized methods. Dental computer applications and use will also be covered. 1 hr. lecture, 2 hrs. lab/wk.

KDA 250
CLINICAL PRACTICE II (4 CR)

Prerequisite: KDA 125

Advanced clinical experience in the front office, at chairside, in radiographic and laboratory assisting techniques in general and specialty dental offices and clinics. 16 hrs. clinic/wk.

KDA 260
DENTAL ASSISTANT SEMINAR (1 CR)

Prerequisite: KDA 250

This seminar course is the preparation for the Dental Assisting National Board Examination and for successful employment, and evaluation of experiences from Clinical Practice II. 1 hr. lecture/wk.

Dental Hygiene

DHYG 121
CLINICAL DENTAL HYGIENE I (5CR)

Prerequisites: Admission to the Dental Hygiene Program and CHEM 122, ENGL 121, SOC 122, PSYC 130 and BIOL 230 (minimum 2.0 G.P.A.)

Corequisites: BIOL 146, DHYG 125 and DHYG 135

This course will include an introduction to the dental hygiene profession, dental hygiene techniques, the principles of instrumentation, patient evaluation,

patient education and primary preventive treatment, auxiliary procedures and aseptic techniques. 2 hrs. lecture, 13 hrs. lab/wk.

DHYG 125
DEVELOPMENTAL DENTISTRY (2CR)

Corequisites: BIOL 146, DHYG 121 and DHYG 135

This course will include a study of embryology; oral histology; developmental disturbances of the face, oral cavity and related structures; and dental morphology and occlusion. 1 hr. lecture, 3 hrs. lab/wk.

DHYG 135
DENTAL MATERIALS (2CR)

Corequisites: DHYG 121, DHYG 125 and BIOL 146

This course is designed to provide students with a knowledge base of the science and physical properties of dental materials. The students will be able to apply their knowledge base in future dental sessions and laboratory experiences. 2 hr. lecture/wk.

DHYG 136
DENTAL MATERIALS LABORATORY (1CR)

Prerequisites: CHEM 122, ENGL 121, SOC 122, DHYG 121, BIOL 146, DHYG 125, PSYC 130, BIOL 230, DHYG 135

Corequisites: DHYG 140, DHYG 142, DHYG 146, DHYG 148, BIOL 225

This course is designed to provide the student with hands-on experience of dental materials used in dentistry while applying their knowledge of dental material sciences. Through laboratory exercises, students will manipulate materials discussed in DHYG 135. 3 hrs. lab/wk.

DHYG 140
CLINICAL DENTAL HYGIENE II (4CR)

Prerequisite: DHYG 121

Corequisites: DHYG 142, DHYG 146, DHYG 148, BIOL 225, and no grade below a "C" in DHYG courses

The focus of this course will be on the clinical application of dental hygiene techniques, instrumentation skills, oral health products, patient motivation and educational techniques. Procedures for medical and dental emergencies in the dental office also will be covered as well as an introduction to selected dental specialties. 2 hrs. lecture, 8 hrs. clinic/wk.

DHYG 142
DENTAL RADIOLOGY (2CR)

Prerequisites: DHYG 121 and no grade below a "C" in DHYG courses

Corequisites: DHYG 136, DHYG 140, BIOL 225, DHYG 146 and DHYG 148

This class will concentrate on the theory and clinical

practice of exposing, processing, mounting and evaluating oral radiographs with emphasis on radiation protection and infection control for the patient and operator. 1 hr. lecture, 3 hrs. lab/wk.

DHYG 146
PERIODONTICS (3CR)

Prerequisites: DHYG 121 and no grade below a "C" in DHYG courses

Corequisites: DHYG 136, DHYG 140, BIOL 225, BIOL 230, DHYG 142 and DHYG 148

This course will include recognition of the etiology, clinical signs and symptoms of periodontal diseases. The inflammatory process, treatment planning and nonsurgical therapy are discussed. 3 hrs. lecture/wk.

DHYG 148
DENTAL HEALTH EDUCATION (2CR)

Prerequisites: DHYG 121 and no grade below a "C" in DHYG courses

Corequisites: BIOL 225, DHYG 136, DHYG 140, DHYG 142 and DHYG 146

Students will study health and apply educational methods for individuals and groups with special emphasis on behavior modification. Exercises in the research process and evaluating research articles are included. 1 hr. lecture, 2 hrs. lab/wk.

DHYG 221
CLINICAL DENTAL HYGIENE III (6CR)

Prerequisites: DHYG 140, BIOL 235, DHYG 142 and no grade below a "C" in DHYG courses

Corequisites: DHYG 225, DHYG 230 and DHYG 240

Students will continue development in the areas of patient management, preventive dental hygiene treatment and proficiency in clinical techniques through practical application. Current advances in dental hygiene services also will be introduced. 2 hrs. lecture, 16 hrs. clinic/wk.

DHYG 225
PATHOLOGY (3CR)

Prerequisites: DHYG 140, BIOL 235 and no grade below a "C" in DHYG courses

Corequisites: DHYG 221, DHYG 230 and DHYG 240

This course will introduce the students to concepts related to general systemic and oral pathology. General principles of pathology include inflammation, immunity, neoplasia and wound healing. Specific systems will be explained, including cardiovascular, hematopoietic and skeletal systems. Basic pathological processes of oral conditions, their etiologies and treatments, will be discussed. 3 hrs. lecture/wk.

DHYG 230**DENTAL THERAPEUTICS (3CR)**

Prerequisites: DHYG 140, BIOL 235 and no grade below a "C" in DHYG courses

Corequisites: DHYG 221, DHYG 225 and DHYG 240

This course will introduce the basic principles of drug actions, emphasizing dental-related therapeutics and drugs associated with common systemic disorders; information on the selection of professional products; and principles necessary in administering local anesthesia. 2 hrs. lecture, 2 hrs. lab/wk.

DHYG 240**COMMUNITY DENTAL HEALTH (2CR)**

Prerequisites: DHYG 140, BIOL 235 and no grade below a "C" in DHYG courses

Corequisites: DHYG 221, DHYG 225 and DHYG 230

Topics will include public health agencies, statistical procedures for critiquing scientific literature, identifying dental needs of different groups and planning dental health education programs. Preventive techniques, health promotion, consumer advocacy and the role of the dental hygienist in public health will be emphasized. Field experience will be included. 1 hr. lecture, 3 hrs. lab/wk.

DHYG 245**NITROUS OXIDE ANALGESIA (1CR)**

Prerequisite: DHYG 230

Corequisite: DHYG 250

This course will concentrate on the principles of administering and monitoring nitrous oxide analgesia. Upon completion of the course, didactic and clinical proficiency in nitrous oxide analgesia will meet certification standards set by state dental boards. 1 hr. lecture, lab/wk.

DHYG 250**CLINICAL DENTAL HYGIENE IV (6CR)**

Prerequisites: DHYG 221 and no grade below a "C" in DHYG courses

This course will offer continued development of proficiency in clinical techniques and current procedural practices of the dental hygienist with emphasis on self-evaluation. Topics will include ethics, jurisprudence, office management, current dental hygiene issues and preparation for board exams. 2 hrs. lecture, 16 hrs. clinic/wk., 1 hr. board review for first 8 wks.

Drafting Technology

DRAF 115**INTRODUCTION TO COMPUTER GRAPHICS SYSTEMS (3CR)**

Prerequisite: MATH 111 or an appropriate score on the math assessment test

This course is an introduction to computer graphics systems. Upon successful completion of this course, the student should be able to identify the components of a computer graphics system. Each student will have an opportunity to get hands-on exposure to several computer graphics software packages. Emphasis will be on the development of an understanding of the various types of applications for which each package is best-suited. Students will also be exposed to the various hardware peripherals necessary for the support of computer graphics. Software will range from defining line vectors to the use of menu-controlled color packages. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 116**ENGINEERING GRAPHICS/CAD-2D DRAFTING I (5CR)**

Prerequisite: MATH 111 or an appropriate score on the JCCC math assessment test. Basic high school drafting or trigonometry

This course is an introduction to computer-aided drafting as a tool in the study of graphical communications. Emphasis will be on familiarization with CAD hardware, proficiency in the application of 2-D CAD software to various types of engineering drawings, understanding of descriptive geometry fundamentals, geometric construction, technical vocabulary and engineering/drafting design standards (ANSI) and procedures. Comparisons between traditional drafting methods and CAD's approach to generating engineering drawings will be presented. CAD will be used throughout the semester. 4 hrs. lecture, 6 hrs. lab/wk.

DRAF 118**ENGINEERING GRAPHICS/CAD-2D DRAFTING II (5CR)**

Prerequisite: DRAF 116

This course is a continuation of Engineering Graphics/CAD-2D. Upon successful completion of this course, the student should be able to use 2-D and 3-D CAD commands in the engineering design process. The following CAD topics will be included: isometric drawing, basic 3-D, paper space and model space; slides and shows; XREF, digitizer scaling, file management and interface. Application problems will be selected from architectural, civil, electromechanical and technical illustration fields. 4 hrs. lecture, 6 hrs. lab/wk.

DRAF 120**INTRODUCTION TO DRAFTING (2CR)**

This course should be taken by students without prior drafting experience. Upon successful completion of this course, the student should be able to identify and apply the essential, basic skills necessary to proceed through the drafting program, including lettering, measuring, geometric construction, sketching, isometrics, orthographic views, dimensioning and auxiliary view.

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

DRAF 123**INTERPRETING MACHINE DRAWINGS (2CR)**

This course will provide students with general knowledge in reading machine-type engineering drawings. Upon successful completion of this course, the student should be able to interpret orthographic multiview drawings, symbols, abbreviations, surface finishes, dimensioning and geometric form and position tolerancing. 2 hrs./wk.

DRAF 124**TECHNICAL DRAFTING (4CR)**

Prerequisites: DRAF 120 or equivalent and OST 101 or approval of the division administrator

This first-semester course covers the basic manual drafting fundamentals required to begin the Drafting Technology program. Upon successful completion of this course, the student should be able to solve descriptive geometry problems; draw multiview, orthographic views with dimensions and pictorial and three-dimensional views using isometric and perspective methods. Mechanical and civil disciplines are addressed. In addition to workbook-style assignments on bond paper, students will draft on vellum and drafting film. 2 hrs. lecture, 6 hrs. lab/wk.

DRAF 129**INTERPRETING ARCHITECTURAL DRAWINGS (2CR)**

This beginning course will explain the fundamentals of interpreting (reading) architectural drawings. Upon successful completion of this course, students should be able to understand plan and elevation views, sections, details, schedules, specifications, symbols and abbreviations found on most residential and commercial construction drawings. 2 hrs./wk.

DRAF 130**INTRODUCTION TO CAD CONCEPTS (3CR)**

Prerequisites: DRAF 120 or approval of division administrator

This course provides a basic knowledge of computer-aided drafting. Students will learn to use CAD equipment, including input/output devices and microcomputers as

drafting tools. Emphasis will be on a basic understanding of CAD terms and concepts as they are applied in industry. Students will be provided an overview of many of the key features of a major microcomputer CAD package with hands-on experience at a workstation. Basic instruction will be provided on drawing setup, drawing commands, editing commands and screen control. The important concepts of layering, standard symbols and dimensioning will be introduced. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 132**INTRODUCTION TO AUTOCAD LT (3CR)**

This course is designed to provide beginning AutoCAD users with a basic knowledge of computer-aided drafting (CAD). Students will learn basic AutoCAD LT commands and to use CAD equipment, including input/output devices, as drafting tools. The latest version of AutoCAD LT (student version) will be used to cover topics including, creating and setting up a drawing, using blocks and wblocks, editing a drawing, saving completed drawings, developing prototype drawings, printing from paper space, dimensioning, layering, drawing defaults, and hatching. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 138**ARCHITECTURAL DRAFTING (3CR)**

This course is an introduction to the production of architectural drawings for residential and commercial construction. Upon successful completion of this course, the student should be able to identify and produce the various drawings that compose a complete set of architectural working drawings. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 140**TOPICS IN CAD I (2CR)**

This course provides training for a specific design application software. In-depth coverage of the selected software and hands-on experience will be provided to the students. Emphasis will be placed on the application of software to industry projects. 2 hrs. lecture, lab/wk.

DRAF 150**ELECTRICAL DRAFTING (3CR)**

Prerequisites: MATH 133 and DRAF 230 or ENGR 131

Upon successful completion of this course, the student should be able to identify drafting techniques applicable to industrial lighting, motor controls, power distribution and generation. Emphasis will be on the use of tables, catalogs and applications software as aids to decision making required on electrical drawings. Project assignments will be completed primarily using CAD. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 160
PROCESS PIPING (3CR)

Prerequisite or corequisite: DRAF 124 or approval of the division administrator

This course is an introduction to process piping drafting. Upon successful completion of this course, the student should be able to identify techniques applicable to, and definitions related to, industrial process piping. Symbols for fittings and valves will be drawn in plan view, elevation view and in isometric, relative to piping standards and specifications. Calculations relative to pipe lengths and fitting locations will be made. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 180
STRUCTURAL DRAFTING (3CR)

Prerequisites: DRAF 230 or ENGR 131
Corequisite: MATH 134

Upon successful completion of this course, the student should be able to produce structural drawings and details of steel, concrete and wood structures for manufacturing, construction, engineering and architectural firms. Project work will be done using CAD. 2 hrs. lecture, 3 hrs. lab./wk.

DRAF 222
MECHANICAL DRAFTING (3CR)

Prerequisite: DRAF 230 or ENGR 131
Corequisite: MATH 134

Students successfully completing this course should be able to draw details and assembly views of mechanical parts. The types of parts drawn in this class include castings, sheet metal pieces, piping, jigs and fixtures, pressure vessels and gauges. Important concepts include dimensioning, form and position tolerancing, coordinate tolerancing and calculations related to material allowances. Project assignments will be completed using computer-aided drafting software. This course is part of the Drafting Technology – Machine Option. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 225
CIVIL DRAFTING (3CR)

Prerequisite: DRAF 230 or ENGR 131
Corequisite: MATH 134

Upon successful completion of this course, the student will be able to apply drafting techniques used in civil engineering offices. The student will learn to draw civil engineering plans from surveying and engineering data. The student will be able to produce plan and profile drawings, roadway cross sections, earthwork calculations, subdivision plats, topographic maps and property maps. The student will use CAD in drawing projects. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 228
INDUSTRIAL DESIGN APPLICATIONS (3CR)

Prerequisites: DRAF 222 and CET 211
Corequisites: DRAF 180 and DRAF 150

This advanced fourth-semester course applies concepts and fundamentals of previously required classes in the machine option of the Drafting Technology program. Assignments address industrial systems and include interdisciplinary considerations of manufacturing processes, electrical controls, structural drafting, form and positional tolerance control and machine elements. Systems options include pumping systems and material handling systems. Student teams will select their specific system project for the semester. Team project/protocol will be used to develop graphic, ISO and ANSI-approved solutions. Job/task responsibilities will be assigned by student-team leadership. Two industrial field trips with subsequent journals are required. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 230
INTERMEDIATE COMPUTER-AIDED DRAFTING (3CR)

Prerequisites: DRAF 130 and DRAF 124 or approval of the division administrator

This course provides an increased knowledge of computer-aided drafting as it is used in today's industries. Students will build on their CAD experience by learning new commands and techniques that increase system productivity. Special emphasis will be on developing construction techniques and command usage to increase CAD proficiency. 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
CAD APPLICATIONS WORKSTATION ENVIRONMENT (2CR)

Prerequisite: DRAF 230 and approval of division administrator

This course provides instruction for customizing the CAD workstation and handling files in a network envi-

ronment. Students will receive instruction in software commands and terminology and be provided with in-depth coverage of customizing the CAD environment and managing CAD data files in a production environment. Emphasis will be on hands-on application of the covered topics. 2 hrs. lecture, lab/wk.

DRAF 233
CAD ADMINISTRATION (2CR)

This course covers topics necessary for an individual to manage a CAD department in a production environment. Topics include managing CAD data, selecting types of equipment/software and establishing drafting policies and procedures. Also discussed are personnel issues for CAD employees/employers. 2 hrs. lecture/wk.

DRAF 240
INTRODUCTION TO AUTOLISP (2CR)

Prerequisites: CPCA 135 and DRAF 230

This course covers basic techniques and concepts needed to begin using AutoLISP effectively. Techniques for automation of AutoCAD drafting procedures through the use of the AutoLISP programming language will be covered. Also included are basic AutoLISP functions, creation of AutoLISP expressions and program files. 1½ hrs. lecture, 1 hr. lab/wk.

DRAF 242
TOPICS IN CAD II (2CR)

Prerequisite: DRAF 230 or approval of division administrator

This course provides training for a specific design application software. In-depth coverage of the selected software and hands-on experience will be provided to the students. Emphasis will be placed on the application of software to industry projects. 2 hrs. lecture, lab/wk.

DRAF 261
GRAPHIC COMMUNICATIONS I
FOR INTERIOR DESIGN (3CR)

Students enrolled in this course are JCCC interior merchandising students and professionals in the interior design field. Upon successful completion of this course, the student should be able to interpret residential and commercial drawings and draft floor plans, interior elevations and full sections of architectural interiors. The student should be able to read and produce two-dimensional architectural drawings. 6 hrs. lecture, lab/wk.

DRAF 264
CAD: INTERIOR DESIGN (3CR)

Corequisite: ITMD 122 or approval of the division administrator

This course is an introduction to the use of computer-aided drafting (CAD) as used in the interior design field. Upon successful completion of this course, the student should be able to draw floor plans and elevations of interiors using a computer-aided drafting system. Autocad software will be used. No previous computer experience is required. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 266
GRAPHIC COMMUNICATIONS II
FOR INTERIOR DESIGN (3CR)

Prerequisite: DRAF 261

Upon successful completion of this course, the student should be able to describe the fundamentals of pictorial representation and demonstrate the ability to draw perspectives, section evaluations and isometric illustrations. The student will be expected to produce drawings with realistic appearance of building interiors, cabinets, furniture and decor. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 271
DRAFTING INTERNSHIP I (3CR)

Prerequisite: Approval of the division administrator

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students the opportunity to develop job and career-related skills while in a work setting. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 2 hrs. lecture, 15 hrs. min./wk.

DRAF 272
DRAFTING INTERNSHIP II (3CR)

Prerequisites: DRAF 271 and approval of the division administrator

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students the opportunity to develop job- and career-related skills while in a work setting. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 2 hrs. lecture, 15 hrs. min./wk.

Early Childhood Education

EDUC 130

FOUNDATIONS OF EARLY CHILDHOOD EDUCATION (3CR)

This introductory survey course is designed to provide students with current information on topics relevant to employment in early childhood programs. The course will explore the historical and philosophical roots of early childhood education, general principles in child development, the teacher's role, values and ethics in early childhood education, curriculum design and classroom management. Twenty hours of observation in a group child care setting are required. 3 hrs. lecture/wk.

EDUC 131

EARLY CHILDHOOD CURRICULUM I (3CR)

Corequisite: EDUC 130

This methods course is designed for students who are, or will be, working in an early childhood education setting and parents/others who desire to develop an intellectually challenging environment for young children. The focus of the course is curriculum areas that deal with language and physical development. 3 hrs. lecture/wk.

EDUC 210

CREATIVE EXPERIENCES FOR YOUNG CHILDREN (3CR)

This course is a study of constructing and maintaining an environment for young children that fosters aesthetic sensitivity and creativity. The course includes the young child's developmental stages in art, music, movement, language and creative and dramatic play; methods and materials that nourish developmentally appropriate creative experiences and support an inclusive, anti-bias curriculum; integration of creative experiences in the whole curriculum; the use of technology; and helping families understand the creative experience. 3 hrs. lecture/wk.

EDUC 215

YOUNG CHILDREN WITH SPECIAL NEEDS (3CR)

This course is a study of creating and maintaining a developmentally appropriate inclusive environment for young children with special needs. The course includes the history of education and care for young children with special needs, federal and state legislation, types of differing abilities, developmental stages and capabilities of all young children, an inclusive approach to early education, and curriculum development for young children with special needs. Health, safety and nutrition; screening and assessment; interaction techniques; the role of the educator specific to the child's special needs; partnering with the family, other disciplines and

community; and advocating for children are presented. The laboratory will include demonstration of the subject matter. 2 hrs. lecture, 3 hrs. lab/wk.

EDUC 225

INFANT AND TODDLER EDUCATION AND CARE (3CR)

This course is a study of creating and maintaining a developmentally appropriate environment for infants and toddlers, with the course including the history of education and care, theories of child development, developmental stages and capabilities of the very young child and curriculum development for infants and toddlers. Health, safety and nutrition; assessment; interaction techniques; the role of the educator specific to the needs of the infant and toddler; partnering with family and community; and advocating for the very young are presented. The laboratory will include demonstration of the subject matter. 2 hrs. lecture, 3 hrs. lab/wk.

EDUC 231

EARLY CHILDHOOD CURRICULUM II (3CR)

Prerequisite: EDUC 131

This methods course is designed for students who are, or will be, working in an early childhood education setting and parents/others who desire to develop an intellectually 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.

EDUC 235

PARENTING (2CR)

Prerequisite or corequisite: PSYC 215 or PSYC 218 or EDUC 270

This course is a study of effective parenting and is designed for teachers of young children and parents/guardians who desire to provide an environment that reflects sensitivity to the unique needs of the individual child and family. History of child-rearing methods, an overview of child development, types of families, parents'/guardians' fears and concerns, purposes of child behavior, effective communication techniques, nurturing self-esteem, problem prevention and resolution, and building effective teacher and family relations are presented. 2 hrs. lecture/wk.

EDUC 250

CHILD HEALTH, SAFETY AND NUTRITION (3CR)

This course is a study of the basic health, nutrition and safety management practices for young children. Information on establishing and maintaining a physically and psychologically safe and healthy learning environment appropriate for the needs of young children will be

included. The interrelation of health, safety and nutrition is stressed, with emphasis on appraisal procedures, prevention and protection, services and educational experiences for young children and their families. 3 hrs. lecture/wk.

EDUC 260
OBSERVING AND INTERACTING WITH YOUNG CHILDREN (3CR)

Prerequisite or corequisite: PSYC 215 or PSYC 218 or EDUC 270

This course is a study of the role of observation to assess and monitor the development and learning of children, birth through age 8, and the appropriate techniques for interacting with young children considering their individual differences. Included will be the purposes and types of observation procedures, interpretation and use of findings, reporting techniques and legal and ethical responsibilities. Expected age-related child behavior, fundamental principles of and theoretical approaches to child guidance, guidance techniques, working with families and issues of diversity are presented. The laboratory will include demonstration of the subject matter. 2 hrs. lecture 3 hrs. lab/wk.

EDUC 270
EARLY CHILDHOOD DEVELOPMENT (3CR)

This course is a comprehensive account of human development from conception through age 8 years. The course integrates genetic, biological, physical and social influences with psychological processes affecting the development of young children. 3 hrs. lecture/wk.

EDUC 280
ADMINISTRATION OF EARLY CHILDHOOD PROGRAMS (3CR)

This course is a study of the organization and administration of early childhood programs. The topics included will be the skills and characteristics of effective administrators; types of programs; planning, implementing and evaluating programs; policy development; staff supervision and development; finances and budget; record keeping; relevant state regulations and laws; developing, equipping and maintaining a facility; organizing a developmentally appropriate environment; collaboration with family and community; public relations; and contributing to the profession. The lab will include demonstration of the subject matter. 2 hrs. lecture, 3 hrs. lab/wk.

EDUC 284
SEMINAR: EARLY CHILDHOOD (3CR)

Corequisite: EDUC 285

The course will focus on conduct and responsibilities of the intern; early childhood codes, laws and regulations;

child development; activity planning and curriculum development; observation and guidance of young children; authentic assessment; responsibilities to the young child's family and community and to the teaching profession; employability skills; self-assessment; and job-seeking skills. The student's practical application of information in the internship will be discussed, and a portfolio will be developed. 3 hrs. lecture/wk.

EDUC 285
INTERNSHIP: EARLY CHILDHOOD (3CR)

Prerequisite: Program facilitator recommendation
Corequisite: EDUC 284

This supervised field experience in early childhood education is designed for students to apply their knowledge of teaching young children. The student will participate in curriculum design and presentation, observing and interacting with young children, providing for the health, safety and nutrition of young children, the general management of a program setting, and working with families and the community. A self-assessment and a professional development plan are completed. The student will spend 16 hours a week (240 clock hours total) in at least two different early childhood settings, serving children of two different ages. 16 hrs. lab/wk.

Economics

ECON 130
BASIC ECONOMIC ISSUES (3CR)

Upon successful completion of this course, the student should be able to use basic economic theory, concepts and nomenclature to analyze current economic issues at the local, national and international levels. This course is primarily for students to take only one economics course and for those who want a nontechnical introduction to economics. 3 hrs. lecture/wk.

ECON 132
SURVEY OF ECONOMICS (3CR)

Upon successful completion of this course, the student should be able to explain basic macroeconomic and microeconomic theory, fiscal and monetary policies, the role and significance of international economics and 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

(Also see *Early Childhood Education*, page 168.)

**EDUC 121
INTRODUCTION TO TEACHING (3CR)**

Teaching concepts and practices as they apply to today's elementary and secondary schools will be introduced. Topics will include the roles and responsibilities of the teacher, various modes of instruction, specialized areas in teaching, and professional requirements and concerns. Twenty hours of observation in a school setting are required. 3 hrs./wk.

**EDUC 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.

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)**

Prerequisite/corequisite: HVAC 123

This is an introductory course on residential wiring methods that includes practical application and hands-on experience in implementing the code requirements. Upon successful completion of this course, the student should acquire the necessary skills to wire a residence to meet the minimum requirements as set forth in the National Electrical Code for residential occupancies. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

**ELTE 200
COMMERCIAL WIRING METHODS (4CR)**

Prerequisite: HVAC 123

This advanced course covers commercial wiring methods. Upon successful completion of this course, the student should be able to read commercial blueprints and apply the National Electrical Code to commercial wiring systems. The student will gain working knowledge and hands-on experience with commercial wiring techniques. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

ELTE 205**INDUSTRIAL ELECTRICAL WIRING (4CR)**

Prerequisite: ELTE 125 or ELTE 200 or ELTE 122

This advanced course covers industrial wiring methods. Upon successful completion of this course, the student should be able to read industrial blueprints and apply the National Electrical Code to industrial wiring systems. The student will gain working knowledge and hands-on experience with industrial wiring techniques. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

ELTE 210**CODE CERTIFICATION REVIEW (3CR)**

Prerequisite: ELTE 122

Upon successful completion of this course, the student should be able to use the current National Electrical Code to do calculations involving loads, lighting and circuit sizing. The course will cover typical load calculations used in both residential and commercial settings. 3 hrs. lecture/wk.

ELTE 271**ELECTRICAL INTERNSHIP I (3CR)**

Prerequisite: Approval of the division administrator

The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of job experiences directly related to the student's career goals. Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

ELTE 272**ELECTRICAL INTERNSHIP II (3CR)**

Prerequisite: ELTE 271 and approval of the division administrator

The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of job experiences directly related to the student's career goals. Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

Electronics Technology

ELEC 120**INTRODUCTION TO ELECTRONICS (3CR)**

This is a beginning course in electronics technology that is appropriate for both the electronics major and other interested students. An overview of basic electronic theory, principles and components is presented. In addition, the laboratory exercises will emphasize the operation and use of the primary pieces of electronic test equipment and the fabrication of selected circuits. 2 hrs. lecture, 2 hrs. lab-lecture, 2 hrs. lab/wk.

ELEC 122**CIRCUIT ANALYSIS I (3CR)**

Prerequisite: MATH 133

Corequisite: ELEC 120

This course covers resistive circuits having DC sources. Analysis topics include Ohm's law, 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 other compatible personal computers. The course will also include a brief introduction to computer architecture. Lecture topics will be supported by hands-on lab projects. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 125**DIGITAL ELECTRONICS I (3CR)**

This is a beginning course in which students will study and practice the basic concepts of digital electronics. Topics will include digital number systems, logic gates, logic circuits, flip-flops, digital arithmetic, counters and registers. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 128**COMPUTER APPLICATIONS IN ELECTRONICS (1CR)**

This course introduces students to computer software applications that are unique and specific to electronics, e.g., electronic workbench. In addition, other resources available on the JCCC network are presented. 1 hr. lecture/wk.

ELEC 130**ELECTRONIC DEVICES I (4CR)**

Corequisite: ELEC 140

This is the first course in electronic devices. Principal topics include diodes, transistors, special-purpose diodes

ELEC 175
TELECOMMUNICATIONS (3CR)

Corequisite: ELEC 230

This course provides an introduction to the hardware functions of a telecommunications system. Topics include both voice and data aspects of telecommunications terminology, telephone sets, interfaces, protocols, fiber optics, PBXs, switching, SS7, ISDN and other related and timely items (ATM, SONNET). 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 200
INTRODUCTION TO GLOBAL POSITIONING SYSTEMS (3CR)

Prerequisite: MATH 134

This is a survey course on the Global Positioning Satellite (GPS) system. Topics will include navigational history and current GPS configuration in terms of space, control, user segments, signals, receivers, position determination, selective availability, corrections and applications. 3 hrs. lecture/wk.

ELEC 210
MEDICAL ELECTRONICS PRINCIPLES (3CR)

Prerequisite: ELEC 225

Corequisite: ELEC 230

This course examines the fundamental principles of modern medical instruments. Students will study the human physiological variables most commonly measured, together with the sensors, transducers and electronic circuits needed to measure these variables. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 211
MEDICAL ELECTRONICS APPLICATIONS (3CR)

Prerequisite: ELEC 210

This course continues the topics covered in ELEC 210 by examining the system operation of many commonly used medical electronics instruments. Emphasis is on repair, service and preventive maintenance of medical equipment hardware. Students will be assigned laboratory projects using actual hospital equipment. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 225
DIGITAL ELECTRONICS II (3CR)

Prerequisite: ELEC 125

This course completes the study of basic digital electronics and will begin a study of digital computer hardware and organization. Building, testing and troubleshooting of digital circuitry will be emphasized. The fabrication of a simple computer will be the principle laboratory project. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 230
ELECTRONIC DEVICES II (3CR)

Prerequisites: ELEC 130 and ELEC 140

This is a continuation of the electronic devices sequence. Principal topics include operational amplifiers, thyristors and voltage regulators. Operational amplifier applications include comparators, summing amplifiers, integrators, differentiators and active filters. Additional topics include frequency response of operational amplifiers. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 240
ELECTRONIC COMMUNICATION SYSTEMS (3CR)

Prerequisite: ELEC 230

This course provides an introduction to electronic communication systems. Topics include the electromagnetic spectrum, decibels, noise, amplitude modulation, frequency modulation, wire and cable media, transmission lines, antennas and the basic principles of television and facsimile. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 245
MICROPROCESSORS (3CR)

Prerequisite: ELEC 225

This is a basic course on microprocessors and micro-processor systems. 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. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 250
MICROCOMPUTER MAINTENANCE (3CR)

Prerequisite: ELEC 225

This course examines the hardware aspects of personal computers and peripheral equipment. Students will configure, build, add cards, test, troubleshoot and repair IBM clone computers. Topics will include diagnostic software, DOS, memory, bus types, video, parallel and serial ports, printers, modems, floppy drives, hard drives and virus prevention. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 271
ELECTRONICS INTERNSHIP I (1-3CR)

Prerequisite: Approval of the division administrator

This course affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide selected advanced electronics technology students with appropriate on-the-job experience with area employers, under instructional oversight, that will promote the student's career goals. 6-20 hrs. of approved and appropriate work activity/wk.

ELEC 272

ELECTRONICS INTERNSHIP II (1-3CR)

Prerequisites: ELEC 271 and approval of the division administrator

This course is a continuation of ELEC 271. It affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide selected advanced electronics technology students with appropriate on-the-job experience with area employers, under instructional oversight, that will promote the student's career goals. 6-20 hrs. of approved and appropriate work activity/wk.

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 (5CR)

This course is designed to provide training in emergency medical care for those who are apt to be the first persons responding to a medical incident. For example, a first responder might be an individual in a public service agency (fire, police, civil defense); a school bus driver; a teacher or a day care provider; a postal carrier; a worker from a utility company; or a worker in an industrial setting. The

student will receive both didactic and psychomotor skills training in CPR, patient assessment, fracture management, airway management and trauma management. Successful completion of this course will enable the student to sit for the First Responder certification examinations administered by the Kansas Board of Emergency Medical Services. 6 hrs. lecture, 6.5 hrs. lab/wk. for 8 wks.

EMS 130

EMERGENCY MEDICAL TECHNICIAN (9CR)

Prerequisites: EMS 128 or equivalent, or be an active member in a health-related occupation (firefighter, rescue, ambulance, law enforcement, industrial first aid personnel or other health-related field), or attained the minimum of an associate's degree

Classroom instruction includes anatomy, physiology, recognition and care of actual medical emergencies and trauma-related injuries. Skills in performing CPR, bandaging, splinting, childbirth techniques and many other emergency care procedures are taught. An extrication session will give students hands-on experience with auto accident situations and provide the opportunity to observe an air evacuation of a patient. Upon instructor recommendation, students will participate in a 10-hour clinical observation in a hospital setting. Additionally, students will arrange to participate as an observer with a local EMS service. Students successfully completing this course will be allowed to sit for certification examinations administered by the Kansas Board of Emergency Medical Services. 7 hrs. lecture, 5 hrs. lab/wk. Students are also required to attend approximately four Saturday classes lasting between 4 and 8 hours each. Saturday dates and times will be announced during the first class session.

