Johnson County Community College

Catalog of Courses   2002-2003
and General Information

JCCC

Johnson County Community College

Johnson County Community College
12345 College Boulevard
Overland Park, Kansas 66210-1299
www.jccc.net

Table of Contents

The Johnson County Community College Vision, Values and Mission Statements

Vision

JCCC will enhance its leadership role among community colleges in the United States. The college will continue to enrich the quality of life for those it serves through creative solutions to educational, economic and community challenges.

Mission

Learning comes first at JCCC. The college
- delivers lifelong educational programs and services that are convenient and accessible
- provides professional training opportunities
- provides opportunities for personal growth and cultural enrichment
- maintains a caring, supportive environment
- stimulates economic development
- is accountable to its stakeholders

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 pursued;

- 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 whose ideas and resources are shared 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 and 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 assure quality, continuous improvement, currency and the achievement of defined purposes and outcomes through continuous assessment of all programs and services;

- the student learning goals established by the college 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.

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 vice president 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 vice president's office.

Message from the President

Dr. Charles J. Carlsen

Dear Friends,

The magazine Business 2.0 has said of the Greater Kansas City area, "Technology is changing this unassuming metropolitan area of 1.7 million located smack-dab at the center of America's heartland." Local businesses need workers who can grow and adapt to this new economy, who can keep up with technology and the pace of change. More and more, they are turning to community colleges for the skilled employees they need.

The curriculum of Johnson County Community College is designed to meet the varied needs of county residents and businesses. We find that as technology grows, so does the importance of lifelong learning as people re-skill themselves to stay current with the latest developments. That means our programs and course offerings must keep pace, stressing critical thinking, communication and human relations skills; the ability to acquire knowledge; computing literacy; and civic responsibility.

Today, when a year's study for a freshman at a selective private college can cost more than $30,000, JCCC can offer virtually the same program, taught by a well-qualified and dedicated faculty, for just $58 a credit hour for Johnson County residents. Our programs and services are tailored to meet the special needs of the young, the older, the physically challenged, those with limited prior schooling, honors students, those dislocated by recent changes in the economy and countless others with distinctive needs.

At JCCC, we believe that students are successful when they meet the goals they have set for themselves, whether these goals involve transfer credits, career programs, business training or personal enrichment classes. That's our primary objective, and to achieve it, we are focused on learning. Each semester at JCCC, we enroll more than 34,000 students in both our credit and continuing education offerings. That so many people choose to attend this community college is not surprising. It's demonstrated in the diversity and flexibility of our programs and services and in our affordability. It's shown by the variety of student development services that we offer and in the caring professors and special centers that we have here to help students learn.

But it's not really necessary to visit the campus. Through our distance learning courses, we bring the classroom to you at home via computer, the Internet and television. Or you can take courses at one of our many off-campus locations – in your local high school or at your workplace.

More and more, these education goals are accomplished in partnership with local businesses and educational institutions. JCCC already has partnerships with Emporia State University, Pittsburg State University, Washburn University and the University of Kansas, among others, to help students who are ready to move beyond the first two years of college. JCCC's partnerships with businesses like Burlington Northern Santa Fe Railroad, Ford Motors and utility companies like Western Resources, Kansas City Power & Light and Utilicorp United enhance opportunities for our students. JCCC's intention is to serve as a community resource for education, personal enrichment and workforce development.

The college's faculty, staff and board of trustees are committed to the development of a truly distinctive institution, attuned to the needs of the community. Our goal is to have people think of JCCC first for education, technology training, workforce development and personal enrichment.

Learning comes first at JCCC. I look forward to seeing you on campus – or online – this year.

Sincerely,

Charles J. Carlsen

President

5

Academic Calendar

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

Summer Session 2002

June 3	First day of 8-week and first 4-week classes.
June 14	Last day to apply for and be guaranteed consideration for summer 2002 graduation.
June 27	Last day of first 4-week classes.
July 1	First day of second 4-week classes.
July 4-5	Independence Day holiday. Classes not in session. College offices closed.
July 25	Last day of summer session.

Fall Semester 2002

Aug. 21	First day of fall credit classes.
Sept. 2	Labor Day. Classes not in session. College offices closed.
Oct. 15	Last day to apply for fall 2002 graduation.
Nov. 15	Last day to drop a 16-week class.
Nov. 27	Classes not in session. College offices closed.
Nov. 28-29	Thanksgiving holiday. Credit classes not in session. College offices closed.
Dec. 12-17	Final exams.
Dec. 18	Last day of fall semester.
Dec. 23-Jan. 1	Winter break. College offices closed.

Note: Saturday and Sunday credit classes begin Aug. 24-25 and end Dec. 7-8. Saturday and Sunday classes will not meet Nov. 30 and Dec. 1.

Spring Semester 2003

Jan. 13	First day of spring credit classes.
Jan. 20	Martin Luther King's birthday. College offices closed.
Feb. 15	Last day to apply for spring 2003 graduation.
March 17-23	Spring break. Credit classes not in session. College offices open.
April 15	Last day to drop a 16-week class.
May 12-15	Final exams.
May 16	Commencement.
May 16	Last day of spring semester.
May 26	Memorial Day holiday. College offices closed.

Note: Saturday and Sunday credit classes begin Jan. 18-19 and end May 10-11. Saturday and Sunday credit classes will not meet March 22 and 23.

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
 Career/Life Planning
 Career and Technical Academy
 College Now
 Quick Step
 Technical College Preparation

Programs with Selective Admission
 Nursing
 Articulation of Licensed Practical Nurses
 Cosmetology
 Dental Hygiene
 Interpreter Training
 Mobile Intensive Care Technician
 Paralegal
 Railroad Operations
 Respiratory Care

Admission Procedures –
 Area Vocational School Programs

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 principal. If you are attending a nonaccredited high school and/or are enrolled in an approved "gifted program," you should contact Admissions 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 42 or when the college is unable to provide the services, courses or program needed to assist you to meet your education 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 Student Success Center, second floor, Student Center. Application forms are available from the Success Center, in the credit class schedule or on the Web. All new and readmitted students must complete a new application.

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

   a. You must request that your high school mails 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 are not pursuing a degree or certificate 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 graduate or have JCCC transcripts sent elsewhere unless all outstanding transcripts are received in Admissions.

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 or 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. Those living in Kansas but outside Johnson County prior to the beginning of the semester will be assessed the out-of-county tuition rates for the remainder of the semester. Contact Admissions for details. If you have lived in Kansas six months and are pursuing your permanent resident status through INS, contact Admissions for more information.

Continuing Students

An application for admission to JCCC is valid for one year. If a student does not enroll or reapply in a year, 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. Cooperative programs include Academic Bridges to Learning Effectiveness (ABLE), 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 a cooperative 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 cooperative student contract, available in the Student Success Center, second floor, Student Center.

3. JCCC will allow enrollment at the cooperative school for courses that are not being offered at JCCC. If you elect to take a course at the cooperative school that is offered at JCCC, you will be responsible for paying the out-of-state tuition at the cooperative school.

4. JCCC will not pay for any repeated coursework. If you elect to repeat a course at the cooperative 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 cooperative 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, interior design, 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 135 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. 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 Enrollment Management. 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"; 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. Enrollment will not be allowed without proof of permanent residency, proof of application for permanent residency or INS paperwork.

2. If degree seeking at JCCC, 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 and faxed 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 U.S. high school transcript.

3. Complete the JCCC assessment and enrollment process.

   a. If degree seeking or taking math and/or English and you do not have prior U.S. college-level math and English or the appropriate ACT scores, you will be required to take the JCCC assessment test prior to enrollment.

   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 in the Success Center. 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 in the Success Center, second floor, Student Center.

2. Submit to Admissions 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, you must complete the JCCC assessment process unless you have successfully completed *English Composition I* and a college math course at a U.S. institution. This process must be completed before you enroll in classes. Course selection may be restricted because of JCCC assessment test results.

All international students on an I-20 issued from JCCC are required to purchase medical insurance through a provider that meets JCCC requirements.

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.

International Student Insurance

Johnson County Community College requires all F-1 students to purchase medical insurance to provide coverage for hospitalization or medical treatment resulting from serious illness, surgery or accident. Medical evacuation and repatriation clauses will be included in this policy. Therefore, funds must be available to purchase health/medical insurance from the international student's first period of enrollment through their time as a student at JCCC.

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 Success Center, second floor, Student Center. 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 Success Center, second floor, Student Center. 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 partnership between area high schools and Johnson County Community College. At the high school level, the program includes career/life planning followed by education preparation and/or experiential learning opportunities.

- Career/Life Planning – This initial phase of the Keeping Options Open program is a series of workshops for high school students and their parents, beginning in the students' sophomore year and continuing throughout their junior and senior years. At the high school level, the program offers:
  – academic readiness, information and planning
  – career/life planning beginning in the sophomore year
  – education preparation and/or experiential learning opportunities for juniors and seniors.

- College Now – This is a concurrent enrollment program for high school juniors or seniors (or students identified as gifted with a current IEP) enrolled in selected college classes offered at, and in cooperation with, the high school. 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 complete a JCCC application, a College Now registration form, assessments (as required) and provide payment 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 or students identified as gifted with a current Individual Education Plan from a public school district. Instruction is provided by JCCC faculty and usually held on the college campus. You must complete a JCCC application for admission, a Quick Step registration form signed by the high school principal, assessments (as required) and provide payment for tuition. Approval of your high school principal is necessary. You will need a high school transcript sent at the time of graduation. If you are home-schooled or in an approved gifted program, you must contact Admissions for complete admission requirements. You can find a complete list of classes each semester in JCCC's credit class schedule.

- Career and Technical Academy – This is a concurrent enrollment program intended to allow eligible students to enroll in college credit classes within selected career and technical programs at specified secondary vocational centers. You must complete a JCCC application, a CTA registration form, assessments (as required), and provide payment for tuition. Your high school transcript is not required at the time of enrollment. Approval of your high school principal is necessary. A schedule of CTA classes and registration forms is available early each semester at participating vocational centers. A maximum of 12 Career and Technical Academy credit hours is allowed.

- 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 include:

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

See your high school counselor or the JCCC Technical College Preparation coordinator to learn which courses at your school apply. To receive TCP advanced standing credit, you must maintain a grade of "C" or better in the specified course for each grading interval, as indicated on your high school transcript.

Students may seek employment and/or elect to continue their education after high school in a variety of certificate, associate's degree or advanced degree programs. Therefore, Keeping Options Open results in a lifelong 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 Success Center, second floor of the Student Center. 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	Summer semester

Cosmetology

See Area Vocational School Programs – Admission Procedures, page 14.

Dental Hygiene

Maximum number selected	26
Application deadline	Feb. 1
Classes begin	Fall semester

Interpreter Training

Maximum number selected	30
Application deadline	Feb. 12
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.

Area Vocational School Programs – Admission Procedures

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 or the Success Center, second floor, Student Center. 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

Cardiopulmonary Resuscitation

I.V. Therapy for Licensed Practical Nurses

Rehabilitative Aide

Call 913-469-8500, 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

Call 913-469-8500, ext. 4722, for information on these programs.

Registration and 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 education objectives.

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

Assessment

As part of JCCC's philosophy of assisting all students who enroll in credit classes to successfully achieve their academic goals, you may be required to participate in the assessment process prior to enrollment.

The assessment is required under the following circumstances:

- Students who are degree or certificate seeking will be required to take the assessment test, with the exception of a few vocational certificate programs that do not require math and/or English.

- Students who wish to enroll in a math or English course at JCCC, regardless of whether they plan to seek a degree or certificate, must take the assessment test.

Substitutions for the assessment:

- If you have taken the ACT test within the last three years and earned an appropriate English and/or math sub-score, you may substitute these scores for some sections of the assessment. See the current credit course schedule for appropriate scores or contact the Success Center for more information.

- Completed college courses in math and English from a U.S. institution may substitute for the assessment.

- If you plan to enroll in courses offered through the JCCC Center for Business and Technology.

- If you plan to enroll in courses specially designed for specific populations. (These specific courses will be designated by the division administrator and the vice president of Instruction.)

Placement Based on Assessment

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

Counseling

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

Once your education 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 in the Student Center.

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 six to 11 credit hours are considered half time, and those enrolling in one to 5 credit hours are considered less than half time.

In the summer session, you are considered full time if you are enrolled in 6 or more credit hours; if you are enrolled in fewer than 6 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 9 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 vice president 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 according to procedures listed in the credit class schedule. To facilitate registration by Web, 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.

Late Registration

Late registration takes place during the first five working days of fall and spring semester classes and during the first three working days of the summer session. Specific dates, times and locations are listed each semester in the credit class schedule.

Registration for Classes with Varying Start and End Dates

You may register for classes listed in the "class offerings with varying start and end dates" section of the credit class schedule up to the day 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 registrar and published each semester in the credit schedule of classes. Students may not attend a course unless officially registered for the course.

Dropping a Credit Class

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

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

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 47.

Exceptions to these policies may be authorized by the vice president 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 required 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 director of student development 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 Success Center.

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.

Johnson County Residents:

Total per Credit Hour.........................$58

Other Kansas County Residents:

Total per Credit Hour.........................$73

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

Total per Credit Hour.........................$139

Some courses may require additional fees. These fees are listed in the credit class schedule each semester. A $10 late fee may 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 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, have enrollment verified, 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 one year 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 after the published payment deadline 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.

For more information, contact the Business Office at 913-469-2567.

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 Success Center.

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. Depending on the date on which you withdraw from a class, you may receive a partial refund. Prior to and during the first week of each fall and spring semester, and the first three days of the summer term, you may drop classes on the Web. After this time, you may withdraw from classes by submitting a drop form to the Success Center, prior to the deadlines.

When withdrawing from a regular 16-week course in the spring and fall semesters, please note the following deadlines:

• To receive a 100 percent refund on the cost per credit hour, the course must be dropped on or before the fifth business day of the semester.

• To receive an 80 percent refund on the cost per credit hour, the course must be dropped on or before the 10th business day of the semester.

• 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.

When withdrawing from any classes that start and stop at various times during the spring, summer or fall terms, the deadlines are prorated based on the same ratios as the 16-week courses. See the credit class schedule for more detailed information each semester, or contact the Student Success Center for specific deadlines.

Refunds are calculated based on the day you officially drop a class in the Success Center, not when you stop attending class.

Exceptions to this policy may be authorized by the vice president 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 four business days before the class begins. Exceptions to this policy may be authorized by the vice president of continuing education.

Textbook Costs

If you are a full-time student, you can expect to pay approximately $400 a semester for textbooks. Textbooks may be purchased in the JCCC bookstore. Procedures for obtaining refunds for textbooks and for textbook buy-back are listed in the credit class schedule.

Student Financial Aid

The Purpose of Financial Aid

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

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

Financial Aid Eligibility Requirements

To be considered for financial aid you must:

- Be enrolled in a program that leads to an associate's degree or 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 Financial Aid (Not Need Based)

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 Financial Aid (Need Based)

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 education 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 scholarships. 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 www.studentservices.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 results. Pell Grant maximum amounts may vary from year to year, with the maximum being $3,750 during the 2001-2002 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 JCCC Career Services, Success Center.

• **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 education 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 $1,500 a year. The loan is interest-free while you are enrolled in at least 6 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 JCCC's Student 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 6 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 JCCC's 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 6 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. In addition, the student must complete the FAFSA.

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' Education Benefits

Veterans' Education 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, Success Center, second floor, Student Center. All applicants for VA education 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 in the Success Center 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 education 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	¾-time benefits
6-8 semester hours	½-time benefits

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

Note Taker Stipends

Note Taker stipends are available if you wish to take notes for deaf or hearing-impaired 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.

The Taxpayer Relief Act of 1997

The Hope credit and the Lifetime Learning credit are tax credits that may be available to you if you pay higher-education costs. A tax credit reduces the amount of income tax you may have to pay. Unlike a deduction, which reduces the amount of income subject to tax, a credit directly reduces the tax itself. You can claim the Hope credit for the first two years of an eligible student's postsecondary education and claim the Lifetime Learning credit for the same student in later years.

For additional information about the Taxpayer Relief Act, we suggest you consult your tax adviser or request IRS Publication 970, Tax Benefits for Higher Education, by contacting the IRS at (800) 829-1040. The IRS Web site is www.irs.ustreas.gov/prod/hot/taxlaw.html. JCCC will not provide tax advice.

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 Johnson County resident living in an apartment and enrolled in a total of 24 credit hours:

Tuition and fees	1,392
Books and supplies	1,000
Room and board	7,300
Transportation	1,752
Personal	1,265
Total cost of attendance	**$12,709**

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. To calculate the amount of Title IV assistance earned by a student, the school must first determine the percentage of 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 (specific semester) that was completed as of the day the student withdrew. It is based on the number of calendar days from the beginning of the semester until the withdrawal date divided by total number of calendar days in the semester.

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

Repayment Policy

A repayment obligation occurs if the funds the student received for education expenses exceed the education costs for the portion of the term the student completed. If the "earned" percentage of the student's aid is less than the disbursed aid, the student will be responsible for repaying those funds to the Title IV federal programs. 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 the 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 a student's scholastic progress or advancement. Federal legislation governing the administration of any federal student financial aid programs require that a student make satisfactory academic progress toward a certificate, degree or transfer program leading to a bachelor's degree. To comply with this regulation, the following standards of satisfactory academic progress have been established. **All recipients of all financial aid programs, including state and institutionally funded programs, are subject to these standards for renewal of their financial aid eligibility.** Some JCCC institutional programs have additional or more stringent renewal criteria.

Satisfactory academic progress evaluation is related to cumulative JCCC and transfer credit coursework as appearing on the student's official academic transcript and will occur at the end of each enrolled semester. Any classes taken during any summer session (within the same summer) are viewed as one enrolled term. Only credit courses are considered for satisfactory academic progress evaluation.

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

1. Grade Point Average

Students must attain a minimum cumulative GPA based on the total number of credit hours completed. JCCC and transfer hours are considered. The minimum standards 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 transcripts, up to a maximum of 97 attempted credit hours. Students attempting more than 97 credit hours (including JCCC and transfer credit hours) will not be eligible to receive financial aid. This includes all enrollment periods, whether or not financial aid was requested or received.

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 in a probation status. To remove probation status, the student must: reinstate his or her academic good standing per the minimum criteria of satisfactory academic progress. To remain on probation and continue financial aid eligibility during an additional "probation" status term:

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

2. Pass 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 applying for financial aid at JCCC for the first time will be on a probation status "prob1" whether or not the student has transfer credit hours. To establish a satisfactory status, the student must meet cumulative minimum standards of a 1.7 GPA for the first 1 to 30 credit hours attempted and a 2.0 GPA for 31-97 attempted credit hours and complete at least 66 percent of all attempted credit hours. (**Note:** Clock hours are computed as credit hours for Satisfactory Academic Progress purposes.) If minimum satisfactory academic standards are not met, the student will be placed on financial aid ineligibility.

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.

Appeals

Students may appeal their satisfactory academic progress status by completing and submitting a written appeal form to 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 subcommittee, with its decision or recommendation being 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 education 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.

Campus Services

Bookstore

Cosmetology Salon

Dental Hygiene Clinic

Dining Services

Massage Therapy Clinic

Safety Services

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 the teaching staff recommends. Computers and software are available at academic prices. MasterCard, Visa, American Express and Discover cards are accepted for all purchases. Hours of operation are listed each semester in the credit and continuing education class schedules.

Cosmetology Salon

You and your family can receive hair, nail and skin 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 913-469-2390 for appointment times.

Dental Hygiene Clinic

At the Dental Hygiene Clinic, you and your family can 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, 913-469-3808, to make an appointment. Multiple visits to the clinic usually are required.

Dining Services

The Food Court on COM level 1.5 serves breakfast, lunch and dinner Monday-Thursday; breakfast and lunch on Friday; and lunch on Saturday. Available weekdays are selections from Pizza Hut Express, Chick-fil-A Express, Quivira's Mexican, BLVD Burgers and Just Desserts, as well as a large salad/hot bar. During the fall and spring semesters, Dining Down Under (on the COM B level) features Main Fare entree and side dishes, the Garden Spot salad bar and the Deli, a self-serve sandwich bar.

Dining Services also operates the C-Store (Convenience Store), next to the bookstore, open Monday-Friday. The coffee café, javajazz@jccc, is located next to the Food Court and features hot and cold specialty drinks, sandwiches and pastries.

Encore! Espresso is located on the first floor of the Carlsen Center, just up from the lobby, with hot and cold specialty drinks, smoothies, and light snacks.

Vending is located throughout campus to provide easily accessed beverages and snacks. Catered meals, delivered refreshments and receptions can be arranged by calling

913-469-8500, ext. 3210. Hours of all operations are listed in the credit and continuing education class schedules.

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. Call the Center for Professional Education, 913-469-4422, for more information or to make an appointment.

Safety Services

JCCC maintains a Safety and Security department that operates 24 hours a day, 7 days a week. Officers are available to assist you in any crisis situation. Officers will listen to any concerns or refer you to others who can further assist you in the resolution of problems. For those indicating a concern, officers provide personal escorts to and from vehicles. Although they are not mechanics, officers can assist you if you become locked out of your vehicle. They can inflate low tires or jump-start your vehicle if you experience a dead battery. For larger problems, officers will assist drivers in obtaining telephone numbers of local service stations. Before leaving your vehicle, take a few moments to make sure valuables are placed out of sight, and always remember to keep your windows closed and lock your doors.

JCCC's communications center operates 24 hours a day. If you need assistance of any kind, simply pick up one of the many emergency telephones on campus, and you will be connected with a college operator. Emergency telephones are located throughout the campus, in the parking lots and in the interior hallways of each campus building. For the deaf and hearing impaired, TTY phones are located next to campus pay phones on the second floor of the Carlsen Center, first floor of GEB and COM basement. Also, campus elevators are equipped with emergency speaker phones. Code blue phones in the parking lots are easily identified by the blue strobe light atop each phone stand. To use these phones, simply push the call button and speak into the speaker. The security dispatcher will automatically know where you are and will immediately dispatch an officer to your location.

Safety and Security is located in 115 Carlsen Center, 913-469-4111 (emergency). The crime-prevention number is 913-469-4492. Services include motorist assistance, security escorts, medical emergency assistance, accident investigation, conflict mediation, lost and found, special event coverage, reserved parking, and parking control.

Instructional Support Services

Academic Achievement Center

ACT Center

Barbara Gill Lifetime Fitness Center

Billington Library

CASE Classroom
  Hardware resources
  Software resources

Computer Labs

English as a Second Language

Human Anatomy Open Lab

Intensive English Program

Language Resource Center

Learning Strategies Program

Math Resource Center

Project Finish

Writing Center

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 *Basic 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 102 Basic Spelling (3 hrs.)
LC 103 Advanced Spelling (1 hr.)
LC 104 Reading Comprehension (1 hr.)
LC 105 Reading Rate (1 hr.)
LC 106 Vocabulary Development (1 hr.)
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.)

ACT Center

Distance Learning

Business and Professional Development is now available through JCCC's newest computer-based learning center. Hundreds of courses from many of the nation's top computer-based companies are available either online from remote locations or in JCCC's ACT Center. If you need courses on leadership, back safety, industrial topics, quality or any other number of topic areas, you can get them and get them fast. No more waiting for minimum class sizes or course start dates … if you need it now, you can get it now.

Licensing/Certification Testing

JCCC's ACT Center currently offers online scoring and reporting of the ACT WorkKeys Individual Assessments. Our ACT Center also offers several national certification exams through Testing Services. For more information, contact Phil Wegman at 913-469-4446.

Barbara Gill Lifetime Fitness Center

You can improve your fitness level by enrolling in *Lifetime Fitness I* and take advantage of the Lifetime Fitness Center. After enrolling, you must complete an initial assessment, and then you may work out in the center during any of our open hours. The Fitness Center is primarily composed of a cardiovascular circuit consisting of treadmills, stationary bicycles and hydraulic resistance equipment. Contact the Lifetime Fitness Center at 913-469-4432 for additional information and/or to schedule an assessment.

Billington Library

Billington Library is open 80 hours a week while classes are in session. The library collection includes 92,000 books, 600 current periodicals, 400,000 documents on microform and 6,000 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.

CASE Classroom (Computer Applications in Science Education)

In order to accommodate the incorporation of cutting-edge technology into the sciences classroom environment, the CASE classroom has been established as a resource center in education technology for science courses. Available to science students and faculty, the CASE classroom provides instructional materials in the form of computer software, audiovisual media, Internet resources and technical expertise.

Hardware resources

The CASE classroom is equipped with 57 computing workstations: 29 Windows-based and 28 Macintosh-OS machines. Connected across 10 megabit Ethernet to a large-capacity file, print and application server, the CASE classroom workstations have full Internet access and are capable of supporting collaborative network applications. Two 11-foot by 6-foot projection screens are available with digital video and overhead projection. Two workstations; one Mac-OS and one Windows-based, are equipped with SCSI image scanners with image editing and optical character recognition software. Three laser printers are available in the CASE classroom, two of which are available for student use. The third printer is a color laser printer and is reserved for faculty use.

Software resources

Discipline-specific instructional software is available in the CASE classroom for use in a class or for the independent study use of students. Among these are *Interactive Anatomy, Concentrated Chemical Concepts* and *Voyager II*. Orientations in software use are available by appointment.