EMS 140

BASIC CARDIOLOGY AND EKG RECOGNITION (2CR)

Prerequisite: Permission of the program director

Topics will include basic anatomy, physiology, electrophysiology of the cardiac system, recognition of EKG tracings and an overview of coronary artery disease. 2 hrs./wk. Class limited to 30.

EMS 243

EMERGENCY MEDICAL SERVICES INSTRUCTOR COORDINATOR (5CR)

Prerequisites: Prospective students must meet all the requirements for selection as set forth by the Kansas Board of Emergency Medical Services, which includes certification as a care provider, documentation of pre-hospital experience and successful completion of the BEMS pre-selection process.

This is a course covering the basic tenets of adult education. Additionally, students are oriented to all Kansas requirements for conducting initial courses of

instruction for ambulance attendants. Successful completion of this course will be the first step toward certification as a Kansas EMS instructor/coordinator. 5 hrs. lecture-demo/wk.

Mobile Intensive Care Technician

EMS 220 MICT I (10CR)

Prerequisite: Admission to the MICT Program

This fundamental course will cover roles and responsibilities, medical terminology, anatomy and physiology as they apply to the MICT. Other topics will include diagnostic signs and assessment of patients, biomedical communication, venipuncture, medication administration techniques, advanced airway management, managing the cardiac patient and ECG interpretation. 17 hrs. lecture, 4.5 hrs. lab/wk.

EMS 225 MICT II (10CR)

Prerequisite: EMS 220 with a minimum grade of "C"

This fundamental course will cover diagnosis, etiology and field treatment of victims of respiratory emergencies and hypertensive, vascular, diabetic, OB, endocrine and environmental emergencies. Also covered will be treatment of victims experiencing overdoses or poisoning; chest, neurological and abdominal trauma; fracture; and shock. 14.5 hrs. lecture/wk., 7 hrs. lab avg./wk., 13 hrs. field observation avg./wk.

EMS 230 MICT III CLINICALS (12CR)

Prerequisite: EMS 225 with the minimum grade of "C"

The student will practice diagnostic and treatment skills under supervision in an emergency department, critical care unit, surgery/recovery room, labor/delivery room and a pediatrics unit. Some field experience will be included. 5 hrs. lecture avg./wk., 2.5 hrs. lab avg./wk., 22.5 hrs. clinical lab/wk., 9 hrs. field lab avg./wk.

EMS 271 MICT IV FIELD INTERNSHIP (15CR)

Prerequisite: EMS 230 with a minimum grade of "C"

The student will act as an MICT, under supervision, with an existing advanced life-support ambulance service. The student also will present case histories, analyze systematic medical care and evaluate medical care using prehospital protocols. 6.5 hrs. lecture avg./wk., 3 hrs. lab avg./wk., 52.5 hrs. field lab avg./wk.

Engineering

ENGR 121 ENGINEERING ORIENTATION (2CR)

Upon successful completion of this course, the student should be able to describe careers in engineering and use fundamental concepts in engineering problem solving. Topics include engineering disciplines, aptitude and academic requirements, professional responsibilities, problem definition and solution, engineering design and terminology. Students take field trips to engineering companies and work sites. 2 hrs. lecture/wk.

ENGR 131 ENGINEERING GRAPHICS I (4CR)

Prerequisite: DRAF 120 or permission from the division administrator

Upon successful completion of this course, the student will be able to apply graphic principles used in the engineering design process. The course will cover graphics concepts using computer-aided drafting software. Topics include 2-D and 3-D CAD commands, geometric construction, multiview orthographic projection, auxiliary views, sectional views, isometrics and descriptive geometry. 3 hrs. lecture, 4 hrs. lab/wk.

ENGR 171 PROGRAMMING FOR ENGINEERING AND SCIENCE (3CR)

Prerequisite: MATH 171

Upon successful completion of this course, the student should be able to use a high-level programming language for solving scientific and engineering problems on digital computers. This course will prepare the student for advanced studies in numerical methods and other computer applications. 2 hrs. lecture, 3 hrs. lab/wk.

ENGR 180 ENGINEERING LAND SURVEYING (3CR)

Corequisite: MATH 134 or MATH 172

Upon successful completion of this course, the student should be able to identify the basic applications of plane surveying procedures; measurement of horizontal distances, directions, angles, leveling, traversing, curves and stadia coordinates; computations with the aid of a computer; and topographical property and construction surveying. Students will take part in field operations using equipment such as auto levels, theodolites, EDM and total station. 2 hrs. lecture, 3 hrs. lab/wk.

ENGR 222
CIRCUIT THEORY I (3CR)

Prerequisites: MATH 243 and PHYS 220
Corequisites: MATH 244 and PHYS 221

This course is the first of a two-semester sequence dealing with electrical circuit theory. Upon successful completion of this course, the student should be able to analyze linear passive electrical circuits. Computer applications will be included. 3 hrs. lecture/wk.

ENGR 231
THERMODYNAMICS (3CR)

Prerequisites: MATH 242, PHYS 220 and CHEM 124

Upon successful completion of this course, the student should be able to describe thermodynamic principles. Students will apply these principles to the analysis of energy systems, including various power and refrigeration cycles. Topics include work and energy, first and second laws of thermodynamics, entropy and enthalpy. 3 hrs./wk.

ENGR 251
STATICS (3CR)

Prerequisite: MATH 242
Corequisite: PHYS 220

Upon successful completion of this course, the student should be able to describe and predict the conditions of rest and motion of bodies under the action of forces. The principles used will include vectors, force systems, equilibrium, free body diagram, centroids, moments of inertia, trusses, frames and shear and moment diagrams. Computer applications will be included. 3 hrs. lecture/wk.

ENGR 254
DYNAMICS (3CR)

Prerequisites: ENGR 251

Upon successful completion of this course, the student should be able to apply the principles of dynamics, the branch of engineering mechanics that studies objects in motion. Topics covered include unbalanced force systems (Newton's second law), displacement, velocity and acceleration, work and energy, and impulse and momentum. Computer applications will be included. 3 hrs. lecture/wk.

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 developing a plan to meet individual student needs. These courses do not fulfill degree requirements.

ENGL 100
ENGLISH AS A SECOND LANGUAGE I (3CR)

Prerequisite: Appropriate assessment score

This course is designed for students who are familiar with English but who have limited language skills. The class will focus on pronunciation and listening comprehension as well as basic grammar and sentence structure. 3 hrs./wk.

ENGL 101
ENGLISH AS A SECOND LANGUAGE II (3CR)

Prerequisite: ENGL 100 or appropriate assessment score

This course will include continued work in pronunciation, grammar and sentence structure and will emphasize improvement of reading, writing and speaking skills. 3 hrs./wk.

ENGL 102
WRITING STRATEGIES (3CR)

Prerequisite: Appropriate placement test score

This course is designed to develop confidence and competence in writing. The focus will be on developing sentence-level skills that will be applied to paragraph development. Students who are non-native speakers should enroll in ENGL 100 or ENGL 101. 3 hrs./wk.

ENGL 103
PRACTICAL WRITING SKILLS (1CR)

A practical writing course in English for 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 essay writing. 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. The course is also available in a Web format. 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 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. This course is also available on the Web. 3 hrs./wk.

ENGL 122**COMPOSITION II (3CR)**

Prerequisite: ENGL 121

This standard freshman English II course will emphasize analysis, synthesis, critical thinking and evaluation through essays written in response to assigned readings. Related research projects will be assigned. This course is also available on the Web. 3 hrs./wk.

ENGL 123**TECHNICAL WRITING I (3CR)**

Prerequisite: ENGL 121

Students will write memos, letters, short reports, e-mail, Web sites and user manuals 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 informative and descriptive writing, analysis and critical writing, and persuasion/argumentation. 3 hrs./wk.

ENGL 223
CREATIVE WRITING (3CR)

Prerequisite: ENGL 122

Students will study and practice poetry and fiction with possibly some drama writing. Topics will include the process of writing poems, short stories and short plays or scripts. Marketing creative work will also be covered. 3 hrs./wk.

ENGL 224
CREATIVE WRITING WORKSHOP (3CR)

Prerequisite: ENGL 223

Students with serious writing aspirations will get advanced practice in writing creatively. Advanced strategies for marketing will be covered, and students will regularly critique each other's work. 3 hrs./wk.

ENGL 230
INTRODUCTION TO FICTION (3CR)

Prerequisite: ENGL 122

This introduction to fiction from different countries and eras will emphasize fictional techniques and themes in selected novels and short stories. Students will read, discuss and write about the assigned fiction. 3 hrs./wk.

ENGL 231
AMERICAN PROSE (3CR)

Prerequisite: ENGL 122

Students will read complete works of selected American writers and be assigned related writing projects. The course will focus on important works of various writers and the relationship between their lives and times and their art. 3 hrs./wk.

ENGL 232
CHILDREN'S LITERATURE (3CR)

Prerequisite: ENGL 122

Students will look at children's literature, both past and present. Topics will include children's needs, criteria for selecting books, types of children's literature, and the best authors and illustrators. 3 hrs./wk.

ENGL 233
THE DEAF IN LITERATURE (2CR)

The portrayal and function of deaf characters in selected works will be examined. Students will read, discuss and write about the assigned selections. 2 hrs./wk.

ENGL 235
DRAMA AS LITERATURE (3CR)

Prerequisite: ENGL 122

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)**

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)

Prerequisites: FASH 283 and FASH 284

Corequisite: FASH 231

Upon successful completion of this course, the student should be able to exhibit knowledge and work-based skill inherent to fashion retailing, wholesaling and manufacturing. The student will have opportunities to apply knowledge gained in prior courses in analyzing industry topics. This capstone course will review and evaluate competencies that are essential for employment in the fashion industry. 3 hrs. lecture/wk.

FASH 283

FASHION INTERNSHIP I (1CR)

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

FASH 284

FASHION INTERNSHIP II (1CR)

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

FASH 285

FASHION INTERNSHIP III (1CR)

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

FASH 286

FASHION INTERNSHIP IV (1CR)

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

FASH 298

EUROPEAN FASHION EMPHASIS (3CR)

Upon successful completion of this course, the student will be able to compare American and European retail merchandising, advertising and visual presentation. This travel-for-credit course includes visits to selected European cities.

Fire Services Administration

FIRE 121

FUNDAMENTALS OF FIRE PREVENTION (3CR)

This class covers organization and function of fire prevention, inspections, surveying and mapping, recognition of life and fire hazards, elimination of fire hazards and public relations. 3 hrs./wk.

FIRE 125

BUILDING CONSTRUCTION FOR FIRE SERVICE (3CR)

Classification of buildings by occupancy and type of construction is covered. Emphasis is on fire protection features, including building equipment, facilities, fire-resistant materials and high-rise considerations. 3 hrs./wk.

FIRE 130

FIRE INVESTIGATION (1CR)

This course provides instruction in basic fire investigation. Students will learn basic cause and origin determination, scene and evidence security techniques and report-writing skills. This course meets the job performance requirements pertaining to fire investigation identified in NFPA 1021, Fire Office Professional Qualifications. 1 hr./wk.

FIRE 132**ARSON INVESTIGATION (3CR)**

Prerequisite: FIRE 130

Arson investigation techniques and procedures are covered in this advanced class. Topics include evidence preservation, interviewing and courtroom procedures. 3 hrs./wk.

FIRE 135**BUILDING AND FIRE CODES (3CR)**

This course entails application and interpretation of codes and ordinances, especially the Life Safety Codes used extensively in fire prevention. 3 hrs./wk.

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

This course covers extinguishing, detection and alarm systems and their operation. (Fire sprinkler and standpipe systems are covered in detail in a separate course.) 3 hrs./wk.

FIRE 150**INTRODUCTION TO FIRE SCIENCE (3CR)**

This survey course covers career opportunities; history of fire protection; fire loss analysis; public, quasi-public and fire protection services; specific fire protection functions; and fire chemistry and physics. 3 hrs./wk.

FIRE 159**FIRE SERVICE HYDRAULICS (4CR)**

Hydraulic principles and formulas are studied, including hydraulic experiments that emphasize fire service applications. 4 hrs./wk.

FIRE 160**FIRE APPARATUS AND EQUIPMENT (3CR)**

Fire apparatus design, specifications, capabilities and use in emergencies are explored. 3 hrs./wk.

FIRE 162**FIRE TACTICS AND STRATEGY (3CR)**

Fire control through manpower, equipment and extinguishing agents will be explored, including theoretical models and practical applications. 3 hrs./wk.

FIRE 169**RESCUE TECHNIQUES (4CR)**

Advanced rescue techniques (rope, high angle, confined space, extrication) are covered, including practical simulations. 5 hrs./wk.

FIRE 170**SPRINKLER AND STANDPIPE SYSTEMS (3CR)**

Types of sprinkler and standpipe systems used in fire protection and their operation will be demonstrated and discussed. 3 hrs./wk.

FIRE 175**ESSENTIALS OF FIREFIGHTING (9CR)**

This course provides cognitive, psychomotor and affective instruction for those students seeking certification as a fire fighter in the state of Kansas. The class covers hazardous materials, fire department communications, fire ground operations (First Responder: operations level), rescue operations and prevention, preparedness and maintenance. Upon successful completion of the cognitive examinations and all psychomotor skills evaluations, students will be allowed to sit for the Kansas Fire Fighter II state certification examination, which is administered by the University of Kansas, Fire Service Training. 5 hrs. lecture, 7 hrs. lab/wk.

FIRE 190**HAZARDOUS MATERIALS CHEMICAL BEHAVIOR (3CR)**

Prerequisite: FIRE 145 or H.M. First Responder Certificate

This course introduces properties and behavior of hazardous materials according to their chemical structures and constituents. Both inorganic and organic compounds will be studied, with specific attention to the hazards associated with particular functional groups and chemical classes. Principles of atomic and molecular structure, bonding, ionization and chemical nomenclature will be presented as they relate to the identification, containment and neutralization of hazardous chemicals in field settings. 3 hrs./wk.

FIRE 220**FIRE ADMINISTRATION (3CR)**

Techniques and methods used in managing fire departments are explored, including budgeting processes, administrative functions and types of political systems that affect a fire department. 3 hrs./wk.

FIRE 222**FIRE SCIENCE LAW (3CR)**

The law as it pertains to the fire service will be explained, along with tort law and business law. 3 hrs./wk.

FIRE 224**INCIDENT COMMAND SYSTEMS (3CR)**

This is a course in basic incident command. Disaster control, disaster management, communications for disaster management and types of disasters are presented. 3 hrs./wk.

FIRE 250**FIRE SERVICE INSTRUCTIONAL METHODS (3CR)**

This course is designed to provide the instructional skills and knowledge necessary to develop, conduct and evaluate formal training programs in in-service and classroom formats. This course meets NFPA 1041 standards for Fire Service Instructor.

FIRE 281**DIRECTED STUDIES FOR THE FIRE SERVICE (2CR)**

Prerequisite: Program director approval

Students will conduct research and study in any individual area of interest. The instructor and student will decide on a topic to be researched. The student will give the results of the research in a written report, reflecting the recognized form and style of writing. By arrangement.

Foreign Language

FL 116**ELEMENTARY LATIN I (3CR)**

Students will have the opportunity to learn the basic vocabulary and structural patterns, or grammar, of Latin. Emphasis will be on fundamental grammar concepts, extensive word study for English vocabulary growth, and the lasting contributions Roman society made to Western civilization. 3 hrs./wk. Fall.

FL 117**ELEMENTARY LATIN II (3CR)**

Prerequisite: FL 116 or one year of high school Latin

This course will complete the presentation of basic Latin vocabulary and grammar. Fundamental grammar concepts, extensive word study for English vocabulary growth, and the lasting contributions of Roman society to Western civilization will be emphasized. 3 hrs./wk. Spring.

FL 120**ELEMENTARY GERMAN I (5CR)**

This course will present the sounds, vocabulary and basic structural patterns of German, focusing on the development of listening comprehension, speaking, reading and writing skills. Cultural material will be integrated into the course. 5 hrs./wk.

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 205**CONVERSATIONAL JAPANESE (2CR)**

Prerequisite: FL 171 or two years of high school Japanese

This course is designed to enhance the ability of students to express themselves orally in Japanese through vocabulary building and reiteration of essential grammatical structures. The vocabulary will stress everyday situations and current events. 2 hrs. lecture/wk.

FL 220**INTERMEDIATE GERMAN I (3CR)**

Prerequisite: FL 121 or two years of high school German

This class will emphasize vocabulary building and grammar review primarily through extensive reading of German texts. There will be additional practice in listening comprehension, speaking and writing. 3 hrs./wk.

FL 221**INTERMEDIATE GERMAN II (3CR)**

Prerequisite: FL 220 or three years of high school German

This class will further expand the mastery of German vocabulary and structure through extensive reading of more advanced texts with additional practice in listening comprehension, speaking and writing. 3 hrs./wk.

FL 223**CONVERSATIONAL GERMAN (2CR)**

Prerequisite: FL 121 or two years of high school German

This course is a continuation of the presentation of German vocabulary and structural patterns, with an emphasis on speaking and writing skills to build a spontaneous speaking ability and writing fluency. Topics concerning everyday life situations and current events will be discussed. 2 hrs./wk.

FL 230**INTERMEDIATE SPANISH I (3CR)**

Prerequisite: FL 131 or two years of high school Spanish

This is a reading course designed to build vocabulary, increase understanding of Hispanic culture and increase speaking fluency. The course will include composition and conversation. 3 hrs./wk.

FL 231**INTERMEDIATE SPANISH II (3CR)**

Prerequisite: FL 230 or three years of high school Spanish

Extensive study of Hispanic literature will be included in this class along with advanced reading and grammar review. 3 hrs./wk.

FL 234**CONVERSATIONAL SPANISH (2CR)**

Prerequisite: FL 131

This course is designed to enhance the students' ability to express themselves orally in Spanish through vocabulary building and reiteration of essential grammatical structures. The vocabulary will stress everyday life situations and current events. 2 hrs./wk.

FL 240**INTERMEDIATE FRENCH I (3CR)**

Prerequisite: FL 141 or two years of high school French

Students will work on building vocabulary and comprehension and increasing speaking ability. The emphasis will be on conversation and composition. A grammar review of Elementary French I and II also will be included. 3 hrs./wk.

FL 241**INTERMEDIATE FRENCH II (3CR)**

Prerequisite: FL 240 or three years of high school French

Students will study newspaper articles from Match, Elle, and L'Express in this advanced reading course. A complete review of grammar, conversation and composition will be included. 3 hrs./wk.

FL 243**CONVERSATIONAL FRENCH (2CR)**

Prerequisite: FL 141 or two years of high school French

This course is designed to build spontaneous speaking ability. Everyday situations and current events will be discussed in class. 2 hrs./wk.

FL 246**CONVERSATIONAL RUSSIAN (2CR)**

Prerequisite: FL 151

This course is designed to enhance students' ability to express themselves orally in Russian through vocabulary building and reiteration of essential grammatical structures. The vocabulary will stress everyday situations and current events. 2 hrs./wk.

FL 298**FRENCH CULTURE AND CIVILIZATION (3CR)**

This travel-for-credit course will take students to France, where they will experience French culture as they visit Paris and most of the sites and places of historical significance in France. Summer.

Geoscience

(Also see Physical Science, page 233.)

GEOS 130**GENERAL GEOLOGY (5CR)**

This course will provide a survey of the earth and the processes that have shaped it. Lecture units will cover the solid earth, the atmosphere, the hydrosphere, resources and environmental geology. Laboratory units will include identification of rocks and minerals and reading and interpretation of topographic maps. 4 hrs. lecture, 3 hrs. lab/wk.

GEOS 132**HISTORICAL GEOLOGY (5CR)**

Prerequisite: GEOS 130

This class will provide a survey of the geological development of North America and the processes, environments and tectonics that occurred during its formation. Topics will include the interrelationships of various rock strata, stratigraphic-geologic time, correlation and interpretation of geologic maps, and identification of fossils. 4 hrs. lecture, 3 hrs. lab/wk.

GEOS 140
PHYSICAL GEOGRAPHY (3CR)

This course is a survey of the physical and environmental topics of geography including the methods used to study them. The Earth, its atmosphere, hydrosphere and surface features will constitute the major units of study. Some additional topics will include mapping, weather, climate, weathering, soils, rivers, deserts, mountains, topography and landforms. 3 hrs./wk.

GEOS 141
PHYSICAL GEOGRAPHY LAB (2CR)

Corequisite: GEOS 140 or the equivalent

Students in this course will broaden their knowledge of geography through identification of earth materials and the reading and interpretation of various maps and remote sensing photographs. 4 hrs. lab/wk.

GEOS 145
WORLD REGIONAL GEOGRAPHY (3CR)

This course is an introductory survey of the distinguishing characteristics of the major regions of the world, including the names and the location of major physiographic features and political boundaries as well as the major aspects of each region's political, economic, historic and cultural geography. 3 hrs. lecture/wk.

GEOS 150
INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (3CR)

Geographic information systems (GIS) can be divided into four major areas: data collection, database structure and management, data analysis and data display. Students will explore the basic principles associated with these four areas and will examine how these principles can be used for problem solving. 2 hrs. lecture, 3 hrs. lab/wk.

GEOS 250
APPLICATIONS OF GEOGRAPHIC INFORMATION SYSTEMS (3CR)

Prerequisite: GEOS 150

Corequisite: MATH 171 or MATH 173

This courses will introduce spatial analysis using vector GIS to explore the technical aspects in the planning, implementation, operation and management of a GIS. The focus will be on using a GIS to prepare case study analysis and experimental projects including such topics as resource management, urban planning and demographic applications. The student will use GIS techniques to design, resolve, complete and present the application issues involving geographic information with diverse disciplines. 2 hrs. lecture, 3 hrs. lab/wk.

GEOS 295
OZARK GEOLOGY (3CR)

This course will survey the geology of the Ozark Mountain region through field and classroom study. Field observations will be made at numerous locations during two six-day field trips to study the stratigraphy, structure, hydrology, mineralogy, landforms and economic geology of the region. Five three-hour pretrip meetings will provide students with the geologic knowledge necessary to make field observations.

GEOS 297
GEOLOGY OF THE HAWAIIAN ISLANDS (3CR)

This course will survey the geology and natural history of the Hawaiian Islands through field and classroom study. Field observations of concepts presented in five three-hour pretrip seminars will be made during a two-week trip to the Hawaiian Islands. Topics to be studied and observed will include volcanism, oceanography, meteorology, sedimentology, hydrology and the structure of the Hawaiian Islands as well as important natural history sites.

Grounds and Turf Management

KAGB 101
GENERAL BIOLOGY (5CR)

In this course, students will apply biological principles to selected groups of plants and animals. 7 hrs. lecture, 4 hrs. lab/wk.

KAGB 106
LANDSCAPE DESIGN AND MAINTENANCE (2CR)

This course examines the principles of planning, producing, setting out and maintaining trees, vines, groundcovers, perennials, turf and annuals. 3 hrs. lecture, 2 hrs. lab/wk.

KAGB 115
SOIL FERTILITY AND FERTILIZERS (3CR)

In this course, students will study different types of fertilizers for soils and crops. The components, formulation and application of fertilizers will be examined. 3 hrs./wk.

KAGB 129
DECIDUOUS TREES AND SHRUBS (3CR)

In this course, students will learn to identify trees and shrubs. They will also explore methods of growing trees and shrubs and their uses as ornamental plants. 4 hrs. lecture, 2 hrs. lab/wk.

KAGB 145
IRRIGATION AND INSTALLATION (3CR)

In this course, students will study the design, operations and maintenance of modern golf courses and landscape facilities, including water requirements, supply and distribution. 3 hrs./wk.

KAGB 200
OCCUPATIONAL INTERNSHIP (3CR)

In this course, 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 (3.5CR)

This course will be an in-depth study of the content, storage, retrieval, control and retention of medical records with special emphasis on hospital records. Forms design and control, microfilming and computer applications for medical record departments also will be included. 3 hrs./wk.

KMRT 162
HEALTH CARE STATISTICS (3CR)

Prerequisite: KMRT 161 or approval of PVCC

This course will cover vital and health statistics, their uses and values. 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 MANAGEMENT (3CR)

Prerequisite: KMRT 169 or approval of the program coordinator

Quality assurance requirements of regulatory agencies will be emphasized as will methodology in assessing quality of care. 3 hrs./wk.

KMRT 166
DIRECTED PRACTICE I (2.5CR)

Prerequisites: KMRT 161 and BIOL 144

This course will offer a supervised learning experience in a medical record department. A one-hour seminar will be included for the supervised discussion of directed practices experiences. 5 hrs./wk.

KMRT 167
DIRECTED PRACTICE II (2CR)

Prerequisite: KMRT 166

This course will offer a supervised learning experience in a medical record department. Students will gain experience in a variety of procedures including coding and abstracting health information, medical transcription

and release of information. A one-hour seminar will be included for the supervised discussion of directed practices experiences. 5 hrs. lab/wk.

KMRT 168
DIRECTED PRACTICE III (2CR)

Prerequisite: KMRT 167

This course will provide supervised learning experiences in the medical record department of a specialized health care facility. A one-hour seminar will be included for the supervised discussion of directed practices experiences. 4 hrs./wk.

KMRT 169
LEGAL ASPECTS OF MEDICAL RECORDS (2CR)

Prerequisite: KMRT 161 or approval of the program coordinator

This course is a study of the principles of the legal system applied to the field of health care. Confidentiality of the medical record, informed consent, the medical record as a legal document, release of clinical information, response to subpoena and testimony will be studied. 2 hrs./wk.

KMRT 175
SPECIALIZED HEALTH RECORD SYSTEMS (2CR)

Prerequisite: KMRT 164 or approval of the program coordinator

This course will offer an overview of specialized health care systems with an emphasis on record maintenance, requirements of accrediting and regulating agencies and specialized health information registers. 2 hrs./wk.

KMRT 180
CLASSIFICATION SYSTEMS, NOMENCLATURES, INDEXES AND REGISTERS II (3CR)

Prerequisite: KMRT 163 or approval of the instructor

This course covers nomenclatures and classification systems for coding and indexing diagnoses and procedures. Coding systems for specialized health care facilities is also covered. 3 hrs./wk.

KMRT 184
INTRODUCTION TO MEDICAL TRANSCRIPTION (3CR)

Prerequisite: KMRT 151 or approval of the instructor

In this course, students will be introduced to the transcription of medical record reports using correct terminology, punctuation and format. 3 hrs. lab/wk.

KMRT 200
INTRODUCTION TO CLASSIFICATION SYSTEMS (1CR)

Prerequisites: BIOL 144 and KMRT 151

This course examines classification systems used to organize clinical data in health care. The ICD-9-CM classification system will be introduced. 1 hr./wk.

KMRT 210
CLASSIFICATION SYSTEMS AND NOMENCLATURES FOR AMBULATORY CARE (3CR)

Prerequisites: BIOL 137 and KMRT 200

This course examines outpatient coding, classification and payment systems and the assignment of CPT-4 codes to procedures and services. Also included is an examination of the role of the health information technologist in ambulatory coding and billing. 3 hrs./wk.

Health Occupations

AVHO 102
CERTIFIED NURSE AIDE (96 CONTACT HOURS)

This course provides skill instruction for basic care of clients in long-term and acute-care facilities. Instruction includes daily hygiene, bedside care, vital sign measurement, positioning and safe transfer of clients. Upon successful completion, the student will be scheduled to take the Kansas CNA examination.

AVHO 104
CERTIFIED MEDICATION AIDE (80 HOURS OF INSTRUCTION)

Prerequisite: Proof of Kansas CNA certification

This course provides instruction in knowledge of commonly prescribed medications, classifications, side effects and techniques of administration. The Kansas CMA examination is administered to successful completers.

AVHO 106
HOME HEALTH AIDE (21.5 CONTACT HOURS)

Prerequisite: Proof of Kansas CNA certification

This course provides skill instruction in nutritional planning, task modification, emotional support and personal services to clients needing health care assistance at home. Successful completers will be scheduled to take the Kansas HHA certification examination.

AVHO 108
CERTIFIED MEDICATION AIDE UPDATE (10 CONTACT HOURS)

Prerequisite: Proof of Kansas CMA certification

This course meets the continuing education requirements for licensed Certified Medication Aides. The course includes review of commonly used drugs and their interactions with foods and other drugs. Also included are discussion of legal implications and regulations related to administration and record keeping, biological effects of medications on the elderly and a review of basic safety principles.

AVHO 115
I.V. THERAPY (48 CONTACT HOURS)

Prerequisite: One year of experience as a licensed practical nurse

This course provides review of basic physiology of the circulatory system and instruction in principles of site selection for veins appropriate for I.V. therapy. This course meets the Kansas requirements for 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 movement are combined in this exercise program designed to improve muscle tone and cardiovascular fitness. 2 hrs./wk.

HPER 152**AEROBICS (INTERMEDIATE) (1CR)**

Prerequisite: HPER 150

In this continuation of Aerobics (Beginning), students will be performing at a faster pace for a longer period of time. 2 hrs./wk.

HPER 155**BALLET (BEGINNING) (1CR)**

The fundamentals of ballet will be introduced as well as terminology and skills. 2 hrs./wk.

HPER 157**BALLET (INTERMEDIATE) (1CR)**

Prerequisite: HPER 155

In this continuation of Ballet (Beginning), students will work on advanced skills, terminology and participation. 2 hrs./wk.

HPER 158**JAZZ DANCE (BEGINNING) (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**JAZZ DANCE (INTERMEDIATE) (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 USATF Level 1 certification. 2 hrs./wk.

HPER 175**FENCING (1CR)**

The fundamentals of fencing will be introduced as well as strategies necessary for individual participation. 2 hrs./wk.

HPER 182**SWIMMING (BEGINNING) (1CR)**

The fundamentals of swimming will be introduced for students who have had little or no previous swimming experience. Students will practice beginning swimming strokes and learn basic safety skills. 1 hr./wk.

HPER 183**SWIMMING (INTERMEDIATE) (1CR)**

Prerequisite: HPER 182 or the equivalent

In this continuation of Swimming (Beginning), students will work on advanced skills and improve endurance in swimming. Upon successful completion of this course, the student will be able to swim continuously using a variety of strokes. 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, certification in responding to emergencies and cardiopulmonary resuscitation may be earned. 2 hrs./wk.

HPER 202**PERSONAL AND COMMUNITY HEALTH (3CR)**

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

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. 2 hrs./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./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. 2 hrs./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 condensers and evaporators, aluminum coil repair, properties of gas, metering devices, gas combustion, gas burners, ventilation and combustion air. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs./wk.

HVAC 121**BASIC PRINCIPLES OF HVAC (4CR)**

Prerequisite or corequisite: HVAC 123

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. This course is appropriate for HVAC majors or other interested students. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 123**ELECTROMECHANICAL SYSTEMS (4CR)**

Prerequisite or corequisite: HVAC 121

Upon successful completion of this course, the student should be able to identify electrical components and their relationships to the various repair and trouble-shooting techniques. The materials in this course will prove useful to service technicians whose background in electricity is limited. The course includes material from basic electrical theory to troubleshooting complex electrical circuits. This course will provide practice in application of electrical theory as well as the interconnection of components of air conditioning and refrigeration systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 124**EQUIPMENT SELECTION AND DUCT DESIGN (4CR)**

Prerequisites: HVAC 121

Upon successful completion of this course, the student should be able to identify techniques and procedures used in the residential construction industry to determine proper sizing of HVAC equipment and ducts to meet the requirements for a high-quality, comfortable climate in terms of heating, cooling, humidifying, dehumidifying, ventilation and air cleaning or filtering. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 125**ENERGY ALTERNATIVES (2CR)**

Upon successful completion of this course, the student should be able to identify diverse methods of alternate energy production. Some of the technologies that will be discussed are wind energy, photoelectric energy, nuclear energy, hydroelectric energy, biomass, alternate fuel vehicles and others. Students will understand the advantages of using various alternate energy technologies, the impact or byproducts of each and the problems that might be encountered. Some student research will be included in the context of the course. Emphasis will be on the most promising or effective alternate energy technologies available. This course is appropriate for HVAC majors or other interested students. 2 hrs. lecture/wk.

HVAC 127**RESIDENTIAL SYSTEMS: HEATING (4CR)**

Prerequisites: HVAC 121 and HVAC 123

Upon successful completion of this course, the student should be able to identify all the components and accessories and their relation to the functions of residential heating systems. Topics covered will be natural gas, propane, oil, forced air and hydronic type equipment. Emphasis will be on the electrical diagrams and mechanical principles of operation of these systems. Practical instruction in service diagnosis procedures and techniques for efficient operation, maintenance, troubleshooting and repair of these systems make up the lab portion of the course. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 137**RESIDENTIAL SYSTEMS: AIR CONDITIONING (4CR)**

Prerequisite: HVAC 121 and HVAC 123

Upon successful completion of this course, the student should be able to identify all the components and accessories and their relation to the functions of residential air conditioning systems. Topics covered will include electric and natural gas air conditioner condensing units, metering devices, evaporation coils and refrigerants. Emphasis will be on the electrical diagrams, psychrometric charts and techniques for efficient operation, maintenance, troubleshooting and repair of these systems and will make up the laboratory portion of the course. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 143**READING BLUEPRINTS AND LADDER DIAGRAMS (2CR)**

Upon successful completion of this course, the student should be able to identify all types of industrial plant blueprints. Included will be discussion of machine parts and drawings, as well as hydraulic, pneumatic, piping and plumbing, electrical, air conditioning and refrigeration drawings. Sketching used in industrial plants will be covered. A portion of the course will cover the types and uses of ladder logic and its various components such as input, output and diagrams. The structure, symbols and terminology of ladder logic diagrams will be introduced. Logic or decision-making functions will be presented along with practice in creating ladder logic diagrams. 2 hrs./wk.

HVAC 145**SERVICING HVAC EQUIPMENT (2CR)**

Prerequisites: Approval of the Burlington Northern Santa Fe training director and the JCCC division administrator

Upon successful completion of this course, the student should be able to identify basic components and know the basic fundamentals of the refrigeration and heating cycle. The student should be able to recognize correct air conditioning service and maintenance procedures. 1.5 hrs. lecture, 1 hr. lab/wk.

HVAC 146**PLUMBING SYSTEMS APPLICATIONS (3CR)**

Upon successful completion of this course, the student should be able to demonstrate familiarity with all aspects of fuel gas piping, gas appliance venting, water heater installations, combustion air requirements and proper piping techniques. Classroom lectures center on methods for proper sizing of both fuel gas piping and vent sizing with emphasis on interpretation of both the Uniform Plumbing Code and the National Fuel Gas

Code. There will be an emphasis on combustion air requirements. Laboratory competencies will include identification of materials and proper installation methods of fuel gas lines, vent piping systems and copper water line connections. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

HVAC 148
HVAC INSTALLATION AND START-UP PROCEDURES (3CRS)

Prerequisites: HVAC 121 and HVAC 123

Upon successful completion of this course, the student should be able to identify techniques and procedures to install new systems, retrofit systems and do an initial start-up and check-out furnaces and air conditioners. Topics will include the requirement for electrical, flue, appliance location, permit and inspections, combustion air, sheet metal ducts and mechanical standards. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

HVAC 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 155
WORKPLACE SKILLS (1CR)

Upon successful completion of this course, the student should be able to identify the job skills necessary to have a successful career in the field of their choosing. Topics include listening skills, oral communication, human relations, decision making/problem solving, how to work as a team, time and resource management, work ethics and career planning. 1 hr. lecture/wk.

HVAC 167
SHEET METAL LAYOUT AND FABRICATION (3CR)

Upon successful completion of this course, the student should be able to identify the components, equipment and operation for sheet metal layout and fabrication. Practice problems are included at the end of each unit in order to provide the student with an opportunity to apply the methods attained by sheet metal layout. Shop facilities are available. The patterns will be fabricated

and joined into a line of fittings. This gives the most complete test of pattern accuracy and also provides the experience needed by a competent layout person. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

HVAC 205
PNEUMATIC CONTROL SYSTEMS (2CR)

Prerequisites: HVAC 123 and HVAC 218

Upon successful completion of this course, the student should be able to identify the components and theory of operation of pneumatic control systems as applied to HVAC equipment. The student will be able to identify components, wiring diagrams and sequence of operation. Laboratory competencies include using sequencing controls, PE switches, calibration, setup of pneumatic equipment and receiver controllers. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1.5 hrs. lecture, 1.5 hrs. lab/wk.

HVAC 218
ELECTRONIC CONTROL SYSTEMS (2CR)

Prerequisites: HVAC 123

Upon successful completion of this course, the student should be able to identify the components in an electronic control system applied to HVAC systems. Components, wiring diagrams and sequence of operations will be covered. Laboratory competencies include using modular control motors, sequencing controls, analog to digital converters and electronic controllers. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1.5 hrs. lecture, 1.5 hrs. lab/wk.

HVAC 221
COMMERCIAL SYSTEMS: AIR CONDITIONING (4CR)

Prerequisites: HVAC 121 and HVAC 123

Upon successful completion of this course, the student will be able to identify large cooling systems used in commercial, institutional and industrial applications. Types of equipment include reciprocating and centrifugal chillers, absorption systems, cooling towers, fans and air handlers. Topics also include psychrometrics, pressure-enthalpy diagrams and commercial load calculations. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 223**COMMERCIAL SYSTEMS: HEATING (4CR)**

Prerequisite: HVAC 123

Upon successful completion of this course, the student should be able to identify large heating systems used in commercial, institutional and industrial applications. Types of equipment include hot water, low-pressure and high-pressure steam boilers; auxiliary, safety and flame safeguard controls; steam traps; condensate return; and water treatment systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 228**DDC AND MICROPROCESSOR-BASED CONTROLS (3CR)**

Prerequisites: HVAC 123 and HVAC 218

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 heating and air conditioning systems. System components, theory of operation, wiring diagrams and installation methods will be covered. Laboratory competencies will include installation, wiring and programming of three different energy management systems. Interactive instructional media will be utilized in this course. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs lab/wk.

HVAC 231**HVAC ROOFTOP UNITS (3CR)**

Prerequisites: HVAC 121 and HVAC 123

Topics will include electrical controls, economizers, the Trane Comfort Trac system, roof curbs, installation, service and diagnosis of typical light commercial rooftop units. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

HVAC 235**RESIDENTIAL HEAT PUMP SYSTEMS (4CR)**

Prerequisites: HVAC 121 and HVAC 123

Upon successful completion of this course, the student should be able to identify the function of all components and accessories of all electric and dual heat pump systems. Topics will include electric heat and heat pump fundamentals, principles and applications; refrigerant flow controls; defrost cycle controls; heat pump thermostats; indoor air distribution; dual fuel controls and change-over stats. Emphasis will be on the electrical diagrams and mechanical principles of operation. These systems, practical instruction in service and diagram

procedures and techniques for the efficient operation, maintenance, troubleshooting and repair of these systems will make up the lab portion of the course. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 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 132**HISTORY OF AFRICA (3CR)**

This course introduces students to the history of Africa until the present. It emphasizes the fundamental characteristics and long-term developments in the evolution of African political and socioeconomic institutions. 3 hrs. lecture/wk.

HIST 135**EASTERN CIVILIZATION (3CR)**

This course is an introduction to the societies and cultures of Asia. Through lectures, readings and discussions, the course will focus on aspects of the history, politics, art, literature and economics of China, Japan and India. The major traditional themes and concepts of these civilizations will be stressed. 3 hrs./wk.

HIST 140**U.S. HISTORY TO 1877 (3CR)**

This survey course in U.S. history will emphasize developments and trends in American society from the early period of discovery and settlement through Reconstruction. Topics will include the Colonial era, the Revolutionary period, the Federalist era, expansion of the Republic during the mid-19th century and Civil War and Reconstruction. The emphasis will be on analysis and interpretation of these developments. 3 hrs./wk.

HIST 141**U.S. HISTORY SINCE 1877 (3CR)**

This survey course will emphasize developments and trends in American society from the 1870s to the late 20th century. Topics will include Reconstruction era, industrialization, immigration, reform movements, World Wars I and II, social and cultural trends, and foreign policy. Emphasis will be on analysis and interpretation of these developments. 3 hrs./wk.

HIST 151**WORLD HISTORY I: THE TRADITIONAL WORLD (3CR)**

This course will provide students an introduction to the history of the major world civilizations to approximately the year 1500. It will include the Neolithic revolution, the ancient Near East, Greece, Rome, medieval Europe, India, China, Japan, the Islamic Middle East, Africa and pre-Columbian America. It will emphasize the basic social, economic, political and cultural characteristics of these societies and long-term developments within them. 3 hrs. lecture/wk.

HIST 152**WORLD HISTORY II: THE MODERN WORLD (3CR)**

This course will examine the history of the world since approximately the year 1500. It will begin with the development of the phenomenon of modernism in Europe, including the scientific revolution, secularism, industrialization and the rise of new political ideologies. It will then trace the expansion of modernism in both the Western and non-Western worlds and the response to modernism in the major non-Western countries. 3 hrs. lecture/wk.

HIST 160**MODERN RUSSIAN HISTORY (3CR)**

This course will focus on the social, economic, political and cultural forces that have shaped this important world power since the reign of Peter the Great. 3 hrs./wk.

HIST 162**MODERN LATIN AMERICA (3CR)**

This course is an examination of the economic, social, political and cultural history of Latin America since independence. Regional identities, such as Central America, and independent national stories – Cuba and Mexico – are explored. Literary and intellectual trends together with contemporary popular culture are featured in the course. 3hrs./wk.

HIST 164**THE CHANGING TRADITION (3CR)**

This self-paced course explores Japanese history, politics and economics from the early days of the Tokugawa regime from 1500 to the present.

Home Economics

HMEC 131

FAMILY COMMUNICATIONS (3CR)

Strategies for coping with stressful situations, the adult and family life cycle and current issues involving families such as drugs, violence and divorce will be examined. 3 hrs./wk.

HMEC 142

HOME MANAGEMENT (3CR)

A systems approach to management, especially of the dual-career family, will be examined. Topics will include goal setting, planning, decision making and the management of time, energy and money. 3 hrs./wk.

HMEC 151

NUTRITION AND MEAL PLANNING (3CR)

Upon successful completion of this course, the student should be able to identify basic food groups, their use in meal planning, their functions and their nutritional values. In addition, the student should be able to describe the current trends in eating, diet and exercise, as well as fad diets and life-cycle nutritional needs. The student should also be able to describe the effects of nutrient intake on growth and development. 3 hrs./wk.

Honors Program

HON 250

HONORS FORUM: IN SEARCH OF SOLUTIONS (3CR)

This course will focus on two topics during the semester and how the topics affect the local, national and global communities. It complements other courses in the curriculum by combining an emphasis on both specific content and on skill development in the areas of interaction, analysis, syntheses and conflict resolution. In the first topic, students will study issues in a historical and contemporary context, develop a greater understanding of the issues and attempt to take a position on the issues. This resolution will be subjected to further challenge and dialogue. The second topic, which is selected by the students, will have a service learning component. In this course, the process of reflecting, researching, analyzing and evaluating is as important as the content. As points of view concerning an issue are developed, the students must articulate and defend these as they are challenged by others and make judgments among alternative options. 3 hrs./wk in addition to attending scheduled forum presentations.

Horticulture

HORT 115

HOME HORTICULTURE (2CR)

This is an introduction to the management of a home lawn, garden and trees. Students will review the horticulture industry, look at career opportunities and practice the lab techniques studied in class. 1 hr. lecture, 2 hrs. lab/wk.

HORT 201

INTRODUCTORY HORTICULTURE SCIENCE (4CR)

Prerequisite: High school biology/botany or concurrent enrollment in BIOL 125

This is an introduction to the principles and practices of horticultural plant systems. Plant structure and function will be discussed, along with the effects of environmental factors on plant growth. General cultural practices will be described, including pest control, mineral nutrition and plant propagation. 3 hrs. lecture, 2 hrs. lab/wk.

HORT 205

PLANT PROPAGATION (3CR)

Prerequisite: HORT 201

This course is designed to enable the student to acquire knowledge above and to understand the various fundamental principles and skills underlying the many diverse methods involved in the propagation and the production of horticultural crops. 2 hrs. lecture, 2hrs. lab/wk.

Hospitality Management

(Chef Apprenticeship)

(Food and Beverage Management)

(Hotel Management)

HMGT 120

FOOD SERVICE SANITATION (1CR)

Upon successful completion of this course, the student should be able to understand and describe the basic principles of providing and serving safe food. The student should also understand all safe food-handling procedures necessary to manage a sanitary and safe food service operation. 1 hr. lecture/wk.

HMGT 121

HOSPITALITY MANAGEMENT FUNDAMENTALS (3CR)

Prerequisite: Admission to the Hospitality Management program

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.

HMG 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.

HMG 126

FOOD MANAGEMENT (4CR)

Prerequisites: HMG 123, HMG 145, HMG 230, HMG 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.

HMG 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.

HMG 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.

HMG 132

SEMINAR IN HOUSEKEEPING OPERATIONS (3CR)

This course presents a systematic approach to managing housekeeping operations in the hospitality industry. The course will also include related health department regulations. While enrolled in this class, a student must work a minimum of 15 hours a week in a lodging operation. The work experience is concurrent but does not necessarily concentrate on the subject being taught in the course. 3 hrs./wk.

HMG 145

FOOD PRODUCTION SPECIALTIES (3CR)

Prerequisite: HMG 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.

HMG 203

HOTEL SALES AND MARKETING (3CR)

Prerequisites: HMG 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.

HMG 221

DESIGN TECHNIQUES (3CR)

Prerequisites: HMG 123 and HMG 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.

HMG 223**FUNDAMENTALS OF BAKING (3CR)**

Prerequisite: HMGT 145

Upon successful completion of this course, the student should be able to demonstrate an understanding of bake shop production as it relates to the basic principles of ingredients, measurements, mixing, proofing, baking and final presentation. In addition, the student will be able to identify the various types of baking equipment used in the preparation of bake shop products. The class includes lecture and participation. 3 hrs./wk.

HMG 226**GARDE-MANGER (3CR)**

Prerequisite: HMGT 123 and HMGT 145

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.

HMG 228**ADVANCED HOSPITALITY MANAGEMENT (3CR)**

Prerequisite: Hospitality Management program approval

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.

HMG 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.

HMG 231**ADVANCED FOOD PREPARATION (4CR)**

Prerequisite: HMGT 145 and 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.

HMG 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.

HMG 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.

HMG 250**INTRODUCTION TO CATERING (3CR)**

Upon successful completion of this course, the student should be able to explain the different types of catered events within the hospitality industry. The student should also be able to explain the importance of marketing, contract writing, food production, room arrangements and required personnel relative to specific catered events. 3 hrs. lecture/wk.

HMG 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.

HMG 268**HOTEL ACCOUNTING (3CR)**

Prerequisites: MATH 120, HMGT 121 and HMGT 273

Upon successful completion of this course, the student should be able to describe hotel accounting concepts, procedures, processing of data and the flow of financial information within the various hotel departments. 3 hrs. lecture/wk.

HMG 271
SEMINAR IN HOSPITALITY MANAGEMENT:
PURCHASING (3CR)

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.

HMG 273
SEMINAR IN HOSPITALITY MANAGEMENT:
ACCOUNTING (3CR)

Prerequisites: MATH 120 or higher and HMG 121

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.

HMG 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.

HMG 277
SEMINAR IN MENU PLANNING (3CR)

Prerequisite: HMG 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.

HMG 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.

HMG 281
CULINARY ARTS PRACTICUM I (2CR)

Prerequisite: Acceptance into the American Culinary Federation Chef Apprenticeship Training Program and Hospitality Management program approval

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.

HMG 282
CULINARY ARTS PRACTICUM II (2CR)

Prerequisite: HMG 281

This is a continuation of Culinary Arts Practicum I.

HMG 285
CULINARY ARTS PRACTICUM III (2CR)

Prerequisite: HMG 282

This is a continuation of Culinary Arts Practicum II.

HMG 286
CULINARY ARTS PRACTICUM IV (2CR)

Prerequisite: HMG 285

This is a continuation of Culinary Arts Practicum III.

HMG 287
CULINARY ARTS PRACTICUM V (2CR)

Prerequisite: HMG 286

This is a continuation of Culinary Arts Practicum IV.

HMG 288
CULINARY ARTS PRACTICUM VI (2CR)

Prerequisite: HMG 287 and Hospitality Management program approval

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 examines artistic and technical elements in several art forms including painting, sculpture, architecture, music, theater, film and literature. The major themes, processes and elements in these art forms will be studied. 3 hrs. lecture/wk.

HUM 136

THE HUMAN EXPERIENCE (3CR)

The themes of freedom and personal identity will be traced in the arts and sciences from the classical period of the 18th century through the romanticism of revolution in politics and the arts and finally in more modern idioms. The course will conclude with a consideration of each student's personal identity through family language. 3 hrs. lecture/wk.

HUM 137

INTRODUCTION TO RUSSIAN CULTURE (3CR)

This course is a survey of the cultural history of Russia from the ninth century to the present day. The approach will be interdisciplinary, examining representative examples of Russian art, architecture, music, theater, dance literature and philosophy in their historical context. In addition to developing the students' appreciation of Russia's contribution to world culture, the course aims to enhance students' understanding of the contemporary world. 3 hrs. lecture/wk.

HUM 138

INTRODUCTION TO RUSSIAN CULTURE, FIELD STUDY (1CR)

Prerequisite: HUM 137 or approval of instructor

This course is the field study portion of the HUM 137 Introduction to Russia course. Students will study, on site, selected works of art, architecture, music, literature, theater and film of the various historical periods from the perspective of Russian experts in these fields. In addition, students will enhance their knowledge of Russian history by visiting the sites of many of the major events that have shaped the development of Russia's culture. 2 hrs. lab/wk.

HUM 145

INTRODUCTION TO WORLD HUMANITIES I (3CR)

This course will acquaint students with the arts and ideas of the world's major civilizations, from antiquity to the period of world exploration during the Renaissance. The approach will be interdisciplinary, covering the artistic values embodied in painting, sculpture, architec-

ture, 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 Greco-Roman myths and their continuation in later Western cultures. Sources studied will include both literature and the visual arts. 3 hrs. lecture/wk.

HUM 164

CIVILISATION (3CR)

This course, based upon the Time-Life television series of the same name and narrated by the art historian Kenneth Clark, covers the major ideas and events that have shaped Western civilization from the fall of the Roman Empire to the 20th century. By arrangement.

Industrial Technology

INDT 125

INDUSTRIAL SAFETY (1CR)

Upon successful completion of this course, the student should be able to identify various industrial safety and health considerations, list basic safety rules and regulations, identify the proper personal protective equipment needed for common industrial tasks and recognize the need for an ongoing safety program. 1 hrs. lecture/wk.

INDT 140

QUALITY IMPROVEMENT USING SPC (2CR)

Upon successful completion of this course, the student should be able to describe the concepts of quality improvement. This course will examine the application of

the "Transformation of America" concept to American businesses. Statistical process control will be introduced as a tool to improve quality. W. Edwards Deming's 14 points and the management changes required to implement quality improvement also will be covered. 2 hrs./wk.

Information Technology

IT 160

LOCAL AREA NETWORK FUNDAMENTALS (1CR)

Prerequisite: CPCA 105

In this survey course of local area networks, students will learn of the evolution of LANs in terms of the need and cost justification in both workgroup and total company environments. Ramifications of decentralizing the processing of information will be examined, and components of a local area network will be outlined. Students will receive hands-on use of a network to show practical applications for LANs. 1 hr. lab/wk.

IT 200

NETWORKING TECHNOLOGIES (3CR)

This course is designed to provide students with the fundamentals of networking technology. Requirements for data, voice and video transmission will be examined. Computer network services will be introduced. Local area and wide area networks will be contrasted. Network cabling, topologies and media access methods will be covered. Common network protocols and the OSI model will be studied. 3 hrs. lecture/wk.

IT 205

IMPLEMENTING WINDOWS 95/98 (3CR)

The focus of this course is the use of Microsoft Windows 95/98 as an operating system in a business environment. Planning a simple network system, installation and configuration of the software and hardware; resource management; connectivity; running application software under Windows 95/98; monitoring and optimizing system hardware; and troubleshooting all lead the student to a deeper understanding of local area network use and administration. 2 hrs. lecture, 3 hrs. lab/wk.

IT 210

NETWARE ADMINISTRATION (3CR)

Prerequisites: IT 200 and ELEC 124 and either as corequisites or prerequisites IT 205 or IT 220 or CPCA 137

This course is designed to provide students with the necessary knowledge and skills to perform competently in the role of a NetWare network administrator. Students completing this course will be able to

accomplish basic network management tasks. Topics covered will include managing user accounts; planning and managing the network file system; managing NetWare Directory Services (NDS); implementing login, file system and NDS security; and implementing network printing. 2 hrs. lecture, 3 hrs. lab/wk.

IT 211

NETWARE ADVANCED ADMINISTRATION (3CR)

Prerequisite: IT 210

This course is designed to provide students with the advanced skills needed to manage a multi-context NetWare environment. Topics covered will include installing, configuring, and upgrading the NetWare operating system; monitoring and optimizing network performance; monitoring and managing memory usage; partitioning and replicating the NDS database; developing time synchronization strategies; and merging NDS trees. 2 hrs. lecture, 3 hrs. lab/wk.

IT 212

NETWARE NDS DESIGN AND IMPLEMENTATION (3CR)

Prerequisite: IT 211

This course is designed to provide students with the skills necessary to design and create an implementation plan for a Novell network. Students will build on network management skills obtained in prerequisite classes to design, analyze and integrate the components of a NetWare network. Topics will include developing strategies for the network infrastructure, NDS administration, replica placement, time synchronization and user accessibility. 2 hrs. lecture, 3 hrs. lab/wk.

IT 214

NOVELL GROUPWISE ADMINISTRATION (3CR)

Prerequisites: IT 210

This course is designed to provide students with the necessary knowledge and skills to perform competently in the role of a Novell GroupWise administrator. Students completing this course will be able to accomplish basic GroupWise management tasks. Topics covered will include installing and configuring a GroupWise system, creating post offices, distribution lists and GroupWise libraries, and how to administer and maintain the GroupWise system. 2 hrs. lecture, 3 hrs. lab/wk.

IT 220

IMPLEMENTING AND SUPPORTING WINDOWS NT WORKSTATION (3CR)

The focus of this course is the use of Microsoft NT Workstation as an operating system in a business environment. Planning a simple network system; installation

and configuration of the software and hardware; resource management; connectivity; running application software under Windows NT Workstation; monitoring and optimizing system hardware; and troubleshooting all lead the student to a deeper understanding of local area network use and administration. 2 hrs. lecture, 3 hrs. lab/wk.

**IT 221
WINDOWS NT SERVER (3CR)**

Prerequisites: IT 200 and ELEC 124 and either as corequisites or prerequisites IT 205 or IT 220 or CPCA 137

This course is designed to provide students with the knowledge and skills of a network administrator utilizing the Window NT network operating system. Students completing this course will be able to accomplish basic fundamental network management tasks, including planning server roles and subsequent requirements, planning the network file system, implementing user accounts and file system security, implementing network printing, and managing the network servers. 2 hrs. lecture, 3 hrs. lab/wk.

**IT 222
WINDOWS NT SERVER IN THE ENTERPRISE (3CR)**

Prerequisite: IT 221 or IT 211 Win/NT server

This course is designed to provide Windows NT network administrators with information that enhances their network managing skills. Topics include advanced server and client management and performance, implementation of an enterprise-wide environment, installation and configuration of network services, advanced print services, coexistence in a multi-network operating system environment and advanced troubleshooting techniques. 2 hrs. lecture, 3 hrs. lab/wk.

**IT 230
UNIX ADMINISTRATION AND NETWORKING (3CR)**

Prerequisites: IT 200 and ELEC 124 and either as corequisites or prerequisites IT 205 or IT 220 or CPCA 137

This course is designed to provide students with the knowledge and skills of a system and/or network administrator utilizing the Unix operating system and network administration tasks. Topics include planning server roles and subsequent requirements, planning the network file system, implementing user accounts and file system security, implementing network printing and managing the network servers and connectivity in a multi-network operating system environment. 2 hrs. lecture, 3 hrs. lab/wk.

**IT 240
LAN CABLING AND INSTALLATION (3CR)**

Prerequisite: IT 200

This course is designed to provide specialized skills for installing and testing local area network cabling systems. Twisted pair, coax and fiber cables will be covered. Laboratory exercises for pulling, terminating and testing network cables will accompany the lectures. Students will be trained on how to use common wiring tools and testing instruments. 2 hrs. lecture, 3 hrs. lab/wk.

**IT 245
TCP/IP INTERNETWORKING (3CR)**

Prerequisite: IT 210 or IT 221 or IT 230

This course is designed to provide in depth understanding of the operation of TCP/IP. Topics covered include IP addressing and subnetting, Domain Name System installation and configuration, Windows Internet Name Service operation, Dynamic Host Configuration Protocol, TCP/IP utilities and Simple Network Management Protocol. Internetworking with TCP/IP and the operation of routers will be examined. Laboratory exercises will accompany the lectures. 2 hrs. lecture, 3 hrs. lab/wk.

**IT 246
INTRODUCTION TO ROUTERS (3CR)**

Prerequisite: IT 200

This course is designed to provide students a fundamental understanding of network routing and the operation of routers. Topics include installing and configuring routers, OSPF and Link State routing protocols, working with metrics and route selection, and TCP/IP configuration. Programming and setup utilizing Cisco routers will be conducted. Laboratory exercises will accompany lectures. 2 hrs. lecture, 3 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

NETWORKING SEMINAR (3CR)

Prerequisites: IT 240 and either IT 211 or IT 222 or IT 217 or IT 219

This course is intended as a capstone course for applying concepts and procedures developed in previous LAN courses using realistic business scenarios. Students will work as a part of a team to develop network solutions for common business applications. Workgroup competencies will be stressed as well as technical skills in LAN systems. 3 hrs. lecture/wk .

IT 271

INFORMATION TECHNOLOGY INTERNSHIP I (3CR)

Prerequisites: IT 210 or IT 221 or IT 230 and approval of division administrator

This course affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide advanced information technology students with appropriate on-the-job experience with area employers, under instructional oversight, which will promote the student's career goals. 15 hrs. on-the-job training/wk.

IT 272

INFORMATION TECHNOLOGY INTERNSHIP II (3CR)

Prerequisites: IT 271 and approval of the division administrator

This course affords the student the additional opportunity to apply classroom knowledge to an actual work environment. It will provide advanced information technology students with appropriate on-the-job experience with area employers, under instructional oversight, which will promote the student's career goals. 15 hrs. on-the-job training/wk.

Information/Word Processing

(See Office Systems Technology, page 226.)

Interdisciplinary Studies

IDSP 175

GLOBAL RESOURCES FROM GEOLOGIC AND ECONOMIC VIEWPOINTS (3CR)

This interdisciplinary course will examine the interdependence of geology and economics in the development, production and use of the world's geologic resources. Land, water, mineral and energy resources form a structure that students can use to gain a perspective on the interrelationships between resources and economics to synthesize their knowledge into intelligent and logical conclusions about past, present and future resource problems. 3 hrs./wk.

Interior Merchandising

ITMD 121

INTERIOR DESIGN I (3CR)

Upon successful completion of this course, the student should be able to demonstrate logical and usable arrangement of furniture in a house plan; use correct scale and symbols in creating a floor plan; develop a color wheel and color schemes; and develop a complete floor plan and decorative scheme for that plan. 3 hrs./wk.

ITMD 122

INTERIOR DESIGN II (3CR)

Prerequisites: ITMD 121 and DRAF 261

Upon successful completion of this course, the student should be able to demonstrate an advanced level of furniture arrangement on a floor plan; develop color schemes that will solve specific assigned decorating problems; and demonstrate the ability to coordinate fabrics, colors, texture, patterns and finishes in a complete floor plan for a residential unit. 3 hrs./wk.

ITMD 125

INTERIOR TEXTILES (3CR)

Upon successful completion of this course, the student should be able to differentiate fibers and textiles according to their specific characteristics and to select fibers and interior textiles for specific applications. This course will cover properties and characteristics of natural and man-made fibers, construction methods and various finishing processes such as weaving, knitting, felting, printing and dyeing. 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 264 and ITMD 122

Upon successful completion of this course, the student should be able to define and use vocabulary related to kitchen and bath design and construction; identify and use proper architectural symbols common to kitchen and bath floor plans and elevations; state the space relationships required for proper kitchen and bath usage; and draw kitchen and bath floor plans and elevations. Additionally, the student should be able to identify and explain the work triangle, structural detail, cabinetry and appliances in kitchen design and wet walls, cabinetry, structural detail and plumbing in bath planning. 2 hrs. lecture, 1 hr. lab/wk.

ITMD 239**CAPSTONE: PORTFOLIO AND PRESENTATION (2CR)**

Corequisites: ITMD 223 and ITMD 234

Upon successful completion of this course, the student should be able to select and rework portfolio materials for maximum visual potential and appeal. In addition, the student will prepare a résumé, conduct a job search and present written and oral presentations based on resource and product files from other classes. This course is designed as a capstone for the interior merchandising program. It should be taken in conjunction with or after completion of the final interiors studio course or in the graduating semester. 2 hrs. lecture/wk.

ITMD 273**INTERIOR MERCHANDISING SEMINAR:
PRACTICES AND PROCEDURES (2CR)**

Prerequisite: ITMD 121

Upon successful completion of this course, the student should be able to demonstrate the use of proper interior design industry terminology and appropriate business forms and contracts; define the types of business legal structures; and solve business organizational and ethical problems through the use of case studies. 2 hrs./wk.

ITMD 275**INTERIOR MERCHANDISING SEMINAR:
BUDGET AND ESTIMATING (2CR)**

Prerequisite: ITMD 121 and MATH 120

Upon successful completion of this course, the student should be able to describe methods of pricing interior design materials and services; measure accurately for materials; demonstrate the use of business math in interior merchandising applications; and compute cost in example cases. 2 hrs./wk.

ITMD 282**INTERIOR MERCHANDISING PRACTICUM I (1CR)**

Prerequisite: ITMD 121

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the interior merchandising industry. A minimum of 15 hrs. on-the-job training/wk.

ITMD 284**INTERIOR MERCHANDISING PRACTICUM II (1CR)**

Prerequisite: ITMD 121

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. It is designed

to provide practical experience in the interior merchandising industry. A minimum of 15 hrs. on-the-job training/wk.

ITMD 295**FIELD STUDY: DESIGN AND MERCHANDISING (3CR)**

Prerequisites: ITMD 121 and approval of the program director

Upon successful completion of this course, the student should be able to compare, contrast and evaluate manufacturing processes and marketing techniques for interior products. This travel-for-credit course consists of visits to manufacturing plants, a market showroom and a merchandise mart in a major market city. Summer.

ITMD 296**INTERIOR DESIGN: THE ORIENT (3CR)**

Upon successful completion of this course, the student should be able to recognize and identify Oriental furniture pieces and accessories from different countries; define and use vocabulary common to the art periods; and compare and contrast furniture and accessory pieces observed in museums, temples, homes and antique stores. This course will include five three-hour pre-departure seminars, followed by a three-week field trip to Japan, Hong Kong and Thailand. Summer.

Interpreter Training

INTR 110**CONVERSATIONAL SIGNED ENGLISH I (2CR)**

An introduction to signed English, this class will help students develop basic conversational skills. 4 hrs. lab/wk.

INTR 111**CONVERSATIONAL SIGNED ENGLISH II (2CR)**

Prerequisite: INTR 110

This course will offer continued development of signed English skills, leading to the development of conversational skills. 4 hrs. lab/wk.

INTR 115**CONVERSATIONAL ASL I (2CR)**

This is an introduction to American Sign Language, leading to the development of basic conversational skills. 4 hrs. lab/wk.

INTR 116**CONVERSATIONAL ASL II (2CR)**

Prerequisite: INTR 115

This is an introduction to American Sign Language, leading to the development of intermediate conversational skills. 4 hrs. lab/wk.

INTR 125**AMERICAN SIGN LANGUAGE I (ASL) (5CR)**

Prerequisite: Admission to the Interpreter Training Program

This class will focus on the development of beginning communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. 1 hr. lecture, 9 hrs. lab/wk.

INTR 130**ORIENTATION TO INTERPRETING (3CR)**

Prerequisite: Admission to the Interpreter Training Program

In this overview of interpreting as an occupation, topics will include interpersonal skills, professional ethics, parameters of the interpreter's responsibilities, community resources and legal ramifications. 3 hrs./wk.

INTR 132**AMERICAN SIGN LANGUAGE II (ASL) (5CR)**

Prerequisite: INTR 125

Students will work on developing intermediate communication skills, concentrating on comprehension and production skills. Linguistic and cultural features will be presented in the context of language-learning experiences. 1 hr. lecture, 9 hrs. lab/wk.

INTR 135**THEORY OF AMERICAN SIGN LANGUAGE (ASL) (3CR)**

Prerequisite: INTR 125

Students will examine the structural and grammatical principles of ASL in this introduction to linguistic problems of equivalency in English and ASL. 3 hrs./wk.

INTR 140**AMERICAN SIGN LANGUAGE III (ASL) (5CR)**

Prerequisite: INTR 132

Students will continue to develop ASL skills in this class. Emphasis will be on comprehension and production skills. Linguistic and cultural features will be presented in the context of language-learning experiences. 1 hr. lecture, 9 hrs. lab/wk.

INTR 142**FINGERSPELLING I (3CR)**

Prerequisite: INTR 125

Students will work on developing beginning expressive and receptive fingerspelling skills based on word and phrase recognition principles. 2 hrs. lecture, 3 hrs. lab/wk.

INTR 145**DEAF CULTURE (3CR)**

Prerequisite: Admission to the Interpreter Training Program
Corequisite: INTR 125

Students will compare middle-class American values, beliefs and institutions with those of the deaf community in the United States. 3 hrs./wk.

INTR 181**INTERPRETING PRACTICUM I (1CR)**

Prerequisite: INTR 130

Students will observe skilled interpreters in various interpreting situations in a variety of settings during the semester. 2 hrs. lab, field work/wk.

INTR 225**PHYSICAL AND PSYCHOLOGICAL ASPECTS OF INTERPRETING (2CR)**

Corequisites: INTR 181 and INTR 250

Discussion will focus on the physical and mental stress interpreting can bring about and on therapeutic exercises for preventing negative physical effects. 2 hrs./wk.

INTR 230**AMERICAN SIGN LANGUAGE IV (ASL) (4CR)**

Prerequisite: INTR 140

Students will continue to develop ASL skills at an advanced level. Emphasis will be on comprehension and production skills. Additional linguistic and cultural features will be presented in the context of language-learning experiences. 1 hr. lecture, 7 hrs. lab/wk.