Computer Labs

More than 60 computer labs with more than 1,500 workstations are available for student use in classes. All of the workstations have access to the Internet, and the college has maintained a ratio of 80 percent PCs and 20 percent Macs. Specialized labs are available for classes in technology programs, MIDI music, photography, communication design, desktop publishing, computer interactive media, science, mathematics, electronics and drafting. Ten labs are available at West Park Center for information technology networking classes. Many of these facilities are open up to 90 hours a week. Students have access to more than 35,000 copies of software for their use, covering nearly all of the curriculum areas. Support staff assist students during the hours the labs are open.

More than 50 of the classrooms on campus have integrated computers, VCRs, digital cameras and high-end projection systems. Many faculty members use these facilities to supplement and enhance classroom presentations.

Student e-mail accounts are provided, and server space is available for large project storage. More than 25 local area network servers are used to support on-site classes, in addition to Web-based distributed distance classes.

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 Kansas residents 16 years of age or older who are not otherwise enrolled in school. Instructional fees will be assessed for those holding visas. Class size is limited. Registration and course placement testing are required. Courses include ESL level 1 through level 3, conversational English, pronunciation improvement, grammar development and workplace applications. In addition, customized contract training language services are available for area businesses. For more information, contact JCCC's Community Services Division.

Fitness Center
(See Barbara Gill Lifetime Fitness Center, page 30.)

Human Anatomy Open Lab

To aid students in studying anatomy and zoology, the open lab is equipped with many high-quality models. Students may use the lab to study outside of class using the same lifelike models instructors use while teaching. The lab includes a biology tutor and is open a minimum of 24 hours a semester.

Intensive English Program

The Intensive English Program (IEP) serves non-native English language learners who want to improve their academic English proficiency for academic college study. The program is year-round and offers beginning, intermediate, advanced and pre-academic listening and speaking; reading and writing; and grammar classes. Each class meets five hours per week, Monday through Thursday. Application deadlines exist and registration and placement testing are required.

For more information, call 913-469-8500, ext. 4386, or visit our Web site at www.jccc.net/admin/iep.

Language Resource Center

The Language Resource Center, located in 225 LIB, serves students and staff of foreign language, interpreter training and speech communication departments. Audio cassette recorders, video cameras, televisions and videocassettes recorders are available for recording and viewing. Computer software, compact discs, videocassette tapes, audio tapes, international newspapers and magazines are available for use in the LRC. Tutoring for students of Spanish, French, German and American Sign Language is offered. The LRC is open days, evenings and weekends.

Learning Strategies Program

This program offers you an opportunity to acquire the thinking skills and learning strategies you need to be a

successful college student. A partial list of these learning strategies includes textbook strategies, lecture note strategies, exam strategies and memory strategies. 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 program at 913-469-8500, ext. 3335.

Library

(See Billington Library, page 30.)

Math Resource Center

The Math Resource Center (MRC) provides an environment in which students can work individually or collaboratively on their mathematics. Peer tutors offer individual assistance; videotapes are available on most of the mathematics curriculum and on the use of the TI graphing calculators; tutorial computer programs as well as statistical, graphing and symbolic manipulation software are available to aid in the understanding and visualization of mathematics; and group study sessions may be scheduled to meet on a regular or impromptu basis. Any student currently enrolled in any JCCC math course may use any of the MRC resources. The MRC, located in 212 CLB, is open 70 hours a week. For more information, call 913-469-8500, ext. 4242.

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.

Project Finish centers are located at JCCC's Olathe Center, Oak Park Library, Gardner Library, DeSoto Library, Spring Hill Library, Antioch Library, Edgerton Library and Olathe Family Resource Center. 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 LIB, call the grammar hotline at 913-469-4413 or e-mail us at wcenter@jccc.net with your grammar questions. You will receive prompt, reliable, courteous answers.

Involvement Opportunities

Alumni Association

Athletics

Brown & Gold Club

Campus Recreation

Clubs and Organizations

Dance Team

Debate

Leadership Institute

Music Performance Ensembles

Phi Theta Kappa

Service Learning Program

Student Ambassadors

Student Events and Programs

Student Newspaper

Student Senate

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 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.

Brown & Gold Club

The Brown & Gold Club of JCCC is organized to serve the senior adult population of Johnson County through educational 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.

For more information, contact the Brown & Gold office in the Commons building, 913-469-8500, ext. 4305.

Campus Recreation

The intramural/recreation program at Johnson County Community College incorporates competitive play in team and individual sports, as well as opportunities for "free play" through the open gym program. Schedules for intramural competition and open gym can be obtained at the Student Information Desk, first floor of the Student Center, or the 003 GYM information desk. Participation in these programs provides JCCC students opportunities for physical development and social interaction.

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 Activities and Information Desk, first floor, Student Center.

Dance Team

In support of our athletic programs, JCCC offers a dance team. The team participates at all home basketball games and select away games. For tryout information and scholarship requirements, contact the Student Activities and Information Desk, first floor Student Center.

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.

Leadership Institute

The Student Leadership Institute is a program of workshops and seminars offered during the fall and spring semesters. Workshops and seminars will give participants opportunities to explore various aspects of leadership with other JCCC students, faculty, staff and guests from the community. After completion of the Student Leadership Institute program, participants will gain a broad understanding of leadership as it applies to campus and community organizations, the workplace and personal life. Leadership education, training and development are an inclusive aspect of a college education.

Music Performance Ensembles

The Music Department at JCCC offers a wide variety of performance ensembles that are available for students. For instrumentalists, there is the Music Masters Concert Band, the Midnight Express Jazz Ensemble and various chamber ensembles and jazz combos. For vocalists, there is the Chamber Choir, Midnight Blues Vocal Jazz Ensemble and select mixed vocal ensembles. All of these ensembles perform on and off campus during the course of each semester. Membership in these ensembles is by audition with the vocal and instrumental professors. For information, contact Ron Stinson, 913-469-8500, ext. 3275, or e-mail rstinson@jccc.net.

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 200 COM or call 913-469-8500, ext. 3305.

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 Ambassadors

The JCCC Ambassadors program consists of a group of six current JCCC students who work in Admissions and give tours for prospective students. In addition to providing tours, the Ambassadors respond to requests for information and assist with other Admissions functions. Students apply for the positions through the Human Resources office. Students in this position must maintain full-time student status throughout the year.

Student Events and Programs

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 Activities and Information Desk, first floor, Student Center.

Student Newspaper

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 6 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 at noon.

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. 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).

Student Support Services

Mission

Student Success Center

**Access Services for Students
with Disabilities**

  Disability Support Services

  Deaf/Hearing-impaired Student Services

  Notice of Nondiscrimination

Career Services

The Children's Center

Counseling and Advising Services

Student Housing Referral

Testing Services

The Mission of Student Services

The Student Services branch of Johnson County Community College is committed to assisting students in the clarification and attainment of their education/career/life goals. All aspects of Student Services are involved in this endeavor:

- **The Success Center** assists students in accessing the information and resources they need for planning and implementing their education and career goals, as well as connecting them to all student services;

- **Access Services for Students with Disabilities**, which provides accommodations for deaf students and students with disabilities;

- **Testing Services**, which provides information regarding students' readiness in specified academic and skill areas;

- **Career Services**, which provides information about and connections with the world of work for planning and placement;

- **Counseling Services**, where students work with counselors to develop an individual education plan; develop career goals and address personal problems;

- **Admissions, Registration and Records**, which provides an accessible process for admission, enrollment, record keeping and documentation of student outcomes;

- **Financial Aid Services** assists students with the process of paying for their education;

- **Student Life and Leadership**, which provides opportunities that foster student growth and development through association and involvement with co-curricular activities;

- **Physical Education and Athletics**, which provides programs in health, physical education, recreation and wellness and 14 athletic teams aimed at enhancing students' quality of life;

- **The Children's Center**, where the children of students and staff are cared for in an environment designed to encourage their growth and development.

Student Success Center

The Student Success Center is an interactive resource center offering students nearly every informational resource and service necessary to succeed at JCCC, in one location. Professional staff are available to answer questions and assist with access and use of all resources and services. Within the Success Center, students are able to:

- visit with career and academic counselors/advisers, and visiting four-year counselors

- utilize free computerized career assessments.

- research career/occupation and college transfer options.

- submit financial aid applications and verify aid status.

- complete the new student orientation, admissions and registration.

- access student records and transcripts.

- receive assistance researching position vacancies, developing a resume and preparing for successful job interviews.

- access disability and deaf/hearing-impaired support services.

- register to vote.

- use the Web to register and view job listings, individual records, and much more.

- receive information about student internships and volunteer opportunities, clubs and organizations, campus activities, pre-ordering books from the JCCC bookstore, book buy-back, intramurals, child care and more.

For more information, walk in the Student Success Center, second floor, Student Center building, call the student information line at 913-469-3803, toll free at (866) 896-5893 or visit www.jccc.net.

Access Services for Students with Disabilities

JCCC provides a range of services to allow persons with disabilities to participate in educational programs and activities. Appropriate documentation of disability will be required to obtain support services. If you desire support services, contact Access Services, 913-469-8500, ext. 3521, or TDD 913-469-3885.

Disability Support Services

JCCC students with disabilities have access to a variety of support services including reading, note taking 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 an Access advisor.

Deaf/Hard-of-hearing Student Services

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

Career Services

The mission of Career Services is to provide career/life/ education connections, resources and experiences for students, alumni, community members and staff.

A resource library provides resources to complement our services.

Career Services is located on the second floor of the Student Center. Call 913-469-3870 with questions, or visit the Internet at http://jccc.net/careers.

Career Services provides the following services:

CHOICES: A 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.

SIGIPLUS and DISCOVER: These career-exploration assessments are offered in the resource library.

Job search preparation: Trained professionals assist students in researching occupations in our resource library and preparing for a successful job interview. We also provide help with writing resumes, cover letters and thank you notes. Learn about careers by talking with JCCC alumni from our Connections database.

Employment services: We offer full- and part-time job listings in various salary ranges. Internet access to local, regional and national job listings is available, plus on-campus recruiting with local employers. Sorkins Online is available in the resource library.

Internships: College credit can be earned for valuable work experience with an internship. Extra money is available through the federal work-study program and work pool.

First Impressions: A two-session workshop to assist with job success and business protocol, which consists of a fine-dining meal and etiquette instructions.

The 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 education 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 a.m. 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.

Enrollment at the Children's Center is limited to dependents of JCCC students, faculty and staff. For the purpose of TCC enrollment, dependent is defined as any child who is currently claimed for federal tax reporting.

An hourly fee is charged for all child care. For specific information, contact the Children's Center on the west side of the campus, 913-469-4438.

Counseling and Advising Services

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

Counseling Services is staffed by full-time and part-time professional counselors who assist students in the process of reaching their goals. Counselor 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 Counseling Services. 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 education plans can be developed to realize those goals.

- New student orientation. **If you are not currently enrolled at JCCC, you must attend a new student orientation session.** A new student orientation session provides important information that you will need for consulting with a counselor. Schedules for new student orientation sessions are listed in the credit class schedule each semester. They are also available in the Success Center, second floor of the Student Center, or by calling the Student Services Information Line, 913-469-3803.

Student Housing Referral

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 Admissions immediately.

Testing Services

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

Other services include career testing, distance learning testing, proficiency examinations, distance learning 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 education plan in the Counseling Center, you may seek credit for life experience through Prior Learning Assessment (PLA), which is administered through Testing Services. If you are interested in finding out more about nontraditional credit options, contact Testing Services.

Academic and Student Policies and Procedures

Academic Progress

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

1. If you enroll in courses offered through contract arrangements between JCCC and an outside agency.

2. If you enroll in courses that have been especially designed for specific populations.

3. If you 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, F or W	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 vice president 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 may not be 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 vice president 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 Admissions 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 Admissions.

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 need to follow the receiving institution's policy.

Access to Student Information

Your rights concerning access to education records are spelled out in the Family Educational Rights and Privacy Act of 1974. The law and regulations require educational institutions to:

1. Provide you the opportunity to inspect your education records. If you wish to see your records, you should contact JCCC Admissions.

2. Provide you the opportunity to challenge through a hearing the content of your education 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 education 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 education 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
- E-mail address
- Date and place of birth
- Major field of study
- Full- or part-time enrollment status
- 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 Records 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 vice president 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.

In addition, the college will comply with any court order or subpoena of records as required by law. In such cases, students will be notified when their records have been subpoenaed. JCCC is not required to comply with out-of-state subpoenas (with some exceptions when receiving federal court orders).

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 at JCCC. Exceptions to the application transcripting policy may be made for specific certificate/career programs. Students may not be enrolled in the class for which they are applying for advanced standing credit.

Credit will not be awarded if:

1. You have received a grade for college classes representing the same content (advanced standing credit cannot be used to repeat classroom credit).

2. You have been awarded credit through other nontraditional programs in areas representing the same content.

Prior Learning Assessment

Testing 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 advanced standing credit (PLA) evaluation.

Portfolio or Certificate Evaluation

You may be granted credit if you have acquired, through experiential learning, 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.

Military Credit

You may be granted credit for education 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 or Discharge (or equivalent), may receive credit and advanced placement as recommended by the American Council on Education if their experience is equivalent to the course(s) offered by JCCC.

National Standardized Tests

The college may grant credit 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 equivalent 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 Services to validate credit previously awarded.

Proficiency Examinations

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

More information is available at www.jccc.net – click Testing Services, Prior Learning Assessment.

Attendance

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 faculty member will include attendance guidelines in his or her course syllabus – the student will be responsible for knowing and adhering to those guidelines. Penalties for excessive absences may include reduction of grade. It is the student's responsibility to obtain class materials missed because of absence.

Students who, by the end of the second week of the semester (prorated for classes less than 16 weeks in length), have not attended at least one session of each

course in which they are enrolled will automatically be dropped from those courses not attended, with no refund of tuition and fees. Students enrolled in distance learning courses will be dropped if they do not fulfill the initial requirements established for the course(s).

Students who are under obligation to participate in jury duty, a generally recognized religious observance or activities where you are required to represent the college must give written notice to the faculty member 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 vice president 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 faculty member and subject to the standard appeal process.

If you receive benefits from a governmental agency, you must follow any policy the specific agency stipulates. Lack of attendance may affect financial aid.

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, and audit registration cannot be changed to credit registration.

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.

Refunds will be authorized by the office of the vice president of Student Services.

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

Some classes at JCCC are available "by arrangement" with an instructor in that department. The student and instructor meet to agree to a semester schedule that may involve regularly scheduled meetings and assignments or alternative projects, depending on the specific course requirements and content. Before enrolling in a class by arrangement, you should contact the instructor (or the division administrator) to see if this opportunity is available for the specific course you desire. 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 and a faculty member must agree to work with you. For details, contact the division administrator for the area in which you are interested.

Self-paced Study

Self-paced classes are offered on a 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. These courses are designed for students who have high levels of self-motivation, self-discipline and organizational skills; they should not be taken as a substitute for late-start sections of the equivalent course. 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 section approval waiver from the department. The student then must come to the Success Center on the second floor of the Student Center to enroll in the class. The student is required to meet with the sponsoring instructor to complete the contract and obtain class materials prior to enrollment in the course.

Although one year is allotted to completing 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 will satisfy the current enrollment requirement for graduation if the following conditions are met:

1. you apply for graduation within a year of enrolling in a self-paced course or courses; and

2. you complete the self-paced course(s) by the grade deadline for the semester in which you apply to graduate.

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 articulated and calculated in your cumulative GPA Quality points and grade points will be articulated 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, in division and program offices or in the credit schedule.

Grading System

Johnson County Community College uses the following grades to indicate the level at which you have achieved the education 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

For classes less than 16 weeks in length, a student may complete the appropriate form up to completion of three-fourths of the class.

You must meet with a counselor, complete the appropriate form and submit it to the Success Center before Nov. 15 of the fall semester and April 15 of the spring semester. You will be allowed to enroll in only one class each semester under this option. Grades earned under the option are "P" or "F." If you choose to withdraw, a "W"

will be recorded. 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, 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.

Grade Changes

Grade changes and withdrawal appeals must be submitted in writing to the office of Enrollment Management within one semester of your initial enrollment in the course. Additional information and forms may be obtained in the Success Center.

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 and credit hours 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 6 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 (for associate's degrees)

If you earn 30 hours at JCCC and have a 3.5 or higher cumulative grade point average in all JCCC hours attempted, you will be graduated with honors. JCCC hours and/or cumulative GPA will be used to calculate honors designation.

Graduation with Honors (for certificates)

If the certificate totals 24 hours or more and you have a 3.5 or higher JCCC GPA, you will graduate with honors.

Recognition of Achievement Award

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

Academic Standards for the Honors Program

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

Records on Hold

If your records have been placed on hold for any reason, such as an unsubmitted official transcript, 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.

A hold on your records due to a financial obligation to JCCC will stop you from the above four items as well as from any verification processes of student status, graduation or other student information.

Contact the Success Center for more information. Appeals to this policy should be made to the registrar.

Transcripts

Records 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." Those transcripts requested by fax will be treated as daily mail and not given priority treatment. There is no fee for official transcripts.

Transcripts will not be released if your records are on hold.

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 registrar or her designee.

Verification of Enrollment

Requests for verification of enrollment must be made in writing. You may either fill out a verification of enrollment form in the Success Center or write a letter and fax or mail to JCCC Records 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

Faxes will be treated as daily mail and not given priority treatment.

Current semester enrollment verifications can be requested after classes have been in session for one week. Verifications will not be completed for those students with financial obligations to JCCC.

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 vice president of Student Services.

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 as well as criminal prosecution.

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 barbital. 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 JCCC Counseling Services, second floor of the Student Center.

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 CC, 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

The use of any tobacco products 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.

Non-students in Classroom

Only those Johnson County Community College students who have been officially admitted, enrolled and listed on the class roster may attend a specific section of a class.

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, visitor, handicapped, staff and faculty, and motorcycle and motor scooter parking.

Motorcycles and motor scooters are considered motor vehicles and their operators are required to comply with all parking and traffic regulations.

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 violation, after which, beginning on the 11th day, an additional charge of $1 a day may be assessed per violation.

Unauthorized vehicles in handicapped parking spaces may be ticketed by both campus security and the Overland Park Police Department and subject to fines and fees from both institutions.

Other violations for which you will be ticketed and fined are:

1. Failure to display a parking sticker, if required;
2. Parking in a restricted area;
3. Parking in posted "No Parking" areas;
4. Parking on the grass;
5. Parking in loading zones/service ares;
6. Parking in a way that restricts the flow of traffic;
7. Parking in pedestrian areas or crossings;
8. Parking next to the curb;
9. Parking beyond the 30-minute limit where such a time limit is designated; and
10. Any other improper parking.

Failure to pay parking fines will result in further action being taken. After receipt of a third violation, your records will be 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 violation 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 vice president of Student Services.

Johnson County Community College
Campus Safety and Security Annual Report
1998-1999

	1998		1999		2000	
	Actual Offenses	Arrests	Actual Offenses	Arrests		
Group A Offenses					**Offense Type (includes attempts)**	
Arson	0	0	0	0	Manslaughter	0
Assault	2	0	1	0	Forcible Sex Offenses	0
Burglary	1	0	1	1	Non-forcible Sex Offenses	0
Counterfeiting/Forgery	2	0	0	0	Robbery	0
Destruction/Damage/ Vandalism of Property	12	0	8	0	Aggravated Assault	1
Drug Offenses	1	0	0	0	Burglary	1
Gambling Offenses	0	0	0	0	Arson	0
Homicides	0	0	0	0	Motor Vehicle Theft	1
Larceny/Theft	55	0	44	0	Murder	0
Motor Vehicle Theft	4	0	0	0	Larceny	96
Robbery	0	0	0	0		
Sex Offenses	0	0	0	0		
Weapon Law Offenses	0	0	0	0	**Hate Crimes (by prejudice)**	
					Race	2
TOTAL GROUP A OFFENSES	**134**	**1**	**77**	**0**	Gender	0
					Religion	1
Group B Offenses					Sexual Orientation	0
Bad Checks	0	0	0	0	Ethnicity	0
Curfew/Loitering/Vagrancy	0	0	0	0	Disability	0
Disorderly Conduct	4	0	4	0		
Driving Under the Influence	0	0	0	0		
Drunkenness	0	0	0	0	**Number of Arrests/Referrals (selected offenses)**	
Family Offenses, Nonviolent	0	0	0	0	Liquor Law Violations TOTAL	0
Liquor Law Violations	0	0	0	0	Arrest	0
Peeping Tom	0	0	0	0	Referral	0
Runaway	0	0	0	0		
Trespass of Real Property	0	0	0	0	Drug Law Violations TOTAL	1
All Other Offenses	0	0	4	0	Arrest	0
					Referral	1
TOTAL GROUP B OFFENSES	**4**	**0**	**8**	**0**		
Hate Crimes	0	0	1	0	Weapons Law Violations TOTAL	0
					Arrest	0
					Referral	0

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.

Skateboards and Roller Blades

For the safety of everyone, skateboards, roller blades and scooters are prohibited on the campus. JCCC students who violate this policy will be referred to the vice president of Student Services, where action will be taken.

Nonstudents will be referred to the director of Safety and Security for appropriate action.

Security

Johnson County Community College maintains a Safety and Security Department that operates 24 hours a day, 7 days a week. Officers patrol the campus in vehicles, on bicycles and on foot. Should you experience any problems while on campus, Safety and Security may be called for assistance.

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.

Emergency telephones are located throughout the campus, both in the parking lots and in the interior hallways and elevators of each campus building. Throughout the parking lots, emergency code blue phones are easily identified by the blue strobe light atop each phone stand.

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

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

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

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

Emergency Telephone Messages, Access to Students

Notification of an emergency can be made by calling the vice president of Student Services office at 913-469-3865 from 8 a.m. to 5 p.m. or by calling 913-469-8500, ext. 4112, after regular hours. The dean of Student Services or his/her representative will speak with the person requesting contact with the student. If it is determined by the dean that the request is directly related to education reasons or presents a health or safety emergency, the dean or his/her representative, with support from Safety and Security, will decide the best method for contacting the students.

Crime Prevention

The Crime Prevention Unit of JCCC maintains a library of useful crime prevention and personal safety brochures, videos and important hotline numbers for all interested persons. Operation Identification, special seminars and crime prevention fairs are additional programs sponsored by the crime prevention unit. Any group desiring a crime prevention presentation may make requests by contacting the crime prevention unit at ext. 4492. For more information, go to the JCCC Security Web site at www.jccc.net/admin/facil/security.

Unattended Children on Campus

Children may not be left unattended in college hallways, library facilities, cafeteria areas or any other college sites or property.

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 vice president 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 vice president 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 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 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 10 days rather than five 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 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 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 jurisdiction of the college during your period of enrollment, and the college reserves the right to take disciplinary action, including suspension or expulsion, against you if, in the opinion of the college administration, you have not acted in the best interest of other students or the college. The following types of behavior are considered violations of the student code of conduct and may subject you to disciplinary action and/or referral to appropriate law enforcement agencies.

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

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

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

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

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

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

7. **Disruptive Behavior**

   a. 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 vice president of Student Services within one work day.

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

   1. 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;

   2. 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

   3. take no action.

   b. Cellular telephones, pagers and other electronic devices shall not be used in a manner that causes disruption in the classroom, library or within any college-owned or college-operated facility.

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 52 of this catalog.

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

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

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

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

    b. any explosives, including but not limited to dynamite, nitroglycerin or any other combustible, blasting caps, fireworks, fire bombs, 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. **Electronic Devices** – Cellular phones, pagers and other electronic devices shall not be used in a manner that causes disruption in the classroom, library or within any college-owned or college-operated facilities.

18. **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.

19. **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 vice president 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 vice president of Student Services may impose disciplinary action deemed appropriate.

Appeals of Disciplinary Action

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

1. You may appeal the decision of the vice president of Student Services to the campus appeals board. The campus appeals board is composed of five voting members and a nonvoting chair as follows:

    a. one vice president or dean selected by the president who shall act as chair, shall conduct the hearing and shall not vote; and

    b. two students selected by the Student Senate; and

    c. three faculty selected by the Faculty Association.

    None of the members of the campus appeals board shall have been involved in the matter that forms the basis of the disciplinary action. If a member of the appeals board is or has been involved in the matter in question, he or she shall recuse himself or herself from the proceedings and the academic vice president will appoint a member to replace such person.

2. You must deliver a written appeal to the office of the academic vice president within seven business days of the date that the vice president 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 vice president's decision will be deemed final. The written appeal shall state the reasons that you believe the decision of the

vice president of Student Services should be modified or reversed.

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

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

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

5. You and the administration shall have the following rights during the hearing:

    a. each party shall have the right to have legal counsel present at each party's own expense;

    b. each party shall have the right to hear or read a full report of the testimony of the other party's witnesses;

    c. each party shall have the right to present witnesses in person or to present their testimony by sworn affidavit;

    d. you and the administration shall each have the right to testify and give reasons supporting your respective positions;

    e. the hearing shall be conducted in an orderly manner;

    f. the appeals board shall render a fair and impartial decision based upon 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 vice president's decision and summarizing the evidence supporting its decision. The appeals board's decision shall be mailed to you and the vice president 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 vice president 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 dean responsible for the area. To appeal, you must file with the appropriate dean, within 10 business days of receipt of the program director's response, a written statement with supporting information on the problem. The dean will send you a written response within five working days.

4. Should you consider the response of the dean an unsatisfactory resolution, you may appeal to the vice president of Instruction. To appeal, you must file with the vice president of Instruction, within 10 business days of the receipt of the dean's response, a written statement with the supporting information on the problem. Similar written statements may be provided by the faculty member. The vice president 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 vice president 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 vice president of Student Services and request a conference. The vice president 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 vice president of Student Services is final. The vice president 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 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 co-curricular activities or when the students' health may be at risk.