INTR 242**FINGERSPELLING II (2CR)**

Prerequisite: INTR 142

This course will focus on continued development of expressive and receptive fingerspelling skills based on word and phrase recognition and expression. 1 hr. lecture, 2 hrs. lab/wk.

INTR 246**ENGLISH EQUIVALENTS FOR ASL (3CR)**

Prerequisite: INTR 140 or permission of the division administrator and proficiency in ASL

Students will study the many English equivalents for ASL discourse, enhancing the written English skills of deaf students and the interpreting skills of hearing students. 3 hrs./wk.

INTR 250**INTERPRETING I (6CR)**

Prerequisite: INTR 130

Corequisite: INTR 140

In this introduction to interpreting principles, emphasis will be on English-to-ASL and ASL-to-English skills.

Students will participate in sequential drills and apply these skills in class. 2 hrs. lecture, 8 hrs. lab/wk.

INTR 255
INTERPRETING II (6CR)

Prerequisite: INTR 250

This is an advanced course concentrating on the continued development of English-to-ASL, ASL-to-English and transliteration skills. Students will have the opportunity to use these skills as they role-play employment situations. 2 hrs. lecture, 8 hrs. lab/wk.

INTR 261
SPECIAL TOPICS (3CR)

Prerequisite: Depends on topics

Current trends and topics in interpreting are the focus of this course. Topics may include medical/mental health interpreting, deaf-blind interpreting, oral interpreting, educational interpreting and trends in the field. These topics will be offered on an "as needed" basis, and the course may be repeated for up to eight credits. Lecture-lab hours vary from one to four hours depending on the topic and the number of lecture-lab hours needed.

INTR 281
INTERPRETING PRACTICUM II (3CR)

Prerequisite: INTR 181

Corequisite: INTR 255

Students will observe and interpret at assigned places as well as discuss current literature in the field. The field work totals 96 hours a semester. 6 hrs. lab, field work/wk.

Journalism and Media Communications

JOUR 120
MASS MEDIA AND SOCIETY (3CR)

This course examines the forms of mass media students are exposed to daily, including newspapers, magazines, radio, television, films, cable and video technologies. Students will be able to become better critics of media messages and understand the influence that the media has on their lives, decisions, goals and beliefs. 3 hrs./wk.

JOUR 122
INTRODUCTION TO NEWSWRITING (3CR)

Prerequisite: Basic typing skills or concurrent enrollment in OST 110

This course is structured for students interested in writing news and gathering information, and especially for students who want to develop the basics of journalistic-style writing. Basic newswriting and news-style principles will

be emphasized, with a focus on interviewing techniques. 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 will be included. 3 hrs./wk.

JOUR 127
INTRODUCTION TO BROADCASTING (3CR)

This course serves as a general introduction to radio and television broadcasting and will include a study of the industry's development, program formats, personnel, equipment function, FCC codes and regulations, and cable. Class time also will include discussion of current trends and issues in broadcasting so that students may develop a critical understanding of these media. Productions in the college's audio booth and TV facilities offer students real-life experiences. 3 hrs./wk.

JOUR 130
PRINCIPLES OF PUBLIC RELATIONS (3CR)

This course will offer an overview of the function, purpose, procedures and practices of public relations; its roots in history; its role in society, business and government; and its potential as a career field. Primary emphasis will be on theory, practice and criticism, supplemented with written and verbal exercises in the application of public relations techniques. 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
ADVANCED REPORTING (3CR)

Prerequisite: JOUR 122

This is an advanced news gathering and reporting course designed to sharpen writing skills. Practice in writing in-depth news features, editorials, profiles, and advance and follow-up stories will be included, with an emphasis on editing and newspaper layout. Students will gain experience writing for the campus newspaper. 3 hrs./wk.

JOUR 225**PROMOTIONAL WRITING (3CR)**

Prerequisite: JOUR 125 or the equivalent

This course is for students who want to learn the elements of layout and copywriting for promotional purposes. It will emphasize how to determine advertising appeals, copy structure and copy style, and how to develop advertising campaigns. The importance of coordinating marketing goals, advertising goals and campaign strategy also will be stressed. 3 hrs./wk.

JOUR 227**BASIC TV PRODUCTION (3CR)**

Prerequisite: JOUR 127

This course provides students with the fundamentals of television production and basic video techniques. Topics to be covered will include technology, lighting, camera operations, audio and editing. Students will gain hands-on experience in the college's television services department. 3 hrs. lecture/wk.

JOUR 271**JOURNALISM INTERNSHIP (3CR)**

Prerequisite: Approval of the division administrator

This course permits a student to gain work experience at an approved training center under staff supervision. Emphasis will be on the application of writing techniques needed to produce print news, broadcast news, and/or advertising or public relations promotional copy or production. On-the-job training involves a minimum of 12 hours a week by arrangement.

Leadership Development

LEAD 120**LEADERSHIP DEVELOPMENT SEMINAR (3CR)**

This seminar course is designed for individuals who are interested in exploring the concepts of leadership using discussion, film, exercises, computer programs and works of classic literature. The course will lead to the development of a personal leadership philosophy and plan of action. 3 hrs./wk.

Learning Strategies

LS 160**TEXTBOOK LEARNING STRATEGIES (1CR)**

Corequisite: Concurrent enrollment in a course requiring the use of a textbook

This course is designed for the student who wants to develop techniques to comprehend and retain information contained in textbooks, journals, newspapers, class handouts and other written sources. The techniques are practiced on the written materials from the student's other classes. 1 hr./wk.

LS 172**LECTURE NOTES STRATEGY (1CR)**

Prerequisite: Concurrent enrollment in a college lecture course

Students will have the opportunity to learn active listening skills and an effective notetaking strategy in order to improve their understanding and recall of information in lecture courses and other lecture settings. The techniques learned in this class are practiced in the other courses students are taking. 1 hr./wk.

LS 174**LEARNING STRATEGIES FOR MATH (1CR)**

Corequisite: Concurrent enrollment in a math course

This course teaches thinking and study skills specifically geared toward the learning of math, including problem-solving skills, test-taking skills and cognitive skills. Students practice these skills on their math textbooks and homework assignments as well as in their math class discussions and lectures. This course also addresses feelings and attitudes that may block math learning and offers strategies and techniques designed to overcome these feelings. 1 hr./wk.

LS 176**STRATEGIC LEARNING SYSTEM (1CR)**

Corequisite: Concurrent enrollment in a college lecture course

In this course, students will learn a series of strategies for processing information from textbooks and lectures and for studying for and taking tests. As the strategies are introduced, students apply them to the content of courses in which they are concurrently enrolled. Upon successful completion of the course, students will have developed a system for learning that can be adapted for use in any learning situation. 1 hr./wk.

LS 178**MEMORY STRATEGIES (1CR)**

Corequisite: Concurrent enrollment in another college course

In this course, students learn a series of techniques to help them improve their retention and recall of information needed for success in college courses. These techniques provide a systematic approach to learning and remembering. Students immediately use the techniques to learn information from their other college courses. 1 hr./wk.

LS 186**EXAM STRATEGIES (1CR)**

Corequisite: Concurrent enrollment in at least one other college course in which exams are taken

In this course, students have an opportunity to explore their own learning styles and to develop appropriate strategies for improving test performance through improved learning procedures. Emphasis will be placed on practical application of the learned strategies to courses in which the students are concurrently enrolled. 1 hr./wk.

LS 195**LEARNING STRATEGIES FOR CAREER PROGRAMS (1CR)**

Corequisite: Students must be either concurrently enrolled in a JCCC career program or accepted into a program, and taking appropriate elective classes to which the strategies can be applied

This course is designed to help students enrolled in the various career programs at JCCC develop more efficient and effective learning plans for meeting the intensive cognitive demands of the two-year programs. Techniques and strategies for managing time, acquiring and reviewing information, test taking and analyzing test errors will be presented. 1 hr. lecture/wk.

LS 200**COLLEGE LEARNING METHODS (3CR)**

Corequisite: Concurrent enrollment in at least one academic college course

This course provides students with opportunities to develop skills and habits that will help them establish and maintain effective learning systems for a variety of academic courses. Students first learn and practice the learning methods in class and then apply these methods to appropriate situations in their other college coursework. The methods, which are based on valid learning and thinking principles, will help students meet the higher-level demands of the subjects encountered in college courses. 3 hrs./wk.

Legal Nurse Consultant**LNC 220****LEGAL NURSE CONSULTANT PROFESSION (3CR)**

Prerequisite: Admission to the Legal Nurse Consultant Program

Upon successful completion of this course, the student should be able to identify functions of legal nurse consultants and career opportunities available to them. In addition, the student should be able to explain applicable medical and legal ethics and apply them to professional situations. 3 hrs. lecture/wk.

LNC 230**FOUNDATIONS OF LAW (3CR)**

Prerequisite: Admission to the Legal Nurse Consultant Program

Upon successful completion of this course, the student should be able to explain and identify the major principles of the structure and functioning of the American legal system. This course will concentrate on the lawmaking activities of the three branches of American government, with special attention given to the operation of the court system and the substantive and procedural aspects of American law, and will emphasize the role of the legal nurse consultant in the litigation process. 3 hrs. lecture/wk.

LNC 240**LEGAL MEDICAL RESEARCH (3CR)**

Prerequisite: Admission to the Legal Nurse Consultant Program and demonstration of basic computer competency. A student may acquire this competency by taking CPCA 105 or demonstrate computer competency by passing a computer-based test for CPCA 105.

Upon successful completion of this course, the student should be able to perform legal and medical research and investigative functions. Topics covered include medical records, medical and legal research techniques and interviewing of clients and medical witnesses and experts. 1 hr. lecture/wk.

LNC 250**LEGAL MEDICAL WRITING (3CR)**

Prerequisites: Admission to the Legal Nurse Consultant Program and LNC 240

Upon successful completion of this course, the student should be able to produce or contribute to the preparation of correspondence, reports and other legal documents and resources used in a legal/medical-related law practice. This course will focus on the role of the legal nurse consultant in the preparation of such resources, particularly in the context of intentional tort, negligence, products liability, strict liability and medical malpractice litigation. 3 hrs. lecture/wk.

LNC 260**PERSONAL INJURY LAW (3CR)**

Prerequisites: Admission to the Legal Nurse Consultant Program and LNC 240

Upon successful completion of the course, the student will be able to explain and apply substantive and procedural principles of personal injury claims. The course will concentrate on the role of a legal nurse consultant in analyzing and applying legal theories and defenses relevant to intentional torts, negligence, products liability, strict liability and medical malpractice. 3 hrs. lecture/wk.

LNC 270**ADMINISTRATIVE LAW (3CR)**

Prerequisites: Admission to the Legal Nurse Consultant Program and LNC 240

Upon successful completion of the course, the student will be able to explain and apply substantive and procedural principles of administrative agencies. The course will concentrate on the basic principles of workers' compensation law, Social Security law, public health law and the Americans with Disabilities Act. 3 hrs. lecture/wk.

Library

LIBR 125**INTRODUCTION TO LIBRARY RESEARCH (1CR)**

This course provides an introduction to the methods and technologies of library research. Included will be a study of the various information resources available for research and techniques for retrieving information from both print and electronic sources. The resources of the JCCC Library will be featured, although the emphasis will be on building information retrieval skills which will be useful in many settings. 1 hr. lecture/wk.

Marketing and Management

MKT 121**RETAIL MANAGEMENT (3CR)**

Upon successful completion of this course, the student should be able to describe and analyze retail store organization and operation, including customer markets, store location and design, human resource management, merchandise planning and control and retail promotion and presentation. 3 hrs. lecture/wk.

MKT 133**SALESMANSHIP (3CR)**

Upon successful completion of this course, the student should be able to define and contrast the three main areas of selling direct, wholesale and retail, and explain the selling process. In addition, the student should be able to define the steps of selling and identify their appropriate application. The student should also be able to demonstrate selling skills through role play and presentations. Students who have received credit for MKT 134 may not receive credit for MKT 133. 3 hrs. lecture/wk.

MKT 134**CREATIVE RETAIL SELLING (3CR)**

Upon successful completion of this course, the student should be able to describe the process of successful selling in the retail environment. In addition, the student should be able to define the steps of selling and identify their appropriate application. The student should also apply selling principles through role playing. Students who have received credit for MKT 133 may not receive credit for MKT 134. 3 hrs. lecture/wk.

MKT 140**TELESERVICE COMMUNICATION SKILLS (3CR)**

Upon successful completion of this course, the student should be able to describe the process of successful communication in the teleservice field. In addition, the student should be able to define the principles of teleclient service and identify their appropriate application. The student should also be able to demonstrate effective telecommunication and client services skills through role playing. 3 hrs. lecture/wk.

MKT 202**CONSUMER BEHAVIOR (3CR)**

Prerequisite: MKT 133 or MKT 134

Upon successful completion of this course, the student will be able to analyze how consumers make buying decisions in the marketplace and how various personal, group and situational influences affect these decisions. In addition, the student will be able to demonstrate how the basic principles of consumer behavior can be applied to develop competitive marketing strategies that better identify and satisfy customer needs and wants. 3 hrs. lecture/wk.

MKT 206**AUTOMOTIVE RETAILING SALES (3CR)**

Prerequisite: MKT 133 or MKT 134

Upon successful completion of this course, the student should be able to demonstrate the skills necessary for competency in automotive retailing. Student awareness and understanding will be directed toward: an introduc-

tion to automotive retailing, past, present and future; professionalism in sales; the components of sales transactions; a structured sales program and product knowledge; customer satisfaction and follow-up; building a clientele; and success through self-improvement. 3 hrs. lecture/wk.

MKT 221
SALES MANAGEMENT (3CR)

Prerequisite: MKT 134 or MKT 133

Upon successful completion of this course, the student should be able to identify skills necessary to manage a sales force and develop a plan for recruitment, selection, training, motivation and evaluation. In addition, the student should be able to describe and analyze techniques to forecast and plan sales and audit results. 3 hrs. lecture/wk.

MKT 234
SERVICES MARKETING (3CR)

Corequisite: BUS 230

Upon successful completion of this course, the student should be able to describe the functioning of a services economy. In addition, students should be able to describe and define the nature and characteristics of services and the ways services are required to be marketed due to their intangible core. Additionally, students should be able to describe service quality, the foundation of services marketing, and the success factors in services marketing. 3 hrs. lecture/wk.

MKT 271
**MARKETING AND MANAGEMENT SEMINAR:
ORGANIZATIONAL BEHAVIOR (2CR)**

Upon successful completion of this course, the student should be able to explain organizational structure and process and the principles of human behavior in organizations; describe core concepts of motivation, perception and communication in organizations; and analyze individual and team effectiveness in organizations. 2 hrs. lecture/wk.

MKT 273
**MARKETING AND MANAGEMENT SEMINAR:
MARKETING RESEARCH (2CR)**

Upon successful completion of this course, the student should be able to explain market research design; collect, organize and analyze market research data; explain demographic and psychographic impacts on markets; and prepare and present a marketing research project. 2 hrs. lecture/wk.

MKT 284
**MARKETING AND MANAGEMENT INTERNSHIP I
(1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an

actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

MKT 286
**MARKETING AND MANAGEMENT INTERNSHIP II
(1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

MKT 288
**MARKETING AND MANAGEMENT INTERNSHIP III
(1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

MKT 289
**MARKETING AND MANAGEMENT INTERNSHIP IV
(1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

MKT 290
**CAPSTONE: MARKETING AND MANAGEMENT
CASE STUDIES (3CR)**

Prerequisites: BUS 141, BUS 230, MKT 284, MKT 286 or permission of division administrator

Upon successful completion of this course, the student should be able to identify problems and develop and describe the situational analysis, formulate alternative solutions and reach and explain a decision for each issue. In addition, the student should be able to apply the knowledge of marketing and management concepts and techniques in the analysis of cases and actual business situations. 3 hrs. lecture/wk.

Mathematics

DEVELOPMENTAL COURSES

MATH 111 and MATH 115 are designed to help students review and improve math concepts and develop math skills. MATH 111 and MATH 115 provide the mathematical foundation upon which subsequent studies in mathematics and other areas depend. These courses do not fulfill degree requirements.

MATH 111 FUNDAMENTALS OF MATH (3CR)

Prerequisite: Appropriate score on the math assessment test

Fundamentals of Mathematics is designed for the student who needs to improve or review basic math skills and concepts. This course includes computation using whole numbers, integers, fractions, decimals and percents and includes mathematical applications of exponents, measurement, geometry, statistics and linear equations. 3 or 5 hrs./wk.

MATH 115 INTRODUCTION TO ALGEBRA (3CR)

Prerequisite: MATH 111 with a grade of "C" or better or appropriate score on the math assessment test

Topics include simplifying numeric and algebraic expressions, including polynomials; simplifying rational, exponential and radical expressions; solving equations and inequalities, including linear and quadratic equations and equations containing rational expressions; and developing, analyzing and graphing linear equations. 3 or 5 hrs./wk.

MATH 116 INTERMEDIATE ALGEBRA (3CR)

Prerequisite: MATH 115 with a grade of "C" or better or appropriate score on the math assessment test

Topics include polynomials, rational expressions, exponents and radicals, equations and inequalities, graphing and systems of equations and functions. 3 or 5 hrs./wk.

MATH 118 GEOMETRY (3CR)

Prerequisite or corequisite: MATH 115 with a grade of "C" or better 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 with a grade of "C" or better 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 with a grade of "C" or better 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 with a grade of "C" or better 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./wk.

MATH 133 TECHNICAL MATHEMATICS I (4CR)

Prerequisite: MATH 111 with a grade of "C" or better 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 an equivalent course with a grade of "C" or better

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 with a grade of "C" or better or appropriate score on the math assessment test

This course is designed to teach math concepts as well as quantitative skills. Topics will include inductive and deductive reasoning, mathematical patterns, sets, networks, geometry, probability, statistics, matrices, introduction to trigonometry, and exponential and logarithmic functions. The common themes throughout the course will be practical applications, innovations in computers, related mathematical and cultural history and reasoning ability. 3 hrs./wk.

MATH 171**COLLEGE ALGEBRA (3CR)**

Prerequisite: MATH 116 with a grade of "C" or better 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 with a grade of "C" or better 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 with a grade of "C" or better 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./wk.

MATH 175**DISCRETE MATH AND ITS APPLICATIONS (3CR)**

Prerequisite: MATH 171 or MATH 173 with a grade of "C" or better or appropriate score on the math assessment test

Students will study many of the puzzles that were solved by mathematicians of the 18th and 19th centuries and how these solutions are being used to find answers to 20th century problems. Topics may include network theory, the analysis of voting power, the analysis of human behavior in conflict situations using game theory, and optimal allocation of resources using the simplex method. The emphasis of the course will be on exploration and understanding. Computer/calculator applications will be incorporated into course topics. 3 hrs./wk.

MATH 181**STATISTICS (3CR)**

Prerequisite: MATH 171 or MATH 173 or an equivalent course with a grade of "C" or better or appropriate score on the math assessment test

This is a beginning course in statistical analysis. Topics include observational studies, designed experiments, descriptive statistics and inferential statistics. The course also includes an introduction to probability, regression, correlation, confidence intervals and hypothesis testing. The course examines statistical distributions from a non-calculus point of view, including the normal, chi-square and binomial distributions. Computer/calculator applications are incorporated into the course topics. 3 hrs./wk.

MATH 231**BUSINESS AND APPLIED CALCULUS I (3CR)**

Prerequisite: MATH 171 or MATH 173 with a grade of "C" or better 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**BUSINESS AND APPLIED CALCULUS II (3CR)**

Prerequisites: MATH 231 and either MATH 172 or MATH 173 or an equivalent course, with a grade of "C" or better

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**CALCULUS I (5CR)**

Prerequisite: MATH 172 or MATH 173 with a grade of "C" or better 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**CALCULUS II (5CR)**

Prerequisite: MATH 241 or an equivalent course with a grade of "C" or better

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**CALCULUS III (5CR)**

Prerequisite: MATH 242 or an equivalent course with a grade of "C" or better

This is the third course in a three-semester sequence on analytic geometry and calculus. Topics will include vector-valued functions, functions of several variables, multiple integration, vector analysis and an introduction to linear algebra. 5 hrs./wk.

MATH 244**DIFFERENTIAL EQUATIONS (3CR)**

Prerequisite: MATH 243 or an equivalent course with a grade of "C" or better

This course will cover standard types of ordinary equations, second and higher order linear equations, solutions by series, the Laplace transform numerical solutions, and applications. 3 hrs./wk.

MATH 285**STATISTICS FOR BUSINESS (4CR)**

Prerequisite: MATH 232 or MATH 242 or an equivalent course with a grade of "C" or better

NOTE: The University of Kansas requires as prerequisite or corequisite DP 124 or DP 134

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. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

MFAB 125**ADVANCED GAS AND ARC WELDING (4CR)**

Prerequisite: MFAB 121

This course is a continuation of Introduction to Welding. The course will cover more advanced projects in oxyacetylene welding, cutting, brazing, shielded metal arc welding (SMAW) and air carbon arc cutting. The SMAW process will be used to weld vee groove butt joints in the flat, horizontal, vertical up and overhead positions with root and face bend test being performed on the vertical weldment. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

MFAB 130**GAS METAL ARC WELDING I (4CR)**

Prerequisite: MFAB 121

Upon successful completion of this course, the student should be able to identify basic theory of gas metal arc welding (GMAW) and flux cored arc welding (FCAW). The welding of mild steel plate will occur in all positions on both fillet and groove welds with the GMAW process. The FCAW process will be used to weld some fillet and

groove welds on mild steel. Root and face bend test will be performed on a vertical up GMAW weldment. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

**MFAB 152
MANUFACTURING MATERIALS AND PROCESSES (3CR)**

Upon successful completion of this course, the student should be able to identify various manufacturing materials and processes currently used in industry. The capabilities and applications of machine tool, general fabrication, welding processes, robotics, cut-off equipment and other manufacturing processes and equipment will be studied. Lecture will be supplemented with demonstrations of various processes and equipment. 3 hrs. lecture/wk.

**MFAB 160
GAS TUNGSTEN ARC WELDING (4CR)**

Prerequisite: MFAB 121

Upon the successful completion of this course, the student should be able to identify the basic theory of gas tungsten arc welding (GTAW). The student will weld on mild steel, stainless steel and aluminum in a variety of positions on both fillet and groove welds using the GTAW process, with u-bend test being performed on mild steel. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hrs. lecture, 6 hrs. lab/wk.

**MFAB 170
BASIC MACHINE TOOL PROCESSES (4CR)**

Upon successful completion of this course, the student should be able to practice the basic principles of machining as well as setup and operation of machines. The laboratory will include the use of lathes, mills, drills, cut-off and other types of equipment. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 4 hrs. lab/wk.

**MFAB 230
GAS METAL ARC WELDING II (4CR)**

Prerequisite: MFAB 130

Upon the successful completion of this course, the student should be able to identify the theory of gas metal arc welding (GMAW) and flux cored arc welding (FCAW). The student will weld with the GMAW and FCAW processes in the flat, horizontal, vertical up and overhead positions on both fillet and groove welds. The GMAW welds will be made on aluminum, and the FCAW welds will be on one-inch mild steel with side bend test being made on the overhead and horizontal weldments. The student will be required to provide ANSI Z87 safety

glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

**MFAB 240
METALLURGY (2CR)**

Metallurgy is the study of the science and technology of metals. This course covers the extractive, mechanical and physical phases of metallurgy. Topics include the identification of metals, types and classification of metals, heat treatment procedures and common steel manufacturing processes. 2 hrs. lecture-demonstration/wk.

**MFAB 271
METAL FABRICATION INTERNSHIP (3CR)**

Prerequisite: Approval of the division administrator

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 15 hrs. minimum on-the-job training/wk.

Music

**MUS 121
INTRODUCTION TO MUSIC LISTENING (3CR)**

The emphasis will be on listening in this survey of the development of music. Students will hear recorded medieval, Renaissance, baroque, classical, romantic and contemporary music, including popular American forms. 3 hrs./wk.

**MUS 123
INTRODUCTION TO MUSIC FUNDAMENTALS (2CR)**

This class is for the elementary classroom teacher or music student without a background in theory. It will cover notation of melody, rhythm, meter and musical terminology, intervals, chords and very basic four-part writing. 2 hrs./wk.

**MUS 125
INTRODUCTION TO JAZZ LISTENING (3CR)**

Listening will be emphasized in this introduction to the history of jazz in America. The focus will be on trends, periods and styles. 3 hrs./wk.

**MUS 131
SIGHT-SINGING AND EAR TRAINING I (2CR)**

Students will combine aural and sight-reading skills in this course on the melodic, harmonic and rhythmic elements of music. 2 hrs./wk.

MUS 132**SIGHT-SINGING AND EAR TRAINING II (2CR)**

Prerequisite: MUS 131

This is a continued study of the melodic, harmonic and rhythmic elements of music, integrating aural and sight-reading skills. 2 hrs./wk.

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 non-harmonic 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 I (3CR)**

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 157

MIDI MUSIC COMPOSITION II (3CR)

Prerequisite: MUS 156

This course is designed to put into practical use and to build on skills acquired in MIDI Music Composition I. Students will demonstrate the ability to create, store and utilize new, original sonorities via the graphic editing process. Students will also demonstrate a proficiency appropriate to the beginning student in notation software, learning how to use sequencing and notation software together to produce both visual and aural representations of their work. An emphasis will be placed on each student's portfolio – a comprehensive example of their work, both print and aural – for students to use, either for personal, commercial or academic purposes. 2 hrs. lecture, 2 hrs. lab/wk.

MUS 161

CHAMBER CHOIR I (1CR)

Prerequisite: Audition

Students will study and rehearse a variety of vocal music and perform at student and community activities. 3 hrs./wk.

MUS 162

CHAMBER CHOIR II (1CR)

Prerequisite: MUS 161

This is a continuation of Chamber Choir I. 3 hrs./wk.

MUS 163

CHAMBER CHOIR III (1CR)

Prerequisite: MUS 162

This is a continuation of Chamber Choir II. 3 hrs./wk.

MUS 164

CHAMBER CHOIR IV (1CR)

Prerequisite: MUS 163

This is a continuation of Chamber Choir III. 3 hrs./wk.

MUS 171

APPLIED VOICE I (Class) (1CR)

This class will offer instruction in singing from the 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

JAZZ BAND I (1CR)

Prerequisite: Audition

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

MUS 177

JAZZ BAND II (1CR)

Prerequisite: MUS 176

This class will consist of continued performances of jazz and popular music at festivals, public concerts and college functions. 3 hrs./wk.

MUS 178

JAZZ BAND III (1CR)

Prerequisite: MUS 177

This class will consist of continued performances of jazz and popular music at festivals, public concerts and college functions. 3 hrs./wk.

MUS 179

JAZZ BAND IV (1CR)

Prerequisite: MUS 178

This class will consist of continued performances of jazz and popular music at festivals, public concerts and college functions. 3 hrs./wk.

MUS 187

JAZZ IMPROVISATION I (2CR)

Prerequisite: Audition

This is a fundamental approach to the rhythm and 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**CONCERT BAND I (1CR)**

Prerequisite: Audition

Concert band repertoire – especially early works and original contemporary selections – will be the basis of these performances. 3 hrs./wk.

MUS 192**CONCERT BAND II (1CR)**

Prerequisite: MUS 191

This is a continuation of Concert Band I. 3 hrs./wk.

MUS 193**CONCERT BAND III (1CR)**

Prerequisite: MUS 192

This is a continuation of Concert Band II. 3 hrs./wk.

MUS 194**CONCERT BAND IV (1CR)**

Prerequisite: MUS 193

This is a continuation of Concert Band III. 3 hrs./wk.

MUS 195**VOCAL JAZZ ENSEMBLE I (1CR)**

Prerequisite: Audition

This course is an introductory-level vocal ensemble musical experience. Prior choral experience is necessary to be successful in this course. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

MUS 196**VOCAL JAZZ ENSEMBLE II (1CR)**

Prerequisite: MUS 195

This course is a beginning-level vocal ensemble musical experience. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

MUS 197**VOCAL JAZZ ENSEMBLE III (1CR)**

Prerequisite: MUS 196

This course is an intermediate-level vocal ensemble musical experience. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

MUS 198**VOCAL JAZZ ENSEMBLE IV (1CR)**

Prerequisite: MUS 197

This course is an advanced-level vocal ensemble musical experience. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

MUS 201**CHAMBER ENSEMBLE I (1CR)**

Prerequisite: Audition

Students will study and perform standard literature for ensembles: brass, woodwind, jazz combo and percussion. 2 hrs./wk.

MUS 202**CHAMBER ENSEMBLE II (1CR)**

Prerequisite: MUS 201

This is a continuation of Chamber Ensemble I. 2 hrs./wk.

MUS 203**CHAMBER ENSEMBLE III (1CR)**

Prerequisite: MUS 202

This is a continuation of Chamber Ensemble II. 2 hrs./wk.

MUS 204**CHAMBER ENSEMBLE IV (1CR)**

Prerequisite: MUS 203

This is a continuation of Chamber Ensemble III. 2 hrs./wk.

MUS 211**ORCHESTRA I (1CR)**

Prerequisite: Audition

Students will rehearse and perform with the Overland Park Civic Orchestra. 2 hrs. (1 evening)/wk.

MUS 212**ORCHESTRA II (1CR)**

Prerequisite: MUS 211

This is a continuation of Orchestra I. 2 hrs. (1 evening)/wk.

MUS 213**ORCHESTRA III (1CR)**

Prerequisite: MUS 212

This is a continuation of Orchestra II. 2 hrs. (1 evening)/wk.

MUS 214**ORCHESTRA IV (1CR)**

Prerequisite: MUS 213

This is a continuation of Orchestra III. 2 hrs. (1 evening)/ wk.

MUS 216**APPLIED WOODWIND I (Class) (1CR)**

In this class, students will be instructed on the wind instrument of their choice. 1 hr./wk.

MUS 217**APPLIED WOODWIND II (Class) (1CR)**

Prerequisite: MUS 216

This course will offer advanced instruction for those who have completed Applied Woodwind I. 1 hr./wk.

MUS 218**APPLIED WOODWIND III (Class) (1CR)**

Prerequisite: MUS 217

This course will offer advanced instruction for those who have completed Applied Woodwind II. 1 hr./wk.

MUS 219**APPLIED WOODWIND IV (Class) (1CR)**

Prerequisite: MUS 218

This course will offer advanced instruction for those who have completed Applied Woodwind III. 1 hr./wk.

MUS 221**APPLIED PIANO I (Class) (2CR)**

This class will offer beginning group instruction in playing the piano. 2 hrs./wk.

MUS 222**APPLIED PIANO II (Class) (2CR)**

Prerequisite: MUS 221

This course will provide advanced group instruction for those who have completed Applied Piano I. 2 hrs./wk.

MUS 223**APPLIED PIANO III (Class) (2CR)**

Prerequisite: MUS 222

This course will provide advanced group instruction for those who have completed Applied Piano II. 2 hrs./wk.

MUS 224**APPLIED PIANO IV (Class) (2CR)**

Prerequisite: MUS 223

This course will provide advanced group instruction for those who have completed Applied Piano III. 2 hrs./wk.

MUS 226**APPLIED GUITAR I (Class) (1CR)**

This class will offer beginning instruction in playing the guitar. 1 hr./wk.

MUS 227**APPLIED GUITAR II (Class) (1CR)**

Prerequisite: MUS 226

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, MATH 116 or higher and CPR certification

CHEM 122 must be completed before enrolling in NURS 121.

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 hrs. lecture, 16 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 hrs. lecture, 16 hrs. clinic/wk.

NURS 123**LPN-RN TRANSITION COURSE (6CR)**

Prerequisites: Licensure as a vocational/practical nurse, admission with advanced standing to the Nursing Program and MATH 116 or higher, BIOL 140, PSYC 130, BIOL 225 and PSYC 218

This is an orientation to the philosophy of the associate degree nursing program for LPNs entering with advanced standing. Topics will include group process, relationships, the role of the associate degree graduate, communication skills, and the nursing process. Individual assessment and assistance will be emphasized. 18 hrs./wk. for 6 wks. Summer.

NURS 221**NURSING ACROSS THE LIFE SPAN – PART II (9CR)**

Prerequisites: NURS 122 or NURS 123, BIOL 140, BIOL 225, PSYC 130, PSYC 218 and ENGL 121

Corequisites: SOC 122 or SOC 125, and communications elective

This course is the third in a sequence of four nursing courses. It provides an opportunity for students to explore human responses to stressors occurring throughout the life span. Students are asked to view clients within a family structure and on a continuum of adaptation to 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 hrs. lecture, 16 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 hrs. lecture, 16 hrs. clinic/wk.

Nursing

Practical Nursing

AVPN 115
NURSING I

Prerequisites: CNA certification, admission to the Practical Nursing program, BIOL 140, PSYC 130, CPCA 105, MATH 111

Using the nursing process, the student will promote adaptive responses in the client during health and illness. The student will develop a basic understanding of the role of the practical nurse in the health care system and demonstrate the fundamental skills essential to the nursing care of the client. The nursing process will be applied to the care of clients in long-term care, the medical office and the acute care settings. Basic concepts of gerontology, professional vocational relationships, pharmacology, medical terminology and nutrition will be utilized in the care of the clients.

AVPN 117
NURSING II

In Nursing II, the student will continue to explore the practical nurse's role in assisting clients to meet basic and more complex physiological needs utilizing the nursing process in a variety of health care settings, including

acute care, long-term care and mental health facilities. The student will apply concepts of leadership and change and demonstrate the roles of charge nurse, medication nurse, treatment nurse and patient care nurse in long-term care. The student will promote adaptive responses in the child and family during the child's illness; pregnancy, labor and delivery and post-partum and neonatal phases of reproductive processes. The student will explore the adaptive capacity of individuals with emotional stresses and diagnosed mental disorders across the life span. Basic concepts of gerontology, professional vocational relationships, pharmacology, medical terminology and nutrition will be applied in the care delivered.

Occupational Therapy Assistant

KOT 100
INTRODUCTION TO OCCUPATIONAL THERAPY (5CR)

Prerequisite: Formal admission to the program

This course is an introduction to the fundamentals and contemporary issues in occupational therapy and the health care guidelines for documentation procedures.

KOT 101
PEDIATRICS (3CR)

Prerequisites: BIOL 144, KOT 100, KOT 103, KOT 106, KOT 116 and KOT 102

Physical, perceptual, cognitive, social, intellectual and emotional development during normal growth from prenatal stages to later adolescence will be covered, as will the role of occupational therapy in growth and development.

KOT 102
BASIC EMERGENCY PATIENT CARE (1CR)

This course introduces current cardiopulmonary resuscitation skills, including adult, child and infant resuscitation according to American Heart Association standards. Medical and environmental emergencies are reviewed.

KOT 103
CLINICAL CONDITIONS (2CR)

Prerequisite: Formal admission to the program

This course will cover common medical diseases and conditions referred to and treated by occupational therapy in the clinical setting.

KOT 105**GERONTOLOGY (3CR)**

Prerequisite: SOC 122, KOT 204 and American Institutions

Physical, perceptual, cognitive, social, intellectual and emotional development of human beings during normal growth and development from later adolescence to death will be covered. The role of the OTR/COTA will be explored, i.e., treatment approaches and service management.

KOT 106**GENERAL TREATMENT PROCEDURES (3CR)**

Prerequisites: Formal admission to the program

General treatment procedures used by OTs in the clinical setting will be presented. Use of adaptive equipment and techniques for home and work will be included.

KOT 107**KINESIOLOGY (3CR)**

Prerequisite: KOT 102, BIOL 144, KOT 100, KOT 103, KOT 106 and KOT 116 with a minimum grade of "C"

The study of kinetics of normal and abnormal motion of the human musculoskeletal system will be covered, as will evaluation procedures for range of motion and functional muscle strength

KOT 111**LEVEL I FIELDWORK: PEDIATRICS (.5CR)**

Prerequisites: KOT 102, BIOL 144, KOT 100, KOT 103, KOT 106 and KOT 116 and concurrent enrollment in KOT 101

This course is an introduction to pediatrics through observation in a clinical setting.

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

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

This course is an introduction to the medical setting through observations and clinical experience under the direct supervision of an OTR or an experienced COTA.

KOT 154**APPLIED NEUROLOGY (2CR)**

Prerequisites: KOT 102, BIOL 144, KOT 100, KOT 103, KOT 106 and KOT 116 or BIOL 210 and KPT 152

This course will present foundations of neuroscience necessary for practice as a rehabilitation professional. Included is anatomy and function of the nervous system and correlation of clinical problems with pathology of the nervous system.

KOT 201**MENTAL HEALTH (2.5CR)**

Prerequisites: SOC 122, KOT 204, American Institutions

This is a study of occupational therapy assessment and treatment techniques in the mental health setting.

KOT 202**PHYSICAL DYSFUNCTION (4CR)**

Prerequisites: SOC 122, KOT 204, American Institutions

Areas covered include occupational therapy treatment techniques and assessment used with the physically and cognitively challenged population.

KOT 203**ASSISTIVE TECHNOLOGY/SPLINTING (3CR)**

Prerequisites: SOC 160, KOT 204 and American Institutions

This course is an introduction to and hands-on experience with assistive technology, augmentative communication and splint fabrication.

KOT 204**THERAPEUTIC MEDIA/FABRICATION (2CR)**

Prerequisite: PSYC 130, SPD 121, KOT 101, KOT 111, KOT 107 and KOT 154

Students will study the characteristics, adaptability and therapeutic use of activities employed in occupational therapy. Instruction in the performance of teaching techniques as they apply to special conditions also will be included, as will demonstration of use of power and hand tools for fabrication purposes.

KOT 212**LEVEL I FIELDWORK: PHYSICAL/PSYCHOSOCIAL DYSFUNCTION (2CR)**

Prerequisites: SOC 122, KOT 204 and American Institutions

This class will introduce students to physical and psychosocial dysfunctions through observation in a clinical setting.

KOT 222**LEVEL II FIELDWORK: PHYSICAL DISABILITIES (8CR)**

Prerequisites: KOT 201, KOT 202, KOT 105, KOT 203 and KOT 212

Directed occupational therapy fieldwork in different practice areas of occupational therapy will be presented in this class.

Office Systems Technology

OST 101

COMPUTERIZED KEYBOARDING (1CR)

Upon successful completion of this course, the student should be able to operate a computer keyboard using the touch-typing system to enter data with speed and accuracy. 1 hr./wk.

OST 102

BUSINESS ENGLISH (1CR)

Upon successful completion of this course, the student should be able to develop business documents that demonstrate correct sentences using correct English grammar and mechanics. Students should be able to proofread written work using standard proofreading symbols. 1 hr./wk.

OST 105

KEYBOARDING/FORMATTING I (3CR)

Upon successful completion of this course, the student should be able to develop speed and accuracy by learning to use the alphabetic, numeric and symbol keys by touch; identify and operate the basic machine parts and special purpose keys; and format and type personal correspondence and business documents – letters, reports, tables and memos. A basic word processing package will be used in this class. 3 hrs./wk.

OST 110

SKILLBUILDING I (1CR)

Prerequisite: OST 105 or equivalent

Upon successful completion of this course, the student should be able to use a diagnostic approach to develop typing speed and accuracy. Specific problems will be identified, and the student should be able to complete specialized drills and activities tailored to the student's own typing needs to improve or eliminate deficiencies. 1 hr./wk.

OST 115

ELECTRONIC CALCULATORS (1CR)

Upon successful completion of this course, the student should be able to review basic arithmetic, operate the electronic calculator by touch to build speed and accuracy, use basic calculator functions and operating controls, and solve application problems. 1 hr./wk.

OST 118

SKILLBUILDING II (1CR)

Prerequisite: OST 110

Upon successful completion of this course, the student should further develop speed and accuracy. The student should be able to improve keyboard skillbuilding through diagnostic evaluation and by completing individualized drills and activities. 1 hr. lecture/wk.

OST 120

MACHINE TRANSCRIPTION (1CR)

Prerequisite: OST 105 or equivalent

Upon successful completion of this course, the student should be proficient in transcribing a variety of business documents from machine transcription. Emphasis is placed on operation of transcription equipment; development of speed and accuracy in transcription; and developing English, proofreading and formatting skills. 1 hr./wk.

OST 125

DOCUMENT FORMATTING (1CR)

Prerequisite: OST 155

Upon successful completion of this course, the student should be able to type business letters using standard letter styles (block, modified block and simplified); format letters with special features; center ruled or boxed tables, key memos, specialized reports and tables; create and complete forms; create and design letterhead stationery; and apply formatting skills in a simulated office environment. The student should also be able to use basic word processing commands to complete the activities. The student should also be able to build speed and accuracy in keyboarding and production skills. 1 hr./wk.

OST 130

OFFICE SYSTEMS CONCEPTS (3CR)

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 and inactive records will be covered, along with procedures for document, card and special records; microrecords; mechanized and automated records; and records storage, retention and transfer. Upon successful completion of this course, the student should

be able to file documents using alphabetic, subject, consecutive numeric, terminal digit numeric and geographic filing systems using requisition charge out and transfer procedures. The student should be able to create a computer database for records management; enter, modify and delete records; print reports; and determine disposition of records filed alphabetically, numerically, by subject and geographically. The course will cover the identification of evaluation methods and standards for both staff and programs in a records management department. 3 hrs./wk.

OST 155
WORD PROCESSING APPLICATIONS I (2CR)

Prerequisite: OST 105 or equivalent

Upon successful completion of this course, the student should be able to demonstrate skill in creating, saving, opening, closing, printing and editing documents. The student should be able to use beginning and intermediate features of the designated software package. The student should be able to demonstrate file maintenance procedures. 2 hrs. lecture-demonstration/wk.

OST 160
LEGAL TRANSCRIPTION (3CR)

Prerequisite: OST 155 or equivalent

This course is a systematic approach to learning legal vocabulary. Upon successful completion of this course, the student should be able to spell, define, pronounce and use in proper context legal terms. The student will learn to use legal reference sources and transcribe legal documents from dictation using proper formatting rules. 3 hrs./wk.

OST 165
MEDICAL TRANSCRIPTION (3CR)

Prerequisites: LC 130 and OST 155 or equivalent

Upon successful completion of this course, the student should be able to spell, define, pronounce and use in proper context medical terms. Also, the student will use medical reference books and transcribe medical case studies using proper formatting rules. 3 hrs./wk.

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 175
CONFLICT IN THE WORKPLACE (1CR)

Upon successful completion of this course, the student should be able to develop the knowledge, skills, process and understanding of good working relationships in an office environment. The student will also be able to recognize and understand behavior patterns and what work-related events might trigger workplace conflict. Strategies will be developed for dealing with conflict and difficult people. 1 hr. lecture/wk.

OST 180
BUSINESS SPREADSHEET APPLICATIONS (1CR)

Prerequisite: CPCA 110 or extensive experience using Windows-based spreadsheets

Upon successful completion of this course, the student should be able to demonstrate competencies in using Microsoft Excel IntelliSense™ features including AutoSum, AutoCalculate, AutoComplete and AutoFill and use the Function Wizard to create complex formulas. Additionally, a student successfully completing this course should be able to create charts and include graphics in the worksheets and workbooks, create regional sales reports using maps, create and analyze an inventory list, link multiple worksheets and workbooks, create financial forecasts and analyze potential variations in a multitude of situations by using the Scenario, Goal Seek and Solver Functions. 1 hr. lecture/wk.

OST 185
BUSINESS DATABASE APPLICATIONS (1CR)

Prerequisite: CPCA 114 or extensive experience using Windows-based databases

Upon successful completion of this course, the student should be able to demonstrate database development skills by effectively identifying the types of projects that should be developed using a database program rather than a spreadsheet, build tables that can be related to each other in order to eliminate data entry duplication, customize forms and reports, create basic and advance queries and define relational integrity between tables. The student should also be able to create basic and advanced queries with single and multiple tables using Boolean logic, identify and implement methods of troubleshooting and explain ways of getting additional help. 1 hr. lecture/wk.

OST 205
PROFESSIONAL IMAGE DEVELOPMENT (1CR)

Upon successful completion of this course, the student should be able to develop work habits and self-management skills that will affect performance on the job by reducing stress, conflict and miscommunication. 1 hr. lecture/wk.

OST 210**WORKING IN TEAMS (1CR)**

Upon successful completion of this course, the student should possess the necessary skills to work in teams. Students should also be able to assess and adjust their perceptions of how they should communicate within a team environment and to assess their own workplace expectations, values and methods of communicating as a basis for understanding how to improve communication with others to achieve a common goal. 1 hr. lecture/wk.

OST 255**WORD PROCESSING APPLICATIONS II (2CR)**

Prerequisite(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 word processing skills using such features as macros, styles, columns, outline and paragraph numbering, table of contents and indexes, graphics and other advanced features of the designated word processing package. Desktop publishing, macros and styles will also be introduced as part of the advanced features of word processing. 2 hrs. lecture-demonstration/wk.

OST 260**DESKTOP PUBLISHING FOR THE OFFICE (3CR)**

Prerequisite: OST 155 or the equivalent

Upon successful completion of this course, the student should be able to use desktop publishing skills to produce publications such as fliers, newsletters, brochures, operating manuals, price lists and bulletins. 3 hrs. lecture-demonstration/wk.

OST 265**COMPUTERIZED OFFICE APPLICATIONS (3CR)**

Prerequisites: CPCA 110, CPCA 114, CPCA 141, OST 255 and OST 130. This capstone course should be taken near the end of the degree or certificate program.

Upon successful completion of this course, the student will have reviewed the basic features of using word processing, database, spreadsheet and presentation software. The student will use advanced features of all applications to complete simulated office projects and to perform integrated applications using tutorials and case studies. 3 hrs./wk.

OST 275**OFFICE INTERNSHIP I (1CR)**

Prerequisite: Admission to the Office Systems Technology Program

Upon successful completion of this course, the student should be able to gain work experience in an approved training situation under instructional supervision. The

course will provide practical experience in the use of skills acquired in Office Systems Technology courses. 240 hrs. work experience.

OST 280**OFFICE INTERNSHIP II (1CR)**

Prerequisite: OST 275

Upon successful completion of this course, the student should be able to gain work experience in an approved training station under instructional supervision in the three degree options, administrative office management, medical office specialist, legal office specialist or certificate options. The course will provide practical experience using skills acquired in the program. 15 hrs. on-job-training/wk.

Paralegal

PL 121**INTRODUCTION TO LAW (3CR)**

Upon successful completion of this course, the student should be able to explain the major substantive and procedural aspects of law. This course is available to students with a general interest in the law, and is required for students seeking admission to the Paralegal program. 3 hrs. lecture/wk.

PL 123**PARALEGAL PROFESSIONAL STUDIES (1CR)**

Upon successful completion of this course, the student should be able to explain the legal assistant profession. Topics will include paralegal licensing, certification, education, employment and professional ethics. The course is required for students seeking admission to the Paralegal program. 1 hr. lecture/wk.

PL 131**LEGAL RESEARCH (3CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to demonstrate a systematic method of researching legal questions. Topics covered are issue recognition, fact analysis and primary and secondary resources. Research results will be communicated in written form. 3 hrs. lecture/wk.

PL 132**CIVIL LITIGATION (3CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to explain the Rules of Civil Procedure and the Rule of Evidence as they relate to litigation. The emphasis in the course will be on the role of the legal assistant in a civil litigation practice and will include drafting of pleadings. 3 hrs. lecture/wk.

PL 140**ALTERNATIVE DISPUTE RESOLUTION (3CR)**

Prerequisites: Admission to the Paralegal program and PL 132, or division administrator approval

This course examines the various methods utilized by the legal system for dispute resolution and the role of the legal assistant in those methods. The course will concentrate on the major alternatives to litigation, including mediation, arbitration, summary jury trials, mini-trials and the moderated settlement conferences. 3 hrs. lecture/wk.

PL 142**TORTS (3CR)**

Prerequisites: Admission to the Paralegal program and PL 132, or division administrator approval

This course examines the major principles of tort law and personal injury litigation. The course will concentrate on the substantive law of negligence, intentional torts and strict liability torts. Elements of prima facie tort claims, types of damages available and defenses to tort claims will be examined. 3 hrs. lecture/wk.

PL 148**CRIMINAL LITIGATION (3CR)**

Prerequisite: Admission to the Paralegal program and PL 132, or division administrator approval

Upon successful completion of this course, the student should be able to explain the objectives, substantive principles and procedural rules of the criminal process. 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. 3 hrs. lecture/wk.

PL 152**REAL ESTATE LAW (3CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to describe common types of real estate transactions and conveyances. The preparation of legal instruments, namely deeds, contracts, leases and mortgages, will be studied. 3 hrs. lecture/wk.

PL 155**SPECIAL TOPICS IN REAL ESTATE (1CR)**

Prerequisite: PL 152 or division administrator approval

This course will focus on current developments in real estate law. Topics will include special areas of real estate practice such as zoning, financing, mechanics lien laws and environmental concerns. 1 hr. lecture/wk.

PL 162**FAMILY LAW (3CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to describe the substantive and procedural principles of family law. Topics will include adoption and divorces, as well as child issues of custody, support and visitation. 3 hrs. lecture/wk.

PL 165**SPECIAL TOPICS IN FAMILY LAW (2CR)**

Prerequisite: PL 162 or division administrator approval

This course will focus on current developments in family law. Topics will include special areas of family law, such as finance, biological/medical advances and domestic violence. 2 hrs. lecture/wk.

PL 171**LAW OFFICE MANAGEMENT (3CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to describe the operational systems in a law office. Some topics addressed are billing systems, pleadings organization, docket control and law library maintenance. 3 hrs. lecture/wk.

PL 205**LEGAL WRITING (3CR)**

Prerequisite: PL 131 or division administrator approval

Upon successful completion of this course, the student should be able to research complex legal problems, communicate the results of this research and other law-related information clearly and effectively, and analyze legal problems using logic and reasoning. 3 hrs. lecture/wk.

PL 212**BUSINESS ORGANIZATIONS (3CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to describe the various forms of business ownership, including corporations, partnerships and sole proprietorships. The emphasis in the course is on the role of the legal assistant in a business law practice and on the preparation of related documents. 3 hrs. lecture/wk.

PL 220**COMPUTER-ASSISTED LEGAL RESEARCH (2CR)**

Prerequisites: PL 131 or division administrator approval

Upon successful completion of this course, the student should develop computer research skills allowing the use of Lexis-Nexis and Westlaw-Dialog databases. By inputting a search request, the student should be able to retrieve relevant cases, statutes or other important documents. Furthermore, the student should be able to use on-line cite checking and Shepardizing in order to guarantee current information by means of legal computer services. 2 hrs. lecture/wk.

PL 223**COMPUTER APPLICATIONS IN THE LAW OFFICE (3CR)**

Prerequisites: Admission to the Paralegal program and either DP 124 or CPCA 128 or three hours of CPCA 108 and CPCA 110 and CPCA 114

Upon successful completion of this course, the student should be able to evaluate and use legal software to perform customary law office procedures, including computer litigation support, drafting and editing of specific legal documents, document and file management, time keeping and billing, docket control and forms generation. 3 hrs. lecture/wk.

PL 225**ADVANCED COMPUTER-ASSISTED LEGAL RESEARCH (2CR)**

Prerequisite: PL 220 or division administrator approval

This course builds on the foundation of PL 220 Computer-assisted Legal Research. The computer research skills are enhanced by in-depth, hands-on training on Lexis-Nexis and Westlaw-Dialog databases. 2 hrs. lecture/wk.

PL 241**WILLS, TRUSTS AND PROBATE ADMINISTRATION (3CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to draft a will with testamentary powers. The use of trusts, probate procedures, techniques for fact gathering and mastery of estate tax principles are emphasized in the course. 3 hrs. lecture/wk.

PL 245**ELDER LAW (3CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to explain the legal aspects of aging. Topics include financial and estate planning, health

care, personal planning and protection, taxation, housing and other legal matters affecting the elderly and people with special legal needs. 3 hrs. lecture/wk.

PL 264**WORKERS' COMPENSATION (2CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to explain the basic principles of workers' compensation. Topics include administrative and adjudicative procedures, calculation of benefits and preparation of claims. 2 hrs. lecture/wk.

PL 266**EMPLOYMENT LAW (3CR)**

Prerequisites: Admission to the Paralegal program or division administrator approval

This course examines the relationship between employer and employee. Major federal and state employment laws will be examined, including Title VII of the Civil Rights Act of 1964, the Age Discrimination Employment Act and the Americans with Disabilities Act. 3 hrs. lecture/wk.

PL 268**BANKRUPTCY (2CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to explain the purpose and applicability of the Bankruptcy Code. This course will emphasize the role of the legal assistant in a bankruptcy practice. Topics will include bankruptcy court procedures and the preparation of bankruptcy forms and documents. 2 hrs. lecture/wk.

PL 271**LEGAL ETHICS, INTERVIEWING AND INVESTIGATION (3CR)**

Prerequisite: PL 132

Corequisite: PL 205 or division administrator approval

Upon successful completion of this course, the student should be able to explain ethical rules and standards governing the legal profession, interview clients and witnesses and perform factual investigation pursuant to legal proceedings. The emphasis will be on recognition of ethical problems commonly encountered by legal assistants, as well as the development of interviewing and investigating skills. 3 hrs. lecture/wk.

PL 275**PARALEGAL INTERNSHIP I (1CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to explain how a law office or legal-related office operates from practical experience. By arrangement.

PL 276**PARALEGAL INTERNSHIP II (1CR)**

Prerequisite: Admission to the Paralegal program or division administrator approval

Upon successful completion of this course, the student should be able to explain how a law office or legal-related office operates from practical experience. The student should also be able to successfully draft a job résumé and conduct a job interview. By arrangement.

Philosophy

PHIL 121**INTRODUCTION TO PHILOSOPHY (3CR)**

This course is a study of basic issues of philosophy, including the nature of being, methods of acquiring knowledge and man's moral, social, religious and political values. Emphasis will be on the applications of the study of traditional problems of philosophy to the study of contemporary society. 3 hrs./wk.

PHIL 124**LOGIC AND CRITICAL THINKING (3CR)**

This course is an inquiry into techniques of persuasion and the standards for interpretation and assessment that a critical thinker should employ. Argumentative and non-argumentative forms of persuasion are examined, including propaganda, exaggeration, stereotyping, slanted news and common fallacies. In addition, the course offers standards for evidential warrants based on samples, probabilities and casual claims. 3 hrs./wk.

PHIL 138**BUSINESS ETHICS (1CR)**

Upon successful completion of this course, the student should be able to analyze and explain classical and contemporary ethical theories by examining case studies of ethical problems in contemporary business. In addition, students should be able to identify methods of ethical analysis and examine their own moral convictions in the context of the theories and cases studied. 1 hr./wk.

PHIL 143**ETHICS (3CR)**

This course is a study of historical theories of ethics as well as contemporary perspectives and applications of these theories to specific moral issues. The goal of the course is to help the student better understand contemporary social and moral issues in order to make personal ethical decisions. 3 hrs./wk.

PHIL 154**HISTORY OF ANCIENT PHILOSOPHY (3CR)**

This course examines ancient Greek and Roman philosophical thought from its original efforts to understand the fundamental operations of the natural world to concerns about the ways a person can live successfully in nature and society. It provides a comprehensive view of the philosophical foundations of its Western world view. 3 hrs./wk.

PHIL 161**ELEMENTARY SYMBOLIC LOGIC (3CR)**

This course is a study of formal logic. The student will be introduced to strategies for symbolizing arguments, propositional logic, truth tables, formal proofs, quantification theory and other tests of formal validity. Attention will also be given to the historical development of formal logic. 3 hrs./wk.

PHIL 176**PHILOSOPHY OF RELIGION (3CR)**

This course is an inquiry into the nature of religion, religious thought and religious language. It addresses philosophical topics such as the nature of religious belief, the apparent need of some people for religion, differences between religion and science and between religious and scientific language, the special problems raised by religious language, and changes religion and philosophy of religion have made to accommodate a modern world view. All readings are from traditional and contemporary theological and philosophical sources. 3 hrs./wk.

PHIL 210**HISTORY OF MODERN PHILOSOPHY (3CR)**

Prerequisite: PHIL 121 or PHIL 143 or HIST 125 or HIST 126

This course takes a historical approach to the development of modern philosophy, covering the period from the Renaissance up to the 20th century. The course covers the epistemological, metaphysical and relevant axiological issues of the major philosophers and philosophical movements of the period. The course also examines the influence of modern philosophy on contemporary thought. 3 hrs. lecture/wk.

Photography

PHOT 121

FUNDAMENTALS OF PHOTOGRAPHY (3CR)

This course covers basic processes and principles in black-and-white photography. The course treats the theory and practice of photography as essential tools of the visual communicator. Emphasis is on development of competence in the use of photographic equipment and materials. Topics include cameras, light meters, films, developing negatives, printing, filters, chemicals and presentation. Students must provide their own cameras with adjustable focus, shutter speeds and aperture. 3 hrs. lecture, 3 hrs. lab-demonstration/wk.

PHOT 122

FINE ART PHOTOGRAPHY (3CR)

Prerequisite: PHOT 121

An advanced course in black-and-white photography, Fine Art Photography is a continuation of Fundamentals of Photography topics and content. Emphasis will be on the development of professional standards of photographic technique and image quality and the advancement of students' abilities to think photographically. A working knowledge of camera and darkroom techniques is assumed. The course is primarily intended to advance the abilities of students interested in photography as a means of self-expression. 6 hrs./wk.

PHOT 123

COMMERCIAL PHOTOGRAPHY (3CR)

Prerequisite: PHOT 121

This advanced course treats the theory and practice of commercial photography. It is intended to satisfy requirements for students seeking commercial art degrees as well as serve as an introduction for prospective commercial photographers. 6 hrs./wk.

PHOT 125

PHOTOJOURNALISM (3CR)

Prerequisite: PHOT 121

This course is an introduction to the theory and practice of photojournalism. The student will become familiar with the issues and problems posed to the working photojournalist and will learn the techniques and methods photojournalists use to disseminate information. The course includes a practicum in which the students will observe and practice in professional news organizations. 3 hrs./wk.

PHOT 127

COLOR PHOTOGRAPHY (3CR)

Prerequisite: PHOT 121

This course is a practical and theoretical treatment of the materials, equipment and processes of color photography. Camera and darkroom techniques and controls necessary to produce effective and expressive color photographic images will be emphasized. 6 hrs. lecture, studio/wk.

PHOT 128

DIGITAL PHOTOGRAPHY (3CR)

This course is an introduction to the concepts, tools, and technology of digital imaging for photographers. Emphasis will be on developing competence in the use of digital photographic equipment, software, storage devices and printers. Topics will include image capture, storage, image correction and manipulation, storage devices, and types of inputs. Commercial and artistic applications, ethics and cultural implications of the technology will be discussed. 6 hrs. lecture, lab/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 189.)

Physical Science

(Also see Geoscience, page 185.)

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. 2 hrs. lecture/wk.

KPT 152

FUNDAMENTALS OF MODALITIES I (3CR)

Prerequisite: BIOL 140, CHEM 122, LC 130 and KPT 151 with a minimum grade of "C" and acceptance into the program

This course will present treatment, modalities, therapeutic measures and patient handling skills used in the physical treatment of various injuries and diseases. 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 140 and KPT 152 with a minimum grade of "C" and acceptance into the program

Students will analyze the anatomy and the functions of the musculoskeletal system and the application of physical therapy assessment procedures related to clinical kinesiology. 2 hrs. lecture, 4 hrs. lab/wk.

KPT 154

APPLIED NEUROLOGY (2CR)

Prerequisites: BIOL 225 and KPT 152 with a minimum grade of "C" and acceptance into the program or BIOL 144, KOT 100, KOT 102, KOT 103, KOT 106 and KOT 116, each with a minimum grade of "C"

This course will present the student with the foundations of neuroscience necessary for practice as a P.T.A. The student will learn anatomy and function of the nervous system, as well as correlation of clinical problems with the pathology of the nervous system. 2 hrs./wk.

KPT 155

REHABILITATION (4CR)

Prerequisite: KPT 160 and KPT 162 with a minimum grade of "C"

The student will be introduced to the philosophy underlying rehabilitation theory and principles of treatment involved in normal and abnormal ambulation and mobility. Attention will be given to application of external supports and assistive devices and teaching activities of daily living with attention to description, demonstration and practice. Field trips are required. 2 hrs. lecture, 5 hrs. lab/wk.

KPT 158

THERAPEUTIC EXERCISE (4CR)

Prerequisite: KPT 160 and KPT 162 with a minimum grade of "C"

This course will introduce students to the theory and principles of application of therapeutic exercise including patient instruction, manual techniques and equipment commonly used by the physical therapist assistant. Field trips are scheduled during the semester so students may learn various specialized techniques. 2 hrs. lecture, 4 hrs. lab/wk.

KPT 159

ORTHOPEDIC PATHOLOGY (2CR)

Prerequisite: BIOL 225 and KPT 152 with a minimum grade of "C" and acceptance into the program

Students will study orthopedic pathologies commonly seen in physical therapy practice, diagnosis, signs and symptoms, physiological factors and treatment. 2 hrs./wk.

KPT 160
MEDICAL DISEASES (2CR)

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

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

KPT 161
FUNDAMENTALS OF MODALITIES II (4CR)

Prerequisites: KPT 152 and BIOL 225 with a minimum grade of "C"

The student will be introduced to the theory and practical application of electrotherapy, patient documentation, patient care skills and selected modalities, including indications and contraindications for use. 2.5 hrs. lecture, 3 hrs. lab/wk.

KPT 162
CLINICAL EXPERIENCE I (2CR)

Prerequisites: KPT 153, KPT 154, KPT 159, KPT 161 and KOT 102 with a minimum grade of "C"

Completion of preclinical examination with a score of 80 percent or better

Demonstrated competency in preclinical checkouts

Students receive supervised clinical experience in the practical application of techniques of physical therapist assistants in the treatment of patients in a variety of clinical settings. 30 lab hrs.

KPT 164
PEDIATRICS AND GERONTOLOGY (2CR)

Prerequisites: KPT 160 and KPT 162 with a minimum grade of "C"

The student will be introduced to specialized information related to the treatment of pediatric and older adult populations. 2 hrs. lecture/wk.

KPT 170
CLINICAL EXPERIENCE II (2CR)

Prerequisites: KPT 160 and KPT 162 with a minimum grade of "C"

Concurrent enrollment in KPT 155, KPT 158, KPT 164 and KPT 171

Students receive supervised clinical experience in the practical application of techniques and procedures covered in all previous KPT courses. Students assist physical therapists and physical therapist assistants in the treatment of patients in a variety of clinical settings. (Clinical 5)

KPT 171
CLINICAL SEMINAR (2CR)

Prerequisites: KPT 160 and KPT 162 with a minimum grade of "C"

Students will discuss current professional and patient care issues regarding the practice of physical therapy, ethics, departmental organization, reimbursement, safety and research. 2 hrs. lecture/wk.

KPT 172
CLINICAL EXPERIENCE III (8CR)

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

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

Physics

PHYS 125
TECHNICAL PHYSICS I (4CR)

Prerequisite: MATH 133

This class is an applied study of the concepts of force, work, rate, resistance and power in mechanical, fluidal, thermal and electrical energy systems. 3 hrs. lecture, 3 hrs. lab/wk.

PHYS 126
TECHNICAL PHYSICS II (3CR)

Prerequisite: PHYS 125

This is a continuation of the applied study of concepts begun in Technical Physics I. Concepts studied will include energy, force transformers, energy converters, and vibrations and waves in mechanical, fluidal, electrical and thermal systems. 2 hrs. lecture, 3 hrs. lab/wk.

PHYS 130
GENERAL PHYSICS I (5CR)

Prerequisite: MATH 171

Selected topics in physics will be introduced: motion, energy, matter, thermodynamics and wave motion. 4 hrs. lecture, 3 hrs. lab/wk.

PHYS 131
GENERAL PHYSICS II (5CR)

Prerequisite: PHYS 130

In this continuation of General Physics I, topics will include electricity, magnetism, light, atomic and nuclear structure, quantum theory, relativity and particle physics. 4 hrs. lecture, 3 hrs. lab/wk.

PHYS 135
SPECIAL TOPICS IN TECHNICAL PHYSICS I (1CR)

Prerequisite: MATH 133 or MATH 171

Corequisite: PHYS 125

Students in this course will explore momentum as it operates in mechanical, fluidal and electromagnetic systems. Topics begun in PHYS 125 will be explored further. 4 hrs. lecture, 3 hrs. lab/wk.

PHYS 136
SPECIAL TOPICS IN TECHNICAL PHYSICS II (2CR)

Prerequisites: PHYS 125 and PHYS 135

Corequisite: PHYS 126

Students will explore concepts involved in developing exponential constants for linear systems, radiation and optics. Students will continue studies begun in PHYS 125, PHYS 126 and PHYS 135. 4 hrs. lecture, 3 hrs. lab/wk.

PHYS 220
ENGINEERING PHYSICS I (5CR)

Corequisite: MATH 242

This is an introduction to physics for engineering and science students. Included will be mathematical approaches to the study of mechanics, wave motion and thermodynamics. 4 hrs. lecture, 3 hrs. lab/wk.

PHYS 221
ENGINEERING PHYSICS II (5CR)

Prerequisite: PHYS 220 and MATH 242

Electricity and magnetism, light, and topics in modern physics will be addressed. 4 hrs. lecture, 3 hrs. lab/wk.

Political Science

POLS 122
POLITICAL SCIENCE (3CR)

This course will explore the interaction between political and economic ideas and institutions in the world political arena and examine the role of communism, capitalism, fascism and democracy in political systems. 3 hrs./wk.

POLS 124
AMERICAN NATIONAL GOVERNMENT (3CR)

This course is an examination of the current national policy-making structure and process. Topics of study include basic political and economic concepts, the Constitution, political parties, pressure groups, budget construction and decision-making institutions. 3 hrs./wk.

POLS 126
STATE AND LOCAL GOVERNMENT (3CR)

This course is a survey of organization, theory and practice of state and local governments through examination of executive, legislative, judicial and service functions in the United States in general and Kansas in particular. 3 hrs./wk.

POLS 132
INTRODUCTION TO COMPARATIVE GOVERNMENT (3CR)

This course studies the major world political systems. It will compare and contrast the resolution of key 20th-century political, social and economic issues. 3 hrs./wk.

POLS 135
INTERNATIONAL RELATIONS (3CR)

This course analyzes the conflict and cooperation among nation-states. Students will study contemporary problems and how they relate to power, war, terrorism, diplomacy, international organizations and the future of the nation-state system. 3 hrs./wk.

Psychology

PSYC 121
APPLIED PSYCHOLOGY (3CR)

This course will examine how students can use psychological principles to better understand themselves and others. Topics will include popular approaches to psychological problems; problem-solving techniques; and the student's view of self, values and goals. The course also will show how psychology applies to other disciplines and social institutions. 3 hrs./wk.