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

Student Right to Know

Of the students entering Johnson County Community College as first-time, full-time, degree-seeking students in fall 1998, 14.3 percent graduated, 2.9 percent transferred and 16.7 percent were still enrolled at JCCC in fall 2001.

Current or prospective students interested in obtaining further information should contact the vice president of Student Services, third floor, Student Center.

Annual Security Report
       www.jccc.net/admin/facil/security/crimes.html

Athletic Program Participation Rates
and Financial Support Data
       http://web.jccc.net/sports

The following list is found within this JCCC catalog:

- Annual Notification of Family Educational Rights and Privacy Act

- Financial Assistance program

- Graduation rates/transfer out rates

- General institution information.

Paper copies of this information are available by contacting the vice president of Student Services office.

Continuing Education and Community Services

Continuing Education

   Continuing Education Courses/Special Events

Project Finish: Adult Basic Education

   ABE/GED/ESL Program

Intensive English Program

Center for Business and Technology

Center for Professional Education

Center for Literary Culture

Citizens Forums

CLEAR Program

Community Services Courses

Gallaudet University Regional Center

Carlsen Center

   Vol*Stars, JCCC's Cultural Volunteers

Speakers Bureau

Special Events

Youth Programs

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 Web, Touch-tone telephone, 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 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 Literacy (ESL) classes are available for the beginning, intermediate and advanced student.

Intensive English Program

The Intensive English Program serves non-native English language learners to improve and strengthen academic language proficiency for university or college study. The IEP offers year-round beginning, intermediate and advanced listening and speaking; reading and writing; and grammar classes. IEP classes meet on the campus of JCCC for five hours a week, Monday through Thursday.

For more information, call 913-469-8500, ext. 4386, e-mail ilee@jccc.net or visit our Web site at www.jccc.net/admin/iep.

Center for Business and Technology

The Center for Business and Technology provides professional training in business and office skills, supervision and management, computer applications, and information technology. The courses typically run from a half day to a week in length, and the students are prepared to immediately apply their new skills. For more information, visit our Web site at www.centerforbusiness.org or call us at 913-469-3845.

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

- **Management and Professional Development.** Professional, skill-oriented management and supervisory seminars and workshops are offered both on campus and on site at company locations. These seminars include certificate programs for Team Leader and Master Team Facilitators.

- **Computer Applications.** Individuals are trained in introductory courses, all levels of the MS Office applications, a variety of Web development and design courses, and programming languages. All courses are offered in a one- to five-day format and are scheduled during the day, evening and on weekends.

- **Information Technology.** The center's technology (IT) program offers courses in personal computer hardware, networking, applications development, databases, routers, telecommunications, project management, helpdesk and other related business IT classes.

Additionally, the Center for Business and Technology can provide assessment and consulting services to area businesses. The center has access to an outstanding group of professionals with years of business and technical experience. This gives the center the unique capability to design workforce development programs that fit each business' particular needs. For more information, visit our Web site at www.centerforbusiness.org or call us at 913-469-3845.

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

- **Customized, 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.

- **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.

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

- **WorkKeys.** WorkKeys is a three-stage employability skills-assessment tool designed by ACT Inc. (best known for the ACT college entrance assessment) to assist employers in hiring the right people for their key positions. The three-stage process includes the following:

  - Job Profiling. Working with experienced employees, ACT-authorized job profilers evaluate key skills and levels of competency required for specific jobs in a company's organization.

  - WorkKeys Standardized Assessments. These are then administered to a company's job applicants and/or employees to pinpoint their current skill levels in up to eight critical areas (applied mathematics, applied technology, listening, locating information, observation, reading for information, teamwork and writing).

  - The skill levels demonstrated by each test taker is then compared with the minimum skill levels required for the profiled jobs, enabling the company to immediately evaluate an applicant's qualifications and/or determine the training needs of its current employees.

- **Corporate Language Services.** A full range of language services, to include *Command Spanish*, is available to assist businesses in today's global economy.

- **ACT Center.** Through the online and on-campus ACT Center, JCCC now offers hundreds of computer-based courses from top instruction companies. If you need courses on leadership, technology or English as a second language, you can get them … fast! Courses start whenever you are ready!

Center for Professional Education

The Center for Professional Education offers a broad range of education 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 and insurance relicensure credit.

- **ACT Center**. Online and on-campus computer education programs in quality systems; mechanical maintenance; industrial safety, industrial controls; heating, refrigeration, and air conditioning; electricity/electronics; and basic industrial/technical skills.

- **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.

- **Co-sponsorships**. The center works cooperatively with a variety of associations, institutions and agencies to provide high-quality continuing education programs at JCCC and off-campus sites.

- **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.** 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.

- **Health and Human Services**. Approved continuing education programs for registered nurses, licensed practical nurses, social workers, counselors, psychologists, mental health technicians, dietitians, dental hygienists, dentists, adult care home administrators, physical therapists, occupational therapists, respiratory care practitioners and other health care professionals. Computer-based instruction, self-study modules and independent study via the Internet are also available.

- **Human Resources Management Training**. Specifically designed for managers and staff with experience in general management or human resource management.

- **The Insurance Institute**. Training and professional development seminars and courses to meet the Kansas and Missouri continuing education requirements of licensed property/casualty, life/health and title insurance agents. Educational programs and professional certification courses for Chartered Property and Casualty Underwriters and Insurance Institute of America insurance

designations. Computer-based instruction for continuing education licensure requirements. In addition to continuing education course offerings, the center offers pre-license courses that provide preparation to pass the property/casualty and life/health licensing exam.

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

- **Online Courses**. A wide variety of courses offered for the health care, legal and real estate professionals. Courses can be completed at your convenience in your own home.

- **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.

- **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 take the Kansas real estate salesperson's license examination. Continuing education seminars for licensed real estate agents and brokers in Kansas and Missouri. Computer-based instruction for continuing education requirements as well as independent studies and online/Web-based instruction.

- **Technical Training.** Hands-on technical training for plumbers, electricians, water/wastewater 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 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 913-469-8500, 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 those who seek new learning experiences for their own personal enrichment, not for academic credit. No tests, grades or required homework is involved.

Courses are held at convenient locations throughout Johnson County. Web-based classes are also available through Education to Go, an established online course provider. 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	Intensive English Program
Arts and Crafts	Literature and Writing
Aviation	Money Management
Career Planning	Music
Computers	Personal Development
(home use and SeniorNet)	Photography
Citizens' Forums	Practical Know-how
Dance and Exercise	Sign Language
English as a Second	Special Interests
Language	Special Events
Foreign Language	Sports and Recreation
Health and Lifestyles	Tours and Travel
Home Ownership	Youth Program
House and Garden	Youth Sports Clinics

Also offered are:

- **Career Redirections Outplacement Services.** Career Redirections is an innovative, comprehensive outplacement program provided by JCCC's professional career counselors who are experienced in outplacement service, career development and industry needs. It is designed to meet industry's need for a quality, cost-effective and flexible outplacement service. For more information, contact Phil Wegman at 913-469-4446.

- **Gallaudet University Regional Center.** The Gallaudet University Regional Center was created in 1977 through an institutional partnership between JCCC and Gallaudet University in Washington, D.C. The GURC/JCCC provides information and referral services and facilitates credit and non-credit training related to deaf education for a 15-state Midwest region.

Carlsen Center

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. The Carlsen Center presents the largest mulitdiscipline performing arts series in mid-America and commissions new work from leading artists.

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 percent to 85 percent Johnson County residents.

More than 35 percent of all the events, activities and performances that the Carlsen Center 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 have presented:

- The Kansas City Symphony, including the annual *SummerFare* and *Symphony Sundays* concerts.
- Kansas Regional Ballet holiday performances of *Sleeping Beauty* and *Cinderella*
- Kansas City Youth Symphony
- Miller-Marley Youth Ballet

Approximately 30 percent of all the events, activities and performances that the Carlsen Center division serves in the CC theaters are sponsored by other JCCC departments. These include:

- 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*

- Gallaudet University presentations of *I. King Jordan* and *Winnie the Pooh*, as well as a performance by deaf comedian Kathy Buckley
- Burlington Northern employee-development meetings
- The JCCC Theater 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' concerts
- Center for Business and Technology 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 35 percent of CC activities are sponsored by the Carlsen Center 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
- A comprehensive, sequential Arts Education program serving the greater metropolitan Kansas City area (approximately 16,000 served last season)
- *Cabaret Series*, featuring the American Popular Songbook
- *Dance Series*, featuring ballet and modern dance by international companies
- *Family Series*, events for all ages
- *Theatre Series*, presenting professional touring companies of national renown
- *What Makes It Great? Series* with *Friends of Chamber Music*
- Special event concerts by current dance, music, theater and comedy 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 serve the college while contributing to the cultural enrichment of the community. More than 200 Vol*Stars serve at 200 to 250 events each year.

Speakers Bureau

JCCC's Speakers Bureau provides guest speakers from staff and faculty 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 locations throughout the county each year. Among the many special events the college sponsors or co-sponsors 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 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 Programs

Classes and workshops in art, language, music, academic enhancement and special interests have been developed to stimulate creativity and growth in young people. These classes are offered on campus and online. Summer activities include half-day and full-day classes for high-ability students, sports clinics, online classes, and special-interest activities.

Graduation, Degree and Certificate Programs

Graduation Requirements

Commencement Exercises

Associate's Degrees
 Implementation

Associate of Arts Degree

Transfer Programs
 Individual Transfer Program

 University Transfer Program
  for Undecided Students

 University Transfer Programs
  for Specific Majors

Transfer Information

Career Programs

Associate of Science Degree

Associate of Applied Science Degree

Kansas AVS/TC Articulated
  Associate of Applied Science Degree

Certificate of Completion

Graduation Requirements

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

Johnson County Community College believes that an associate's 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's 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.

Timetable, requirements and process for becoming a JCCC graduation candidate

One semester prior to your graduation:
- Complete an Application for Degree/Certificate of Completion form and turn it in at the Success Center on the second floor of the Student Center or mail to the attention of the Records office at JCCC.

- Deadline for submitting an Application for Degree/Certificate of Completion is:

  June 15 for summer graduation
  October 15 for fall graduation
  February 15 for spring graduation

Requirements for degree/certificate of graduation:
- For an associate's degree, 15 credit hours earned in residence at JCCC is required.
- Advanced standing credit will *not* count toward satisfying this credit hour requirement.
- For certificates, you must complete a minimum of 50 percent of the required coursework at JCCC.
- 2.0 grade point average: graduates must have earned both a 2.0 grade point average at JCCC and have a cumulative 2.0 or better on all completed coursework.
- Prerequisite courses, required before enrollment in college-level courses, will not count toward fulfilling graduation degree/certificate requirements.
- Must be enrolled in classes at JCCC during the semester you anticipate completing degree/certificate requirements and wish to graduate.

Process
1. To be guaranteed consideration for graduation, you must file the Application for Degree/Certificate of Completion form with the Records office by the above deadline dates.

2. When you apply for graduation, the Records office will complete a degree check to ensure that degree requirements will be satisfied. For ultimate timing, your Application for Degree/Certificate of Completion form should be filed at least one semester before you plan to graduate.

3. If you failed to file your Application for Degree/Certificate of Completion form by the published deadline dates but will complete all degree requirements in the current semester, you may file an appeal to graduate in the following semester and request a waiver of current enrollment status by completing a Graduation Appeal and turning it in at the Success Center on the second floor of the Student Center or mail to the attention of the Records office at JCCC.

You may complete the requirements for a degree/certificate at the end of each term or semester. The degree/certificate status will be recorded on your permanent transcript record upon certification of all graduation requirements being completed. Application for Degree/Certificate of Completion form and Graduation Appeal can be picked up in the Success Center on the second floor of the Student Center or found online through links on http://web.jccc.net/academic/studentservices/records.

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 during that academic year, you will be invited to participate in commencement exercises. Diplomas are mailed shortly after degree and/or certificate verifications are completed.

Associate's Degrees

An associate's degree is earned when you successfully complete a minimum of 64 hours of college credit courses in an approved education 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; and

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 collegewide 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's 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 education 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/Theatre

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	192	Intermediate Chinese I..............3
FL	193	Intermediate Chinese II...........3
FL	220	Intermediate German I..............3
FL	221	Intermediate German II...........3
FL	230	Intermediate Spanish I..............3
FL	231	Intermediate Spanish II............3
FL	240	Intermediate French I................3
FL	241	Intermediate French II..............3

C. History

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

D. Humanities

ART	180	Art History: Ancient/Renaissance.................3
ART	182	Art History: Renaissance/Modern..................3
HUM	122	Introduction to Humanities......3
HUM	136	The Human Experience 3
HUM	145	World Humanities I...................3
HUM	146	World Humanities II.................3
HUM	164	Civilisation................................3
MUS	121	Introduction to Music Listening 3
MUS	125	Introduction to Jazz Listening...3
PHOT	140	History of Photography.............3
PHOT	141	Issues of Contemporary Photography..............................3
REL	120	Exploring World Religions........3

E. Philosophy

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

PHIL	176	Philosophy of Religion..............3

III. Social Science/Economics – 6 hours

No more than one course from each of the five areas may count toward the 6 required hours.

A. Anthropology

ANTH	125	Cultural Anthropology..............3
ANTH	126	Physical Anthropology..............3
ANTH	130	World Cultures..........................3
ANTH	210	Peoples of the World 3

B. Economics

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

C. Political Science

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

D. Psychology

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

E. Sociology

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

IV. Science and/or Mathematics – 9 hours

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

A. Life Science

BIOL	122/3	Principles of Biology/Lab........3/1
BIOL	124	Oceanus: The Marine Environment.........3
BIOL	125	General Botany...........................5
BIOL	127	General Zoology........................5
BIOL	130/1	Environmental Science/Lab...3/1
BIOL	140	Human Anatomy.......................4
BIOL	144	Human Anatomy/Physiology....5
BIOL	150	Biology of Organisms................5
BIOL	225	Human Physiology....................4
BIOL	230/1	Microbiology/Lab....................3/2

B. Physical Science

ASTR	120	Fundamentals of Astronomy.....3
ASTR	122	Astronomy.................................4
CHEM	120	Chemistry in Society.................4
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
GEOS 145   World Regional Geography.......3
IDSP 175   Global Resources from Geologic
and Economic Viewpoints.........3
(Nonlab science)
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

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 225   Math as a Decision-making Tool..3
MATH 231   Business and Applied Calculus I.3
MATH 232   Business and Applied Calculus II3
MATH 241   Calculus I..................................5
MATH 242   Calculus II.................................5
MATH 243   Calculus III...............................5
MATH 244   Differential Equations................3

** MATH 173 is not available for credit to students who have completed MATH 171 and/or MATH 172. Students who have credit in MATH 173 will not receive credit for MATH 171 and/or MATH 172.

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 Student Success 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**
ENGL 121	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**
ENGL 122	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.

In general, 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 Success 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
    Theatre
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 University
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 Success Center. You should realize that not all majors are available at all colleges.

Transfer Information

JCCC Counseling and Advising Services 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 Success 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 Success 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.
   Law Enforcement Option

Automotive Technology, A.A.S.

Business Administration, A.A.S.

Business Entrepreneurship, A.A.S.

Business Office Technology, A.A.S.
   Administrative Assistant Office Management Option
   Administrative Assistant with Legal Emphasis
   Administrative Assistant with Medical Emphasis

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.AS.

Emergency Medical Science, A.A.S.

Fashion Merchandising and Design, A.A.S.
   Fashion Merchandising Option
   Fashion Design Option

Fire Services Administration, A.A.

Grounds and Turf Management, A.A.S. *

Health Information Technology, A.A.S. *

Health Occupations

Heating, Ventilation and Air Conditioning
   Technology, A.A.S.
   Commercial Service Technician Option
   Residential Service Technician Option

Horticulture

Hospitality Management, A.A.S.
   Food and Beverage Management
   Hotel/Motel Management

Information Technology, A.A.S.

Interactive Media

Interior Design, A.A.S.
   Interior Design Option
   Interior Merchandising Option
   Interior Entrepreneurship Option

Interpreter Training, A.A.S.

Legal Studies
   Paralegal, A.A.

Marketing and Management, A.A.S.

Metal Fabrication Technology, A.A.S.
Nursing, A.A.S.
Occupational Therapy Assistant, A.A.S. *
Physical Therapist Assistant, A.A.S. *
Power Plant Technology, A.A.S.
Radiologic Technology, A.A.S. *
Railroad Electronics, A.A.S.
Railroad Industrial Technology
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.
   Biotechnology, A.A.S.
   Chemical Specialty, A.S.
Surgical Technology
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 education objectives and needs. The general education distribution requirements for each of these degrees are as follows.

Associate of Science Degree
(available for career programs only)

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

Communications...9 hours
Humanities..6 hours
Social Science and/or Economics.......................6 hours
Science and Mathematics.................................12 hours
Health and/or Physical Education.......................1 hour

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

I.   Communications – 9 hours
   A. ENGL 121   Composition I.............................3
                or
      COM 125   Oral and Written
                 Communications **.................6
* Satisfies both Composition I and Oral
  Communication requirements.
   B. Communications Elective – 3 hours
     (one of the following)
     ENGL 122   Composition II 3

ENGL 123   Technical Writing I...................3
BUS   150   Business Communications.........3
SPD   120   Interpersonal Communications.3
SPD   121   Public Speaking........................3
SPD   125   Personal Communication..........3

II.   Humanities – 6 hours
   Two courses from any of the following categories may count toward the six required hours.
   A. Literature/Theatre
     Note: This course has a prerequisite of ENGL 121.
     ENGL 130   Introduction to Literature.........3
     Note: These courses have a prerequisite of ENGL 122.
     ENGL 230   Introduction to Fiction..............3
     ENGL 231   American Prose.........................3
     ENGL 235   Drama as Literature..................3
     ENGL 241   British Writers..........................3
     ENGL 250   World Masterpieces...................3
     ENGL 254   Masterpieces of the Cinema......3
     ENGL 256   American Poetry.......................3
     THEA 120   Introduction to Theater............3
   B. Foreign Language
     Note: These courses have prerequisites.
     FL   178   Intermediate Russian I..............3
     FL   179   Intermediate Russian II.............3
     FL   190   Intermediate Japanese I.............3
     FL   191   Intermediate Japanese II...........3
     FL   192   Intermediate Chinese I..............3
     FL   193   Intermediate Chinese II...........3
     FL   220   Intermediate German I..............3
     FL   221   Intermediate German II...........3
     FL   230   Intermediate Spanish I..............3
     FL   231   Intermediate Spanish II.............3
     FL   240   Intermediate French I...............3
     FL   241   Intermediate French II.............3
   C. History
     HIST 124   Community Life/Values.............3
     HIST 125   Western Civilization I...............3
     HIST 126   Western Civilization II..............3
     HIST 130   European History from 1750.....3
     HIST 135   Eastern Civilization...................3
     HIST 140   U.S. History to 1877.................3
     HIST 141   U.S. History Since 1877............3
     HIST 151   World History I:
                   The Traditional World..............3
     HIST 152   World History II:
                   The Modern World...................3
     HIST 160   Modern Russian History...........3
     HIST 162   Modern Latin America..............3
   D. Humanities
     ART   180   Art History:
                   Ancient/Renaissance.................3

ART	182	Art History: Renaissance/Modern	3
HUM	122	Introduction to Humanities	3
HUM	136	The Human Experience	3
HUM	145	World Humanities I	3
HUM	146	World Humanities II	3
HUM	164	Civilisation	3
MUS	121	Introduction to Music Listening	3
MUS	125	Introduction to Jazz Listening	3
PHOT	140	History of Photography	3
PHOT	141	Issues of Contemporary Photography	3
REL	120	Exploring World Religions	3

E. Philosophy

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

III. Social Science and/or Economics – 6 hours
Two courses from any of the following categories may count toward the six required hours.

A. Anthropology

ANTH	125	Cultural Anthropology	3
ANTH	126	Physical Anthropology	3
ANTH	130	World Cultures	3
ANTH	210	Peoples of the World	3

B. Economics

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

C. Political Science

POLS	122	Political Science	3
POLS	124	American National Government	3
POLS	126	State and Local Government	3
POLS	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	Introduction to Sociology	3
SOC	125	Social Problems	3
SOC	131	Marriage and the Family	3
SOC	160	Social Power: Motivation and Action	3

IV. Science and Mathematics – 12 hours
Must include at least one course in mathematics and at least one in a lab science.

A. Mathematics

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

Note: MATH 173 is not available for credit to students who have completed MATH 171 and/or MATH 172. Students who have credit in MATH 173 will not receive credit for MATH 171 and/or MATH 172.

B. Science

The laboratory science requirement will be satisfied by any of the following:

1. Life Science

BIOL	122/3	Principles of Biology/Lab	3/1
BIOL	124	Oceanus: The Marine Environment	3
BIOL	125	General Botany	5
BIOL	127	General Zoology	5
BIOL	130/1	Environmental Science/Lab	3/1
BIOL	140	Human Anatomy	4
BIOL	144	Human Anatomy/Physiology	5
BIOL	150	Biology of Organisms	5
BIOL	225	Human Physiology	4
BIOL	230/1	Microbiology/Lab	3/2

2. Physical Science

ASTR	120	Fundamentals of Astronomy	3
ASTR	122	Astronomy	4
CHEM	120	Chemistry in Society	4
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
GEOS	145	World Regional Geography	3
IDSP	175	Global Resources from Geologic and Economic Viewpoints (nonlab science)	3
PHYS	125	Technical Physics I	4
PHYS	126	Technical Physics II	3
PHYS	130	General Physics I	5
PHYS	131	General Physics II	5
PHYS	220	Engineering Physics I	5
PHYS	221	Engineering Physics II	5
PSCI	120	Physical Science	4

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

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

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:

Communications . . . . .3 hours
Humanities . . . . .3 hours
Social Science and/or Economics . . . . .3 hours
Science and/or Mathematics . . . . .3 hours
Health and/or Physical Education . . . . .1 hour
Specific courses that meet the associate of applied science
degree requirements are:

I.Communications – 3 hours
      A. ENGL 121   Composition I............................3
                     or
         COM   125   Oral and Written
                     Communications *....................6
* Satisfies both Composition I and Oral
  Communication requirements.
      B. Communications Elective – 3 hours
         (one of the following)
         ENGL 122   Composition II 3
         ENGL 123   Technical Writing I....................3
         BUS   150   Business Communications.........3
         SPD   120   Interpersonal Communications.3
         SPD   121   Public Speaking........................3
         SPD   125   Personal Communication..........3
 II.   Humanities – 3 hours
       One course from any of the following categories
       may count toward the three required hours............
       A. Literature/Theater
          Note: This course has a prerequisite of ENGL 121.
          ENGL 130   Introduction to Literature.........3
          Note: These courses have a prerequisite of
          ENGL 122.
          ENGL 230   Introduction to Fiction..............3
          ENGL 231   American Prose.........................3
          ENGL 235   Drama as Literature...................3
          ENGL 241   British Writers...........................3
          ENGL 250   World Masterpieces...................3

ENGL 254   Masterpieces of the Cinema.....3
ENGL 256   American Poetry.......................3
THEA 120   Introduction to Theater............3
B. Foreign Language
   Note: These courses have prerequisites.
   FL   178   Intermediate Russian I..............3
   FL   179   Intermediate Russian II.............3
   FL   190   Intermediate Japanese I.............3
   FL   191   Intermediate Japanese II............3
   FL   192   Intermediate Chinese I..............3
   FL   193   Intermediate Chinese II...........3
   FL   220   Intermediate German I..............3
   FL   221   Intermediate German II...........3
   FL   230   Intermediate Spanish I..............3
   FL   231   Intermediate Spanish II............3
   FL   240   Intermediate French I...............3
   FL   241   Intermediate French II.............3
C. History
   HIST 124   Community Life/Values 3
   HIST 125   Western Civilization I...............3
   HIST 126   Western Civilization II..............3
   HIST 130   European History from 1750.....3
   HIST 135   Eastern Civilization...................3
   HIST 140   U.S. History to 1877.................3
   HIST 141   U.S. History Since 1877............3
   HIST 151   World History I:
              The Traditional World..............3
   HIST 152   World History II:
              The Modern World...................3
   HIST 160   Modern Russian History............3
   HIST 162   Modern Latin America..............3
D. Humanities
   ART   180   Art History: Ancient/Renaissance .3
   ART   182   Art History: ....
              Renaissance/Modern..................3
   HUM   122   Introduction to Humanities......3
   HUM   136   The Human Experience 3
   HUM   145   World Humanities I...................3
   HUM   146   World Humanities II 3
   HUM   164   Civilisation...............................3
   MUS   121   Introduction to Music ....
              Listening....................................3
   MUS   125   Introduction to Jazz Listening...3
   PHOT 140   History of Photography.............3
   PHOT 141   Issues of Contemporary
              Photography...............................3
   REL   120   Exploring World Religions........3
E. Philosophy
   PHIL 121   Introduction to Philosophy.......3
   PHIL 124   Logic and Critical Thinking.....3
   PHIL 143   Ethics...3
   PHIL 154   History of Ancient Philosophy .3
   PHIL 176   Philosophy of Religion.............3

III. Social Science and/or Economics – 3 hours
One course from any of the following categories may count toward the three required hours.