PSYC 124
HUMAN POTENTIAL SEMINAR (3CR)

This is a structured group experience designed to increase self-affirmation, self-motivation, self-determination and empathetic regard for others. It will include analysis of achieving satisfaction and success, clarification of personal values, acknowledgment of personal strengths and long-range goal setting. Regular attendance is imperative. 3 hrs./wk.

PSYC 130
INTRODUCTION TO PSYCHOLOGY (3CR)

This is an introduction to general psychology. Topics will include the biological aspects of behavior, the brain, consciousness, sensation, perception, motivation, emotion, stress, maturation and development, learning and memory, normal and abnormal personality, and social

psychology. This course is a prerequisite for other courses in psychology. 3 hrs./wk.

PSYC 205
HUMAN SEXUALITY (2CR)

Prerequisites: PSYC 130

This course is designed to provide a balanced and thoughtful account of what is known about sexuality from various perspectives. A broad and representative survey of research is presented in a number of topical areas. Psychobiology, sexual development during childhood and adolescence, sexual interactions, love relationships and behavior, gender issues, sexual orientation, health issues and diseases, and sexual problems and solutions will be studied. Primary emphasis will be placed on the individual and the couple as units of analysis. Class discussions of issues relating to human sexuality will be encouraged. 3 hrs. lecture/wk.

PSYC 210
METHODOLOGY IN THE SOCIAL SCIENCES (3CR)

Prerequisite: PSYC 130 or SOC 122 or ECON 230

This course will involve active participation in the application of research strategies to the social and behavioral sciences. A wide range of data collection methods will be studied. Students will be expected to do an independent research project. 3 hrs./wk.

PSYC 215
CHILD DEVELOPMENT (3CR)

Prerequisite: PSYC 130

This course is a comprehensive account of human development from conception through adolescence, integrating genetic, biological, physical and anthropological influences with psychological processes. 3 hrs./wk.

PSYC 218
HUMAN DEVELOPMENT (3CR)

Prerequisite: PSYC 130

This course is a comprehensive account of human psychological and physical development from conception through infancy, childhood, adolescence, adulthood and death. The course integrates genetic, biological, physiological and anthropological influences with the psychological process, and explores determinants of development from both hereditary and environmental perspectives. 3 hrs./wk.

PSYC 220
SOCIAL PSYCHOLOGY (3CR)

Prerequisite: PSYC 130

This class will seek to comprehend the nature and causes of individual behavior in social situations. It will identify those factors that shape our feelings, overt actions and thought in social situations. Topics will include social attitudes and prejudice, conformity, aggression and leadership. 3 hrs./wk.

PSYC 225
EDUCATIONAL PSYCHOLOGY (3CR)

Prerequisite: PSYC 130

The psychology of learning-teaching situations will be addressed. 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 160 INTRODUCTION TO RADIOLOGIC TECHNOLOGY (4CR)

Prerequisite: Admission to the program

Students will receive an orientation to the program and clinical responsibilities, with emphasis on body mechanics of patient transport, methods of radiation protection and types of radiographic equipment. Clinical observation is also included. 5 hrs./wk.

KRAD 162 IMAGE PROCESSING (2CR)

Prerequisite: Admission to the program and KRAD 173 with a minimum grade of "C"

This course is intended for the student who is enrolled in the study of radiologic technology. The course content is intended to prepare the student for the processing of radiographs. 2.5 hrs./wk.

KRAD 165 PATIENT CARE (2CR)

Prerequisite: KRAD 160

This is the study of patient care and the skills required for patient care in the procedures of radiology. 2 hrs./wk.

KRAD 170 RADIOLOGIC BIOLOGY/PROTECTION (3CR)

Prerequisite: KRAD 160 with a minimum grade of "C"

Radiation biology, radiation protection and monitoring, professional attitudes and ethics will be among the topics covered. 3 hrs./wk.

KRAD 171 RADIOGRAPHIC EXPOSURES I (3CR)

Prerequisite: KRAD 170

Radiographic image formation and the factors affecting or controlling it will be examined. Students will conduct related experiments. 3.5 hrs./wk.

KRAD 172 RADIOGRAPHIC POSITIONING I (3CR)

Prerequisite: Admission to the program and concurrent enrollment in KRAD 173

This is a study of anatomy and positioning for the abdomen, chest, upper and lower extremities, upper and lower gastrointestinal track, gall bladder/biliary track and kidneys. 3.5 hrs./wk.

KRAD 173 CLINICAL TRAINING I (3CR)

Prerequisites: Admission to the program and concurrent enrollment in KRAD 172

This class will offer training in basic radiographic procedures and related tasks that correlate with KRAD 172 course content. Training is under the supervision of a radiologic technologist. 16 hrs. clinic/wk.

KRAD 174 RADIOGRAPHIC EXPOSURES II (3CR)

Prerequisites: KRAD 173 with a minimum grade of "C"

Topics will include analysis and quality control measures used for image-producing equipment including tests and calibration requirements. Computer-assisted image production will be studied in detail including the technology of computer-assisted tomography (C.A.T.) and magnetic resonance imaging (M.R.I.) scanners. 3.5 hrs./wk.

KRAD 175 CLINICAL TRAINING II (4CR)

Prerequisites: KRAD 172 and KRAD 173 with a minimum grade of "C"

Corequisite: KRAD 176

This training will focus on the upper and lower extremities, cervical, thoracic and lumbar vertebrae, ribs, sternum, skull and mammographic examinations. The student must be able to perform eight additional unassisted examinations by the end of the term. 26 hrs. clinic/wk.

KRAD 176 RADIOGRAPHIC POSITIONING II (3CR)

Prerequisite: KRAD 172 and KRAD 173 with a minimum grade of "C"

Corequisite: KRAD 175

This class will cover anatomy and positioning related to the upper and lower extremities, the vertebral column and thorax and will include mammography. 3.5 hrs./wk.

KRAD 178 CLINICAL TRAINING III (4CR)

Prerequisites: KRAD 175 and KRAD 176 with a minimum grade of "C"

Students will continue to perform examinations they have previously proven competent in. Direct supervision and instruction will be provided until competence is attained for a minimum of three additional examinations not previously learned. Students will complete 10 evening shifts during the summer session. Average 19 hrs./wk.

KRAD 278
IMAGING MODALITIES AND PATHOLOGY (3CR)

Prerequisites: KRAD 279 and KRAD 280 with a minimum grade of "C"

This course will study the disease processes of all organ systems, with an emphasis on pathology visualized on radiographs or through other image-producing modalities such as C.A.T. scans or ultrasound exams. 3 hrs./wk.

KRAD 279
RADIOGRAPHIC POSITIONING III (2CR)

Prerequisites: KRAD 175 and KRAD 176 with a minimum grade of "C" and concurrent enrollment in KRAD 280

This course will concentrate on image evaluation for every radiographic examination of the human anatomy. 2 hrs./wk.

KRAD 280
CLINICAL TRAINING IV (4CR)

Prerequisite: KRAD 178 with a minimum grade of "C"
Corequisite: KRAD 285

Training opportunities in portable radiography, emergency room techniques and supervised fluoroscopy will be provided. By the end of the term, students will be expected to perform with limited supervision all the exams they have previously shown competence in as well as new exams. 29 hrs./wk.

KRAD 281
RADIATION PHYSICS (3CR)

Prerequisites: KRAD 178 with a minimum grade of "C"

Students will apply the principles of physics to the study of X-ray equipment and other diagnostic imaging devices used in the X-ray department. 3.5 hrs./wk.

KRAD 282
CLINICAL TRAINING V (4CR)

Prerequisites: KRAD 280 and KRAD 285, each with a minimum grade of "C"

Students will perform patient examinations in a clinical setting with the supervision of a radiologic technologist. 36 hrs./wk.

KRAD 283
FINAL SEMINAR (2CR)

Prerequisites: KRAD 280, KRAD 281 and KRAD 285, each with a minimum grade of "C"

Students will prepare for the National Registry examination by using tests and materials designed to simulate ARRT examinations. Completion of this course and all radiologic technology courses with a "C" or better is required for qualification for the National Registry exam. 3 hrs./wk.

KRAD 285
SPECIAL PROCEDURES (2CR)

Prerequisites: KRAD 178 with a minimum grade of "C"

This course will cover anatomy, positioning, equipment and special tasks related to the circulatory, nervous and lymphatic systems. The role of the technologist will be stressed. 2 hrs./wk.

KRAD 289
MAMMOGRAPHY (3CR)

Prerequisite: Current enrollment in second year of the program or ARRT radiographer in good standing

This course will cover the principles of mammography, with practical application under the supervision of a radiologic technologist. 2 hrs. lecture, 8 hrs. clinic/wk.

Railroad Operations

RRT 120
HISTORY OF RAILROADING (3CR)

This course covers the history and traditions of railroading and the industry's role in North American economic development. Upon successful completion of this course, students should be able to list and explain the significance of major events in North American railroading. 3 hrs. lecture/wk.

RRT 121
RAILROAD TECHNICAL CAREERS (3CR)

This course includes information about technical careers in railroading, enabling students to choose suitable career paths. This course includes field trips that will demonstrate the relationship among technical work groups in day-to-day railroad operations. Upon successful completion of this course, students should be able to describe basic technical job functions, requirements and characteristics. 3 hrs. lecture/wk.

RRT 150
RAILROAD OPERATIONS (3CR)

This course includes information about the industry, its major assets, structure and typical operations. Upon successful completion of this course, students should be able to define the current North American railroad industry characteristics, basic operations, components and processes, and industry structure and administrative processes. 3 hrs. lecture/wk.

RRT 165**RAILROAD SAFETY, QUALITY AND ENVIRONMENT (3CR)**

This course covers the importance of safety, quality, personal health and environmental awareness to the railroad industry and emphasizes the basic tools and techniques for improving these conditions on the job. Upon successful completion of this course, students should be able to define and explain the needs for improved safety, quality, health and environmental awareness; describe their basic principles; explain the elements of successful programs; and apply these elements to typical tasks on the job. 3 hrs. lecture/wk.

RRTC 123**INTRODUCTION TO CONDUCTOR SERVICE (4CR)**

Prerequisite: Admission to the JCCC's Railroad Operations Program, conductor option

Upon successful completion of this course, the student should be able to describe railroad organization and general operations, policies and practices to ensure railroad safety and the basic responsibilities of conductors. 5 hrs. lecture, demonstration/wk.

RRTC 175**CONDUCTOR MECHANICAL OPERATIONS (2CR)**

Prerequisite: Admission to the JCCC's Railroad Operations program, conductor option, and successful completion of RRTC 123 with a grade of "C" or better

This course covers mechanical operations that relate to conductor service. This is the second course in the conductor option of the Railroad Operations degree program. Upon successful completion of this course, the student should be able to describe the importance and application of freight care mechanical policies and practices to ensure safe railroad operations. 2.5 hrs. lecture/wk.

RRTC 261**CONDUCTOR SERVICE (2CR)**

Prerequisite: Admission to the JCCC's Railroad Operations program, conductor option, and successful completion of RRTC 175 with a grade of "C" or better

Upon successful completion of this course, the student should be able to describe and apply railroad organization and general operations, policies and practices to ensure railroad safety and the basic responsibilities of conductors. This course includes safety and the general rules with which conductors must comply and teaches the techniques and administrative procedures conductors use on the job to perform safely and effectively. 2.5 hrs. lecture/wk.

RRTC 263**GENERAL CODE OF OPERATING RULES (4CR)**

Prerequisite: Admission to the JCCC's Railroad Operations program, conductor option, and successful completion of RRTC 261 with a grade of "C" or better

This is the fourth course in the conductor option for the Railroad Operations degree program. Conductors must maintain a thorough understanding of the General Code of Operating Rules (GCOR). This course provides an in-depth study of the GCOR. Upon successful completion of this course, the student should be able to demonstrate abilities to apply the GCOR to safe and efficient train movement and operations. 5 hrs. lecture/wk.

RRTC 265**CONDUCTOR FIELD APPLICATION (9CR)**

Prerequisite: Admission to the JCCC's Railroad Operations program, conductor option, and successful completion of RRTC 263 with a grade of "C" or better

Upon successful completion of this course, the student will have observed actual operations and be able to apply skills learned in classroom-based instruction to those operations. The student will observe and perform operations under the supervision of experienced 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. *Class currently held at Tarrant County Junior College, Ft. Worth, Texas.*

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. *Class currently held at Tarrant County Junior College, Ft. Worth, Texas.*

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. *Class currently held at Tarrant County Junior College, Ft. Worth, Texas.*

RRTD 275**RAILROAD DISPATCHING FIELD OBSERVATION (3CR)**

Prerequisite: Admission to the JCCC's Railroad Operations program, dispatcher option, and RRTD 122 with a grade of "C" or better

Upon successful completion of this course, the student will have observed actual dispatching operations and should be able to identify major job responsibilities. Students will observe operations under the supervision of experienced dispatcher mentors in actual dispatching offices. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk. *Class currently held at Tarrant County Junior College, Ft. Worth, Texas.*

RRTD 276**RAILROAD DISPATCHING FIELD APPLICATION (5CR)**

Prerequisite: Admission to the JCCC's Railroad Operations program, dispatcher option, and RRTD 272 with a grade of "C" or better

Upon successful completion of this course, the student should be able to apply skills learned in classroom-based dispatching instruction to those operations. This course is offered for 10 weeks, and students will observe and practice operations under the supervision of experienced dispatcher mentors in actual dispatching offices. Minimum 15 hrs. on-the-job training/wk. *Class currently held at Tarrant County Junior College, Ft. Worth, Texas.*

RRTM 124**ORIENTATION TO THE RAILROAD MECHANICAL CRAFT (2CR)**

Prerequisite: Admission to the JCCC's Railroad Operations program, mechanical option

This course is designed to familiarize the student with work in railroad mechanical crafts. Upon successful com-

pletion of the course, students should be able to describe apprenticeship program structures, benefits, organization goals, basic safety and quality principles and other aspects of mechanical craft work. 2.5 hrs. lecture/wk.

RRTM 170**RAILROAD MECHANICAL SAFETY AND HEALTH (2CR)**

Prerequisite: Admission to the JCCC's Railroad Operations program, mechanical option and 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
BASIC LOCOMOTIVE ELECTRICITY
AND ELECTRONICS (2CR)

Prerequisite: Admission to the JCCC's Railroad Operations program, mechanical option and completion of RRTM 124 and RRTM 170 with a grade of "C" or better

This course covers the theory and operation of electrical and electronic circuitry on board modern locomotives and complements EMD and GE electrical systems classes. Upon successful completion of this course, students should be able to describe the theory and purpose of the processes and operation of locomotive electrical system components and maintenance techniques. 1.5 hrs. lecture, 1 hr. lab/wk.

Railroad Electronics

RREL 144
INTRODUCTION TO PLCs (2CR)

Prerequisites: Approval of the railroad 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 hr. lecture, 1.5 hrs. lab/wk.

RREL 172
PLC APPLICATIONS (2CR)

Prerequisites: Approval of the railroad 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.

RREL 180
INTRODUCTION TO RAILROADELECTRONICS (1CR)

Prerequisites: Approval of the railroad training administrator and the JCCC division administrator

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this

course, the student should be able to state basic safety procedures in electronics, explain basic principles of electronics, perform basic electronic calculations and use basic electronic tools. 2.5 hrs. lecture, 2.5 hrs. lab/wk.

RREL 181
CIRCUIT ANALYSIS DC/AC (6CR)

Prerequisites: RREL 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.

RREL 182
SEMICONDUCTOR DEVICES AND CIRCUITS (6CR)

Prerequisites: RREL 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.

RREL 183
DIGITAL TECHNIQUES (6CR)

Prerequisites: RREL 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.

RREL 284**ELECTRONIC COMMUNICATIONS (6CR)**

Prerequisites: RREL 183 and approval of the railroad 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.

RREL 285**MICROPROCESSOR TECHNIQUES (6CR)**

Prerequisites: RREL 183 and approval of the railroad 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.

RREL 286**APPLIED MICROPROCESSORS (2CR)**

Prerequisite: RREL 285 and approval of the railroad 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.

Railroad Industrial Technology

RRIT 122**ELEMENTS OF WELDING (3CR)**

Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be able to cut and weld using oxy-fuel (OFW, OFC) and shielded metal arc welding (SMAW). The

OFW portion will cover puddling with and without filler metal; OFC will cover straight line cutting, beveling, piercing and gouging. The SMAW portion will cover flat position and will be limited to fillet welds. The student should be able to discuss electrical safety in SMAW, handle welding cables properly, understand eye hazards, list safe clothing requirements and discuss environmental safety. This knowledge will be evidenced by achieving the specified score on the unit test. 2 hrs. lecture, 3 hrs. lab/wk.

RRIT 123**BASIC WELDING (3CR)**

Prerequisites: RRIT 122 or approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be able to use oxy-fuel cutting (OFC), shielded metal arc welding (SMAW) and air carbon arc cutting (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.

RRIT 127**WELDING PROCESSES (2CR)**

Prerequisites: Approval of the BNSF training director and the JCCC division administrator

Upon successful completion of this course, the student should be able to identify various welding processes used by railroads and industry. Standard shop and maintenance welding processes will be taught and demonstrated. Welds will be tested and inspected according to industry standards. 1 hr. lecture, 1.5 hrs. lab/wk.

RRIT 132**THERMITE WELDING (3CR)**

Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be able to produce, in a safe manner, high-quality, sound Thermite welds on standard rail and mismatched rail. This course is intended for people who are employed in the railroad industry. This will be specific, in-depth industrial training. Students will be required to make various rail alignments and grind various new and worn rail. The students also should be able to clean a used crucible, assemble a crucible and temper new and used crucibles. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 135**COMPONENT WELDING (3CR)**

Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be able to identify industrial welding of track components. The course will involve the study of different welding processes, metallurgy and the effects of heat on track components. Demonstrations on actual track components will be given with the lecture. The student will be required to experience all appropriate methods and processes of welding and straight edging rail steel for evaluation. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 137**STRUCTURAL WELDING SMAW (3CR)**

Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student will be qualified to weld with SMAW according to AWS D1.5.88 code. All welds will be made in the vertical (3G) and overhead (4G) positions. Passing or failing will be determined by the student's ability to successfully produce welds according to the prescribed standards in AWS D1.5.88. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 138**STRUCTURAL WELDING FCAW (3CR)**

Prerequisites: RRIT 137 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student will be qualified to weld with FCAW according to AWS D1.5.88 code. All welding will be made in the vertical (3G) and overhead (4G) positions. Passing or failing will be determined by the student's ability to successfully produce welds according to prescribed standards in AWS D1.5.88. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 139**STRUCTURAL WELDING PIPE (3CR)**

Prerequisites: RRIT 137 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be qualified to weld on pipe using the SMAW process. All welding will be made in the vertical uphill fixed position. Passing or failing the course will be determined by the student's ability to successfully produce test welds according to standards. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 140**STRUCTURAL QUALITY SMAW (3CR)**

Prerequisites: RRIT 127 or approval of BNSF training director and JCCC division administrator

Upon successful completion of this course, the student should be qualified to weld with Shielded Metal Arc Welding (SMAW) according to industrial standards. Test welds will be made in the vertical (3G) and overhead (4G) positions; limited thickness. Passing or failing will be determined by the student's ability to successfully produce welds according to prescribed standards. The ox-fuel (OF) portion will include cutting to specific sizes and shapes. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 141**STRUCTURAL QUALITY GMAW (3CR)**

Prerequisites: RRIT 127 or approval of BNSF training director and JCCC division administrator

Upon successful completion of this course, the student should be able to explain the theory of gas metal arc (GMAW) and fluxed cored arc welding (FCAW), identify materials, and use equipment related to the processes. The student will weld on mild steel plate in all positions producing both fillet and groove welds with the GMAW process with a U-bend test being performed in selected positions according to industrial standards. The student will also weld in selected positions on mild steel plate with the FCAW process. Selected welding codes and specifications will be used as a reference for this class. The ox-fuel cutting (OF) will be used to prepare mild steel for welding. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 143**THERMITE WELDING FOR SUPERVISORS (2CR)**

Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be able to produce, in a safe manner, high-quality sound thermite welds on standard rail and mismatched rail. This course is intended for people who are employed in the railroad industry. This will be specific, in-depth, industrial training. Students will be required to make various rail alignments and grind various new and worn rail. The student should also be able to clean a used crucible, assemble a crucible and temper new and used crucibles. 1.5 hrs. lecture, 1 hr. lab/wk.

RRIT 145**FROG WELDING (3CR)**

Prerequisites: RRIT 135 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be able to repair by welding a frog casting. Students will be required to grind, straight edge, dye penetrant test and monitor heat input during the repair process.

1 hr. lecture, 4 hrs. lab/wk.

RRIT 147**COMPONENT WELDING FOR SUPERVISORS (2CR)**

Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be able to identify industrial welding of track components. This course will introduce the student to various types of welding processes, metallurgy and the effects of heat on rail steel and frog castings. Demonstration and experience will be given regarding grinding on rail steel and frog castings, air arc cutting (CAC-A), straight edging, temperature monitoring and dye penetrant on both rail steel and frog castings. 1.5 hrs. lecture, 1 hr. lab/wk.

RRIT 150**SWITCH POINT REPAIR (2CR)**

Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be able to produce, in a safe manner, high-quality repairs of switch points, switch point protectors, adjacent railends and adjacent and associated rail components.

This specific in-depth industrial training course is intended for people who are employed in the railroad industry. Students will be required to complete repairs of components with flux cored arc welding (FCAW), shielded metal arc welding (SMAW) and associated welding processes. Students will also be able to grind components before and after welding to meet current standards. Straight edging according to current standards will be required of all students. 1.5 hrs. lecture, 1 hr. lab/wk.

RRIT 155**RAILROAD WELDING REVIEW (2CR)**

Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be able to identify currently used rail, frogs, switch points, crossings, Conley's and insulated joint

plugs. The student should be able to locate operating procedures in an approved manual and apply them to the appropriate component. In addition, the student should be able to describe the proper application of OFC, OFW, heating, SMAW, FCAW, CAC-A and thermite welding procedures. Welds will be tested and inspected according to industry standards. 1.5 hrs. lecture, 1 hr. lab/wk.

Railroad Maintenance of Way

RRMW 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.

RRMW 135**CONCRETE TECHNOLOGY (2CR)**

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

Railroad Welding

RRWE 136**BASIC ELECTRONICS (2CR)**

Prerequisites: Approval of the railroad training director and the JCCC division administrator

This course is an introduction to electronics with a review of basic electrical concepts. Instruction is provided on the operation and use of an oscilloscope, function generator, DC power supply, digital multi-meter and watt-meter. The course also includes an introduction to electronics devices, schematics, basic electronic formulas and programmable logic controllers. 1 hr. lecture, 1.5 hrs. lab/wk.

RRWE 138**WORK EQUIPMENT SYMBOLS (2CR)**

Prerequisite: Approval of the railroad training administrator and the JCCC division administrator

This course is designed to introduce the mechanic to the different types of symbols found on railroad track equipment. Major symbols families that will be discussed include: mechanical, hydraulic, pneumatic, ladder and logic devices. At the end of each major topic, several small projects will be assigned to insure that understanding has been achieved. As a final project, students will be assigned a project that will test their ability to use correctly several different families of symbols in one complete, working drawing. 1½ hrs. lecture, 1 hr. lab/wk

RRWE 146**HYDRAULIC PRINCIPLES (2CR)**

Prerequisite: Approval of the railroad training administrator and the JCCC division administrator

This course is designed for operators and maintenance personnel who use hydraulic systems in their work. Upon successful completion of this course, the student should be able to apply hydraulic principles to improve operational availability of equipment. Students will learn to read hydraulic diagrams and perform preventive maintenance and troubleshooting. In order to explain component operation, there will be extensive use of cut-away components. 1 hr. lecture, 1.5 hrs. lab/wk.

RRWE 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.

RRWE 157**FLUID POWER SYSTEMS (2CR)**

Prerequisite: Approval of the railroad training administrator and the JCCC division administrator

This course is designed to introduce the field of fluid power. Major topics that will be discussed include: the two types of fluid power systems, major parts in a fluid power system and their purpose, the calculations needed to size motors and cylinders, the proper preventive maintenance procedures needed to keep the system operating at peak efficiency and the troubleshooting methods used to isolate the problem in a system that is not working properly. 2 hrs. lecture/wk.

RRWE 190**ADVANCED HYDRAULIC PRINCIPLES (2CR)**

Prerequisites: RRWE 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.

RRWE 192**ADVANCED ELECTRONIC PRINCIPLES (2CR)**

Prerequisites: RRWE 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.

Religion

REL 120**EXPLORING WORLD RELIGIONS (3CR)**

This course is a comparative study of the world's major religious traditions. The basic beliefs of Hinduism, Buddhism, Confucianism, Taoism, Judaism, Christianity and Islam will be explored. A comparative framework for religious studies will be provided, and essential differences between Eastern and Western religions will be noted. Literary texts and iconographic images will be studied as appropriate. 3 hrs. lecture/wk.

Respiratory Care

RC 125

BEGINNING PRINCIPLES OF RESPIRATORY CARE (4CR)

Prerequisite: Admission to the Respiratory Care program

This is an introduction to respiratory therapy. Students will focus on basic anatomy, physiology, 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 patho-physiology of the pulmonary, cardiovascular and renal systems as they relate to respiratory therapy. 2 hrs./wk. Fall.

RC 230

CLINIC TOPICS AND PROCEDURES I (4CR)

Prerequisite: Successful completion of the summer sequence of respiratory care courses

In this lecture and lab course, students will focus on basic and emergency care and be introduced to mechanical ventilators and critical care of the respiratory patient. 3 hrs. lecture, 3 hrs. lab/wk. Fall.

RC 231

CLINIC TOPICS AND PROCEDURES II (4CR)

Prerequisite: Successful completion of the fall sequence of respiratory care courses

Critical care and more sophisticated aspects of respiratory therapy will be emphasized in this lab/lecture course. Medical ethics and department management will be covered. 3 hrs. lecture, 3 hrs. lab/wk. Spring.

RC 233

RESPIRATORY CARE OF CHILDREN (2CR)

Prerequisite: RC 230

The focus will be on the respiratory care of neonatal and pediatric patients with emphasis on the management of cardiopulmonary disease states unique to children. Information will be based on developmental anatomy and physiology, pathology, diagnostic/laboratory procedures, and equipment manipulation in acute, chronic, critical and emergency care settings. 2 hrs./wk. Spring.

RC 235

CARDIOPULMONARY MEDICINE II (2CR)

Prerequisite: Successful completion of the summer sequence of respiratory care courses

This is a continuation of the series taught by the program medical director emphasizing disease states of the cardiopulmonary system. Discussion will cover the pathology, diagnosis and treatment of various diseases and the role of the respiratory therapist in the medical management of these patients. 2 hrs./wk. Fall.

RC 236

CARDIOPULMONARY MEDICINE III (2CR)

Prerequisite: Successful completion of the fall sequence of respiratory care courses

This is a continuation of the medical director's discussion of pulmonary diseases, their pathology and their treatment. 2 hrs./wk. Spring.

RC 240

RESPIRATORY PHARMACOLOGY (2CR)

Prerequisite: Successful completion of the summer sequence of respiratory care courses

This class will present all the pharmacology that respiratory therapists provide. A general study of most of the drugs used in the care of patients with cardiopulmonary problems will be included. Drugs administered during a code blue also will be stressed. 2 hrs./wk. Fall.

RC 245**CRT-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**CRT-RRT CLINICAL PRACTICE TRANSITION (4CR)**

Prerequisites: RC 233 and RC 245

Students will assess and treat adult, pediatric and neonatal patients with respiratory and/or cardiac-related conditions using the basic respiratory therapy arsenal, as well as the critical care monitoring, mechanical ventilation and airway management techniques required for the more critically ill patient. Students will be exposed to cardiopulmonary diagnostic procedures, pulmonary rehabilitation and home care management of the respiratory patient. 24 hrs. clinic/wk.

Sociology**SOC 122****SOCIOLOGY (3CR)**

This overview of social life will cover group structure and processes, social interaction and an examination of major institutions. Theories, methods of study and uses of social research will be examined. 3 hrs./wk.

SOC 125**SOCIAL PROBLEMS (3CR)**

Selected social problems from crime to racism will be analyzed. The history and development of each problem will be examined from a variety of sociological perspectives, as will possible solutions. 3 hrs./wk.

SOC 131**MARRIAGE AND THE FAMILY (3CR)**

This is a sociological examination of marriage and the family as a social institution. It will emphasize changing roles, family formation, socialization, domestic conflict, interaction among family members and marriage partners, and the role of marriage and the family in society. 3 hrs./wk.

SOC 146**SOCIAL WELFARE (3CR)**

Social welfare and its relationship to other social systems in America will be introduced. The social, economic and political factors that foster inequality as well as social welfare as a response to social deprivation will be examined. 3 hrs./wk.

SOC 147**SOCIAL WORK AND SOCIAL SERVICES (3CR)**

Students will study social work as a profession in this class. Origins, values, skills, fields of service and current issues in social work will be analyzed. 3 hrs./wk.

SOC 152**PERSPECTIVES ON AGING (3CR)**

Social aspects of aging will be identified. Areas of special interest will include research themes and demographic trends; aging and its relationship to family, the economy, politics, religion and education; the effect of cultural values on behavior; and the future of the elderly. 3 hrs./wk.

SOC 160**SOCIAL POWER: MOTIVATION AND ACTION (3CR)**

This course will concentrate on the socio-psychological aspects of power. Topics will include the development of personality, the role of social class and ideology, the mechanics of domination and subordination, discrimination, economic inequality, powerlessness and the search

for community. Basic terminology and theoretical foundations of both sociology and psychology will be at the heart of the course. 3 hrs./wk.

SOC 165

CHINESE SOCIETY: PAST AND PRESENT (3CR)

This self-paced course is an introduction to Chinese society since 1949. The course examines Chinese society and culture in the 20th century and focuses on contemporary developments while tracing the historical roots of Chinese values and institutions. Issues such as socialization, economic development, political change, social organization and conflict are studied.

Speech

SPD 120

INTERPERSONAL COMMUNICATION (3CR)

In this basic speech course, students will study principles of effective communication in one-to-one relationships and in small groups. They will apply these principles in a variety of learning exercises and situations. Individualized talks may be given, but everyday communication will be stressed. 3 hrs./wk.

SPD 121

PUBLIC SPEAKING (3CR)

This fundamental speech course will emphasize speech organization, development of ideas, audience analysis and delivery. Students will deliver informative and persuasive speeches in the impromptu, extemporaneous and manuscript styles. 3 hrs./wk.

SPD 122

GROUP DISCUSSION (3CR)

Students will participate in small groups to study the principles of effective group dynamics and leadership skills and to practice these principles in class. 3 hrs./wk.

SPD 125

PERSONAL COMMUNICATION (3CR)

An integration of interpersonal communication and public speaking, this course will focus on communication theory, listening, self-concept, language and perception. It also will discuss types of speaking including impromptu, informative and persuasive speaking. Emphasis will be on the natural relationship that exists between one-to-one and public communication. 3 hrs./wk.

SPD 128

BUSINESS AND PROFESSIONAL SPEECH (3CR)

Students will improve their verbal communication skills both formally and informally by studying interviewing

techniques, making effective presentations, working in groups, negotiating, studying listening techniques, and recognizing verbal and nonverbal messages. The course is designed for the student presently working in business or planning to pursue a business degree. 3 hrs./wk.

SPD 130

ELEMENTARY DEBATE (3CR)

Theories of argumentation and debate will be introduced. Students will attend two to eight weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

SPD 132

INTERMEDIATE DEBATE I (3CR)

Prerequisite: SPD 130 or the equivalent

This is a continuation of argumentation and debate theories. Students will attend two to eight weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

SPD 180

INTERCULTURAL COMMUNICATIONS (3CR)

This interdisciplinary course will draw on the disciplines of psychology, sociology, anthropology and communications to analyze how communication is influenced by culture. Students will explore the cultural basis of values, perceptions and behavior and learn how this affects communication across cultural lines. Specific topics will include the role of verbal and nonverbal symbols, cues, stereotypes, prejudice and ethnocentrism. Specific cultures will be studied, and role play and simulations will be used. 3 hrs. lecture/wk.

SPD 230

INTERMEDIATE DEBATE II (3CR)

Prerequisite: SPD 132 or the equivalent

Intercollegiate debates will be stressed in this review of argumentation and debate theories. Students will attend two to eight weekend debate tournaments each semester. 3 hrs./wk.

SPD 235

ADVANCED DEBATE (3CR)

Prerequisite: SPD 230 or the equivalent

Students will participate on the senior level in intercollegiate debate, attending two to eight debate tournaments a semester. 3 hrs./wk.

SPD 298

INTERCULTURAL COMMUNICATION: GREAT BRITAIN AND THE UNITED STATES (3CR)

In this travel-for-credit course, students will visit selected cities in Great Britain where they will compare British and U.S. languages, values and institutions. Offered periodically.

Surgical Technology

KSUR 100

INTRODUCTION TO SURGICAL TECHNOLOGY (2CR)

This course explores the historical development of surgery, health care facilities development and organization, the composition and duties of the surgical team, ethical, legal and moral responsibilities and career obligation of the surgical technologist. Focus is on effective communication skills, accurate medical terminology and the impact of transcultural psychosocial outcomes for clients in the surgical setting. 4 hrs./wk.