A. Anthropology
ANTH 125 Cultural Anthropology..............3
ANTH 126 Physical Anthropology..............3
ANTH 130 World Cultures..........................3
ANTH 210 Peoples of the World 3

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

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

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

E. Sociology
SOC 122 Introduction to 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.

MATH 173 is not available for credit to students who have completed MATH 171 and/or MATH 172. Students who have credit in MATH 173 will not receive credit for MATH 171 and/or MATH 172.

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 120 Fundamentals of Astronomy.....3
ASTR 122 Astronomy..................................4
CHEM 120 Chemistry in Society.................4
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 135 World Regional Geography.......3
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

Kansas AVS/TC Articulated Associate of Applied Science Degree

This degree is designed to facilitate student transfer of technical education programs under the provisions outlined in the Transfer Agreement and Articulation Guide for Kansas Community Colleges, Area Vocational Technical Schools and Technical Colleges for the Associate in Applied Science, dated September 1999. Specifically, this degree may be earned by a student wishing to transfer a completed eligible technical program (which JCCC does NOT offer *) from a Kansas area vocational technical or Kansas technical college. At least 12 credit hours must be earned at JCCC before the technical hours will be recorded on the student's transcript. No more than 43 credit hours shall be transferred in a technical area based on a minimum of 1,080-clock-hour completed program. Students must also meet JCCC admissions, residency, and graduation requirements. Interested students should contact the

JCCC Student Success Center for further information prior to transfer and enrollment.

* The provisions also outline the process for transfer of individual technical course competencies if a parallel program exists at JCCC. Interested students should contact the JCCC Student Success Center.

**Kansas AVS/TC Articulated
Associate of Applied Science Degree**

Sequence of Courses	CR
Transferred AVTS/TC Program.....................................43	
ENGL 121 Composition I.. 3	
ENGL 123 Technical Writing I................................ 3	
Humanities Elective 3	
Social Science and/or Economics Elective 3	
MATH 133 Technical Math I..4	
PHYS 125 Technical Physics I 4	
Health and/or Physical Education Elective ...1	
TOTAL PROGRAM CREDIT HOURS.............................64	

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 both a cumulative grade point average of 2.0 or better and a JCCC GPA 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 vice president 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 Success Center by the following dates:

• Feb. 15 for spring graduation
• June 15 for summer graduation
• Oct. 15 for fall graduation

Requests for deadline extensions may be made to the registrar 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 during the same academic year 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:

Automotive Technology
   Automotive Technology Vocational Certificate
Business Administration
   Supervision Management Vocational Certificate
Business Entrepreneurship
   Business Entrepreneurship Vocational Certificate
   The Business Plan Vocational Certificate
Business Office Technology
   Office Careers Vocational Certificate
   Administrative Support Specialist Vocational Certificate
   Medical Office Assistant Vocational Certificate
   Medical Transcription Vocational Certificate
   Virtual Home Office Vocational Certificate
   Owning/Managing a Virtual Home Office Vocational Certificate
   Virtual Medical Office Vocational Certificate
Civil Engineering Technology
   Construction Management Vocational Certificate
   Engineered Plumbing Systems Vocational Certificate
Communication Design
Computer Information Systems
   Interactive Media, Advanced Certificate
   Database Vocational Certificate
   Mainframe Programmer/Analyst Vocational Certificate
   Microcomputer Programmer/Analyst Vocational Certificate
   Desktop Publishing Applications Specialist Vocational Certificate
   Personal Computer Applications Specialist Certificate
   Web Applications Vocational Certificate
   Web Developer Advanced Vocational Certificate
Cosmetology
   Cosmetology Vocational Certificate
   Esthetics Vocational Certificate
   Nail Technology Vocational Certificate
Dental Assisting Vocational Certificate *
Drafting Technology
   Computer-aided Drafting (CAD) Vocational Certificate
   CAD Network Administrator Vocational Certificate
Early Childhood Education
   Early Childhood Postsecondary Certificate
Electrical Technology
   Electrical Technology Vocational Certificate
   Industrial Maintenance Vocational Certificate
Electronics Technology
   Industrial Controls Vocational Certificate
Emergency Medical
   MICT Vocational Certificate
Fashion Merchandising and Design
   Visual Merchandising Vocational Certificate
Health Occupations
   Cardiopulmonary Resuscitation
   Certified Nurse Aide
   Certified Medication Aide
   Home Health Aide
   Certified Medication Aide Update
   I.V. Therapy

Rehabilitative Aide
Heating, Ventilation and Air Conditioning
    Commercial Service Technician
        Postsecondary Certificate
    Residential Service Technician Postsecondary Certificate
    Installation Technician Vocational Certificate
Horticulture Certificate
Information Technology
    Networking Administration: Windows
        Vocational Certificate
    Networking Administration: Unix
        Vocational Certificate
    Network Connectivity Vocational Certificate
Interior Design
    Interior Products Sales Representative
        Vocational Certificate
    Interior Design Retail Sales/Manufacturers
        Representative Vocational Certificate
Interpreter Training
    Sign Language Communication
    Postsecondary Certificate
Legal Studies (for legal nurse consultant and
    paralegal students)
    Legal Nurse Consultant Postsecondary Certificate
    Paralegal Postsecondary Certificate
Marketing and Management
    Retail Sales Representative Vocational Certificate
    Sales and Customer Relations Vocational Certificate
    Teleservice Representative Vocational Certificate
    TeleTrac Vocational Certificate
Metal Fabrication Vocational Certificate
Nursing – Practical Nursing
    Practical Nursing Vocational Certificate
Power Plant Technology Vocational 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
Science Technology
    Biotechnology Vocational Certificate
Surgical Technology Vocational Certificate *
* Cooperative program

Career and Certificate Programs

Accounting

Administration of Justice/Law Enforcement

Automotive Technology

Business Administration

Business Entrepreneurship

Business Office Technology

Chef Apprenticeship

Civil Engineering Technology

Communication Design

Computer Information Systems
   Interactive Media Advanced
   Mainframe Programmer/Analyst
   Microcomputer Programmer/Analyst
   Web Applications
   Web Developer Advanced
   Database
   Desktop Publishing Applications
   Personal Computer Applications

Construction Management

Cosmetology

Dental Assisting

Dental Hygiene

Drafting Technology

Early Childhood Education

Electrical Technology

   Electrical Technology Option
   Industrial Maintenance Option

Electronics Technology

Emergency Medical Science

Fashion Merchandising and Design

Fire Services Administration

Grounds and Turf Management

Health Information Technology

Health Occupations

Heating, Ventilation and Air Conditioning
   Technology

Horticulture

Hospitality Management
   Food and Beverage Management
   Hotel/Motel Management

Information Technology

Interior Design

Interpreter Training

Legal Studies

Marketing and Management

Metal Fabrication

Nursing
   Associate's Degree – Registered Nurse
   Practical Nursing

Occupational Therapy Assistant

Power Plant Technology

Physical Therapist Assistant

Radiologic Technology

Railroad Electronics

Railroad Industrial Technology

Railroad Operations

Respiratory Care

Science Technology
  Biotechnology Option

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 Student Success Center. You are encouraged to see a counselor before enrolling.

Accounting

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

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

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

Associate of Applied Science Degree

First Semester   **CR**

ENGL 121	Composition I	3
	Social Science and/or Economics Elective	3
ACCT 121	Accounting I	3
MATH 120	Business Math	3
	or	
MATH 171	College Algebra (or higher)	3
BOT 101	Computerized Keyboarding	1
	Business Electives	3
	TOTAL CREDIT HOURS	16

Second Semester

ACCT 122	Accounting II	3
BUS 150	Business Communication	3
BUS 261	Business Law I	3
	Business Electives	6
BOT 115	Electronic Calculators	1
	TOTAL CREDIT HOURS	16

Third Semester

ACCT 222	Managerial Accounting *	3
	or	
ACCT 231	Intermediate Accounting I *	3
ACCT 278	Accounting Internship I	1
ACCT 140	Computerized Accounting Problems	3
BUS 225	Human Relations	3
PHIL 138	Business Ethics	1
HIST 141	U.S. History Since 1877	3

	Business Electives	2
	TOTAL CREDIT HOURS	16

Fourth Semester

ACCT 115	Accounting for Nonprofit Organizations *	3
	or	
ACCT 221	Cost Accounting *	3
	or	
ACCT 232	Intermediate Accounting II *	3
ACCT 131	Federal Income Taxes I	3
ACCT 135	Computerized Accounting Applications	3
ACCT 285	Accounting Capstone	3
	Business Electives	3
	Health and/or Physical Education Elective	1
	TOTAL CREDIT HOURS	16
	TOTAL PROGRAM CREDIT HOURS	**64**

Note: Business electives are any courses with the BUS, BUSE or ECON prefix.

* The student is required to complete two of the five following accounting courses: ACCT 115, 221, 222, 231 or 232.

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.

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

Associate of Arts Degree

First Semester   **CR**

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

Second Semester

SPD	120	Interpersonal Communication.............3
ENGL	122	Composition II.....................................3
PHIL	143	Ethics 3
ADMJ	140	Constitutional Case Law ***...............3
ADMJ	230	Criminal Behavior...............................3
ADMJ		Program Electives...............................3
		TOTAL CREDIT HOURS...............18

Third Semester

FL	130	Elementary Spanish I...........................5
ADMJ	120	Writing Across Disciplines 1
ADMJ		Program Electives...............................3
		Science and/or Math Elective.............6
		TOTAL CREDIT HOURS................15

Fourth Semester

		Humanities Course (cannot be a philosophy course)..........3
		Social Science Course..........................3
ADMJ	136	Police and the Public...........................3
		Science and/or Math Elective **........3
		Health and/or Physical Education Elective...1
ADMJ		Program Electives...............................3
		TOTAL CREDIT HOURS................16
		TOTAL PROGRAM........................... CREDIT HOURS..............................64

Required Program Electives (9 hours – any three courses)

ADMJ	130	Crime Prevention.................................3
ADMJ	133	Juvenile Delinquency...........................3
ADMJ	141	Criminal Law.......................................3
ADMJ	145	Fundamentals of Private Security........3
ADMJ	146	Retail Security.....................................3
ADMJ	148	Family Violence and Sexual Abuse.....3
ADMJ	154	Fundamentals of Criminal Investigation......................................3
ADMJ	170	Introduction to Substance Abuse........3
ADMJ	221	Introduction to Criminalistics.............3
ADMJ	281	Readings in Police Science..................3
ADMJ	285	Administration of Justice Internship...3

* You must take two courses from the following list, but not more than one course from each group may count toward the required 6 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 9 hours in math and science. See associate of arts general education requirements, page 68, 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.

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

First Semester   **CR**

AUTO	163	Automotive Steering and Suspension .3
AUTO	234	Automotive Electrical Systems............4
INDT	125	Industrial Safety..................................3
MATH	120	Business Math......................................3
ENGL	121	Composition I 3
		TOTAL CREDIT HOURS................16

Second Semester

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
		TOTAL CREDIT HOURS................16

Third Semester

AUTO	250	Automatic Transmissions and Transaxles...4
AUTO	254	Automotive Engine Performance.........5
MFAB	127	Welding Processes................................2
		Humanities Elective.............................3
		Social Science and/or Economics Elective..............................3
		TOTAL CREDIT HOURS................17

Fourth Semester

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
CIS	124	Introduction to Computing Concepts and Applications..................................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
INDT	155	Workplace Skills 1

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...................................3
INDT	155	Workplace Skills 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	127	Welding Processes................................2
		TOTAL CREDIT HOURS................34

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
CIS	124	Introduction to Computing Concepts and Applications..................................3 and
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
CIS	134	Programming Fundamentals.................4
		TOTAL CREDIT HOURS................16

Second Semester

ACCT	121	Accounting I	3
BUS	141	Principles of Management	3
		or	
BUS	145	Small Business Management	3
BUS	150	Business Communications	3
ECON	230	Economics I	3
HIST	141	U.S. History Since 1877	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16

Third Semester

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

Fourth Semester

ACCT	222	Managerial Accounting	3
BUS	123	Personal Finance	3
		or	
BUS	215	Savings and Investments	3
		or	
BUS	250	Introduction to Corporate Finance	3
BUS	263	Business Law II	3
BUS	243	Human Resource Management	3
		or	
BUS	235	Introduction to International Business	3
BIOL	130	Environmental Science	3
		or	
IDSP	175	Global Resources from Geologic and Economic Viewpoints	3
		Elective	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

Supervision Management Vocational Certificate

The supervision management certificate is a 25-credit-hour program designed for students who desire to be or have been designated as managers. The certificate meets the basic core competencies of being a manager or a supervisor.

BUS	121	Introduction to Business	3
BUS	140	Principles of Supervision	3
BUS	141	Principles of Management	3
BUS	150	Business Communication *	3
BUS	230	Marketing*	3

MKT	202	Consumer Behavior	3
BUS	120	Management Attitudes and Motivation	3
		or	
BUS	225	Human Relations	3
MKT	234	Services Marketing	3
MKT	284	Marketing and Management Internship I	1
		TOTAL PROGRAM CREDIT HOURS	**25**

* Courses with prerequisites/corequisites

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, legal issues for small business, planning advertising and sales promotions, marketing a product or service, developing an accounting system and financial management for the entrepreneurial company.

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 HOURS	16

Second Semester

BUS	145	Small Business Management	3
ACCT	111	Small Business Accounting	3
		or	
ACCT	121	Accounting I	3
ECON	130	Basic Economics Issues	3
		or	
ECON	231	Economics II	3
		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
CIS	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	23	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. Course work includes evaluating a business idea, preparing a business plan, financial management, marketing research, marketing a product or service and developing an accounting system.

First Semester   CR

ACCT	111	Small Business Accounting	3
		or	
ACCT	121	Accounting I	3
BUSE	140	FastTrac Feasibility Plan	2
BUSE	180	Seminar: Opportunity Analysis	2
BUS	230	Marketing	3
CIS	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	131	Financial Management/Small Business	2
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	16
		TOTAL PROGRAM CREDIT HOURS	**32**

The Business Plan Certificate

The business plan certificate program focuses on evaluating an idea for a business and concludes with writing a business plan to start and/or grow a business.

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

Business Office Technology

Technological innovations are revolutionizing the office. Office professionals contribute to the efficient management of business offices worldwide and play a pivotal role in a knowledge-based economy. Understanding and using new procedures and technology are requirements for job placement and advancement.

Essential skills and knowledge include computer literacy, word processing, desktop publishing, databases, spread-sheets, 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 business office technology program offers a degree for administrative assistants or executive assistants, as well as other degree options titled administrative assistant with legal emphasis and administrative assistant with medical emphasis. Vocational certificate options are office careers, administrative support specialist, medical office assistant, medical Transcription, virtual home office, owning/managing a virtual home office and virtual medical office.

Prerequisite

Prior to admission to the business office technology vocational certificate programs or associate of applied science degree, you must have completed BOT 105 Keyboarding/Formatting I or equivalent.

Associate of Applied Science Degree Administrative Assistant

The program prepares students for administrative professional positions as supervisors and managers in 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 students to function in the business office by using a combination of technical and academic training.

First Semester			**CR**
MATH	120	Business Math	3
ENGL	121	Composition I	3
BOT	110	Skillbuilding I *	1
BOT	155	Word Processing Applications I *	2
BOT	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	17

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
BOT	125	Document Formatting *	1
BOT	150	Records Management	3
CPCA	138	Windows for Microcomputers *	1
		TOTAL CREDIT HOURS	15

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
BOT	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
BOT	275	Office Internship I *	1
BUS	243	Human Resource Management	3
BOT	265	Computerized Office Applications *	3
BOT	260	Desktop Publishing for the Office *	3
BOT		Electives	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	**65**

* Courses with prerequisites/corequisites

Associate of Applied Science Degree
Administrative Assistant with Medical Emphasis

The administrative assistant with medical emphasis degree program prepares students to pursue an administrative career in the medical profession. The program combines training in business office and computer skills with specialized coursework unique to the medical profession. Both beginning students and employed medical personnel will find this program invaluable for careers in a medical office environment.

First Semester   CR
AAC	130	Medical Terminology............................3
ENGL	121	Composition I 3
BOT	155	Word Processing Applications I *.......2
BOT	130	Office Systems Concepts......................3
CPCA	138	Windows for Microcomputers *...........1
CPCA	118	Groupware *...1
CPCA	114	Databases on Microcomputers I *........1
		Health and/or Physical Education Elective..1
		BOT Elective.......................................1
		TOTAL CREDIT HOURS................16

Second Semester
BOT	110	Skillbuilding I *...................................1
BOT	170	Medical Coding and Billing *..............3
BOT	150	Records Management...........................3
BOT	125	Document Formatting *........................1
MATH	120	Business Math......................................3
BUS	225	Human Relations..................................3
BOT	115	Electronic Calculators.........................1
		BOT 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
BOT	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
BOT	165	Medical Transcription *.......................3
BOT	265	Computerized Office Applications *...3
BOT	275	Office Internship I *............................1
BUS	140	Principles of Supervision.....................3
		or
BUS	141	Principles of Management...................3

		BOT Electives......................................3
		TOTAL CREDIT HOURS................16

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

* Courses with prerequisites/corequisites

Associate of Applied Science Degree
Administrative Assistant with Legal Emphasis

This administrative assistant with legal emphasis degree program prepares students for administrative duties in the law office and other legal settings. The program combines training in the current office and technical skills with specialized coursework unique to the legal profession, including exposure to legal practices, preparation and practical application of documents and terminology used in the legal office.

First Semester   CR
BUS	122	Introduction to Law.............................3
BOT	155	Word Processing Applications I * 2
BOT	130	Office Systems Concepts......................3
ENGL	121	Composition I 3
CPCA	138	Windows for Microcomputers..............1
BOT	115	Electronic Calculators.........................1
CPCA	114	Databases on Microcomputers I *........1
		Health and/or Physical Education Elective..1
		BOT Elective.......................................1
		TOTAL CREDIT HOURS................16

Second Semester
BOT	110	Skillbuilding I *...................................1
BOT	150	Records Management...........................3
MATH	120	Business Math......................................3
ACCT	111	Small Business Accounting..................3
		or
ACCT	121	Accounting I..3
BOT	125	Document Formatting *........................1
BOT	160	Legal Transcription *...........................3
CPCA	118	Groupware..1
		BOT Elective.......................................1
		TOTAL CREDIT HOURS................16

Third Semester
LAW	223	Computer Applications in the Law Office 3
BUS	150	Business Communications....................3
BUS	225	Human Relations..................................3
BOT	255	Word Processing Applications II *......2
CPCA	141	Internet I *...1
CPCA	110	Spreadsheets on Microcomputers I *...1
		BOT Electives......................................3
		TOTAL CREDIT HOURS................16

Fourth Semester

ECON	130	Basic Economic Issues	3
		or	
ECON	230	Economics I	3
BOT	275	Office Internship I *	1
BOT	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**

* Courses with prerequisites/corequisites

Office Careers Certificate

At the completion of this 13-credit-hour certificate, students will be able to 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.

BOT	102	Business English	1
BOT	105	Keyboarding/Formatting I	3
BOT	110	Skillbuilding I *	1
BOT	125	Document Formatting *	1
BOT	130	Office Systems Concepts	3
BOT	155	Word Processing Applications I *	2
BOT	115	Electronic Calculators	1
BOT	120	Machine Transcription *	1
		TOTAL PROGRAM CREDIT HOURS	**13**

* Courses with prerequisites/corequisites

Administrative Support Specialist Certificate Program

This certificate program prepares students for executive and/or administrative assistant duties in the office. The program provides training in the latest technical and software skills.

BOT	110	Skillbuilding I *	1
BOT	130	Office Systems Concepts	3
BOT	125	Document Formatting *	1
CPCA	110	Spreadsheets on Microcomputers I *	1
CPCA	114	Databases on Microcomputers I *	1
CPCA	138	Windows for Microcomputers	1
BUS	225	Human Relations	3
BOT	155	Word Processing Applications I *	2
BOT	115	Electronic Calculators	1
BOT	120	Machine Transcription *	1
BOT	150	Records Management	3
CPCA	118	Groupware *	1
CPCA	141	Internet 1 *	1
BOT	255	Word Processing Applications II *	2

BOT	265	Computerized Office Applications *	3
BOT	260	Desktop Publishing for the Office *	3
BOT	275	Office Internship I *	1
		BOT Electives	2
		TOTAL PROGRAM CREDIT HOURS	**31**

* Courses with prerequisites/corequisites

Medical Office Assistant Certificate

This certificate program prepares students for work in doctors' offices and hospital offices. The curriculum provides training for students in entry-level positions as well as for those who are upgrading existing skills.

Required Courses

ACC	130	Medical Terminology	3
BOT	102	Business English	1
BOT	110	Skillbuilding I *	1
BOT	125	Document Formatting *	1
BOT	155	Word Processing Application I *	2
BOT	165	Medical Transcription *	3
BOT	170	Medical Billing and Coding *	3
		TOTAL PROGRAM CREDIT HOURS	**14**

* Courses with prerequisites/corequisites

Medical Transcription Certificate

The certificate program prepares the student for entry-level employment as a medical transcriptionist by providing the basic knowledge and skills required to transcribe medical dictation with accuracy and clarity, meet timelines, and apply the principles of professional and ethical conduct.

BOT	122	Medical Keyboarding *	1
BOT	130	Office Systems Concepts	3
BOT	155	Word Processing Applications I *	2
BOT	255	Word Processing Applications II *	2
BOT	102	Business English	1
LC	130	Medical Terminology	3
BOT	165	Medical Transcription *	3
BOT	270	Advanced Medical Transcription *	3
BOT	170	Medical Coding and Billing *	3
BOT	220	Pharmacology Terminology *	2
BIOL	140	Human Anatomy	4
BOT	275	Office Internship I *	1
		TOTAL PROGRAM CREDIT HOURS	**28**

* Courses with prerequisites/corequisites

Virtual Home Office Certificate

The certificate is designed for students who want to conduct all or part of their job duties from a home office.

First Semester

CPCA	105	Introduction to Personal Computing: Win	1

BOT	130	Office Systems Concepts......................3
BOT	102	Business English...................................1
BOT	155	Word Processing Applications I * 2
CPCA	141	Internet I...1
ACCT	111	Small Business Accounting..................3
CPCA	110	Spreadsheets on Microcomputers I: Excel *..1

Second Semester

CPCA	151	Internet II *..1
BOT	275	Office Internship I *.............................1
BOT	255	Word Processing Applications II *......2
CPCA	114	Databases on Microcomputers I: Access *..1
		TOTAL PROGRAM CREDIT HOURS.........................17

* Courses with prerequisites/corequisites

Owning/Managing a Virtual Home Office Certificate

The certificate program is designed for students who want to own and/or manage a home office. This includes training in entrepreneurship, business planning, marketing and managing as well as Web page creation and desktop publishing skills.

Prerequisite: Completion of Virtual Home Office Certificate (first and second semester courses) as well as BOT 105

BUSE	140	FastTrac Feasibility Plan.......................2
BUSE	180	Entrepreneurship Seminar: Opportunity Analysis...........................2
BUS	230	Marketing...3
BUS	145	Small Business Management................3
CPCA	161	Introduction to Web Pages *...............1
BOT	260	Desktop Publishing for the Office *....3
		TOTAL PROGRAM CREDIT HOURS.........................14

* Courses with prerequisites/corequisites

Virtual Medical Office Certificate

This certificate program is designed for students who want to work in the medical field but conduct all or part of their job duties from a home office.

Prerequisite: Completion of Virtual Home Office Certificate

BOT	165	Medical Transcription *........................3
LC	130	Medical Terminology...........................3
BOT	170	Medical Coding and Billing *...............3
BIOL	140	Human Anatomy..................................4
BOT	270	Advanced Medical Transcription *.....3
		TOTAL PROGRAM CREDIT HOURS........................ 16

BOT Electives

| BOT | 102 | Business English...................................1 |

BOT	118	Skillbuilding II *...................................1
BOT	175	Conflict in the Workplace...................1
BOT	180	Business Spreadsheet Applications *...1
BOT	185	Business Database Applications *........1
BOT	205	Professional Image Development.........1
BOT	210	Working in Teams.................................1
BOT	280	Office Internship II *............................1

* Courses with prerequisites/corequisites

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
HMGT123	Basic Food Preparation 3
MATH 120	Business Math or higher.......................3
CPCA 105	Introduction to Personal Computing: Win...................................1
	or
CPCA 106	Introduction to Personal Computing: Mac 1
HMGT281	Culinary Practicum I.............................2
	TOTAL CREDIT HOURS................12

Second Semester	
HMGT273	Seminar in Hospitality Management: Accounting...3
HMGT230	Intermediate Food Preparation............3
HMEC 151	Nutrition and Meal Planning..............3
HMGT282	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

HMGT130		Hospitality Law....................................3
HMGT271		Seminar in Hospitality Management: Purchasing..3
HMGT145		Food Production Specialties 3
HMGT285		Culinary Practicum III.........................2
		TOTAL CREDIT HOURS...............11

Fourth Semester

HMGT226		Garde-manger.......................................3
HMGT223		Fundamentals of Baking.......................3
HMGT277		Seminar in Hospitality Management: Menu Planning 3
HMGT286		Culinary Practicum IV.........................2
		TOTAL CREDIT HOURS...............11

Fifth Semester

HMGT231		Advanced Food Preparation.................4
HMGT279		Beverage Control 3
PSYC	121	Applied Psychology..............................3
		or
PSYC	130	Introduction to Psychology..................3
HMGT287		Culinary Practicum V...........................2
		TOTAL CREDIT HOURS...............12

Sixth Semester

HMGT128		Supervisory Management......................3
HMGT228		Advanced Hospitality Management....3
HMGT288		Culinary Practicum VI.........................2
		Humanities Elective.............................3
		TOTAL CREDIT HOURS................11
		TOTAL PROGRAM CREDIT HOURS.........................74

Civil Engineering Technology

Civil engineering technicians use theory and practical application in planning, designing, construction, inspecting and maintaining civil engineering projects. These projects include roadways, buildings, sanitary sewers, treatment plants, power distribution, bridges and land development.