KSUR 102

FUNDAMENTALS OF OPERATING ROOM TECHNIQUE (11 CR)

This course explores the application of the principles of medical and surgical asepsis, preparation and maintenance of the sterile field, identification of instruments, sutures, supplies and equipment. Emphasis is on basic skills of the surgical technologist in preparation for and during the operative procedure. The student will practice maintaining a safe client environment and explore the responsibilities and duties of surgery personnel. Common surgical techniques and procedures are introduced. 21 hrs. (clinical 15 hrs.)/wk.

KSUR 104

BODY STRUCTURE AND FUNCTION (2 CR)

Prerequisite: Students must meet entrance standards and must be accepted into the program.

This course introduces students to the major structures and function of the human body. Each body system is explored. Laboratory time is used to introduce and reinforce classroom instruction. 2 hrs. lecture, 4 hrs. lab/wk.

KSUR 105

PHARMACOLOGY FOR THE SURGICAL TECHNOLOGIST (2 CR)

This course explores the development of knowledge and understanding of the metric, apothecary, household and linear systems of measurement. The conversion of equivalents from one system to another is explored. Focus is on terminology associated with pharmacology and procedures for safe and accurate handling of medications and solutions. Included is discussion of principles of anesthesia administration, postanesthesia client care and care in emergencies. 3 hrs. lecture, 1 hr. lab/wk.

KSUR 106

ASEPTIC TECHNIQUE FOR THE SURGICAL TECHNOLOGIST (2 CR)

This course studies the structure, function and pathogenicity of microorganisms and immune and infectious responses. Emphasis is on principles of sterilization, disinfecting, environmental sanitation and practices that promote optimal healing. 4 hrs. lecture/wk.

KSUR 109

PRINCIPLES OF SURGICAL PROCEDURES I (8 CR)

Prerequisite: Successful completion of all previously attempted courses of the program

This course focuses on the diagnosis, pathology and surgical sequence of general surgery, gynecological surgery, genitourinary surgery and laparoscopic surgery. Included is discussion of postoperative care and complications. 16 hrs. (clinical 12 hrs.)/wk.

KSUR 110

PRINCIPLES OF SURGICAL PROCEDURES II (7 CR)

This course focuses on diagnosis, pathology and surgical sequence of ophthalmological, ENT, head and neck, plastic/reconstructive and orthopedic surgeries. Included is a discussion of postoperative care and complications. 15 hrs. (clinical 12 hrs.)/wk.

KSUR 111

CAREER DEVELOPMENT FOR THE SURGICAL TECHNOLOGIST (2 CR)

This course focuses on résumé development, interviewing techniques and introduction to the current health care market. Emphasis is on self-evaluation of professional skills and their potential application to the current health care market. 2 hrs. /wk.

KSUR 114

PRINCIPLES OF SURGICAL PROCEDURES III (7 CR)

This course focuses on diagnosis, pathology and surgical sequence with complex surgical specialties: neurosurgery, cardiovascular and peripheral vascular, thoracic, pediatric, geriatric and trauma. Included is discussion of postoperative care and complications. 13 hrs. (clinical 9 hrs.)/wk.

Theater

THEA 120 INTRODUCTION TO THEATER (3CR)

Students will be introduced to a variety of theatrical experiences, read great plays and see live theater presentations. They also will discuss theater practices, dramatic literature and the history of the theater. Includes 12 required shop hours. 3 hrs./wk.

THEA 123 IMPROVISATION FOR THEATER (1CR)

Prerequisite: THEA 130

Theater improvisation will be introduced in this class, which will emphasize creative stage activities not requiring a written script. 1 hr./wk.

THEA 130 ACTING I (3CR)

The fundamentals of acting will be studied in this class. Emphasis will be on discovering and expanding creative potential through exercises in self-awareness, posture, movement, voice and personality projection. Students will complete a minimum of three in-class performances. 3 hrs./wk. plus rehearsals and performances.

THEA 133 TECHNICAL PRACTICUM I (1CR)

Students can gain practical experience in technical theater techniques in this class. 2 hrs. lab/wk.

THEA 134 PERFORMANCE PRACTICUM I (1CR)

This course will enable students to gain practical experience in performance-related aspects of college theater productions. Admission is by audition. 2 hrs. lab/wk.

THEA 135 MAKEUP (1CR)

Students will study and practice applying stage makeup. 1 hr./wk.

THEA 136 BASIC COSTUMING (3CR)

This course is a survey of the theory, techniques and skills used in costume production for the theater and film. Areas of study and practice include basic construction, patterning and cutting; fabrics, design and realization; millinery, craft work and organization. 2 hrs. lecture, 2 hrs. lab/wk.

THEA 140 BASIC STAGECRAFT (3CR)

This course will provide students with stagecraft theory as well as practical experience with stage scenery and current theater technology. 2 hrs. lecture, 2 hrs. lab/wk.

THEA 145 INTRODUCTION TO THEATER DESIGN (3CR)

This lecture and studio class introduces the theory and practice of theater design and the graphics and standards of entertainment technology. Emphasis will be on the processes and practices used in designing for the performing arts. Using course-taught computer and hand-based drawing techniques, the student will begin to create a portfolio of work through in-class projects. 2 hrs. lecture, 2 hrs. lab/wk.

THEA 225 READER'S THEATER (3CR)

Students will combine acting, interpretation and rhetoric as they analyze and perform prose, poetry and dramatic literature and present public performances. 3 hrs./wk. plus rehearsals.

THEA 230 ACTING II (3CR)

Prerequisite: THEA 130

This continuation of Acting I will focus on more in-depth character analysis and development, emphasizing the actor's responsibility in creating the character. 3 hrs./wk. plus rehearsals and performances.

THEA 233 TECHNICAL PRACTICUM II (1CR)

Prerequisite: THEA 133

This class will provide additional practice in technical theater techniques. 4 hrs. lab/wk.

THEA 234 PERFORMANCE PRACTICUM II (1CR)

Prerequisite: THEA 134

This course will enable students to gain further practical experience in the performance-related aspects of college theater productions. Admission is by audition. 2 hrs. lab/wk.

THEA 240 COSTUMING (1CR)

Students will study designing and creating costumes for theatrical productions. 2 hrs./wk.

**THEA 298
BACKSTAGE ON BROADWAY (2CR)**

In this travel-for-credit course, students will have a week of intensive study in professional New York theaters. The course will involve five one-hour sessions on campus and five full days of study on location in New York City. Sessions on campus will cover such topics as working in professional theaters, American theater history, writing theater criticism and initiating theater research. While in New York, time will be spent in daily class sessions, doing theater research at special performing arts archives, touring professional theater facilities, seeing professional theater productions and visiting with various guest lecturers. Spring.

Travel and Tourism Management

**KTT 101
INTRODUCTION TO THE TRAVEL INDUSTRY (3CR)**

This survey of all aspects of the travel industry includes domestic and international air travel, cruises, railroads, hotels, tours and vacation planning. 3 hrs. lecture/wk.

**KTT 102
DESTINATION GEOGRAPHY (3CR)**

Prerequisite: Completion or enrollment in KTT 101

Major travel destinations and how to get there from Kansas City will be studied. Also included will be required documents for travelers, major suppliers and activities and attractions. 3 hrs. lecture/wk.

**KTT 103
TRAVEL SALES (3CR)**

Prerequisite: KTT 102

Topics in this course include sales techniques with travel reservations, travel customer counseling and cross selling of specific travel products. 3 hrs. lecture/wk.

**KTT 104
TRAVEL OPERATIONS (3CR)**

Prerequisite: Completion or enrollment in KTT 103

This survey of major activities of travel specialists includes reservations, work flow, communications and automation. 3 hrs. lecture/wk.

**KTT 105
COMPUTER RESERVATIONS SYSTEMS (4CR)**

Prerequisite: Completion or enrollment in KTT 104

This training on a computer reservation system of a major airline includes codes and inputting data, reservation formats, pricing and ticketing and booking cars and hotel. 3 hrs. lecture, 2 hrs. lab/wk.

**KTT 111
DESTINATION SPECIALIST – CARIBBEAN AND MEXICO (3CR)**

Designed as an applied geography course for professional certification for travel agency, cruise line, and airline employees, this course provides in-depth knowledge of the geography, climate, cultures, politics, languages and history of the region. Emphasis will be placed on both physical and cultural attractions and activities and on the dynamics of the tourism industry. Students will take a national certification test to become a destination specialist. This is also a good introduction for people simply planning to visit the region.

**KTT 112
DESTINATION SPECIALIST – PACIFIC RIM (3CR)**

Designed as an applied destination geography course leading to professional certification for travel agency, cruise line, and airline employees, this course provides in-depth knowledge of the geography, climate, cultures, politics, languages, and history of the Pacific Rim including Australia, New Zealand, Tahiti and Polynesia, Melanesia, Micronesia, Japan, China, and East Asia. Emphasis will be placed on both physical and cultural attractions and activities as well as the dynamics of the regional tourist industry. Students will take a national certification test to become a destination specialist.

**KTT 113
DESTINATION SPECIALIST – NORTH AMERICA (3CR)**

Designed as an applied destination geography course leading to professional certification for travel agency, cruise line and airline employees, this course provides in-depth knowledge of the geography, climate, cultures, politics, languages and history of North America, especially Canada and the United States. Students will take a national certification test to become a destination specialist.

**KTT 114
DESTINATION SPECIALIST – WESTERN EUROPE (3CR)**

Designed as an applied destination geography course leading to professional certification for travel agency, cruise line and airline employees, this course provides in-depth knowledge of the geography, climate, cultures, politics, languages and history of Western Europe. Students will take a national certification test to become a destination specialist.

KTT 115**DESTINATION SPECIALIST – CORPORATE TRAVEL (3CR)**

This is an in-depth study of major business travel destinations. Both U.S. and international cities are reviewed. Topics include the fundamentals of business travel, needs of business travelers and types of business travel. Students will work in teams to develop a service plan for commercial accounts. Each student will take a certification test from the Institute of Certified Travel Agents.

KTT 121**TRAVEL SALES AND CUSTOMER SERVICE (3CR)**

This course is designed for airline, travel agency and tour operator employees who have direct contact with the public. Emphasis is placed on developing a customer service program to retain customers and enhance sales.

KTT 122**CRUISE COUNSELING AND MARKETING (3CR)**

This course covers the fundamentals of arranging and selling cruises, including port facilities, services, itineraries, shore and optional excursions, and reference materials. Emphasis is on cruise counseling, determining needs, making recommendations, customer service and marketing.

KTT 124**ADVANCED STUDIES IN TRAVEL AND TOURISM (3CR)**

This is the capstone course for students seeking an advanced certificate in travel management or an A.A.S. degree in travel and tourism. The student will complete a major project in corporate travel management or leisure travel management.

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)**

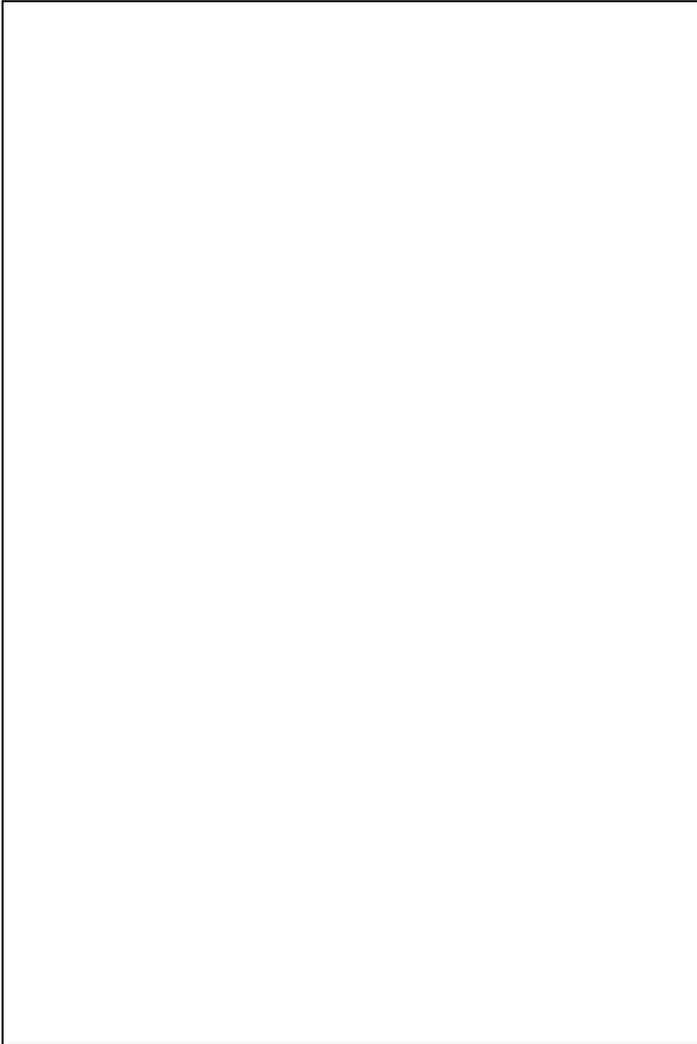
This course is an intensive study providing practice in radiological techniques, radiographic exposure techniques, film processing, contrast radiography and machine electronics. 1 hr. lecture, 2 hrs. lab/wk.

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



Margaret Ackelson

Associate Professor, Learning Strategies
B.A., MidAmerica Nazarene College
M.A., University of Missouri-Kansas City

Mazen Akkam

Professor, Career Program Facilitator,
Information Technology
B.S., M.S., Kansas State University

Ateegh Al-Arabi

Associate Professor, Life Science
B.S., University of El-Fathe, Libya
M.S., University of Dayton
Ph.D., University of Dublin, Ireland

Daniel Alexander

Associate Professor, English
B.A., M.A., Oklahoma State University

David Allen

Associate Professor, Life Science
B.S., University of Kansas
M.A., University of Missouri-Kansas City

Douglas Allen

Executive Director, Information Services
B.Music Ed., University of Nebraska

Michael Alley

Program Director, Carlsen Center Sales and Marketing
A.A., Johnson County Community College
B.A., University of Missouri-Kansas City

Luz Maria Alvarez

Assistant Professor, Foreign Language
B.A., Universidad Cuauhtemoc, Mexico
M.A., M.A., University of Kansas

Jean Alvers

Professor, Psychology
B.S., Eastern Michigan University
M.A., University of Michigan

Betty Anastasio

Program Director, Contract Training/
Economic Development
B.S., Fairleigh Dickinson University

Carl Anderson

Associate Professor, Mathematics
B.S., Northern Michigan University
M.S., University of Michigan

Jeffrey Anderson

Counselor
B.A., M.A., University of Northern Iowa

Lowry Anderson

Professor, English
B.A., Baker University
M.S., University of Kansas

Rebecca Anderson

Associate Professor, Speech
B.S., M.A., Southwest Missouri State University

Susan Annen

Professor, Hospitality Management
B.S., University of Wisconsin-Stout

Dennis Arjo

Assistant Professor, Philosophy
B.A., University of California-Santa Cruz
M.A., University of Colorado-Boulder
Ph.D., University of California-Santa Barbara

Renee Arnett

Professor, Dental Hygiene
B.S., Loyola University
M.S., University of Missouri-Kansas City

Jonathan P. Bacon

Academic Director, Educational Technology Center
B.A., M.A., Michigan State University

Gerald Baird

Vice President, Administrative Services
B.S., M.Ed., Ph.D., University of Nebraska

Lilliana Bajich-Bock

Counselor
B.S., M.S., Kansas State University

Judi A. Ballard

Professor, Reading/Academic Achievement Center
A.B., William Jewell College
M.A., University of Missouri-Kansas City

Brian Balman

Associate Professor, Mathematics
B.S., Calvary Bible College
M.A., Fort Hays State University

John Barnes

Associate Professor, Metal Fabrication
B.S., Metropolitan State College

Brian Baumgardner

Professor, Life Science
A.A., Johnson County Community College
B.S., Pittsburg State University
D.D.S., University of Missouri-Kansas City

Connie Beachler

Program Director, Personal Enrichment
B.S.S.W., M.A., Ohio State University

Stuart A. Beals

Professor, Photography
B.A., M.A., University of Kansas

Larry Beardslee

Professor, Information Systems
A.A., Highland Community Junior College
B.S., Missouri Western State College
M.L.A., Baker University

Robert Beasley

TV Producer/Director
B.A., Oklahoma State University

Lynne Beatty

Associate Professor, Physical Science
B.S., Murray State University
M.S., Southern Illinois University

Joni Becker

Development Coordinator
A.A., Johnson County Community College
B.G.S., University of Kansas

Zohreh Saeed Behbehani

Professor, Business Administration
L.L.B., University of Tehran
L.L.M., University of Missouri-Kansas City

Kenneth Behrmann

Box Office Manager
B.A., M.A., University of Missouri-Kansas City

William Benjamin

Professor/Career Program Facilitator, Fire Science
B.S., M.S., Central Missouri State University

James Bennett

Associate Professor, Heating, Ventilation and
Air Conditioning Technology
B.S., University of Kansas

Roslyn Bethke

Associate Professor, Reading/
Academic Achievement Center
B.A., Fort Hays State University
M.S., University of Kansas

Charles C. Bishop Jr.

Professor, History
B.A., Midland College
M.A., Ph.D., University of Kansas

Mary Bloom

Counselor
RN, Wesley Medical Center
B.A., Ottawa University
M.A., University of Missouri-Kansas City

Randall Bloomberg

Assistant Professor, Communication Design
B.F.A., Pratt Institute
M.F.A. New York Academy of Art

Stacy Boline

College Information Writer/Editor
B.S., Kansas State University

Amy Bonham

Manager, Student Activities
and Leadership Development
B.S., Kansas State University
M.S., Emporia State University

Marilyn Bottrell

Senior Buyer
B.S., University of Nebraska-Kearney

Roger Box

Associate Professor, Electronics
B.S., M.S., Pittsburg State University

Robert Brannan Jr.

Associate Professor, English
B.A., University of Missouri-Kansas City
M.A., Iowa State University

Judy Brazil

Professor, Communication Design
B.A., Avila College
M.A., University of Kansas

Alicia Bredehoeft

Counselor
B.A., M.Ed., University of Missouri-Columbia

John (Bill) Brown

Academic Director, Industrial Technology
B.S., M.S., Pittsburg State University

Kim Brown Kurz

Assistant Professor, Interpreter Training
B.S., M.S., Rochester Institute of Technology

Susan Haas Brown

Professor, Physical Education
B.S., Kansas State University
M.S.Ed., University of Kansas

Mark Browning

Associate Professor, English
B.A., William Jewell College
M.A., University of Missouri-Kansas City
Ph.D., University of Kansas

Elizabeth Bryant

Associate Professor, Sociology
B.A., University of the State of New York
M.A., Ph.D., SUNY-Albany

William Buese

Professor/Trainer
B.S.E., M.S., Central Missouri State University

Albert Bundons

Academic Director, Business Administration
B.S., Columbus College
M.B.A., Northwest Missouri State University

N. Burgess Burch

Academic Director, Engineering Technologies Program
B.A., Hendrix College
B.S.C.E., M.S.C.E., University of Arkansas

C. David Burgess

Professor/Coach
B.A., McPherson College
M.S., University of Kansas

Helen Burnstad

Director, Staff and Organizational Development
B.A., Colorado State College
M.A., University of Northern Colorado
Ed.D., University of Arkansas

Andy Burton

Academic Director, Railroad Operations Technology
A.A., Central Texas College
B.S., State University of New York
M.S., Kansas State University

Wayne R. Busse

Manager, Maintenance and Operations

Donnie Byers

Professor, Physical Science
B.A., Knox College
M.S., Michigan State University

Paige Cahill

Assistant Professor, Personal Computer Applications
B.S., Missouri Western State College

Gayle Callahan

Manager, Business Office Services/Bursar
B.B.A., Pittsburg State University
M.B.A., University of Kansas

Carol Campbell

Associate Professor/Librarian
B.A., University of Virginia
M.L., University of Washington

Gloria Campbell

Program Director, Career Center
A.A., Ottumwa Heights College
B.S., Emporia State Teachers College
M.S.Ed., University of Kansas

Kevin P. Cannell

Assistant Professor, Physical Science
B.S., Millikin University
M.S., North Carolina State University

Charles J. Carlsen

President
B.S., M.S., Southern Illinois University
Ed.D., University of Illinois

Nancy Carpenter

Professor, Mathematics
B.S., Elizabethtown College
M.A., University of Missouri-Kansas City

Dana Elaine Carr

Adviser, Career Center
A.A., Johnson County Community College
B.S.E., M.A., University of Kansas

Stephen Carr

Professor, Automotive Technology
B.A., Hanover College
B.S., University of Wyoming
M.A., Purdue University

Deborah Carrier

Associate Professor/Coach
B.S., M.S., Emporia State University
M.S., Northern Montana College

Kathy A. Carver

Professor, Nursing
B.S.N., Washburn University
M.S., University of Kansas

Patrick Casey

Manager, Audiovisual Services
B.S., Kansas State University

Carol Cattaneo

Professor, Nursing
B.S.N., University of the State of New York
M.N., University of Kansas

John Chapman

Professor, Information Systems
B.S., University of Missouri-Kansas City
M.S., Kansas State University

Hsing Chen

Database Administrator
B.C., Soochow University
M.B.A., Colorado State College

Shu-Dong Chen

Assistant Professor, Humanities
B.A., Jilin University
M.A., Ph.D., University of Kansas

Judith Choice

Program Director, Public Events
B.A., M.A., University of Iowa

Vincent Clark

Professor, History
B.A., Pacific Union College
M.A., Loma Linda University
Ph.D., University of California

Gene Clegg

Professor, Mathematics
B.A., Bethany Nazarene College
M.A., University of Oklahoma

Lydia Cline

Associate Professor, Drafting
B.A., Iowa State University

Charlyn Cloud

Professor, Respiratory Care
B.S., Cornell College

Kenneth L. Coffey

Academic Director, Office Occupations
A.A., Pueblo Junior College
B.A., M.A., Colorado State College

Linda L. Cole

Director, Community Services
B.J., M.Ed., University of Missouri-Columbia

Karen Conklin

Marketing and Survey Research Analyst
B.S., M.S., Ed.S., Pittsburg State University

Julianne Cooper

Program Director/Financial Aid
B.A., San Francisco State University
M.S., M.S., Emporia State University

Cody Copeland

Professor, Personal Computer Applications
B.S., University of Arizona
M.Ed., University of Wyoming

Douglas Copeland

Associate Professor, Economics
B.S., M.S., University of Missouri-Kansas City

Sally Copeland

Professor, Mathematics
A.A., Johnson County Community College
B.A., M.S.Ed., University of Kansas

Susan Cordes

Assistant Professor, Accounting
B.S., M.B.A., Kansas State University

Mary Jean Costello

Career Coordinator
B.S., M.Ed., University of Missouri-Columbia

Julia Cotter

Professor, Fashion Merchandising
B.S., University of Missouri-Columbia
M.S., University of Kansas

Jeffrey Couch

Program Coordinator, ESL Program
B.S., M.A., Central Missouri State University

John Courtney
Professor, Hospitality Management
B.S., M.S., Mississippi Valley State University

Marsha Cousino
Assistant Professor/Librarian
B.A., Kansas State University
M.L.S., University of Michigan

Julane Crabtree
Associate Professor, Mathematics
B.S., M.A., West Virginia University

Clarissa Craig
Academic Director, Respiratory Care
A.S., Penn Valley Community College
B.S., Rockhurst College
M.A., University of Missouri-Kansas City

Rebecca L. Cramer
Professor, Anthropology
B.A., State University of New York-Stony Brook
M.A., University of Iowa

Patrick Crowe
Professor, Mathematics
B.S., University of Notre Dame
M.A., Washington University

Jan Cummings
Professor/Career Program Facilitator,
Interior Merchandising
B.S., William Woods College
M.S., Kansas State University

Forrest Cunningham
Professor/Career Program Facilitator, Electronics
B.S., Bethany Nazarene College
B.S.E.E., M.S.E.E., U.S. Naval Postgraduate School

Mel Cunningham
Associate Dean of Instruction, Computer Instruction
and Media Resources
B.G.S., Municipal University of Omaha
M.S.E., University of Nebraska-Omaha
M.L., Emporia State University
Ph.D., University of Kansas

Yousef Daryan
Support Analyst
B.A., Ottawa University-Kansas City

David Davis
Associate Professor, English
B.A., Coe College
M.A., University of Kansas

Debra Davis
Financial Aid Accountant
B.S., University of Missouri-Columbia

Janet Davis
Bookstore Manager
B.A., Ottawa University

Dennis Day
Associate Dean, Student Services
B.S., M.S., Southwest Missouri State University
Ph.D., University of Kansas

Kami Day
Assistant Professor, English
B.A., University of Utah
M.S., Cameron University
Ph.D., Indiana University of Pennsylvania

Paul Decelles
Assistant Professor, Life Science
B.S., Cornell University
M.S., University of Georgia
Ph.D., University of Kansas

Mary Ann Dickerson
Manager, Standardized Testing
B.S., Kansas State University

Joseph Dicostanzo
Academic Director, Mathematics
B.A., Washington and Jefferson College
M.Ed., University of Pittsburgh

James Divney
Associate Professor, Sociology/Anthropology
B.A., Adams State College of Colorado
M.A., University of Northern Colorado
Ph.D., University of Kansas

Mary L. Dover
Records Manager
A.A., Kansas City Missouri Junior College
B.A., Ottawa University

Kristin Downing
Counselor
B.A., M.S., Emporia State University

Holly Dressler

Supervisor, Disability Support Services
B.S., University of Illinois

James Drone

Senior Computer Support Analyst
B.S., Emporia State University

John Drysdale

Professor/Career Program Facilitator,
Hospitality Management
B.A., Michigan State University
M.S., Central Michigan University

Julia Duckwall

Senior Research Analyst
B.A., Bethany College
M.A., Ph.D., Florida State University

Donna Duffey

Professor/Career Program Facilitator,
Marketing/Management
B.S., Wisconsin State University
M.S., M.B.A., Baker University

Colleen Duggan

Professor, Nursing
B.S.N., Northern Illinois University
M.S.N., St. Louis University

Leon C. Duggar

Professor, Electronics
B.S.E.E., Colorado State University
M.S.E.E., Air Force Institute of Technology

Csilla Duneczky

Associate Professor, Physical Science
B.A., University of Colorado
Ph.D., University of Pennsylvania

Rory Dyrness

Senior Educational Technology Analyst
A.A., Johnson County Community College
B.A., M.E.D., MidAmerica Nazarene College

David Ellis

Counselor
B.S., M.S., Emporia State University

David Emerson

Professor, Life Science
A.B., University of California
A.M., Ph.D., State University of South Dakota

Janie Epstein

Professor, Information Systems
A.A., Graceland College
B.A., University of Missouri-Kansas City

Roberta A. Eveslage

Professor, Psychology
B.F.A., Texas Christian University
M.A., Ph.D., University of Kansas

Wendy Farwell

Counselor
B.A., M.S., University of Nebraska

Elise Fischer

Associate Professor, Mathematics
B.S., University of Oklahoma
M.S., University of Massachusetts

Ellen Fisher

Manager, Accounting Services/Grants
B.S., Kansas State University
M.B.A., University of Kansas

Richard Fisher

TV Producer/Director
A.S., B.A., Park College

Maureen Fitzpatrick

Associate Professor, English
B.A., Iowa State University
M.A., University of Missouri-Columbia

Heather Flick

Associate Professor, Dental Hygiene
A.A., Clark College
B.S., M.S., University of Missouri-Kansas City

Michael Fluke

Senior Computer Support Analyst
A.S., Johnson County Community College

Mary Grace Foret

Assistant Professor, English
B.A., M.A., M.Ed., University of Mississippi

Richard Fort

Associate Professor/Career Program Facilitator,
Automotive Technology
B.S., M.S., Pittsburg State University

Johanna Foster

Associate Professor, Life Science
B.S., University of Nevada
Ph.M., Ph.D., University of Kansas

Mark Foster

Associate Professor, Sociology
A.A., Nassau Community College
B.A., University of Georgia
M.A., Long Island University
Ph.D., Mississippi State University

Mary Jo Fourier

Professor, Life Science
B.S., M.Ed., University of Oregon
M.S., University of New Mexico
Ph.D., University of Missouri-Kansas City

Emily Fowler

Development Coordinator
B.A., University of Missouri-Kansas City

Ruth Fox

Assistant Professor, English
A.A., Johnson County Community College
B.A., MidAmerica Nazarene University
M.A., Baker University

Carl Frailey

Associate Professor, Life Science
B.A., Southern Illinois University
M.S., University of Florida
Ph.D., University of Kansas

Philip Franklin

Associate Professor, Physical Science
A.A., Johnson County Community College
B.S., Pittsburg State University
M.S., University of Kansas

James Freed

Director, Facility Planning
B.A., Kansas State University

Constance Freund

Associate Professor, Respiratory Care
A.A., Kansas City Kansas Community College
B.S., University of Kansas

Dorothy M. Friedrich

Director, Human Resources
B.A., M.P.A., University of Missouri-Kansas City

Lisa Friedrichsen

Assistant Professor, Personal Computer Applications
B.S., Iowa State University
M.B.A., Drake University

Ronald Frigault

Counselor
B.S., Michigan State University
M.Ed., University of Missouri-Columbia
Ph.D., University of Texas-Austin

Jeff Frost

Professor, Mathematics
B.S., B.A., Kansas State University
M.A., University of Kansas

Amy Fugate

Professor, Speech/Debate Coach
B.S., Northern Michigan University
M.A., University of Michigan
Ph.D., University of Kansas

Marilyn Gaar

Professor, Political Science/History
A.B., A.M., M.S., Indiana University

Joseph Gadberry

Academic Director, Sciences
B.A., Concordia College
M.S., North Dakota State University
Ph.D., University of Nebraska

Marilyn Gairns

Financial Aid Manager, Advising
B.S., B.A., Rockhurst College

Sean T. Garvey

Systems Software Programmer
A.A., Kansas City Kansas Community College

Keith Geekie

Associate Professor, English
B.S., M.A., Murray State University
Ph.D., University of Missouri-Columbia

Dennis J. George

Professor, Life Science
B.S., Rockhurst College
M.A., University of Missouri-Kansas City

Steven M. Gerson

Professor, English
B.A., University of Texas
M.A., Southwest Texas State University
Ph.D., Texas Tech University

Christopher Gibson

Senior Support Analyst
A.A., Johnson County Community College

Linda Gill

Financial Aid Officer
B.S.Ed., Emporia State University

Richard Gist

Academic Director, Social Sciences and Social Services
B.A., M.A., Ph.D., University of Missouri-Kansas City

Phyllis Goldberg

Counselor
B.A., Hunter College
M.A., Webster University

Peggy Graham

College Information Writer/Editor
B.S., University of Kansas
M.L.A., Baker University

Kevin A. Gratton

Professor, Physical Science
A.B., Rockhurst College
Ph.D., University of Kansas

Carolyn Jean Green-Nigro

Professor, Nursing
A.A., Johnson County Community College
B.S.N., M.N., Ph.D., University of Kansas

Frank S. Grigsby

Assistant Professor, Information Services
B.S., Central Missouri State University

Kim C. Grubbs

Professor, Emergency Medical Science
B.S., Bethel College

Julie Haas

Director, College Information and Publications
B.A., M.A., University of Kansas

John J. Halligan

Professor, English
B.A., M.A., Duquesne University
Ph.D., University of Pittsburgh

Brandon Hamlin

Senior Support Analyst

Roy K. Hammack

Laboratory Specialist
B.S., M.S., Ed.S., Pittsburg State University

Russell Hanna

Associate Professor, Information Systems
B.S., M.S., University of Missouri-Rolla

Steve Hansen

Professor, Computer Science
A.A., Metropolitan Community College
B.A., M.S., University of Missouri-Kansas City

John Hanson

Associate Professor, Physical Science
B.S., Bethany College
M.A., Webster University

William Hardiman

Director, Purchasing
B.S., M.P.S., Western Kentucky University

Terry Haren

Manager, Computer Resource Center
B.A., University of Kansas
M.B.A., Webster University

Jean Harpst

Associate Professor, Mathematics
B.A., Dana College
M.S., University of Nebraska-Omaha

Greg Harrell

Assistant Professor, Journalism, English
and Learning Strategies
B.S., Ball State Teacher's College
M.S., Northwestern University

Nancy Harrington

Associate Professor, Information Systems
B.S., Mississippi State University
M.S., University of Arkansas

Bruce Hartman

Director, Gallery of Art
B.F.A., Central Missouri State University
M.F.A., Washington University

Bruce Harvey

Counselor
B.S., Northern Illinois University
M.Ed., University of Arkansas

Sandra Hastings

Associate Professor, English
B.A., Hollins College
M.L.A., Baker University

Larry Haushahn

Drafting Lab Technician
A.S., College of San Mateo
A.S., Ohlone College
B.S., San Jose State University

Mary Hedberg

Assistant Professor, Office Systems Technology
B.S., Minot State University
M.S., Central Missouri State University

Carl Heinrich

Program Manager, Athletics
B.S., University of Kansas
M.S., Northwest Missouri State University

Josh Heizman

Senior Internet Analyst

Gina Helget

Registration Supervisor
B.A., M.S., University of Kansas

Teresa Helmick

Associate Professor, Speech
B.S.E., M.A., Central Missouri State University
Ph.D., University of Kansas

Michael Hembree

Associate Professor, History
B.A., Florida Presbyterian College
M.A., Ph.D., Florida State University

Brandon Henry

Senior Educational Technology Analyst
B.S., Kansas State University

Barry F. Herron

Assistant Professor, Physical Science
B.S., Central Missouri State University
Ph.D., University of Missouri-Columbia

Ann Hess

Coordinator, Health Occupations
B.S., Avila University
M.S., St. John's University
Ph.D., University of Kansas

Wayne Hewitt

Professor/Career Program Facilitator, Information Systems
A.B., Princeton University
M.B.A., University of Pittsburgh

William Hickerson

Professor/Career Program Facilitator,
Heating, Ventilation and Air Conditioning Technology
A.A.S., B.S.T., University of South Dakota-Springfield

Ron D. Hicks

Professor, Art
B.S., M.S., Pittsburg State University

Roxanne Hillman

House Manager
B.A., Southern Illinois University

Barry Hincks

Associate Professor, Personal Computer Applications
B.A., Occidental College
M.F.A., Rochester Institute of Technology

Bruce Hines

Manager, Word Production
B.S., Northwest Missouri State University

Timothy Hoare

Assistant Professor, Humanities
B.A., Missouri Valley College
M.Div., McCormick Theological Seminary
Ph.D., Graduate Theological Union

Roger Hobson

Video Systems Engineer
A.S., Johnson County Community College

Kay Hoech

Associate Professor, Life Science
B.S., M.A., University of Missouri-Kansas City

Elizabeth Holmgren

Supervisor, Math Resource Center
B.S., Morningside College

Monica Hogan

Assistant Professor, English
B.A., B.A., M.A., University of Missouri-Kansas City

Donna Hoopes

Associate Professor, Mathematics
B.S., University of Kansas
M.S., Wichita State University

James Hopper

Assistant Professor, Information Systems/
Computer Science
B.A., University of Missouri-Kansas City
M.A., University of Kansas

Michael Hoskins

Senior Analyst/Assistant Database Administrator
B.S., Evangel College

David Hufnagel

Associate Professor, Physical Science
B.S., U.S. Military Academy, West Point
M.S., Rensselaer Polytechnic Institute

Dale Hughes

Professor, Mathematics
B.S., University of Missouri-Rolla
M.A., Washington University

Tom Hughes

Professor/Career Program Facilitator,
Computer-aided Drafting
A.A.S., Kalamazoo Valley Community College

Robert Hunt

Professor, Physical Science
B.S.Ed., University of Kansas
M.S., M.S., Rensselaer Polytechnic Institute

Samira Hussein

Assistant Professor, Business Administration
B.S., Iowa State University
M.S., M.B.A., Central Missouri State University

Jeremy Hutchins

Assistant Professor, Speech/Debate Coach
A.A., Wharton County Junior College
B.A., McNeese State University
M.A., Southwest Texas University

Janalee Isaacson

Associate Professor, Nursing
B.S., University of Kansas
M.S., University of Kansas

Mary Beth Izard

Professor/Career Program Facilitator,
Business Entrepreneurship
B.S., Indiana State University
M.B.A., University of Missouri-Kansas City

H. Eugene Jack

Professor, Physical Science
B.S., M.S., Pittsburg State University

Gretchen Janis

Associate Professor, Foreign Language
B.A., Drury College
M.A., Arizona State University
M.A., University of Missouri-Kansas City

Steve Javorek

Professor, Fitness
Diploma, Cluj Institute, Romania

Michael Jeffers

Associate Professor/Coach
B.S.Ed., M.Ed., Georgia Southern University

Susan Johnson

Associate Professor, Drafting/Engineering
B.S., M.S., Ohio State University

Patricia Jonason

Professor, Reading/Academic Achievement Center
B.A., Yankton College
M.A., University of Missouri-Kansas City

Bernhardt Jones

Professor, Interpreter Training
B.A., M.Ed., University of Arizona
Ed.D., University of Kansas

Gayle Jones

Program Director, Academy for Information Technology
B.S., Central Missouri State University
Middle Degree, Sorbonne

Kelly Jones

Associate Professor, Dental Hygiene
A.A., Johnson County Community College
B.S., University of Missouri-Kansas City

John Joyce

Associate Professor, Hospitality Management

Carolyn J. Kadel

Professor, Political Science
A.B., Elmira College
M.A.T., Brown University

Bobanne Kalkofen

Assistant Professor, Interior Merchandising
B.S., University of Missouri-Columbia

Norman H. Karl

Professor, Marketing/Management
B.A., Wartburg College
M.A., University of Northern Colorado

William C. Karnaze Jr.