JCCC's civil engineering technology program offers a broad base of instruction in mathematics, engineering design, drawing interpretation, computer-aided drafting, construction methods and communication skills. The program will qualify graduates for a variety of entry-level position in design firms, construction companies or public agencies. Successful completion of 66 hours from the civil engineering technology curriculum will lead to an associate of applied science degree.

Associate of Applied Science Degree

First Semester

DRAF	129	Interpreting Architectural Drawings...2
ENGR	131	Engineering Graphics...........................4
MATH	133	Technical Mathematics I.....................4
		or
MATH	171	College Algebra....................................3
		and
MATH	172	Trigonometry.......................................3
		or
MATH	173	Precalculus...5
CET	125	Construction Specifications.................2
CET	105	Construction Methods.........................3
		Health/Physical Education Elective.....1
		TOTAL CREDIT HOURS................18

Second Semester

CET	129	Construction Management...................3
DRAF	225	Civil Drafting......................................3
ENGL	121	Composition I 3
PHYS	125	Technical Physics.................................4
		or
PHYS	130	General Physics I..................................5
		or
PHYS	220	Engineering Physics I...........................5
MATH	134	Technical Mathematics II....................5
		or
MATH	181	Statistics..3
		or
MATH	225	Math as a Decision-making Tool.........3
		or
MATH	241	Calculus I...5
		TOTAL CREDIT HOURS..........16-19

Third Semester

CET	127	Construction Estimating......................3
CET	211	Technical Statics and Design...............3
ENGR	180	Engineering Land Surveying................3
		Technical Elective from list.................3
ENGL	123	Technical Writing I..............................3
		TOTAL CREDIT HOURS................15

Fourth Semester

CET	140	Civil Engineering Materials.................3
CET	270	Fluid Mechanics...................................3
DRAF	252	Structural Drafting..............................3
		Humanities Elective.............................3
		Social Science/Economics Elective.....3
		Technical Elective from list.................3
		TOTAL CREDIT HOURS................18
		TOTAL PROGRAM CREDIT HOURS.........................65

Approved Technical Electives

BIOL	130/1	Environmental Science/Lab	3/1
CET	120	Engineered Plumbing Systems I	3
CET	122	Engineered Plumbing Systems II	3
CPCA	105	Introduction to Personal Computing	1
CPCA	108	Word Processing on Microcomputers I	1
CPCA	110	Spreadsheets on Microcomputers I	1
CPCA	114	Databases on Microcomputers I	1
CPCA	121	Introduction to Project Management	1
CPCA	128	Personal Computer Applications	3
CPCA	138	Windows for Microcomputers	1
DRAF	124	Technical Drafting	4
DRAF	140	Topics in CAD I	2
DRAF	230	Intermediate CAD	3
DRAF	231	Computer-Aided Drafting 3-D	3
DRAF	242	Topics in CAD II	2
GEOS	130	General Geology	5
GEOS	140/1	Physical Geography/Lab	3/2
HVAC	155	Workplace Skills	1
INDT	125	Industrial Safety	3

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

Second Semester			
CET	125	Construction Specifications	2
CET	127	Construction Estimating	3
CET	129	Construction Management	3
		Management Electives	4
		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
CPCA	108	Word Processing on Microcomputers I	1
CPCA	110	Spreadsheets on Microcomputers I	1
CPCA	114	Databases on Microcomputers I	1
CPCA	121	Introduction to Project Management	1
CPCA	128	Personal Computer Applications	3
CPCA	138	Windows for Microcomputers	1

Engineered Plumbing Systems Vocational Certificate

This certificate is designed to address the needs of engineers and technicians in the plumbing design industry. Successful completion of this certificate will help the student prepare for the Certified in Plumbing Engineering (CIPE) examination.

First Semester			
CET	120	Engineered Plumbing Systems I	3

Second Semester			
CET	122	Engineered Plumbing Systems II	3
CET	270	Fluid Mechanics	3
		TOTAL PROGRAM CREDIT HOURS	**9**

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)

CIM	135	Electronic Photography/Digital Video	3
		or	
PHOT	123	Studio 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	Advanced 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 the student 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	Studio 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 Information Systems

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

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

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

The associate of applied science degree is awarded for successful completion of 68 or 69 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:

CIS   134   Programming Fundamentals 4

Required Courses

First Semester

CS	200	Concepts of Programming Algorithms Using C++.........................4
		or
CS	205	Concepts of Programming Algorithms Using Java 4
CIM	133	Screen Design.......................................3
ACCT	121	Accounting I..3
ENGL	121	Composition I 3
MATH	171	College Algebra....................................3
		or
		Any Precalculus/Calculus Course.......3
		TOTAL CREDIT HOURS.................16

Second Semester

		Level One Programming Language Option..4
CS	210	Discrete Structures I.............................3
CIS	162	Database Programming.........................4
CIS	242	System Design and Analysis................3
		or
CIS	243	Object-oriented Analysis and Design..4
SPD	125	Personal Communication 3
		or
ENGL	123	Technical Writing................................3
		TOTAL CREDIT HOURS..........17-18

Third Semester

		Level Two Programming Language Option..4
CIS	258	Operating Systems 3
		or
CIS	204	Unix OS and Perl.................................3
		IS Elective...4
		Humanities/Art Elective......................3
		Social Science and/or Economic Elective..3
		Health and/or Physical Education Elective..1
		TOTAL CREDIT HOURS................18

Fourth Semester

		Level Three Programming Language Option..4
CIS	264	Application Development and Programming...4
CIS	260	Database Management..........................4
CPCA	121	Introduction to Project Management..1
		IS Elective...4
		TOTAL CREDIT HOURS.................17
		TOTAL PROGRAM CREDIT HOURS..........................68-69

Each student should select one option area from the following list. All three levels of programming language must be from the same option area.

Level One Programming Language Options:

CC++

CIS	235	Introduction to Object-oriented Programming Using C++.....................4
		or
CS	250	Basic Data Structures Using C++........4

COBOL

| CIS | 148 | Cobol I...4 |
| CIS | 140 | Editor for COBOL...............................1 |

JAVA

| CS | 255 | Basic Data Structures Using Java.........4 |

VISUAL BASIC

| CIS | 138 | Visual Basic for Windows.....................4 |

Level Two Programming Language Options:

CC++

CIS	235	Object-oriented Programming Using C++...4
		or
CS	250	Basic Data Structures Using C++........4

COBOL

| CIS | 248 | COBOL II ....4 |

JAVA

| CIS | 240 | Java I ....4 |

VISUAL BASIC

| CIS | 238 | Visual Basic Intermediate Topics.........4 |

Level Three Programming Language Options:

CC++

| CIS | 269 | GUI Programming...............................4 |

COBOL

| CIS | 253 | CICS ....4 |

JAVA

| CIS | 280 | Java II ....4 |

VISUAL BASIC

| CIS | 275 | Web-enabled Database Programming: Active Server Pages ....4 |

Eight hours of information systems electives are to be selected from the following list:

CS	200	Concepts of Programming Algorithms Using C++..4
CS	205	Concepts of Programming Algorithms Using Java 4
CS	250	Basic Data Structures Using C++........4
CS	255	Basic Data Structures Using Java.........4
CS	211	Discrete Structures II...........................3
CIS	138	Visual Basic for Windows *..................4
CIS	145	Assembler Language for Microcomputers....................................4
CIS	148	COBOL I *.. 4
CIS	204	Unix Operating System *....................4
CIS	215	OS/VS Job Control Language..............3
CIS	235	Introduction to Object-oriented Programming Using C++.....................4
CIS	238	Visual Basic Intermediate Topics.........4
CIS	240	JAVA I...4
CIS	248	Cobol II...4
CIS	253	Customer Information Control System Command Level Cobol.........................4
CIS	254	Unix System and Web Administration4
CIS	258	Operating Systems *..............................3
CIS	269	GUI Programming.................................4
CIS	270	Information Systems Internship * 3
CIS	275	Web-enabled Database Programming..4
CIS	280	JAVA II...4
IT	200	Networking Technologies....................3
IT	210	Network Administration.......................3

* 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:

| CIS | 134 | Programming Fundamentals.................4 |

Required Courses

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

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

Third Semester
| CIS | 253 | Customer Information Control System Command Level COBOL....................4 |
| CIS | 258 | Operating Systems................................3 |

CIS	260	Database Management..........................4
CPCA	121	Introduction to Project Management..1
		TOTAL CREDIT HOURS.................12
		TOTAL PROGRAM CREDIT HOURS.........................28

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:

| CIS | 134 | Programming Fundamentals.................4 |

Required Courses

First Semester | | CR
CS	200	Concepts of Programming Algorithms Using C++...4
		or
CS	205	Concepts of Programming Algorithms Using Java 4
CS	210	Discrete Structures 3
CIS	162	Database Programming.........................4
		TOTAL CREDIT HOURS................11

Second Semester
CIS	235	Introduction to Object-oriented Programming Using C++.....................4
		or *
CS	250	Basic Data Structures Using C++........4
		or **
CS	255	Basic Data Structures Using Java.........4
CIS	242	Introduction to System Design and Analysis..3
		or
CIS	243	Object-oriented Analysis and Design..4
CIS	204	Unix Operating System and PERL......3
		TOTAL CREDIT HOURS..........10-11

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

* CS 200 students must take either CS 250 or CIS 235
** CS 205 students must take CS 255

Web Applications Vocational Certificate

This certificate is designed for those seeking entry-level positions and those who are currently employed and want to improve their job skills and career opportunities relating to Web-oriented applications. This certificate gives an employer tangible evidence of Web-based software skills and competencies.

Prerequisite:

CPCA 105 Introduction to Personal and Computing: IBM..................................1

First Semester

CWEB 101 Introduction to the Web Using Internet Explorer.......................1
and

CWEB 111 Intermediate Web Concepts and Techniques Using Internet Explorer.... 1
or

CWEB 102 Introduction to the Web Using Netscape Navigator.............................1
and

CWEB 112 Intermediate Web Concepts and Techniques Using Netscape Navigator...1

CPCA 114 Databases on Microcomputers I: Access...1

CWEB 106 Introduction to Microsoft FrontPage...1
and

CWEB 116 Intermediate Microsoft FrontPage.......1
or

CWEB 105 Introduction to Web Pages: Dreamweaver..1
and

CWEB 115 Intermediate Web Pages: Dreamweaver..1

CWEB 230 Introductory E-Commerce Applications...1

TOTAL CREDIT HOURS 7

Second Semester

CWEB 135 Web-enabled Databases I – Using Access.......................................1

CWEB 145 Web-enabled Databases II – Using Access 1

CWEB 240 Intermediate E-Commerce Applications...1

Select two of the following three courses listed:

CDTP 135 Desktop Photo Manipulation I: Photoshop...1

CDTP 145 Desktop Illustration I: Illustrator.........1

CWEB 130 Introduction to Flash............................1

Select two of the following three courses listed:

CPCA 161 Introduction to Web Pages: HTML 1

CWEB 160 Introduction to Javascript.....................1

CWEB 107 Web Tools: Microsoft Office................1

TOTAL CREDIT HOURS 7

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

Web Developer Advanced Certificate

CIS 134 Programming Fundamentals 4 credit hours is the prerequisite to most CIS/CS courses.

Courses that are prerequisites to the Web developer advanced certificate:

CPCA 161 Introduction to Web Pages Using HTML 1

CDTP 130 Desktop Publishing I: Pagemaker 1
or

CDTP 131 Desktop Publishing I: QuarkXpress........1
or

CDTP 140 Desktop Publishing I: InDesign..............1

CIS 162 Database Programming.........................4

CS 200 Concepts of Programming Algorithms Using C++...4
or

CS 205 Concepts of Programming Algorithms Using Java 4

CIS 235 Introduction to Object-oriented Programming Using C++.....................4
or

CS 255 Basic Data Structures Using Java.........4

First Semester

CIM 133 Screen Design 4

CIS 204 Unix Operating System with Perl 3

CIS 240 Java I 4

CIS 260 Database Management.........................4

TOTAL CREDIT HOURS................15

Second Semester

CIM 130 Interactive Media Concepts * 4

CIS 254 Unix System and Web Administration .4

CIS 280 Java II 4

CIS 275 Web-enabled Database Programming..4

TOTAL CREDIT HOURS................16

TOTAL PROGRAM CREDIT HOURS.........................31

* Permission from the CIS academic director required

Database Vocational Certificate

Completion of this certificate, offered through the computer information systems program, will help to prepare students for future careers as database specialists or for one of many other information systems careers in which knowledge of database concepts, products and technologies is important. Students will be able to design and build personal databases using Access. The student will acquire a strong foundational knowledge in an object-oriented programming language (Visual Basic) and will work with Web-enabled databases, SQL and other database products, as well as attaining formal systems analysis and design skills.

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

| CPCA | 105 | Introduction to Personal Computing: WIN...............................1 |

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 and Macintosh operating environments. Students will be encouraged to develop a "cross-platform" mastery.

Required Courses

or

Select five courses of the following eight:

Select one course of the following 13:
or

Personal Computer Applications 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
CPCA 108	Word Processing on Microcomputers I	1
CPCA 110	Spreadsheets on Microcomputers I	1
CPCA 114	Databases on Microcomputers I: Access	1
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	1
	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 for CPCA 105.

Interactive Media

Advanced Certificate in Interactive Media

The certificate in interactive media provides instruction in the development process for different types of interactive media (e.g., screen, CD-ROM, Web, kiosk); acquiring and managing assets (text, images, sound, video); the history and theory of communication forms; authoring for interactive media; and interface design. The certificate is designed to build a common foundation of experience while allowing the student to elect asset and authoring courses that best serve his or her individual needs. Depending on the background of the student, completers should be prepared for employment in a variety of positions within the interactive media field (e.g., writer/editor/researcher, graphics professional, music/sound professional, video professional, animator, programmer, information designer and/or interface designer).

Prior to entering CIM courses, a student must have completed at least a two-year degree in one of five related fields (communication design, English or journalism, information systems, music or audio, photography, or imaging or video) * and demonstrate basic computer

competencies. Applicants for admission to the advanced certificate in interactive media program must demonstrate competency in the following areas: 1. using a Macintosh or Windows personal computer systems – this requirement may be met by completing either CPCA 138 OR CPCA 134; 2. using page layout software, such as PageMaker, QuarkXPress or InDesign – this requirement may be met by completing either CDTP 130 or CDPT 131 or CDTP 140; 3. basic authoring using Hypertext Markup Language and basic Internet browsing and research skills using FTP, HTTP, Gopher and newsgroups – this requirement may be met by completing CPCA 141. These competencies may be demonstrated by certified transcripts, examinations or portfolios, individually or combined as appropriate. Proficiency in using Adobe Photoshop and Illustrator software is strongly recommended but not required.

Entry Tier

CIM	130	Interactive Media Concepts	4
CIM	140	Interactive Media Assets	4
CIM	200	Interactive Communication Forms	3

Authoring Requirements

CIM	152	Interactive Authoring I: Authorware	4
		or	
CIM	154	Interactive Authoring I: Director	4
		and	
CIM	156	Interactive Authoring 1: Web	4
		Asset Elective	3-4

Advanced Tier

CIM	230	Interactive Media Development	4
CIM	250	Interface Design	4
CIM	270	Interactive Media Project	4
		TOTAL PROGRAM CREDIT HOURS	34-35

Asset Electives

CIM	133	Screen Design	4
CIM	135	Digital Imaging and Video	3
CIS	138	Visual Basic for Windows	4
CIS	162	Database Programming	4
ENGL	140	Writing for Interactive Media	3
MUS	156	MIDI Music Composition I	3

Construction Management
(See Civil Engineering Technology, page 89.)

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 913-469-8500, ext. 4139, for additional information.

Nail Technology Vocational Certificate

350 contact hours

AVCO 102   Nail Technology

Cosmetology Vocational Certificate

1,500 contact hours

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

Esthetics Vocational Certificate

650 contact hours

AVCO 118   Esthetics

Data Processing
(See Computer Information Systems, page 91.)

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 and 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 and:

ENGL	121	Composition I	3

First Semester, Fall

KDA	100	Developmental Dentistry	3
KDA	105	Dental Laboratory Procedures	2
KDA	110	Chairside Assisting I	5
KDA	115	Dental Radiology I	3
KDA	125	Clinical Practice I	2
KDA	126	Dental Assistant Seminar I	1
SPD	125	Personal Communication	3
		TOTAL CREDIT HOURS	**19**

Second Semester, Spring

KDA	200	Body Structure and Function	2
KDA	205	Dental Biomaterials	2
KDA	210	Chairside Assisting II	2
KDA	215	Dental Radiology II	1
KDA	225	Dental Office Management	2
KDA	250	Clinical Practice II	4
KDA	260	Dental Assisting Seminar II	1
PSYC	130	Introduction to Psychology	3
		TOTAL CREDIT HOURS	**17**
		TOTAL CERTIFICATE CREDIT HOURS	**36**

Dental Hygiene

The dental hygienist is a preventive health professional, a licensed 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 screenings 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 services.

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 four 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 web.jccc.net/academic/dentalhygiene.

Associate of Applied Science Degree

Before beginning clinical courses   **CR**

CHEM 122   Principles of Chemistry.........................5
ENGL 121   Composition I 3
SOC 122   Introduction to 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 plots 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 applied science degree is awarded upon the successful completion of 65 credit hours.

Prerequisites

Before admission to the associate of applied science degree program in drafting technology, the student must satisfy the following prerequisites.

DRAF 120   Introduction to Drafting......................2
BOT 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 Design	3
PHYS	125	Technical Physics I	4
		Technical Elective	3
		TOTAL CREDIT HOURS	16

Fourth Semester

DRAF	250	Electrical Drafting	3
DRAF	252	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 Design	3
PHYS	125	Technical Physics I	4
		Social Science and/or Economics Elective	3
		TOTAL CREDIT HOURS	16

Fourth Semester

DRAF	250	Electrical Drafting	3
DRAF	252	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	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
CIS	134	Programming Fundamentals	4
ENGR	171	Programming for Engineering and Science	3

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

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

Prerequisites

Prior to 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
CPCA		Elective	1
DRAF	130	Introduction to CAD Concepts	3
DRAF	230	Intermediate Computer-aided Drafting	3
DRAF	231	Computer-aided Drafting 3-D	3
		TOTAL PROGRAM CREDIT HOURS	**12**

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 a 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 to 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	Networking Technologies	3
ELEC	124	Microcomputer Hardware	3
IT	205	Implementing Windows Client or	3
IT	220	Implementing and Supporting Windows Workstation	3
IT	221	Windows 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's degree program is for those students who currently are employed or aspire to work in early childhood care and educational 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 Psychology	3
SPD	121	Public Speaking	3
		TOTAL CREDIT HOURS	15

Second Semester			
EDUC	131	Early Childhood Curriculum I	3
EDUC	250	Child Health, Safety, Nutrition	3
		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 II	3
		Humanities Elective	3
		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 Cultures.....................................3
                or
ANTH 125   Cultural Anthropology.........................3
                or
SOC   131   Marriage and Family.............................3
                Science or Math 3-5
                TOTAL CREDIT HOURS..........15-17

Fourth Semester
EDUC 235   Parenting..2
EDUC 284   Seminar: Early Childhood 3
EDUC 285   Internship: Early Childhood 3
                Humanities Elective.............................3
                Specialization courses...........................6
                TOTAL CREDIT HOURS................17
                **TOTAL PROGRAM
                CREDIT HOURS....................69-70**

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
** Recommended if the student is not certified in CPR:
HPER 200   First Aid/CPR.....................................2
*** 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

Early Childhood Education Postsecondary Certificate
This certificate is for students who are seeking employment in early childhood care and educational programs and for current early childhood care and education teachers/administrators who want to upgrade their skills and increase their knowledge in this area of study. The program does not need to be completed in one year.

Students must be First Aid/CPR certified to receive the early childhood education certificate. The First Aid/CPR certification may be obtained through agencies such as The Johnson County Child Care Association or your local hospital; you may also enroll in HPER 200 First Aid/CPR at JCCC. Students must meet the requirements for employment in early childhood care and education centers in Kansas (stated in the Kansas Licensing Regulations for Preschool and Child Care Centers).

First Semester   CR
EDUC 130   Foundations of Early Childhood
                Education..3
EDUC 131   Early Childhood Curriculum I.............3
EDUC 270   Early Childhood Development............3
ENGL 121   Composition I 3
SPD   120   Interpersonal Communications *........3
                or
SPD   121   Public Speaking...................................3
                TOTAL CREDIT HOURS................15

Summer Session
EDUC 210   Creative Experiences for Young
                Children..3

Second Semester
EDUC 231   Early Childhood Curriculum II............3
EDUC 250   Child Health, Safety and Nutrition 3
MATH 120   Business Math......................................3
EDUC 235   Parenting..2

Select one of the following courses:
EDUC 205   Concepts In Early Childhood
                Education ** 3
EDUC 280   Administration of Early Childhood
                Programs...3
EDUC 215   Young Children with Special
                Needs/Lab...3
EDUC 225   Infant and Toddler Education and
                Care/Lab...3
                TOTAL CREDIT HOURS................14
                **TOTAL PROGRAM
                CREDIT HOURS........................32**

* Course is not considered credit in the associate of science Early Childhood Education degree program.

** Course is not considered credit in the associate of science Early Childhood Education degree program. Credit for experience is available.

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 28-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.

Electrical Technology Option
Associate of Applied Science Degree

First Semester
			CR
ELTE	122	National Electrical Code I	4
ELTE	125	Residential Wiring *	4
ELTE	123	Electromechanical Systems	4
INDT	125	Industrial Safety	3
		TOTAL CREDIT HOURS	15

Second Semester
ELTE	200	Commercial Wiring *	4
ENGL	121	Composition I	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	205	Industrial Electrical Wiring	4
ELTE	210	Code Certification Review	3
ELTE	271	Electrical Internship I	3
HPER	200	First Aid/CPR	2
		Social Science and/or Economics Elective	3
		TOTAL CREDIT HOURS	17

Fourth Semester
ENGL	123	Technical Writing I	3
ELTE	215	Generators, Transformers and Motors	4
CET	105	Construction Methods	3
		Humanities Elective	3
		Related Electives	3

TOTAL CREDIT HOURS................16

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

Related Electives
ELTE	272	Intern II	6
ELTE	291	Independent Study *	1-4
CPCA	128	Personal Computer Applications	3
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
ELEC	185	LAN Cabling and Installation	3
HVAC	121	Basic Principles of HVAC	4
INDT	155	Workplace Skills	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

* Requires prerequisite/corequisite or approval of academic director.

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
ELTE	123	Electromechanical Systems	4
INDT	125	Industrial Safety	3
		TOTAL CREDIT HOURS	15

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.........................28

Technical Electives
ELTE	205	Industrial Electrical Wiring	4
ELTE	272	Electrical Internship II	3
ELTE	291	Independent Study *	1-4

ELTE	215	Generators, Transformers and Motors	.4
ELEC	185	LAN Cabling and Installation	3
CET	105	Construction Methods	3
DRAF	120	Introduction to Drafting	2
DRAF	129	Interpreting Architectural Drawings	2
ELEC	120	Introduction to Electronics	3
ELEC	124	Microcomputer Hardware	3
ELEC	125	Digital Electronics I	3
ELEC	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
INDT	155	Workplace Skills	4
MFAB	121	Introduction to Welding	4

* Requires prerequisite/corequisite or approval of academic director.

Industrial Maintenance Option
Associate of Applied Science Degree

Industrial maintenance requires people employed in the field to be trained in a variety of areas, including welding, electricity, HVAC, gasoline or diesel engines and generators. Often, the needs will change because of growth in a company or the expansion of services provided. This degree option will allow a student to choose from numerous courses to custom build a program that will fit the needs of an employer. It will also allow students employed in an industrial maintenance position to broaden their skill areas and earn an associate of applied science degree.

First Semester   CR
DRAF	129	Interpreting Architectural Drawings	2
		or	
MFAB	180	Blueprints and Symbol Reading for Welders	2
		or	
HVAC	143	Reading Blueprints and Ladder Diagrams	2
ENGL	121	Composition I	3
INDT	125	Industrial Safety	3
HVAC	123	Electromechanical Systems	4
MATH	133	Technical Mathematics I	4
		TOTAL CREDIT HOURS	16

Second Semester
CPCA	128	Personal Computing	3
ELTE	122	National Electrical Code	4
ENGL	123	Technical Writing	3
INDT	155	Workplace Skills	1
		Technical Electives	5
		TOTAL CREDIT HOURS	16

Third Semester
| ECON | 130 | Basic Economics | 3 |

MFAB	121	Introduction to Welding	4
		or	
MFAB	127	Welding Processes	2
SPD	120	Interpersonal Communications	3
		Related Electives	3
		Technical Electives	3-5
		TOTAL CREDIT HOURS	16

Fourth Semester
EMS	121	CPR I – Basic Life Support Health Care Provider	1
		Humanities Elective	3
		Related Electives	3
		Technical Electives	9
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	**64**

Technical Electives
AUTO	165	Automotive Engine Repair *	4
AUTO	210	Advanced Engine Repair *	3
CET	105	Construction Methods	3
ELEC	120	Introduction to Electronics	4
ELEC	133	Programmable Controllers	3
ELEC	165	Advanced Programmable Controllers *	3
ELTE	200	Commercial Wiring Methods	4
ELTE	205	Industrial Wiring Methods *	4
ELTE	271	Electrical Internship I *	3
HVAC	150	Refrigerant Management and Certification	1
HVAC	121	Basic Principles of HVAC	4
HVAC	146	Plumbing Systems Applications	3
HVAC	221	Commercial Systems: Air Conditioning *	4
HVAC	223	Commercial Systems: Heating *	4
HVAC	271	HVAC Internship *	3
MFAB	125	Advanced Gas and Arc Welding *	4
MFAB	170	Basic Machine Tool Processes	4
MFAB	240	Metallurgy	2
MFAB	140	Maintenance and Repair Welding *	3
MFAB	271	MFAB Internship	3

Related Electives
BUS	140	Principles of Supervision	3
BUS	141	Principles of Management	3
CET	129	Construction Management	3
CET	140	Civil Engineering Materials (Concurrent with Math 133) *	3
CPCA	105	Introduction to PCs	1
CPCA	121	Introduction to Project Management *	1
CPCA	141	Internet I *	1
IT	200	Networking Technologies	3

* Courses with prerequisites/corequisites

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 129	Interpreting Architectural Drawings	2
	or	
MFAB 180	Blueprints and Symbol Reading for Welders	2
	or	
HVAC 143	Reading Blueprints and Ladder Diagrams	2
ELTE 123	Electromechanical Systems	4
INDT 125	Industrial Safety	3
MFAB 121	Introduction to Welding	4
	or	
MFAB 127	Welding Processes	2
	Technical Electives	11-13
	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 140	Maintenance Repair Welding *	3
MFAB 170	Basic Machine Tool Processes	4
MFAB 240	Metallurgy	2
INDT 155	Workplace Skills	1

* Courses with prerequisites/corequisites

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 program focuses on the underlying principles of electronic devices, circuit analysis and digital electronics, and will provide a broad systems view of 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 with current electronics technology program requirements.

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 who desire to graduate using electronics technology courses completed more than seven years ago should seek counseling regarding the current relevance of those courses.

Associate of Applied Science Degree

First Semester CR

ELEC 120	Introduction to Electronics	3
ELEC 124	Microcomputer Hardware	3
ELEC 125	Digital Electronics I	4
MATH 133	Technical Mathematics I (or higher)	4
ENGL 121	Composition I	3
	TOTAL CREDIT HOURS	17

Second Semester

ELEC 122	Circuit Analysis I	3
ELEC 225	Digital Electronics II	3
MATH 134	Technical Mathematics II (or higher)	5
SPD 125	Personal Communications	3
	Humanities Elective	3
	TOTAL CREDIT HOURS	17

Third Semester

ELEC 130	Electronic Devices I	4
ELEC 140	Circuit Analysis II	3
ELEC 175	Telecommunications	3
ENGL 123	Technical Writing I	3
	Social Science/Economics Elective	3
	TOTAL CREDIT HOURS	16

Fourth Semester

ELEC 230	Electronic Devices II	3
ELEC 240	Communication Systems	4
ELEC 245	Microprocessors	3
PHYS 125	Technical Physics I (or higher)	4
	Health and/or Physical Education Elective	1
	TOTAL CREDIT HOURS	15
	TOTAL PROGRAM CREDIT HOURS	**65**

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**

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 – in general, 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 clinical observation in a hospital setting. Additionally, students will arrange to participate as an observer with a local EMS service. Students participate in 7 hours of lecture and two hours of lab a week. Students are also required to attend approximately two 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**

EMT Practicum

EMT Practicum is designed to give the EMT-B, recently certified or those with limited field experience, the additional skills and confidence needed to successfully compete for a position as an EMT-B with an EMS service. Skills will include ambulance operation, driving, map reading, insurance billing and unit maintenance. This

course will also provide high-fidelity scenario training in all aspects of the EMS call, as well as extensive field lab time with a local EMS service.

Students will become directly involved in their own training by leading and participating in realistic medical emergency scenarios with "actors" playing life-like patients and bystanders. Numerous field internship shifts on a licensed ambulance are part of the training. Students will work through all phases of an ambulance call. They will be presented with complex patient care situations that require the development of critical thinking and decision-making skills. Students will be tested on their ability to lead a team of pre-hospital caregivers in the diagnosis, proper treatment and evacuation of a patient. Scenario simulations will be set up to be as life-like as possible.

Prerequisite
EMS 130 EMT-B or equivalent and a copy of current EMT-B card

EMS	133	EMT Practicum	3
		TOTAL PROGRAM CREDIT HOURS	**3**

Mobile Intensive Care Technician (Paramedic) 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 defibrillation and the administration of medications and IV fluids. Successful completion of this program and subsequent certification exams will enable graduates to work as skilled paramedics and to provide sophisticated, advanced prehospital life support.

JCCC's MICT program is fully accredited by the Committee Accreditation of Educational Programs for the EMS professions (CoEMSP). If you are interested, contact the Admissions office for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

This is a selective admission program with limited enrollment. If you are accepted into the program, you take classes in the spring, summer and fall, completing the program in December.

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

Prior to beginning professional courses
An associate's degree or higher, successful completion of an EMT course, and successful completion of a college-level anatomy/physiology course are required.

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

Second Session			
EMS	230	MICT III (clinicals)	12

Third Semester			
EMS	271	MICT IV (field internship)	15
		TOTAL MICT PROGRAM CREDIT HOURS	**47**

Associate of Applied Science Degree

Prior to beginning professional courses
Successful completion of an EMT course and successful completion of the following courses:

BIOL	144	Human Anatomy and Physiology	5
		or	
BIOL	140	Human Anatomy	4
		and	
BIOL	225	Human Physiology	4
ENGL	121	Composition I	3
SOC	125	Social Problems	3
		or	
		Social Science/Economics Elective	3
PHIL	143	Ethics	3
		or	
		Humanities Elective	3
		Health/Physical Education Elective	1
		Electives	0/2
		(depending on which science class[es] are taken)	
		TOTAL GENERAL EDUCATION CREDIT HOURS	**17/18**

First Semester			
EMS	220	MICT I	10
EMS	225	MICT II	10
		TOTAL CREDIT HOURS	20

Second Semester			
EMS	230	MICT III (Clinicals)	12

Third Semester			
EMS	271	MICT IV (Field Internship)	15
		TOTAL PROFESSIONAL CREDIT HOURS	47
		TOTAL PROGRAM CREDIT HOURS	**64/65**

Fashion Merchandising and Design

Rome, Paris, New York and Tokyo are centers of the fashion world. In today's fast-paced fashion market, these cities aren't that far ahead of your local shopping mall. Fashion is on the move – in New York, Paris and Johnson County.

At JCCC, the fashion curriculum is designed to prepare you for a career in retail management, retail sales, apparel and textile design, promotion, display, illustration, and representative positions.

The program includes professional courses in merchandising, design, apparel construction, management, visual merchandising, creative selling and merchandise evaluation. To complement your education, you will also study important basic subjects such as business math, English, economics and marketing.

An associate of applied science degree is awarded after successful completion of the 64-credit-hour curriculum in fashion merchandising or fashion design. The program also offers an 18-credit-hour certificate in visual merchandising. Seminars in career options and industry topics are available. Required work-study internships in the fashion business of your choice will give you experience in technical, creative and merchandising skills and make you more marketable in the industry.

With an associate's degree or certificate, you'll be ready to apply your energy and creativity in an industry that rewards both. Or, if you prefer to continue your education, you can complete a bachelor's degree through a transfer program to a college or university.

Associate of Applied Science Degree, Fashion Merchandising Option

First Semester

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

Second Semester

FASH	242	Consumer Product Evaluation	3
FASH	284	Fashion Internship II	1
		Health and/or Physical Education Elective	1
MATH	120	Business Math or higher	3
FASH	150	Textiles	3
FASH	125	Visual Merchandising	3
BUS	150	Business Communications	3
		TOTAL CREDIT HOURS	17

Third Semester

BUS	225	Human Relations	3
FASH	285	Fashion Internship III	1
FASH	132	Marketing Communications	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
BUS	230	Marketing	3
FASH	231	Merchandising Planning and Control	3
FASH	280	Capstone: Industry Topics	3
		Humanities Elective	3
		Electives	3
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	**65**

Recommended Electives

FASH	123	Apparel Construction I	4
FASH	130	Fashion Illustration I	3
FASH	140	Garment Design I	3
FASH	224	History of Costume	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
MATH	120	Business Math or higher *	3
FASH	242	Consumer Product Evaluation	3
FASH	150	Textiles	3
FASH	285	Fashion Internship III	1
BUS	150	Business Communication	3
BUS	225	Human Relations	3
FASH	132	Marketing Communications	3
MKT	121	Retail Management	3
ECON	130	Basic Economics	3
		or	
ECON	230	Economics I *	3
FASH	231	Merchandising Planning and Control	3
FASH	280	Capstone Industry Topics	3
FASH	286	Fashion Internship IV	1
		Physical Education Elective	1
		Humanities Elective	3
		Fashion Electives	5
		TOTAL PROGRAM CREDIT HOURS	**64**

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

Associate of Applied Science Degree
Fashion Design Option

First Semester

FASH 121	Fashion Fundamentals	3
FASH 123	Apparel Construction I	4
FASH 135	Image Management	1
FASH 220	CAD Apparel Design	3
FASH 277	Fashion Seminar: Career Options	2
ENGL 121	Composition I	3
	TOTAL CREDIT HOURS	16

Second Semester

FASH 124	Apparel Construction II	4
FASH 130	Fashion Illustration I	3
FASH 150	Textiles	3
FASH 224	History of Costume	3
	Health and/or Physical Education Elective	1
	Fashion Elective	3
	TOTAL CREDIT HOURS	17

Third Semester

FASH 127	CAD: Pattern Design I	4
	or	
FASH 140	Garment Design I	3
FASH 283	Fashion Internship I	1
MATH 120	Business Math or higher	3
	Fashion Electives	3
	Elective	4-5
	TOTAL CREDIT HOURS	15

Fourth Semester

FASH 242	Consumer Product Evaluation	3
FASH 280	Capstone Industry Topics	3
FASH 284	Fashion Internship II	1
BUS 150	Business Communications	3
	Humanities Electives	3
	Social Science and/or Economics Elective	3
	TOTAL CREDIT HOURS	16
	TOTAL PROGRAM CREDIT HOURS	**64**

Suggested Fashion Electives

FASH 128	CAD: Pattern Design II	4
FASH 143	Tailoring	4
FASH 230	Fashion Illustration II	3
FASH 268	Field Study: The Market Center	3
BUS 225	Human Relations	3
MKT 134	Creative Retail Selling	3

Suggested Sequence of Required Courses

FASH 121	Fashion Fundamentals	3
FASH 123	Apparel Construction I	4
ENGL 121	Composition I	3
FASH 220	CAD Apparel Design	3
FASH 130	Fashion Illustration I	3
FASH 277	Seminar: Career Options	2
FASH 224	History of Costume	3
FASH 124	Apparel Construction II	4
FASH 135	Image Management	1

FASH 283	Fashion Internship I	1
FASH 150	Textiles	3
FASH 127	CAD: Pattern Design I	4
	or	
FASH 140	Garment Design I	3
FASH 242	Consumer Product Evaluation	3
MATH 120	Business Math or higher *	3
BUS 150	Business Communication	3
FASH 280	Capstone Industry Topics	3
FASH 284	Fashion Internship II	1
	Fashion Electives	6
	Humanities Elective	3
	Physical Education Elective	1
	Social Science and/or Economics Elective	3
	Open Elective	4-5
	TOTAL PROGRAM CREDIT HOURS	**64**

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

Visual Merchandising Vocational Certificate

The visual merchandising certificate provides students with the opportunity to prepare for positions in the retail and wholesale market as display designers or visual merchandise managers.

FASH 121	Fashion Fundamentals	3
FASH 125	Visual Merchandising	3
	Fashion Elective	3
MKT 121	Retail Management	3
ITMD 127	Elements of Floral Design	1
ITMD 147	Lighting Design and Planning	1
FASH 283	Fashion Merchandising Internship I	1
FASH 225	Store Planning	3
	TOTAL PROGRAM CREDIT HOURS	**18**

Recommended Fashion Electives for Certificate

FASH 130	Fashion Illustration I	3
FASH 132	Marketing Communications	3
FASH 150	Textiles	3
FASH 242	Consumer Product Evaluation	3

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 education goals beyond the associate's 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 44).

JCCC also offers coursework 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 coursework includes FIRE 175 Essentials of Fire Fighting, EMS 130 Emergency Medical Technician and HPER 240 Lifetime Fitness I or equivalent. HPER 240 Lifetime Fitness I is the prerequisite for HPER 175 Essentials of Fire Fighting.

Note: Mechanisms have been developed to compensate for the effect of students 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 firefighter or be an active member in a fire-related occupation.

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

Second Semester
ENGL	122	Composition II	3
BUS	141	Principles of Management	3
FIRE	224	Incident Command Systems	3
		Humanities Elective	3
		Physical Science, with lab	4

		TOTAL CREDIT HOURS	16

Third Semester
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**

Food and Beverage Management

(See Hospitality Management, page 113.)

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 **CR**
HORT	140	Turfgrass Management I	3
HORT	120	Introduction to Urban Agribusiness	3
ECON	130	Basic Economic Issues	3
		TOTAL CREDIT HOURS	9

Second Semester

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

Summer

KAGB	200	Occupational Internship.....................**3**

Third Semester

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

Fourth Semester

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

Fifth Semester

MATH	120	Business Math.....................................3
HORT	250	Turf and Ornamental Plants: Pest Management...............................3
HORT	240	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
CIS	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	169	Legal Aspects of Medical Records.......2
KMRT	166	Directed Practice I............................2.5
KMRT	171	Pharmacology...................................1.5
		TOTAL CREDIT HOURS................16

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
BOT	155	Word Processing Applications I...........3
		TOTAL CREDIT HOURS................15

Fourth Semester

BUS	243	Human Resource Management............3
KMRT	170	Introduction to Medical Insurance and Office Procedures......................1.5
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.............14.5
		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, home health aide and rehabilitative 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 for practical nurses 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 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 for LPNs

Cardiopulmonary Resuscitation
8 contact hours

AVHO   110 Cardiopulmonary Resuscitation

Rehabilitative Aide
32 contact hours

AVHO   112 Rehabilitative Aide

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	3
ENGL 121	Composition I	3
EMS 121	CPR I-Basic Rescuer	1
	TOTAL CREDIT HOURS	18

Second Semester		
HVAC 146	Plumbing Systems Applications	3
HVAC 150	Refrigerant Management/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	2
	Humanities Elective	3
	General Education Elective	3
	TOTAL CREDIT HOURS	15
	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..................................3
ENGL 121	Composition I 3
EMS 121	CPR I-Basic Rescuer...........................1
	TOTAL CREDIT HOURS................18

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..............................4
	General Education Elective.................3
	TOTAL CREDIT HOURS................14
	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..................................3
HVAC 155	Workplace Skills 1
MATH 115	Introduction to Algebra......................3
	TOTAL PROGRAM CREDIT HOURS.........................39

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..................................3
HVAC 155	Workplace Skills 1
MATH 115	Introduction to Algebra......................3

Technical Electives..............................4
**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 because of 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..................................3
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........................28**

Horticulture

Horticulture Certificate Program
Programs in some career areas are made available
by means of cooperative agreements with other
educational institutions. These cooperative
arrangements have resulted in the sharing of
programming, curriculum and staffing in the Greater
Kansas City area and have promoted increased
economies of operations for cooperating institutions.
The horticultural certificate program is a cooperative
program with the Metropolitan Community Colleges.

Essential Courses at MCC
AGBS 106   Landscape and Design Maintenance ..3
            (equivalent to JCCC HORT 130)
AGBS 107   Deciduous Trees and Shrubs...............3
            (equivalent to JCCC HORT 214)
AGBS 135   Turfgrass Management I......................3
            (equivalent to JCCC HORT 140)
BSAD 135   Small Business Management...............3
            (equivalent to JCCC BUS 145)
            TOTAL MCC CREDITS..............12
Essential Courses at JCCC
HORT 220   Herbaceous Plants...............................3
HORT 215   Woody Plants II...................................3
HORT 225   Plant Problems....................................3
HORT 230   Landscape Maintenance Techniques...4
HORT 150   Vegetables, Fruits and Herbs...............2
HORT 160   Garden Center Operations..................3
            TOTAL JCCC CREDITS 18

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**
HMGT121   Hospitality Management Fundamentals..3
HMGT123   Basic Food Preparation 3
ENGL 121   Composition I 3
HMGT271   Seminar: Purchasing............................3
MATH 120   Business Math or higher.......................3
CPCA 105   Introduction to Personal
            Computing: Win...1
            or
CPCA 106   Introduction to Personal Computing: Mac .1
            TOTAL CREDIT HOURS................16

Second Semester

HMGT230	Intermediate Food Preparation	3
HMGT128	Supervisory Management	3
HMGT273	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

HMGT275	Hospitality Management Internship	3

Third Semester

HMGT277	Seminar: Menu Planning	3
HMGT145	Food Production Specialties	3
HMGT221	Design Techniques	3
HMGT279	Beverage Control	3
HMGT130	Hospitality Law	3
	TOTAL CREDIT HOURS	15

Fourth Semester

HMGT126	Food Management	4
HMGT228	Advanced Hospitality Management	3
HMGT250	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
HMGT121	Hospitality Management Fundamentals	3
HMGT123	Basic Food Preparation	3
HMGT126	Food Management	4
HMGT128	Supervisory Management	3
HMGT230	Intermediate Foods	3
HMGT271	Seminar: Purchasing	3
HMGT273	Seminar: Accounting	3
HMGT275	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

HMGT121	Hospitality Management Fundamentals	3
HMGT123	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
HMGT132	Seminar in Housekeeping	3
	TOTAL CREDIT HOURS	16

Second Semester

HMGT271	Seminar in Hospitality Management: Purchasing	3
HMGT230	Intermediate Food Preparation	3
HMGT265	Front Office Management	3
MATH 120	Business Math or higher	3
HMGT128	Supervisory Management	3
	TOTAL CREDIT HOURS	15

Summer

HMGT275	Seminar in Hospitality Management: Internship	3
SPD 120	Interpersonal Communication	3
	or	
SPD 125	Personal Communication	3
	TOTAL CREDIT HOURS	6

Third Semester

HMGT273	Seminar in Hospitality Management: Accounting	3
HMGT203	Hotel Sales and Marketing	3
PSYC 121	Applied Psychology	3
	or	
PSYC 130	Introduction to Psychology	3
HMGT279	Beverage Control	3
HMGT145	Food Production Specialties	3
	TOTAL CREDIT HOURS	15

Fourth Semester

HMGT126	Food Management	4
HMGT228	Advanced Hospitality Management	3
HMGT130	Hospitality Law	3
	Humanities Requirement	3
HMGT268	Hotel Accounting	3
	TOTAL CREDIT HOURS	16
	TOTAL PROGRAM CREDIT HOURS	**68**

Information Systems

(See Computer Information Systems, page 91.)

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, Unix and Cisco.

Associate of Applied Science Degree

First Semester

IT	200	Networking Technologies....................	3
IT	205	Implementing Windows Client...........	3
ELEC	185	LAN Cabling and Installation.............	3
ELEC	124	Microcomputer Hardware...................	3
ENGL	121	Composition I	3
		Health and/or Physical Education.......	1
		TOTAL CREDIT HOURS................	16

Second Semester

IT	210	Netware Administration *...................	3
IT	221	Windows Server *................................	3
IT	246	Introduction to Routers *...................	3
CPCA	121	Introduction to Project Management *	1
MATH	171	College Algebra (or higher)................	3
ENGL	122	Composition II *	
		or	
ENGL	123	Technical Writing *............................	3
		TOTAL CREDIT HOURS................	16

Third Semester

IT	225	Windows Active Directory Services *	3
IT	230	Unix Administration and Networking *......................................	3
IT	245	Network Infrastructure *.....................	3
CIS	134	Programming Fundamentals................	4
		Humanities Elective............................	3
		TOTAL CREDIT HOURS................	16

Fourth Semester

IT	250	Networking Seminar *.........................	3
SPD	121	Public Speaking or	
SPD	125	Personal Communication	3
		Social Science and/or Economics Elective..	3
		Technical Elective...............................	7
		TOTAL CREDIT HOURS................	16
		TOTAL PROGRAM CREDIT HOURS.........................	**64**

* Course has a prerequisite or corequisite

Technical Electives

IT	211	Netware Advanced Administration *	3
IT	212	Netware NDS Design Implementation *	3
IT	214	Novell Group Wise Administration *	3
IT	220	Windows Workstation *......................	3
IT	222	Windows Server in the Enterprise *....	3
IT	227	SQL Server Administration	3
IT	247	Introduction to Wide-Area Networks *	3
IT	271	Information Technology Internship I *	3
IT	272	Information Technology Internship II *	3
ELEC	120	Introduction to Electronics.................	3
ELEC	150	Introduction to Telecommunications..	3
ELEC	250	Microcomputer Maintenance *...........	3
CS	200	Concepts of Programming Algorithms *	4
CIS	138	Visual Basic for Windows *.................	4
CIS	162	Database Programming: VBA Access *	4
CIS	172	Introduction to Powerbuilder Enterprise *	4
CIS	204	Unix Operating System and PERL *...	3
CIS	238	Visual Basic Intermediate Topics *......	4
CPCA		Any CPCA Course (except CPCA 105)	

*pre/corequisite required

Networking Administration: Windows Vocational Certificate

The networking administration Windows 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-based local area network, the coursework parallels the requirements for the Microsoft Certified Systems Engineer (MCSE) certification exams.

IT	200	Networking Technologies......................	3
ELEC	185	LAN Cabling and Installation	3
ELEC	124	Microcomputer Hardware......................	3
IT	205	Implementing Windows Client.............	3
IT	221	Windows Server *	3
IT	225	Windows Active Directory Services	3
IT	245	Network Infrastructure *........................	3
		Technical Electives................................	6
		TOTAL PROGRAM CREDIT HOURS	**27**

Technical Electives

IT	210	Netware Administration *...................	3
IT	211	Netware Advanced Administration *	3
IT	212	Netware NDS Design Implementation*	3
IT	214	Novell Group Wise Administration *	3
IT	220	Windows Workstation *......................	3
IT	222	Windows Server in the Enterprise *....	3
IT	227	SQL Server Administration	3
IT	230	Unix Administration and Networking *......................................	3
IT	246	Introduction to Routers *....................	3
IT	247	Introduction to Wide-Area Networks *	3

IT	250	Networking Seminar *........................3
IT	271	Information Technology Internship I *3
IT	272	Information Technology Internship II *3
ELEC	120	Introduction to Electronics.................3
ELEC	150	Introduction to Telecommunications..3
ELEC	250	Microcomputer Maintenance *...........3
CS	200	Concepts of Programming Algorithms *4
CIS	134	Programming Fundamentals.................4
CIS	138	Visual Basic for Windows *..................4
CIS	162	Database Programming: VBA Access *4
CIS	172	Introduction to Powerbuilder Enterprise * 4
CIS	204	Unix Operating System and PERL *...3
CIS	238	Visual Basic Intermediate Topics *......4
CPCA		Any CPCA Course (except CPCA 105)

* Pre/corequisite required

Networking Administration:
Unix Vocational Certificate

This certificate is a 24-credit-hour program that students can complete in three semesters. The certificate will provide students with competencies necessary to install, troubleshoot and administer Unix systems in an enterprise environment. These skills are sought after in the industry today, with Unix operating systems claiming the majority of new implementations in the enterprise environment.

IT	200	Networking Technologies....................3
ELEC	185	LAN Cabling and Installation.............3
ELEC	124	Microcomputer Hardware....................3
IT	205	Implementing Windows Client...........3
IT	230	Unix Administration and Networking *.......................................3
IT	231	Unix Administration in the Enterprise * 3
		Technical Electives..............................6
		TOTAL CREDIT HOURS................24

Technical Electives

IT	210	Netware Administration *...................3
IT	211	Netware Advanced Administration * .3
IT	212	Netware NDS Design Implementation *3
IT	214	Novell Group Wise Administration * .3
IT	220	Windows Workstation * 3
IT	221	Windows Server *................................3
IT	222	Windows Server in the Enterprise *....3
IT	227	SQL Server Administration 3
IT	245	Network Infrastructure *.....................3
IT	246	Introduction to Routers *...................3
IT	247	Introduction to Wide-Area Networks *3
IT	250	Networking Seminar *.........................3
IT	271	Information Technology Internship I *3
IT	272	Information Technology Internship II *3
ELEC	120	Introduction to Electronics.................3
ELEC	150	Introduction to Telecommunications..3

ELEC	250	Microcomputer Maintenance *...........3
CS	200	Concepts of Programming Algorithms *4
CIS	134	Programming Fundamentals.................4
CIS	138	Visual Basic for Windows *..................4
CIS	162	Database Programming: VBA Access *4
CIS	172	Introduction to Powerbuilder Enterprise * 4
CIS	204	Unix Operating System and PERL *...3
CIS	238	Visual Basic Intermediate Topics *......4
CPCA		Any CPCA Course (except CPCA 105)

* Pre/corequisite required

Network Connectivity Vocational Certificate

The network connectivity vocational certificate is a 15-credit-hour program that students can complete in three semesters. The certificate will address the crucial area of Internet connection devices and provide necessary skills for students in the field. This certificate is supported and promoted by Cisco through its Networking Academy initiative. Coursework parallels the requirements for Cisco Certified Network Associate (CCNA) certification exam.