Professor, Physical Science
A.A., Kansas City Kansas Community College
B.A., M.A., University of Kansas

Andrea Kempf

Professor/Librarian
A.B., Brandeis University
M.A., Johns Hopkins University
M.S., Simmons College

Raymond Kenny

Hazardous Materials Coordinator
B.A., University of Kansas
M.P.A., University of Kansas

Kyong-Mal Kim

Professor, Economics
B.S., Nihon University
M.A., California State University
Ph.D., Union Graduate School

Juliet Kincaid

Professor, English
B.A., Marshall University
M.A., University of Colorado
Ph.D., Ohio State University

Ed Kindermann

Professor, Physical Science
B.A., M.S., University of Missouri-Kansas City

Russell D. Kinion

Electronics Lab Technician

Landon C. Kirchner

Professor, Philosophy
A.S., Flint Junior College
A.B., A.M., University of Michigan

Shirly Kleiner

Associate Professor/Career Program Facilitator,
Accounting
B.A., Avila College
M.B.A., University of Kansas

Toby Klinger

Associate Professor, Psychology
B.A., Douglass College
M.A., M.Ed., Columbia Teachers College

Lin Knudson

Associate Dean, Continuing Education
and Community Services
B.A., Wichita State University
M.P.A., University of Kansas
Ed.D., University of Kansas

Deborah Knudtson

Manager, Dining Services
B.S., Iowa State University

Judy Korb

Associate Professor, Accounting
A.A., Johnson County Community College
B.A., MidAmerica Nazarene College
M.A., Webster University

Jeff Kosko

Senior Educational Technology Analyst
A.A., Johnson County Community College
B.S., Avila College

Fred Krebs

Professor, History
B.A., University of Kansas
M.A., University of Missouri-Kansas City

Lyle D. Krebbiel

Professor, Electronics
B.S.E.E., Kansas State University
M.S.E.E., A.M., University of Missouri-Columbia

Donna Krichiver

Professor, Mathematics
B.A., M.A., Northeastern Illinois State College

Dennis Kuder

Buyer
B.B.A., Baker University

William E. Kuehn

Manager, Housekeeping and Custodial Services
B.S., Concordia Teachers College

Jane Kuo

Programmer Analyst
B.A., Soochow University
M.A., University of Kansas

Dennis Kurogi

Academic Director, Emergency Medical Science

Mark LaBarge

Associate Professor, Life Science
B.S., M.S., Emporia State University

Bill Lamb

Academic Director, Writing, Literature
and Media Communications
B.A., University of Kansas
M.S., Pittsburg State University
Ph.D., Kansas State University

James Lane

Academic Theater Technical Director
B.A., Washburn University
M.F.A., University of Missouri-Kansas City

R.E. "Budd" Langley

Professor, Drafting
A.A., Johnson County Community College
B.S., Pittsburg State University

Betty Lauer

Assistant Professor, Information Technology
A.A., Johnson County Community College
B.A., MidAmerican Nazarene College

Darwin D. Lawyer

Counselor
A.A., Estherville Junior College
B.A., Northwest Missouri State College
M.Ed., University of Missouri-Columbia

Timothy Lednicky

Assistant Professor, Metal Fabrication Technology
A.A., Hutchinson Community College
B.S., Pittsburg State University

William Lehman

Associate Professor, Physical Science
B.S., Eastern Illinois University
M.S., Arizona State University

Susan Lindahl

Program Director, Testing and Assessment Services
B.S. Ed., M.S. Ed., University of Kansas

Margaret LoGiudice

Academic Director, Dental Hygiene
B.S., Marquette University
M.S., University of Missouri-Kansas City

Pat Long

Dean, Student Services
B.A., Southwest Baptist College
M.S., Central Missouri State University
Ed.D., University of Kansas

David Loring

Associate Professor, Life Science
B.S., M.S., Kansas State University

Jim R. Lossing

Professor, Information Systems
B.A., Western New Mexico University
M.A., M.S., University of Arizona

Delphine Lovitt

Systems Specialist
B.S., Fort Hays State University

Edward Lovitt

Technical Training Coordinator
B.A., B.S., Kearney State College
M.S., Pittsburg State University

Deborah Ludwig

Associate Professor/Librarian
B.A., University of Kansas
M.L.S., Texas Women's University

Gregory J. Luthi

Professor, English
B.A., M.A., Kansas State University
Ph.D., Oklahoma State University

Darryl Luton

Associate Professor/Career Program Facilitator,
Interpreter Training
B.A., Gallaudet University

Gerald Magliano

Professor, Personal Computer Applications
B.A., University of Detroit
M.B.A., Rockhurst College

Barbara Mahring

Professor, Personal Computer Applications
A.A., Johnson County Community College
A.A., Kirkwood Community College
B.S., MidAmerica Nazarene College
M.S., Central Michigan University
M.Ed., MidAmerican Nazarene College

Lori Mallory

Director, Physical Education/Athletics
B.S., Bethel College
M.A., Wichita State University

Doreen Maronde

Academic Director, Humanities
B.A., Hamline University
M.S., Iowa State University

Penny Marshall

Professor, Nursing
B.S.N., Washburn University
M.N., Ph.D., University of Kansas

Michael Martin

Associate Professor, Mathematics
B.S., M.A., University of Kansas

Karen Martley

Program Director, Training and Development Services
B.S., Avila College
M.S., Pittsburg State University

Craig Maxim

Associate Professor, Hospitality Management
A.A.S., A.A., Penn Valley Community College
B.S./B.A., Avila College
M.Div., University of St. Mary's of the Lake

Pamela Mayfield

Systems Specialist, Financial Aid
B.A., Park College

Charlotte McAnerney

Associate Professor, Cosmetology

Joan E. McCrillis

Professor/Career Program Facilitator,
Fashion Merchandising
B.S., M.S., Kansas State University

Karen McDaniel

Program Director, Professional Education
B.S., Southwestern College
M.S., Kansas State University

Sara McElhenny

Program Director, Children's Center
B.A., University of Kansas
M.S., Emporia State University

Judi McKenzie

Assistant Professor, Cosmetology

Leslie D. McKinzie

Systems Specialist
B.S., Oklahoma State University

William McKown

Associate Professor, Physical Science
B.A., Sterling College
M.A., Sam Houston State University
Ph.D., University of Minnesota

Sylvia J. McMorris

Professor, Nursing
B.S.N., University of Kansas
M.S., Emporia State University
Ed. Specialist, University of Missouri-Kansas City

Mary P. McQueeny

Assistant Professor, English
B.S., M.A., Ph.D., University of Kansas

James McWard

Associate Professor, English
B.A., M.A., University of Missouri-Columbia

Mickey McWilliams

Professor, Drafting
B.S., Wayne State University
M.A., Eastern Michigan University
Ed.S., Michigan State University

Philip Mein

Systems Manager/Analyst
B.S., University of Kansas

Larry Mills

Professor, Mathematics
B.S., Central Missouri State University
M.S., University of Missouri-Kansas City

Sam Mirsepasi

Support Analyst

Rick Moehring

Counselor
B.A., MidAmerica Nazarene College
M.S., University of Kansas

Ellen Mohr
Professor, Writing Center
B.S., M.A., Northwest Missouri State College

Michelle Moriarty
Associate Professor, Psychology
B.A., Rockhurst College
M.S., Avila College

James A. Morris
Professor, Metal Fabrication
B.S., Oklahoma State University

Glen V. Moser
Professor/Coach
B.S., M.S., Bowling Green State University

Robert Murphy
Counselor
B.A., St. Mary College
M.S., Ph.D., University of Wisconsin-Madison

Ahmad Nasser
Associate Professor, Physical Science
B.A., Tehran Teacher Training Institute
M.A., Ed.D., University of Northern Colorado

Carolynn L. Nellis
Professor, Emergency Medical Science
B.S., Emporia State University
M.L.A., Baker University

Virginia Nelson
Associate Professor, English
B.A., M.A., Indiana University

Carolyn Neptune
Professor, Mathematics
B.S., M.S., Purdue University

John Nicholson
Associate Professor, Office Systems Technology
B.A., University of Colorado

Zohreh Niknia
Professor, Economics
B.A., University of Minnesota
M.A., University of Missouri-Kansas City

Paul Northam
Professor, English
B.S., University of Wisconsin-Oshkosh
M.A., M.Phil., University of Kansas
Ph.D., University of Kansas

Linda O'Brien
Associate Professor, Mathematics
B.A., New York University
M.A., State University of New York-Binghamton

Judy Oden
Associate Professor, English
B.A., M.A., University of Kansas

Ronald H. Oetting
Professor, Mathematics
B.S., Central Missouri State University
M.A., Louisiana State University

Judy Ogden
Professor, Information Systems
A.B., Fairmont State College
M.A., West Virginia University-Morgantown

Leland Olmsted
Professor, Electronics
B.S.E.E., University of Missouri-Columbia

Nancy Olson
Associate Professor, Mathematics
B.S., University of Kansas
M.A., University of Northern Colorado

Jason Orcutt
Systems Programmer

William Osborn
Associate Dean of Instruction
B.S.E., Emporia State University
M.S.E., Pittsburg State University
Ed.D., University of Kansas

Mary O'Sullivan
Senior Computer Support Specialist
A.A., Johnson County Community College
B.A., MidAmerica Nazarene College

Linda Overbay
College Information Writer/Editor
B.J., University of Missouri

Lynne Overesch-Maister
Associate Professor, Foreign Language
B.A., Michigan State University
M.A., Ph.D., University of Kentucky

Laura Pappenfort
Director, Network Services
B.B.S., Texas Christian University

Michael Pener
Professor, Paralegal
A.B., University of Missouri-Columbia
J.D., L.L.M., University of Missouri-Kansas City

Donald Perkins
Internal Auditor
B.A., St. Xavier College

Robert Perry
Professor, Sociology
B.A., Northwestern University
M.A., University of California

Cathleen Peterson
Program Director, Professional Services
B.S., University of Nebraska
M.A., Mankato State University

Pete Peterson
Associate Professor, Psychology
B.A., M.A., California State University-Stanislaus

Susan Pettyjohn
Associate Professor, Mathematics
A.B., William Jewell College
M.A., University of Missouri-Kansas City

Herb Pfeifer
Computer Lab Supervisor
B.L.S., St Louis University

Polly Pfister
Professor, Dental Hygiene
B.S., University of Minnesota
A.S., North Dakota State School of Science
M.S., University of Kansas

Sheilah Philip-Bradfield
Professor, Theater
B.A., M.S., Fort Hays State University
M.F.A., University of Missouri-Kansas City

Mary Pilgram
Program Director, Seminars and Special Events
B.A., William Jewell College
M.A., University of Kansas

Robert W. Pinker
Professor, Physical Science
B.S., Capital University
M.S., Ohio State University
M.B.A., University of Kansas

Joel Poinsett
Sound Supervisor
B.Music, Ball State University
M.F.A., University of Missouri-Kansas City

Robert Prater
Director, Financial Services
B.S., B.A., M.B.A., Central Missouri State College

Zigmunds Priede
Professor, Fine Arts
B.A., University of Minnesota
M.A., University of California-Berkeley

William Podrazik
Associate Professor, Railroad Operations
B.A., Central Missouri State University
M. Hum.Rel., University of Oklahoma

Mary Rack
Professor, Mathematics
B.A., College of St. Elizabeth
M.A., University of Rochester

Dan Radakovich
Vice President, Academic Affairs
B.A., M.A., Ed.D., University of Wyoming

Mark Raduziner
Professor, Journalism and Media Communications
B.S., University of Nebraska
M.A., University of Missouri-Kansas City

Gus Ramirez
Director, Safety and Security
A.A., Johnson County Community College

Bradley Redburn
Professor, Psychology
B.A., Wichita State University
M.A., University of Missouri-Kansas City
Ph.D., University of Missouri-Kansas City

Michael Reese
Lighting Supervisor
B.A., University of Nebraska-Omaha
M.F.A., University of Kansas

Harold Reuber
Counselor
A.B., Drury College
M.A., University of Missouri-Kansas City

Larry Reynolds

Associate Professor, Speech
A.A., San Jacinto College
B.S., University of Texas
M.A., Ph.D., University of Kansas

John Rezac

Professor, Information Systems/Computer Science
B.S., M.Ed., South Dakota State University
M.S., Rutgers University

Marilyn Rhinehart

Dean of Instruction
B.A., M.A., Ph.D., University of Houston

Brenda Rice

Associate Professor, Paralegal
A.A., Louisburg College
B.A., University of Texas-Arlington
J.D., Southern Methodist University

Michael Robertson

Associate Professor, Humanities
B.A., M.A., Ph.D., Florida State University

Lindy Robinson

Associate Professor, Hospitality Management
A.A., Johnson County Community College
B.A., Ottawa University

Lawrence Rochelle

Professor, English
B.Ed., University of Toledo
M.A., University of Dayton
Ed.S., University of Toledo

Carol Rodriguez

Associate Professor/Career Program Facilitator,
Office Systems Technology
B.S., Northwest Missouri State University
M.S., Central Missouri State University

Teresa Ronnebaum

Compensation and Benefits Manager
B.S., Troy State University

Liliane Rosenshield

Professor, Foreign Language
License, La Sorbonne
M.A., University of Paris

Richard Rowe

Associate Professor, Metal Fabrication
B.S., University of Mary
M.S., Pittsburg State University

Claudinna Rowley

Associate Professor, Mathematics
B.A., M.S., Kansas State University

Jeanne Russell

Program Director, Carlsen Center Operations
B.S.E., University of Kansas
M.F.A., University of Missouri-Kansas City

John W. Russell

Professor/Librarian
B.S., Trenton State College
M.S., Syracuse University
M.B.A., Kansas State University

Stephanie Sabato

Assistant Professor, Communication Design
A.A., Longview Community College
B.F.A., Kansas City Art Institute
M.F.A., Virginia Commonwealth University

Debbie Schlegel

Program Coordinator, Microcomputer Training
B.S., Kansas State University

Anne Schmidt

Associate Professor, Health Occupations
A.A., Johnson County Community College
B.A., University of Kansas

Nancy Schneider-Wilson

Professor, Communication Design
B.F.A., Kansas City Art Institute
M.F.A., University of Kansas

Karen R. Schory

Professor, Communication Design
B.F.A., Kutztown State College
M.F.A., Rochester Institute of Technology

Patricia Schroeder

Professor, Physical Science
B.S., Iowa State University
M.S., University of Arkansas
Ph.D., Kansas State University

Ann Schwartz

Counselor
B.A., Kansas University
M.Ed., Antioch University

Thomas Scofield

Manager, Academic Computing Services
A.A., Johnson County Community College
B.S., Rockhurst College

Richard Scott

Academic Director, Speech, Language and
Academic Enhancement
B.A., Fort Hays State University
M.S., Pittsburg State University
Ed.D., Nova University

Penny Seavertson

Professor, Mathematics
B.A., San Jose State University
M.S., Ed.D., University of Kansas

David Seibel

Associate Professor, Life Science
B.S., Southwest College
M.Phil., Ph.D., University of Kansas

Marilyn Senter

Assistant Professor, English
B.S., University of Missouri-Columbia
M.A., University of Missouri-Kansas City

David Setser

Associate Professor, Electronics
B.A., Central Missouri State University
B.S., University of Missouri-Rolla
M.B.A., University of Missouri-Kansas City

Jeffrey Seybert

Director, Research, Evaluation and
Instructional Development
B.A., California State College-Long Beach
M.S., Ph.D., University of Oklahoma

Stuart L. Shafer

Professor, Sociology
B.A., Western Michigan University
M.A., University of Kansas

Kent D. Shelley

Professor/Coach
A.A., Pratt Community College
B.S., University of Kansas
M.S., Emporia State University

Margaret E. Shelley

Program Director, Admissions and Records
B.S., Kansas State University
M.S., Emporia State University

Sherry Shively

Professor, Accounting
B.A., Metropolitan State College
M.B.A., Avila College

Albert Shopper

Professor, Metal Fabrication
B.S., M.S., Central Missouri State College
M.S., Central Missouri State University

Marilyn Shopper

Professor, Life Science
A.A., Cottey Junior College
B.S., University of Missouri
M.S., Central Missouri State University
Ed.D., University of Kansas

Robert Sindt

Senior Educational Technology Analyst
B.F.A., University of Utah

Jesse Skaggs

Counselor
B.A., B.Th., Kansas City College and Bible School
M.A., University of Missouri-Kansas City
Ed.S., University of Missouri-Kansas City

John A. Skubal

Director, Campus Services
B.S., Emporia State University

Ruth Ann Slesser

Professor, Psychology
B.A., M.A., University of Guelph-Canada
Ph.D., University of Kansas

B. Jean Smith

Professor, Office Systems Technology
A.A., Hutchinson Community Junior College
B.S., Emporia State University

Glenn Smith

Professor, Heating, Ventilation
and Air Conditioning Technology
B.A., Central Methodist College
M.S., Pittsburg State University

Mary Smith

Associate Professor, Nursing
B.S.N., M.S.N., University of Kansas

Joseph Sopcich

Director, Institutional Advancement
B.A., M.B.A., University of Notre Dame

Kimberly Stabbe

Professor, Dental Hygiene
B.S., University of South Dakota
M.S., University of Missouri-Kansas City

Ronda Staton

Counselor
B.S., M.S., Ed.S., Pittsburg State University

Bradley Staupp

Support Analyst

Kerri Stephenson

Associate Professor, Foreign Language
B.A., University of Nebraska-Kearney
M.A., Middlebury College

Loralee Stevens

Admissions Supervisor
B.S., Baker University
M.S., Emporia State University

Sharon Stevens

Assistant Professor, Academic Achievement Center/
Reading
B.S.M.S., Southwest Missouri State University
Ph.D., University of Oklahoma

Linda Stewart

Senior Educational Technology Analyst
A.S., Longview Community College
B.A., MidAmerica Nazarene College

Richard L. Stine

Professor, Speech
B.S., M.S., Emporia State University
Ph.D., University of Kansas

Jill Stinson

Assistant Professor/Coach
A.A., Cowley County Community College
M.S., M.S.E., University of Kansas

Ronald Stinson

Assistant Professor, Instrumental Music
B.M.E., Wichita State University
M.M., Yale University

William Stockton

Associate Professor, History
B.A., Drake University
M.A., Ph.D., Brandeis University

Roger Stone

Professor, Automotive Technology/Metal Fabrication
B.S., M.S., Central Missouri State College

Stephen Storkel

Computer Lab Supervisor
B.A., Willamette University
M.A., Iowa State University

Patricia Sumner

Information Analyst
B.S., M.S., University of Missouri-Kansas City

Lynda G. Swander

Professor, Life Science
B.S., Wittenberg University
M.A.Ed., Western Michigan University

Alan Swarts

Director, Academic Computing Services
B.S., Emporia State University
M.S., University of Kansas

Patrick J. Sweeney

Professor/Career Program Facilitator,
Hospitality Management/Chef Apprenticeship
A.O.S., Culinary Institute of America

Frank Syracuse

Associate Professor, Economics
B.A., John Carroll University
M.B.A., Avila College

Thomas C. Tarnowski

Professor, Photography
B.A., University of South Florida
M.F.A., Rhode Island School of Design

Annehara Tatschl

Professor, Life Science
B.S., M.S., University of New Mexico
Ph.D., University of Kansas

Anita Tebbe

Professor/Career Program Facilitator, Paralegal
B.A., Mundelein College
M.A., University of Missouri-Kansas City
J.D., Washburn University

Paul L. Tebbe

Professor, Physical Science
A.B., M.A., Spring Hill College
M.A., Georgetown University

Sandra Tebbenkamp

Associate Professor, Mathematics
B.A., William Jewell College
M.A., Hunter College

John Thomas

Associate Professor, Art
B.F.A., Southeast Missouri State University
M.A., M.F.A., University of Iowa

Karen Thomas

Accountant
B.S., Central Missouri State University

George Thompson

Academic Director, Visual Arts
B.S., Ohio State University
M.A., M.F.A., Kansas State University

Daniel Torchia

Publications Manager
B.S., University of Kansas

Roger E. Traver

Professor, Economics
B.A., Illinois Wesleyan University
M.B.A., Washington University

Danial R. Turner

Professor, Hospitality Management
A.A., Johnson County Community College

Carolyn Urbom

Assistant Professor, Information Technology
A.A.S., Johnson County Community College
B.B.A., M.A., Wichita State University

Richard Vallandingham

Program Director, Counseling and Student Access
B.A., Oklahoma State University
M.A., Tulsa University
Ph.D., University of Arizona

Felix VanLeeuwen

Professor, Mathematics
B.S., Fort Hays State University
M.S., Emporia State University

Pamela Vassar

Program Director, Student Activities
and Leadership Development
B.S.E., Northeast Missouri State University
M.S., Western Illinois University

Judith Vaughn

Associate Professor/Librarian
B.S., University of Kansas
M.L.S., University of Missouri-Columbia

Jerry L. Vincent

Academic Director, Hospitality Management
B.S., Oklahoma State University
M.S., Central Michigan University

Wallack, Philip

Assistant Professor, Information Systems/
Computer Science
B.S., M.S., City College of New York
Ed.S., New York University

Jeanne Walsh

Academic Director, Nursing
A.D.N., Olney Central College
B.S.N., M.S.N., University of Evansville

Timothy Walsh

Microcomputer Specialist

Sandra Warner

Director, Administrative Computing Services
B.A., University of Kansas

G. David Wasson

Professor, Business Administration
B.S., M.S., Central Missouri State College

Minnie Watkins

Tech Prep Coordinator
B.A., MidAmerican Nazarene College
M.A., University of Missouri-Kansas City

Michael Waugh

Academic Director, Television Services
B.S., M.S., University of Kansas

Frederick L. Webb II

Professor, Business Administration
B.S., Baker University
M.B.A., Avila College

Iris Irene Weber

Deaf/Hard-of-Hearing Student Support Services Supervisor
CSC, KsQAS 5-5

Michael Weible

Associate Professor, Electrical Technology
B.A., Baker University

Phil J. Wegman

Program Director, Developmental Education
B.A., Benedictine College
M.S., Kansas State University
Ed.S., University of Missouri-Kansas City

Nancy West

Professor, Nursing
A.A., Fort Scott Community College
B.S.N., Pittsburg State University
M.N., University of Kansas

Rosalie Wetherill

Associate Professor, Health Occupations
A.D.N., Penn Valley Community College
B.S.N., Webster University
B.A., University of Missouri-Kansas City

James Wheeler

Program Director, Microcomputer Training
and Development
Ed.B., M.S., State University College at Buffalo, N.Y.

Theodore H. White

Associate Dean of Instruction, Science, Health Care
and Math
B.G.S., B.S., University of Kansas
M.S., Wichita State University
Ph.D., University of Michigan

Kimberly Whittaker

Professor, Electronics
B.S.E.E., University of Oklahoma

Ann Wiklund

Associate Professor, Art History
B.A., Tulane University
M.A., University of Kansas

Judith M. Wilkinson

Professor, Nursing
A.A., Johnson County Community College
B.S.N., Graceland College
M.A., M.S.N., University of Missouri-Kansas City
Ph.D., University of Kansas

Carmaletta Williams

Associate Professor, English
B.A., M.A., University of Missouri-Kansas City

James M. Williams

Associate Dean of Instruction, Communications
and Academic Enhancement
A.A., Independence Community College
B.S., M.A., Emporia State University
Ed.D., University of Kansas

Marilynn M. Williams

Executive Assistant to the President and Board
A.A., Johnson County Community College
B.A., MidAmerica Nazarene College

Margaret R. Willis

Program Director, Health and Human Services
B.S.N., University of Virginia
M.A., University of Missouri-Kansas City

Dina L. Wilson

Professor, Nursing
B.S.N., M.S., University of Pittsburgh

LeAnna Wilson

Director, Business and Industry Institute
A.A., Johnson County Community College
B.A., MidAmerica Nazarene College
M.S., Kansas State University
M.S., Emporia State University

Steve Wilson

Associate Professor, Mathematics
B.A., M.A.T., University of Chicago

Sally Winship

Dean, Continuing Education and Community Services
A.S., Pensacola Junior College
B.S., Armstrong State College
M.S., Columbia University
Ed.D., University of Kansas

Stephen Wnek

Assistant Professor, Emergency Medical Science
B.A., Clark University
M.A., University of Missouri-Kansas City

Jerry Wolfskill

Professor, Administration of Justice/
Career Program Facilitator, Police Academy
B.S., Central Missouri State College
M.S., Central Missouri State University
Ed.D., University of Kansas

Norma Wooten

Professor, Paralegal
B.A., J.D., University of Missouri-Kansas City

Jeffrey Wright

Professor, Accounting
B.S., M.B.A., University of Kansas

Ray Wright

Professor, Emergency Medical Science
B.A., Bethel College

Kathleen O. Xidis

Professor, History
B.A., St. Mary's College
A.M., Ph.D., Indiana University

Robert D. Xidis

Professor, English
B.A., University of Kansas
A.M., Indiana University
Ph.D., University of Kansas

Robin L. Yarsulik

Professor, Nursing
B.S.N., Pittsburg State University
M.N., University of Kansas

Kathy Yeager

Program Director, Marketing
B.S., Ball State University
M.A., Webster University

Scott A. Yeargain

Professor, Philosophy
A.B., A.M., Ph.D., University of Missouri-Columbia

Patrick Yeung

Senior Computer Support Analyst
A.A., Penn Valley Community College
B.B.A., University of Missouri-Kansas City
M.S., University of Kansas

Rae Ann York

Benefits Coordinator

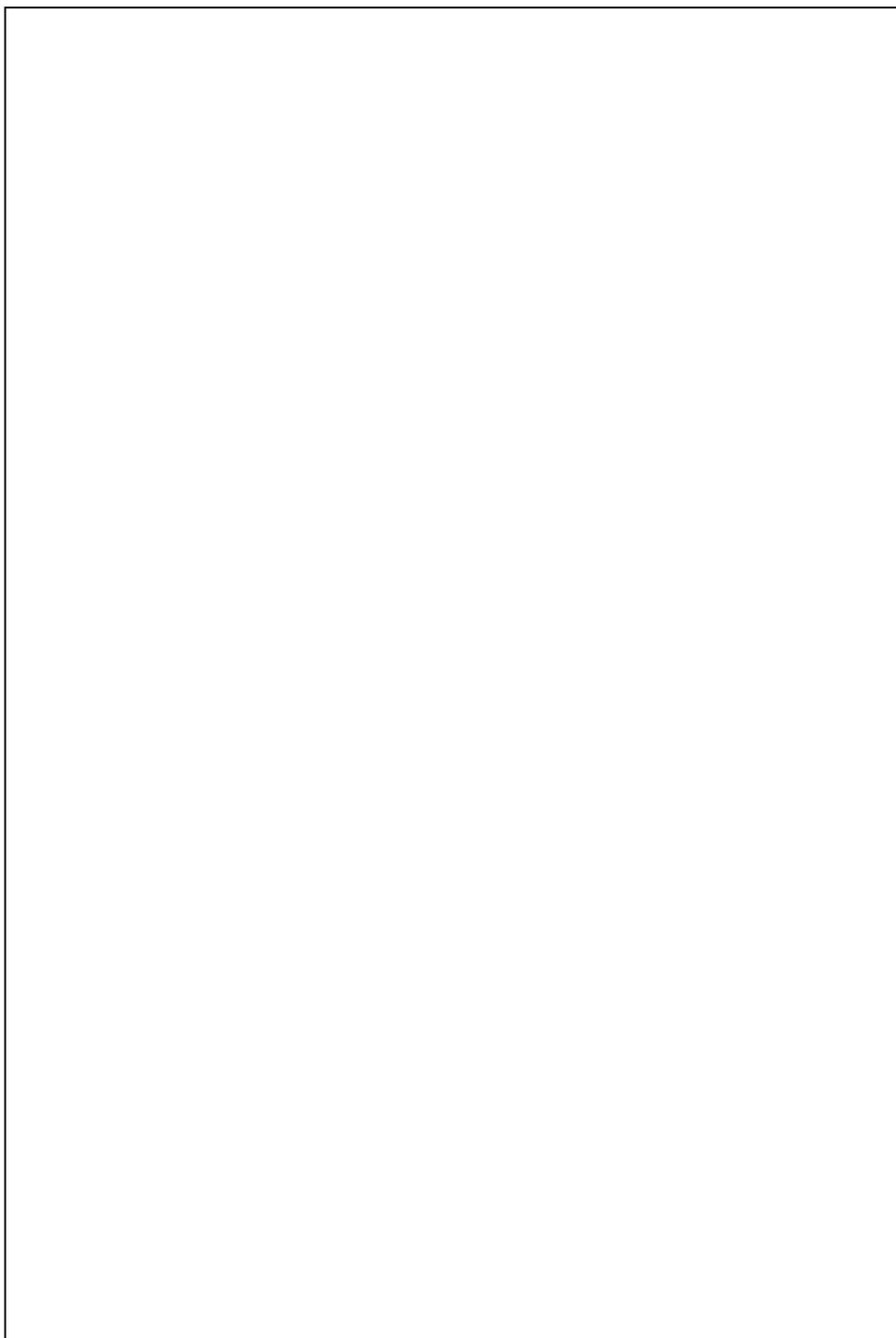
Gay A. Young

Professor, Administration of Justice/Psychology
A.A., Johnson County Community College
B.A., Central Missouri State University
M.A., Ed.S., Ph.D., University of Missouri-Kansas City

Myra Young

Associate Professor, Speech
B.S., Northwest Missouri State University
M.A., University of Northern Colorado

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