IT	200	Networking Technologies....................3
ELEC	124	Microcomputer Hardware....................3
ELEC	185	LAN Cabling and Installation.............3
IT	246	Introduction to Routers......................3
IT	247	Introduction to Wide-Area Networks .3
		TOTAL CREDIT HOURS................15

Information/Word Processing
(See Business Office Technology, page 85.)

Interior Design

Five options in JCCC's expanded interior design program offer students opportunities to choose a career path from a wide variety of exciting fields. Three associate of applied science degree options – interior design, interior merchandising and interior entrepreneurship – offer design, retail and business proprietorship skills. Two new certificate programs, the interior products sales certificate and the interior design sales and marketing representative certificate, are available for students who need skills for immediate employment or who want a broader knowledge base for their current employment.

JCCC's program offers courses in interior products, creative selling, business management, manual and CAD drafting, and product presentation, combined with a basic curriculum of business math, marketing, English and history. Two required work-study internships help develop technical, creative and merchandising skills.

Faculty have worked in the field, which equips them to offer valuable firsthand knowledge of what it takes to succeed.

Students can choose to specialize in diverse fields, from furniture to wallcovering to kitchens and baths to floor covering and paint.

Associate of Applied Science Degree
Interior Design Option

First Semester   CR
ITMD	121	Interior Design I	3
DRAF	261	Graphic Communications I for Interior Design	3
ITMD	133	Furniture and Ornamentation/Antiquity to Renaissance	3
MATH	120	Business Math or higher	3
ITMD	125	Interior Textiles	3
ENGL	121	Composition I	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	Interiors Internship 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	148	History of Asian Furniture and Design *	2
ITMD	284	Interiors Internship II *	1
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	15
		TOTAL PROGRAM CREDIT HOURS	**67**

Recommended Electives
ACCT	111	Small Business Accounting	3
ACCT	121	Accounting II	3
ITMD	127	Floral Design	1
ITMD	295	Field Study: Design and Merchandising *	3
ITMD	296	Interior Design: The Orient (travel for credit)	3

Associate of Applied Science Degree
Interior Merchandising Option

First Semester   CR
ITMD	121	Interior Design I	3
ITMD	133	Furniture and Ornamentation/Antiquity to Renaissance	3
DRAF	261	Graphic Communications for Interior Design	3
MATH	120	Business Math or higher	3
ITMD	125	Interior Textiles	3
ENGL	121	Composition I	3
		TOTAL CREDIT HOURS	18

Second Semester
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
		Interiors Elective	3
ITMD	275	Seminar: Budget and Estimating *	2
ITMD	282	Interiors Internship I *	1
ART	180	Introduction to Art History	3
ECON	130	Basic Economic Issues	3
		or	
ECON	230	Economics I	3
		Business/Marketing Elective	3
		TOTAL CREDIT HOURS	15

Fourth Semester
		Interiors Elective	3
ITMD	273	Seminar: Business Practices and Procedures *	2
ITMD	284	Interiors Internship II *	1
		Business/Marketing Elective	3
FASH	125	Visual Merchandising	3
ITMD	239	Capstone: Portfolio and Presentation *	2
FASH	135	Image Management	1
		Physical Education Elective	1
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	**67**

Recommended Electives

ITMD	127	Floral Design	1
ITMD	295	Field Study: Design and Merchandising	3
ITMD	296	Interior Design: The Orient (travel for credit)	3
ITMD	140	Draperies, Treatments and Construction *	1
ITMD	145	Upholstery Construction *	1
ITMD	147	Lighting Design and Planning *	1
ITMD	148	History of Asian Furniture and Ornamentation	2
ITMD	223	Contract Design *	3
		or	
ITMD	234	Kitchen and Bath: Planning and Design *	3
BUS	141	Principles of Management	3
BUS	145	Small Business Management	3
BUS	230	Marketing	3
MKT	121	Retail Management	3
MKT	221	Sales Management	3

Associate of Applied Science Degree
Interior Entrepreneurship Option

First Semester   CR

ITMD	121	Interior Design I	3
ITMD	133	Furniture and Ornamentation/Antiquity to Renaissance	3
DRAF	261	Graphic Communications for Interior Design	3
MATH	120	Business Math or higher	3
ITMD	125	Interior Textiles	3
ENGL	121	Composition I	3
		TOTAL CREDIT HOURS	18

Second Semester

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

		Interiors Elective	3
ITMD	275	Seminar: Budget and Estimating *	2
ITMD	282	Interiors Internship I *	1
ART	180	Introduction to Art History	3
ECON	130	Basic Economic Issues	3
		or	
ECON	230	Economics I	3
		Business Entrepreneurship/ Marketing Elective	3
		TOTAL CREDIT HOURS	15

Fourth Semester

ITMD	234	Kitchen and Bath: Planning and Design *	3
		or	

ITMD	223	Contract Design *	3
ITMD	273	Seminar: Business Practices and Procedures *	2
ITMD	284	Interiors Internship II *	1
		Business Entrepreneurship/ Marketing Electives	6
ITMD	239	Capstone: Portfolio and Presentation *	2
FASH	135	Image Management	1
		Physical Education Elective	1
		TOTAL CREDIT HOURS	16
		TOTAL PROGRAM CREDIT HOURS	**67**

Recommended Electives

ITMD	127	Floral Design	1
ITMD	295	Field Study: Design and Merchandising	3
ITMD	296	Interior Design: The Orient (travel for credit)	3
ITMD	140	Draperies, Treatments and Construction *	1
ITMD	145	Upholstery Construction *	1
ITMD	147	Lighting Design and Planning *	1
ITMD	148	History of Asian Furniture and Ornamentation	2
ACCT	111	Small Business Accounting	3
ACCT	121	Accounting I	3
BUS	141	Principles of Management	3
BUS	145	Small Business Management	3
BUS	230	Marketing	3
BUSE	131	Financial Management for Small Business	2
BUSE	140	FastTrac Feasibility Plan	2
BUSE	142	FastTrac Business Plan	3
BUSE	160	Legal Issues for Small Business	2

Interior Products Sales Representative Vocational Certificate Program

The interior products sales representative vocational certificate is a 17-credit-hour program designed for students employed in or seeking positions in the interior design retail market. The required courses are already included in the vocationally approved curriculum of the interior design program.

ITMD	121	Interior Design I	3
ITMD	125	Interior Textiles	3
ITMD	132	Interior Products	3
MATH	120	Business Math or higher	3
MKT	134	Creative Retail Selling	3
FASH	135	Image Management	1
ITMD	282	Interiors Internship I	1
		TOTAL PROGRAM CREDIT HOURS	**17**

Interior Design Retail Sales/Manufacturers Representative Vocational Certificate Program

The interior design retail sales/manufacturers representative vocational certificate is a 32-credit-hour program designed for students employed in or seeking positions in the retail or wholesale interior design market.

First Semester			**CR**
ITMD	121	Interior Design I	3
ITMD	125	Interior Textiles	3
ITMD	132	Interior Products	3
MATH	120	Business Math or higher	3
MKT	134	Creative Retail Selling	3
FASH	135	Image Management	1
ITMD	282	Interiors Internship I	1
		TOTAL CREDIT HOURS	17

Second Semester			
MKT	121	Retail Management	3
FASH	125	Visual Merchandising	3
SPD	120	Interpersonal Communications	3
		or	
BUS	225	Human Relations	3
ITMD	275	Interiors Seminar: Budget and Estimating *	2
ITMD	284	Interiors Internship II	1
ITMD		Elective	3
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM CREDIT HOURS	**32**

Recommended Electives

ITMD	127	Floral Design	1
ITMD	140	Draperies, Treatments and Construction *	1
ITMD	145	Upholstery Construction *	1
ITMD	147	Lighting Design and Planning *	1
ITMD	231	Furniture and Ornamentation/ Renaissance to 20th Century	3
ITMD	273	Interiors Seminar: Practices and Procedures *	2

* Courses with prerequisites/corequisites

Interpreter Training

The employment outlook for sign language interpreters is promising. As the population grows, so will the number of deaf and hearing-impaired 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 and a required exit examination lead to an associate of applied science degree.

This is a selective admission program with limited enrollment. The deadline for fall semester applications is Feb. 11. 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**

Sign Language Communication Postsecondary Certificate

The sign language communication postsecondary certificate has been developed based on the need for professional people in the community to be skilled in sign language. The certification program is not available to students who have been admitted to the interpreter training program.

First Semester			**CR**
INTR	120	Elementary American Sign Language I	3
INTR	145	Deaf Culture	3
		Health/Physical Education Elective	1
ENGL	121	Composition I	3

Second Semester
INTR   121   Elementary American Sign Language II ...3
INTR   130   Orientation to Interpreting 3
ENGL   122   Composition II 3

Third Semester
INTR   122   Intermediate American Sign Language I ..3
INTR   142   Fingerspelling I 3
              Science or Math Elective 3

Fourth Semester
INTR   123   Intermediate American Sign Language II ..3
INTR   135   Theory of American Sign Language 3
              Social Science or Economics Elective 3
              **TOTAL PROGRAM
              CREDIT HOURS 37**

Legal Studies

(for legal nurse consultant and paralegel students)

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.

LAW   225   Legal Nurse Consultant Profession 1
LAW   121/
BUS   122   Introduction to Law 3
LAW   131   Legal Research * 3
LAW   250   Medicolegal Research and Writing * 3
LAW   260   Personal Injury Law * 3
LAW   270   Administrative Law * 3
LAW   271   Legal Ethics, Interviewing and
              Investigation * 3

Required: Students must take one of the following paralegal electives:
LAW   140   Alternative Dispute Resolution * 3
LAW   142   Torts * 3
LAW   148   Criminal Law * 3
LAW   152   Real Estate Law 3
LAW   162   Family Law 3
LAW   171   Law Office Management 3
LAW   212   Business Organization 3

LAW   241   Wills, Trust and Probate 3
LAW   245   Elder Law 3
LAW   266   Employment Law 3
.AW   268   Bankruptcy 2
              **TOTAL PROGRAM
              CREDIT HOURS 22**

* Course has a prerequisite

Paralegal Program

The expanding role of the paralegal in the delivery of legal services has created increased opportunities. 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. 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 GPA of 2.0 prior to application for admission to the paralegal program.

LAW   121   Introduction to Law 3
LAW   123   Paralegal Studies 1

First Semester
CPCA   128   Personal Computer Applications 3
              or
CIS   124   Introduction 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
LAW   131 Legal Research..3
LAW   132 Civil Litigation......................................3
             Paralegal Electives..................................7
             TOTAL CREDIT HOURS...................13

Third Semester
LAW   205 Legal Writing...3
LAW   271 Legal Ethics, Interviewing and
             Investigation..3
             Paralegal Electives..................................7
             TOTAL CREDIT HOURS...................13
             **TOTAL PROGRAM
             CREDIT HOURS............................33**

Paralegal Electives
LAW   140 Alternative Dispute Resolution..............3
LAW   142 Torts...3
LAW   148 Criminal Litigation................................3
LAW   152 Real Estate Law.....................................3
LAW   162 Family Law...3
LAW   171 Law Office Management.........................3
LAW   173 Judicial Academy...................................1
LAW   212 Business Organizations...........................3
LAW   220 Computer-assisted Legal Research..........2
LAW   223 Computer Applications in the Law Office..3
LAW   241 Will, Trusts and Probate Administration..3
LAW   245 Elder Law 3
LAW   266 Employment Law....................................3
LAW   268 Bankruptcy...2
LAW   275 Paralegal Internship I..............................1
LAW   276 Paralegal Internship II.............................1
             TOTAL CREDIT HOURS...................15

Paralegal 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
LAW   121 Introduction to Law................................3
LAW   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
LAW   131 Legal Research..3
LAW   132 Civil Litigation.......................................3
CPCA   128 Integrated Software................................3
             or
CIS   124 Introduction 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
LAW   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
LAW   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
LAW   140 Alternative Dispute Resolution..............3
LAW   142 Torts...3
LAW   148 Criminal Litigation................................3
LAW   152 Real Estate Law.....................................3
LAW   162 Family Law...3
LAW   171 Law Office Management.........................3
LAW   173 Judicial Academy...................................1
LAW   212 Business Organizations...........................3
LAW   220 Computer-assisted Legal Research..........2
LAW   223 Computer Applications in the Law Office..3
LAW   241 Will, Trusts and Probate Administration..3
LAW   245 Elder Law 3

LAW	266	Employment Law.....................................3
LAW	268	Bankruptcy...2
LAW	275	Paralegal Internship I.............................1
LAW	276	Paralegal Internship II............................1

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 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 coursework 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
CIS	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..4
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 those 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
		TOTAL CREDIT HOURS	16

Second Semester			
BUS	225	Human Relations	3
MKT	202	Consumer Behavior	3
MKT	221	Sales Management	3
CIS	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
		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
		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
BOT	130	Office Systems Concepts	3
CIS	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	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 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
BOT	101	Computerized Keyboarding **	1
MKT	284	Marketing and Management. Internship I (in teleservice industry)	1
		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 blueprint and symbol reading for welders, oxyacetylene welding and cutting, plasma, arc cutting (PAC), 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	3
MFAB	121	Introduction to Welding	4
ENGL	121	Composition I	3
MATH	133	Technical Math I	4
CPCA	105	Introduction to Personal Computing: Win.	1
MFAB	180	Blueprint and Symbols Reading for Welders	2
		TOTAL CREDIT HOURS	17

Second Semester

MFAB	125	Advanced Gas and Arc Welding	4
		or	
MFAB	140	Maintenance Repair Welding	3
ENGL	123	Technical Writing I	3
PHYS	125	Technical Physics I	4
MFAB	152	Manufacturing Materials and Processes	3
HPER	200	First Aid/CPR	2
		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
		Humanities Elective	3
		Related Electives	5-6
		TOTAL CREDIT HOURS	14-15
		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
CIS	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
MFAB	127	Welding Processes	2
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

Metal Fabrication 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 oxyacetylene cutting and welding. The student also 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	3
MFAB	180	Blueprint and Symbols Reading for Welders	2
MFAB	121	Introduction to Welding	4
MFAB	125	Advanced Gas and Arc Welding or	4
MFAB	140	Maintenance Repair 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	24-25

Nursing

JCCC offers two programs for individuals interested in nursing as an occupation. The registered nurse – RN program is a two-year associate of applied science degree in nursing. Successful completion of this program and approval by the state board of nursing allow the graduates to take the national licensing examination for registered nurses. The other program is the practical nurse – PN program, which is a 10-month certificate program. Like the RN program, successful completion and approval by the state board of nursing allows the graduate to take the national licensing exam for practical nurses. Both programs are approved by the Kansas State Board of Nursing. The associate's 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 1 for admission. Applications for admission to the associate's 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 913-469-2350. For information on the associate's degree – registered nurse program for registered nursing, contact the program office at 913-469-8500, ext. 3157.

If you are licensed as a practical nurse, you may wish to apply for admission to the associate's 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 – Registered Nurse
Associate of Applied Science Degree

CNA certification will be required as a prerequisite in fall 2003.

Prerequisites: 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	144	Human Anatomy and Physiology	5
PSYC	130	Introduction to Psychology	3
NURS	121	Fundamentals of Nursing	9
		TOTAL CREDIT HOURS	17

Second Semester

		Communications Elective	3
PSYC	218	Human Development	3
NURS	122	Nursing Across the Life Span – Part I	9
		TOTAL CREDIT HOURS	15

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 or	3
SOC	125	Social Problems	3
BIOL	230	Microbiology	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

Students must successfully complete NURS 123 and NURS 221 before advanced standing credits for NURS 121 and NURS 122 will be granted

Prerequisite: Prior to enrolling in NURS 221

BIOL	144	Human Anatomy and Physiology	5
CHEM	122	Principles of Chemistry	5
ENGL	121	Composition I	3
PSYC	130	Introduction to Psychology	3
PSYC	218	Human Development	3
		Communications Elective	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

BIOL	230	Microbiology	3
NURS	221	Nursing Across the Life Span – Part II	9
SOC	122	Sociology	3
		or	
SOC	125	Social Problems	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	**59**

Nursing – Practical Nursing
Vocational Certificate Program

Prerequisites: CNA certification, BIOL 144, PSYC 130, CPCA 105, MATH 111

Fall
AVPN 115 Nursing I

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

Occupational Therapy Assistant

The occupational therapy assistant works under the supervision of 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 will be eligible to sit for the national certification examination for the occupational therapy assistant administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of the exam, the individual will be a Certified Occupational Therapy Assistant (COTA). Most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT 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.

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.

Option 1

BIOL	144	Human Anatomy and Physiology and	5
BIOL	145	Human Anatomy/Physiology Dissection * (BIOL 144 must be taken first)	1

or

Option 2

BIOL	140	Human Anatomy and	4
BIOL	225	Human Physiology *	4

(BIOL 140 and CHEM 122 must be taken before BIOL 225)

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

Fall I Semester

KOT	112	Basic Emergency Patient Care	1

BIOL	145	Human Anatomy/Physiology Dissection (option 1, course 2).................................1
		or
BIOL	225	Human Physiology (option 2, course 2) ..4
KOT	100	Introduction to Occupational Therapy ***...2
KOT	103	Clinical Conditions 2
KOT	104	Documentation Guidelines.....................2
KOT	106	Therapeutic Interventions.....................4
KOT	116	Level I Fieldwork I.................................1
		TOTAL CREDIT HOURS.............12-16

Spring I Semester

PSYC	130	Introduction to Psychology....................3
KOT	101	Pediatrics...3
KOT	111	Level I Fieldwork II 5
KOT	154	Applied Neurology................................2
KOT	118	Assistive Technology.............................2
KOT	130	Analysis of Physical Performance...........3
SPD	121	Public Speaking.....................................3
		TOTAL CREDIT HOURS...............16.5

Summer

| | | American Institutions **........................3 |
| | | TOTAL CREDIT HOURS.....................3 |

Fall II Semester

KOT	105	Gerontology...3
KOT	203	Splinting...2
KOT	201	Occupational Therapy in Mental Health 2.5
KOT	202	Occupational Therapy in Physical Dysfunctions...3
KOT	211	Level I Fieldwork II 2
KOT	217	Fieldwork Seminar.................................3
		TOTAL CREDIT HOURS...............15.5

Spring II Semester

KOT	222	Level II Fieldwork.................................12
		TOTAL CREDIT HOURS...................12
		TOTAL PROGRAM CREDIT HOURS 60-65

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

*** KOT 100 Introduction to Occupational Therapy can now be taken prior to acceptance into the occupational therapy program or in the fall I semester.

Note: All KOT students must complete Level II Fieldwork within 18 months following completion of academic preparation.

Office Systems Technology

(See Business Office Technology, page 85.)

Paralegal

(See Legal Studies, page 120.)

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
ENGL	121	Composition I...3
LC	130	Medical Terminology..............................3
KPT	151	Introduction to Physical Therapy...........2

Fall Semester			**CR**
KPT	152	Fundamentals of Modalities I.................4
PSYC	130	Introduction to Psychology....................3
KPT	160	Medical Diseases....................................2
BIOL	144	Human Anatomy/Physiology..................5
BIOL	145	Human Anatomy/Physiology Dissection...1
SPD	121	Public Speaking......................................3
		TOTAL CREDIT HOURS...................18

Spring Semester		
KPT	153	Kinesiology 4
KPT	102	Basic Emergency Patient Care................1
KPT	161	Fundamentals of Modalities II................4
KPT	159	Orthopedic Pathology............................2
KPT	154	Applied Neurology.................................2
		American Institutions *.........................3
		TOTAL CREDIT HOURS...................16

Summer

KPT	162	Clinical Experience I	2
		TOTAL CREDIT HOURS	2

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	12
		TOTAL CREDIT HOURS	12
		TOTAL PROGRAM CREDIT HOURS	**72**

* 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.

Power Plant Technology

The power plant technology program will provide the student with the practical knowledge and skill competencies to obtain an entry-level position for the electric power generation industry. The program will provide an overview of the power generation industry and the many available types of power generation: wind, solar, hydroelectric, refuse-derived fuel, nuclear, combustion turbines and coal-fired plants. The program will emphasize coal-fired plants that use steam turbines. However, graduates could find employment in all varieties of power plants or industry and manufacturing companies, which use or process steam. The program offers a 65-credit-hour associate of applied science degree and a certificate requiring 31 credit hours. Graduates can work as control room operators, process control personnel or floor operators. Graduates will also be prepared for continued education in industrial maintenance, industrial/electronic controls and power transmission/distribution systems. Graduates would find they are able to advance rapidly with this degree. The associate of applied science degree requires higher math and language skills than the certificate requires and offers students the opportunity to pursue additional technical courses.

Associate of Applied Science Degree

First Semester   CR

PPT	140	Generating Plant Fundamentals	3
ENGL	121	Composition I	3
MATH	171	College Algebra or higher *	3
INDT	125	Industrial Safety	3
ELTE	123	Electromechanical Systems	4
		TOTAL CREDIT HOURS	16

Second Semester   CR

PPT	130	Basic Hydraulics, Mechanics and Pneumatics	3
HVAC	143	Reading Blueprint and Ladder Diagrams	2
PHYS	125	Technical Physics I *	4
ELEC	131	Introduction to Sensors and Actuators	3
CPCA	128	Personal Computer Applications	3
INDT	155	Workplace Skills	1
		TOTAL CREDIT HOURS	16

Summer Semester   CR

PPT	271	Power Plant Technology Internship *	3
		TOTAL CREDIT HOURS	3

Third Semester   CR

ENGL	123	Technical Writing I	3
PPT	250	Introduction to Power Plant Combustion/Exhaust *	3
PPT	251	Introduction to Power Plant Steam/Water Cycle *	3
PPT	230	Introduction to Water Chemistry/Treatment	3
		Humanities Elective	3
		TOTAL CREDIT HOURS	15

Fourth Semester   CR

PPT	280	Power Plant Operations/ Process Controls *	3
SPD	120	Interpersonal Communication	3
EMS	121	CPR-Basic Life Support Health Provider	1
		Social Science or Economics Elective	3
		Technical Electives	5
		TOTAL CREIDT HOURS	15
		TOTAL PROGRAM CREDIT HOURS	**65**

* Course has a prerequisite or corequisite

Technical Electives

ELEC	133	Programmable Controllers	3
CHEM	122	Principles of Chemistry	5
BUS	140	Principles of Supervision	3
BUS	141	Principles of Management	3
ELTE	205	Industrial Electrical Wiring *	4
ENGL	210	Technical Writing II *	3
BIOL	130	Environmental Science	3
BIOL	131	Environmental Science Lab *	1
POLS	126	State and Local Government	3
HVAC	146	Plumbing Systems Applications	3
EMS	128	EMS First Responder	5

* Courses with prerequisites/corequisites

Vocational Certificate
Power Plant Technology

The power plant technology vocational certificate will provide the student with the practical knowledge and skill competencies to obtain an entry-level position for the electric power generation industry. The certificate program will provide an overview of the power generation industry and the many available types of power generation: wind, solar, hydroelectric, refuse-derived fuel, nuclear, combustion turbines and coal-fired plants. It will emphasize coal-fired plants that use steam turbines. However, graduates could find employment in all varieties of power plants or industry and manufacturing companies, which use or process steam. Graduates can work as control room operators, process control personnel or floor operators. Graduates will also be prepared for continued education in industrial maintenance, industrial/electronic controls and power transmission/distribution systems.

First Semester   CR
PPT   140   Generating Plant Fundamentals...............3
INDT 125   Industrial Safety...3
ELTE 123   Electromechanical Systems.......................4
HVAC 143   Reading Blueprint and Ladder Diagrams .2
PPT   130   Basic Hydraulics, Mechanics
            and Pneumatics..3
            TOTAL CREDIT HOURS 15

Second Semester   CR
PPT   251   Introduction to Power Plant
            Steam/Water Cycle * 3
INDT 155   Workplace Skills..1
PPT   250   Introduction to Power Plant
            Combustion/Exhaust * 3
PPT   280   Power Plant Operations/
            Process Controls * 3
PPT   230   Intro to Water Chemistry/Treatment.......3
            TOTAL CREDIT HOURS 13

Summer Semester   CR
PPT   271   Power Plant Technology Internship *......3
            TOTAL CREDIT HOURS 3
            **TOTAL PROGRAM
            CREDIT HOURS 31**

* Courses with prerequisites/corequisites

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 requirements: College general biology/human anatomy with laboratory (4 to 5 credit hours), 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; and completion of KRAD 150 Introduction to Radiology (1CR).

Associate of Applied Science Degree
Degree granted by Penn Valley Community College

Summer Semester   CR
KRAD 160   Survey of Radiologic Technology...........4
            TOTAL CREDIT HOURS.....................4

Fall Semester
BIOL 140   Human Anatomy 4
KRAD 165   Patient Care...2
KRAD 170   Radiation Biology and Protection..........3
KRAD 172   Radiographic Positioning I.....................3
KRAD 173   Clinical Training I..................................3
            TOTAL CREDIT HOURS..................15

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...........................73**

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

Railroad Electronics

The A.A.S. in railroad electronics degree program is a
restricted access program for those students enrolled in
the railroad electronics certificate program who wish to
progress to a degree. The certificate program has been
an active program on the JCCC campus since 1993,
with a total enrollment to date of approximately 250
students, with another 80 to be enrolled during the
next six months.

The certificate program consists of 33 credit hours of
electronics courses, previously designated as ELEC
courses, currently designated as RREL courses. The
total program content is equivalent to the electronics
degree program, but the delivery differs. Content is
divided into courses differently. Examples tend to be
railroad related where possible, and courses are
delivered in alternative format, combining distance
learning (using a remote access server) and classroom
presentations.

Electronics technology influences almost every aspect of
modern life. Skilled electronics technicians are needed
to support growth in the railroad 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 program focuses
on the underlying principles of electronic devices used
extensively in railroad signaling, circuit analysis and
digital electronics, and will provide a broad systems
view of electronics.

Students in the railroad electronics technology program
will work with outstanding facilities and the latest
laboratory equipment. Graduates of the program will
have the opportunity for employment in today's most

challenging and exciting railroad signal career field.

No new courses are required for this program. All RREL
courses are offered as closed courses for Burlington
Northern Santa Fe, with the railroad furnishing all
equipment, trainers, computers, and software.

Associate of Applied Science Degree

This 64-credit-hour associate of applied science degree
is offered through the railroad operations program.
Students completing this degree will have opportunities
for employment in the railroad signal career field.

First Semester		CR
RREL 180	Introduction to Railroad Electronics *	1
RREL 181	Circuit Analysis DC/AC *	6
ENGL 121	Composition I *	3
	Science and/or Mathematics Elective	3
	Elective	3
	TOTAL CREDIT HOURS	16

Second Semester		CR
RREL 182	Semiconductor Devices and Circuits *	6
RREL 183	Digital Techniques *	6
	Humanities Elective	3
	TOTAL CREDIT HOURS	15

Third Semester		CR
RREL 284	Electronic Communications*	6
	Social Science or Economics Elective	3
	Technical Electives	6
	TOTAL CREDIT HOURS	15

Fourth Semester		CR
RREL 285	Microprocessor Techniques*	6
RREL 286	Applied Microprocessors*	2
	Health and/or Physical Education Elective	1
	Communications Elective	3
	Technical Electives	6
	TOTAL CREDIT HOURS	18
	TOTAL PROGRAM CREDIT HOURS	**64**

Note: MATH 111 and MATH 115 will not meet math
requirements.

* Courses with prerequisites/corequisites

Technical Electives

This degree is designed to meet the needs of a wide
range of students. The 12 credits of technical electives
may come from a number of areas as designated by the
following course prefixes:

ASTR   120 Fundamentals of Astronomy...................3
AUTO   121 Small Engine Service.............................3
AUTO   122 Introduction to Auto Glass.....................3
AUTO   125 Introduction to Automotive
              Shop Practices...3

BOT	101	Computerized Keyboarding	1
BOT	102	Business English	1
BOT	105	Keyboarding/Formatting	3
BOT	115	Electronic Calculators	1
BOT	150	Records Management	3
BOT	175	Conflict in the Workplace	1
CET	105	Construction Methods	3
CET	120	Engineered Plumbing Systems I	3
CET	122	Engineered Plumbing Systems II	3
CET	129	Construction Management	3
CPCA	105	Introduction to Personal Computing: WIN	1
CPCA	106	Introduction to Personal Computing: Macintosh	1
CPCA	128	Personal Computer Applications	3
CIS	110	Introduction to Computers	2
CIS	124	Introduction to Computing Concepts and Applications	3
CIS	134	Programming Fundamentals	4
DRAF	120	Introduction to Drafting	2
DRAF	123	Interpreting Machine Drawings	2
DRAF	129	Interpreting Architectural Drawings	2
DRAF	132	Introduction to AutoCAD LT	3
DRAF	138	Architectural Drafting	3
DRAF	140	Topics in CAD I	2
ELEC	120	Introduction to Electronics	3
ELEC	124	Microcomputer Hardware	3
ELEC	125	Digital Electronics I	4
ELEC	131	Introduction to Sensors and Actuators	3
ELEC	133	Programmable Controllers	3
ELEC	150	Introduction to Telecommunications	3
ELEC	185	LAN Cabling and Installation	3
ENGR	121	Engineering Orientation	2
GEOS	130	General Geology	5
GEOS	140	Physical Geography	3
GEOS	145	World Regional Geography	3
HVAC	108	HVAC Technical Service	2
HVAC	125	Energy Alternatives	2
HVAC	143	Reading Blueprints and Ladder Diagrams	2
HVAC	146	Plumbing Systems Applications	3
HVAC	150	Refrigerant Management and Certification	1
HVAC	155	Workplace Skills	1
HVAC	167	Sheet Metal Layout and Fabrication	3
INDT	125	Industrial Safety	3
INDT	140	Quality Improvement Using SPC	2
INDT	155	Workplace Skills	1
IT	200	Networking Technologies	3
IT	205	Implementing Windows Client	3
IT	220	Windows Workstation	3
MFAB	121	Introduction to Welding	4
MFAB	152	Manufacturing Materials and Processes	3
MFAB	170	Basic Machine Tool Processes	4
MFAB	180	Blueprint and Symbols Reading for Welders	2
MFAB	240	Metallurgy	2
RRT	120	History of Railroading	3
RRT	121	Railroad Technical Careers	3
RRT	150	Railroad Operations	3
RRT	165	Railroad Safety, Quality and Environment	3

You are advised to see a counselor before selecting your 12 credits of technical electives. If you plan to pursue a four-year degree in electronics, you should be prepared to enroll in a higher-level math class (172 or 173) and a higher-level physics class (130) than those classes required for the A.A.S.

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.

RREL	180	Introduction to Railroad Electronics	1
RREL	181	Circuit Analysis DC/AC	6
RREL	182	Semiconductor Devices and Circuits	6
RREL	183	Digital Techniques	6
RREL	284	Electronic Communications	6
RREL	285	Microprocessor Techniques	6
RREL	286	Applied Microprocessors	2
		TOTAL PROGRAM CREDIT HOURS	**33**

Railroad Industrial Technology

JCCC's railroad industrial technology certificate program is open **only** to Burlington Northern Santa Fe employees.

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	136	Rail and Switch Point Repair	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	155	Railroad Welding Review	2
RRT	120	History of Railroading	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	136	Rail and Switch Point Repair	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 Processes	2
RRIT	140	Structural Quality SMAW	3
		TOTAL PROGRAM CREDIT HOURS	5

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 Processes	2
RRIT	140	Structural Quality SMAW	3
		TOTAL PROGRAM CREDIT HOURS	5

Railroad Operations

JCCC's associate's degree program in railroad operations can prepare you for an exciting and well-paying career. The more than 500 companies that make up the U.S. 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 workforce 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 Thinking	3
RRT	120	History of Railroading	3
		TOTAL CREDIT HOURS	16

Second Semester
ENGL	123	Technical Writing I	3
MATH	134	Technical Math II	5
PHYS	125	Technical Physics I	4
RRT	121	Railroad Technical Careers	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	16

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

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

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

Technical/Related Electives
AUTO	125	Introduction to Automotive Shop Practices	3
AUTO	165	Auto Engine Repair	4
CET	105	Construction Methods	3
CET	127	Construction Estimating	3
CET	129	Construction Management	3
CPCA	138	Windows for Microcomputers	1
DRAF	115	Introduction to Computer Graphics Systems	3
DRAF	123	Interpreting Machine Drawings	2
DRAF	129	Interpreting Architectural Drawings	2
ELEC	120	Introduction to Electronics	3
ELEC	124	Microprocessor Hardware	3
ELEC	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	3
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. They 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 coursework 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	3
RRIT	122	Elements of Welding	3
		or	
MFAB	121	Introduction to Welding	4
RRIT	123	Basic Welding	3
RRIT	132	Thermite Welding	3
RRIT	136	Rail and Switch Point Repair	3
RRIT	145	Frog Welding	3
		TOTAL CREDIT HOURS	17-19
		TOTAL PROGRAM CREDIT HOURS	**65-67**

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 (RCP) is involved in a variety of lifesaving and life-supporting situations. As a member of the health care team, the RCP 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 RCP.

JCCC's program is designed to meet the requirements specified by the Committee on Accreditation for Respiratory Care. Following completion of 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 and health care agencies. This clinic year involves 36-40 hours a week of class, lab and clinical time. Successful completion of the program also includes satisfactory completion of a two-part comprehensive program final examination.

Students completing the associate's degree requirements are eligible to take the National Board for Respiratory Care examinations. Through this examination process, you first earn the Certified Respiratory Therapist (CRT)

credential and then, with additional examinations, the Registered Respiratory Therapist (RRT) credential.

This is a selective admission program with limited enrollment. You must apply for admission to the respiratory care program by Oct. 15 before the clinic year you plan to enter. Application materials received after this date may not be considered until after Feb. 15 for any remaining class positions. If you are interested, contact Admissions for an application packet, which includes deadlines and admission requirements.

Note: Metropolitan Community College students should seek specific counsel through Penn Valley Community College counselors or the JCCC academic director for appropriate course plan and numbers.

Associate of Applied Science Degree

Summer			**CR**
		Social Science/Economics Elective	3
ENGL	121	Composition I *	3
		TOTAL CREDIT HOURS	6

First Semester

BIOL	140	Human Anatomy *	4
MATH	116	Intermediate Algebra (or Math 171 or higher)*	3
CHEM	122	Principles of Chemistry*	5
		Humanities/Art Elective	3
		TOTAL CREDIT HOURS	15

Second Semester

BIOL	225	Human Physiology *	4
BIOL	230	Microbiology *	3-5
		(BIOL 231 Micro Lab is also strongly suggested)	
EMS	121	CPR I Basic Life Support Health Care Provider	1
HC	101	Introduction to Health Care**	3
		Communications Elective	3
		TOTAL CREDIT HOURS	11-16

* Indicates prerequisite courses that must be completed before the clinic year. Electives not completed by the clinic year will delay credentialing eligibility.

** HC 101 is not a required course for the degree but is strongly encouraged. See the program application packet for details on how this course may be used to meet clinic year eligibility requirements.

Summer (clinic year)

RC	125	Beginning Principles of Respiratory Care	4
RC	130	Respiratory Care Equipment	4
RC	135	Cardiopulmonary Medicine I	1
		(Current BCLS for Health Care Provider is required)	
		TOTAL CREDIT HOURS	9

Third Semester

RC	220	Clinical Cardiopulmonary Physiology	2
RC	230	Clinical Topics and Procedures I	4
RC	235	Cardiopulmonary Medicine II	2
RC	240	Respiratory Pharmacology	2
RC	271	Clinical Practice I	6
		TOTAL CREDIT HOURS	16

Fourth Semester

RC	231	Clinical Topics and Procedures II	4
RC	233	Respiratory Care of Children	2
RC	236	Cardiopulmonary Medicine III	2
RC	272	Clinical Practice II	6
		TOTAL CREDIT HOURS	14
		TOTAL PROGRAM CREDIT HOURS	**71-73**
		TOTAL PROGRAM CREDIT HOURS WITH HC 101 ELECTIVE	**74-76**

Certified Respiratory Therapist (CRT) Transition

This curriculum is designed to meet the education 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 JCCC Testing Services 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 applied 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 coursework. Candidates may apply to the program before these requirements are completed and are encouraged to meet with program personnel prior to beginning any coursework 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 Prior Learning Assessment evaluation. To obtain credits through the PLA 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..................................6
* 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 should seek specific counsel through PVCC counselors or the JCCC academic director for appropriate course plans and numbers.

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 Applied Science Degree

Biotechnology Option

This degree will prepare students to work in biotechnology laboratories associated with universities, medical centers, private research institutions and a variety of industrial applications. Upon completion of this 68-hour degree, students will be able to find entry-level or higher positions in the diverse field of biotechnology. Along with basic and more advanced science courses, students will take specialized courses in subjects such as laboratory safety and biotechnology methods.

First Semester			**CR**
BIOL	135	Principles of Cell and Molecular Biology...................................4
BIOL	160	Introduction to Biotechnology...............2
BIOL	165	Laboratory Safety....................................1
CHEM	122	Principles of Chemistry...........................5
MATH	133	Technical Math I or higher.................3-5
		TOTAL CREDIT HOURS.............15-17

Second Semester		
BIOL	230	Microbiology..3
CIS	124	Introduction to Computers.....................3
ENGL	121	Composition I...3
PHYS	133	Applied Physics......................................5
SOC/ ECON		Social Science/Economics Elective 3
		TOTAL CREDIT HOURS...................17

Third Semester		
BIOL	144	Human Anatomy and Physiology...........5
BIOL	145	Human Anatomy and Physiology Dissection..1
BIOL	205	General Genetics.....................................4
CHEM	140	Principles of Organic Chemistry............5
ENGL	123	Technical Writing...................................3
		TOTAL CREDIT HOURS...................18

Fourth Semester		
BIOL	260	Biotechnology Methods..........................5
BIOL	265	Biotechnology Internship........................4
CHEM	250	Biochemistry...4
		Humanities elective................................3
		Physical Education Elective....................1
		TOTAL CREDIT HOURS...................17
		TOTAL PROGRAM CREDIT HOURS 67-69

Associate of Science Degree
Chemical Specialty

First Semester
			CR
CHEM	123	Principles of Technical Chemistry	6
BIOL	122	Principles of Biology	3
MATH	171	College Algebra	3
ENGL	121	Composition I	3
		TOTAL CREDIT HOURS	15

Second Semester
CHEM	143	Principles of Technical Organic Chemistry	6
PHYS	125	Technical Physics I	4
PHYS	135	Special Topic Technical Physics I	1
MATH	172	Trigonometry	3
CIS	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

First Semester
			CR
CHEM	123	Principles of Technical Chemistry	6
BIOL	122	Principles of Biology	3
MATH	133	Technical Math I *	4
ENGL	121	Composition I	3
CPCA	105	Introduction to Personal Computing: 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	
CPCA	114	Databases on Microcomputers I	1
		TOTAL CREDIT HOURS	17

Third Semester
CHEM	223	Technical Analytical Chemistry	4
PHYS	126	Technical Physics II	3
PHYS	136	Special Topics Technical Physics II	2
ENGL	123	Technical Writing I	3
		Humanities Elective	3
		TOTAL CREDIT HOURS	15

Fourth Semester
CHEM	243	Technical Instrumental Chemistry	5
SPD	125	Personal Communications (recommended)	3
		or	
SPD	128	Business and Professional Speech (recommended)	3
		or	
		Speech Elective	3
PSYC	121	Applied Psychology (recommended)	3
		or	
		Psychology Elective	3
ECON	130	Basic Economic Issues (recommended)	3
		or	
		Economics Elective	3
		Health and/or Physical Education Elective	1
		TOTAL CREDIT HOURS	15
		TOTAL PROGRAM CREDIT HOURS	**64**

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

Biotechnology Vocational Certificate

This certificate is for students seeking employment in the biotechnology industry either in private or academic research laboratories. This certificate will demonstrate to potential employers that the student has experience in performing a variety of techniques necessary for the day-to-day operation

First Semester
			CR
BIOL	135	Principles of Cell and Molecular Biology	4
BIOL	160	Introduction to Biotechnology	2
BIOL	165	Laboratory Safety	1
CHEM	122	Principles of Chemistry	5
MATH	133	Technical Math I or higher	3-5
		TOTAL CREDIT HOURS	16

Second Semester
BIOL	230	Microbiology	3
BIOL	260	Biotechnology Methods	5
CHEM	140	Principles of Organic Chemistry	5
PHYS	133	Applied Physics	5
		TOTAL CREDIT HOURS	18

Second Semester
BIOL   262   Biotechnology Internship (optional)......4
              **TOTAL PROGRAM
CREDIT HOURS............................33**

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
KST	100	Introduction to Surgical Technology......2	
KST	102	Fundamentals of Operating Room Techniques...11	
KST	104	Body Structure and Function..................2	
KST	106	Aseptic Technique for the Surgical Technologist..................2	
		TOTAL CREDIT HOURS...................17	

Second Semester		
KST	105	Pharmacology for the Surgical Technologist.2
KST	109	Principles of Surgical Procedures I..........8
KST	110	Principles of Surgical Procedures II........7
		TOTAL CREDIT HOURS...................17

Third Semester		
KST	111	Career Development for the Surgical Technologist 2
KST	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

Third Semester		
CIS	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, 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 at 816-437-3235 for an application packet that includes deadlines.

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
CPCA	128	Personal Computer Applications	3
ENGL	121	Composition I	3
KSAH	108	Clinical Mathematics	1
		American Institutions *	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 Techniques I	4
CHEM	122	Principles of Chemistry	5
SPD	121	Public Speaking	3
		TOTAL CREDIT HOURS	17

Summer			
KSAH	214	Veterinary Technician Internship	**6**

Third Semester			
KSAH	200	Veterinary Hospital Technology I	3
KSAH	202	Veterinary Technology Anatomy	5
KSAH	212	Large Animal Technology	4
BIOL	230	Microbiology	3
BIOL	231	Microbiology Lab	2
		TOTAL CREDIT HOURS	17

Fourth Semester			
KSAH	203	Laboratory Animal Technology	2
KSAH	209	Equine Medicine and Management	3
KSAH	210	Veterinary Hospital Technology II	3
KSAH	211	Clinical Pathology Technology II	5
KSAH	213	Radiology and Electronic Procedures	2
		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

College My Way

Community Outreach
College Close to Home
On Your Site

Earning a Bachelor's Degree

Internet/Online Courses

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.

For additional information go to the Honors office, 202 COM, or call 913-469-2512.

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 6 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 coursework 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 coursework 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 coursework 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 education 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.

Additional information is available in the Honors Program office, 237 GEB, 913-469-2512.

College My Way

JCCC understands that many in our community cannot attend traditional semester and summer session classes because of time or place constraints. College My Way offers these students an opportunity to complete degree requirements through alternative scheduling and delivery options. In combination with programs like Assessment of Prior Learning and proficiency examinations, students may enroll in self-paced courses or short-term courses that meet both within and outside the traditional college semester schedule. For example, some course options include four-week, six-week and eight-week sessions. In addition, some courses are scheduled to meet for four to six weekends during the semester. These courses can be combined with Internet options to complete an entire program of study. College My Way means just that: to design a college program of study "your" way – when you have the time and when you need the courses the most. Look for more information at the College My Way Web site at http://web.jccc.net/academic/myway.

Community Outreach Programs

College Close to Home

JCCC provides a selection of classes at convenient locations outside the main campus. Classes are typically offered during the evening. Current sites may include Blue Valley High School, DeSoto High School, Gardner-Edgerton High School, Shawnee Mission North High School and Spring Hill High School. Students may refer to the current JCCC credit class schedule for a complete listing.

On Your Site

JCCC can bring college the credit classes listed in our schedule of courses each semester to business locations. Credit classes will be taught by our instructors and may be offered before or after a shift, or in the morning, afternoon or evening. JCCC can provide courses that will train or retrain employees in specific skills or provide general education courses that count toward a college degree. Businesses may contact the JCCC Community Outreach office, 913-469-8500, ext. 3539, for more information.

Earning a Bachelor's Degree

JCCC works actively with other colleges and universities to broaden Johnson County residents' access to upper division courses and bachelor-degree completion opportunities through a variety of special transfer agreements. Additional information is available in the JCCC Student Success Center or may be accessed on the Web at http://web.jccc.net/academic/transfer.

Internet/Online Courses

At JCCC, not all classes are taught in the traditional classroom. Students may also enroll in courses taught by computer and over the World Wide Web. 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 Internet classes, which allow them to complete their coursework according to their own schedules and often 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 an Internet course just as you do a regular course. Tuition for these courses is the same as for other credit courses. However, you will need to have a computer and software capable of loading and managing the course materials. Go to www.jccc.net/academic/dl for more information on distance learning courses and the computer hardware requirements you need.

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, the Netherlands 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 28 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. Summer programs are also available.

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 services office. For additional information about all study abroad, contact the International Education office, 333 GEB, 913-469-8500, ext. 3496.

Television Courses

Many JCCC courses are offered through cable broadcasts or are available on free-loan VCR cassettes. Students enrolled in TV courses may check out complete sets of course cassettes from Billington Library. Telecourses can also be viewed in the library and on Time Warner Cable or on Comcast Cable. 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 library. Course materials are either available through the JCCC bookstore or are mailed to you prior to the start of the semester. For additional information, contact the department or program office for the course you would like to take. The schedule of current JCCC cable programming can be accessed at www.jccc.net/acad/tvservices.

Course Prefix Listing

Academic Achievement Center	AAC
Accounting	ACCT
Administration of Justice	ADMJ
Agribusiness	HORT
Anthropology	ANTH
Architecture	ARCH
Art	ART
Astronomy	ASTR
Automotive Technology	AUTO
Banking and Finance	AIB
Biology	BIOL
Business Administration	BUS
Business Entrepreneurship	BUSE
Business Office Technology	BOT
Chemistry	CHEM
Civil Engineering Technology	CET
Communication Design	CD
Computer Information Systems	CIS
Interactive Media	CIM
Computer Science	CS
Computers: Personal Computer Applications	CPCA
Computers: Desktop Publishing	CDTP
Computers: Web Courses	CWEB
Cosmetology	AVCO
Dental Assisting	KDA
Dental Hygiene	DHYG
Drafting Technology	DRAF
Early Childhood Education	EDUC
Economics	ECON
Education	EDUC
Electrical Technology	ELTE
Electronics Technology	ELEC
Emergency Medical Science	EMS
Engineering	ENGR
English	ENGL
Fashion Merchandising and Design	FASH
Fire Services Administration	FIRE
Foreign Language	FL
Geoscience	GEOS
Grounds and Turf Management	KAGB
Health Information Technology	KMRT
Health Occupations	AVHO
Health, Physical Education and Recreation	HPER
Hearing Impaired	HRIM
Heating, Ventilation and Air Conditioning Technology	HVAC
History	HIST
Home Economics	HMEC
Honors Program	HON
Horticulture	HORT
Hospitality Management	HMGT
Humanities	HUM
Industrial Technology	INDT
Information Technology	IT
Interdisciplinary Study	IDSP
Interior Design	ITMD
Interpreter Training	INTR
Journalism and Media Communications	JOUR
Leadership Development	LEAD
Learning Strategies	LS
Legal Studies	LAW
Library	LIBR
Marketing Management	MKT
Mathematics	MATH
Metal Fabrication	MFAB
Music	MUS
Nursing	NURS
Practical Nursing	AVPN
Occupational Therapy Assistant	KOT
Paralegal	LAW
Philosophy	PHIL
Photography	PHOT
Physical Education	HPER
Physical Science	PSCI
Physical Therapist Assistant	KPT
Physics	PHYS
Political Science	POLS
Power Plant Technology	PPT
Psychology	PSYC
Radiologic Technology	KRAD
Railroad Electronics	RREL
Railroad Industrial Technology	RRIT
Railroad Maintenance of Way	RRMW
Railroad Operations	RRT
Railroad Operations Conductor Option	RRTC
Railroad Operations Dispatcher Option	RRTD
Railroad Operations Mechanical Option	RRTM
Railroad Welding	RRWE
Reading	RDG
Religion	REL
Respiratory Care	RC
Sociology	SOC
Speech	SPD
Surgical Technology	KSUR
Theatre	THEA
Travel and Tourism Management	KTT
Veterinary Technology	KSAH

Courses/Programs by Division Listing

Business and Technology Division

Accounting
Architecture
Automotive Technology
Business Administration
Business Entrepreneurship
Business Office Technology
Civil Engineering Technology
Computer Information Systems
   Computers: Desktop Publishing
   Computers: Personal Computer Applications
   Computer Science
   Computers: Web Courses
   Interactive Media
Drafting Technology
Economics
Electrical Technology
  Industrial Maintenance Option
Electronics Technology
Engineering
Fashion Merchandising and Design
Heating, Ventilation and Air Conditioning
Home Economics
Hospitality Management
Industrial Technology
Information Technology
Interior Design
Legal Studies
  Legal Nurse Consultant
  Paralegal
Marketing and Management
Metal Fabrication
Power Plant Technology
Railroad Electronics
Railroad Operations
Travel and Tourism Management

Community Outreach and Instructional Support Division

Audio-Visual Services
College Close to Home
College NOW
Library
On Your Site
Television Services

Liberal Arts and Distance Learning Division

Academic Achievement Center
Administration of Justice
Anthropology
Art
Communication Design
College My Way
Early Childhood Education
Education
English
Fire Services Administration
Foreign Language
History
Humanities
Interpreter Training
Journalism
Learning Strategies
Music
Philosophy
Photography
Political Science
Psychology
Reading
Religion
Sociology
Speech and Debate
Theatre

Physical Education Division

Physical Education

Science, Health Care and Math Division

Agribusiness
Astronomy
Biology
Chemistry
Cosmetology
Dental Assisting
Dental Hygiene
Emergency Medical Science
Geoscience
Grounds and Turf Management
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

Vice President, Instruction

Community-Based/Service Learning
Honors
International Education
Regional Police Academy

Student Development Division

Hearing Impaired

Continuing Education

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 AAC 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.

AAC 100
STUDY SKILLS (1CR)

This course is designed to improve student ability to study efficiently. The focus is on an array of skills needed by the college student and on services offered by the college to facilitate the learning experience for the college student, i. e., Writing Center, Math Center, Academic Achievement Center(AAC). Based on the results of a survey of study skills administered during the student's initial visit to the center, an individualized program is established. Using instructional material provided by the AAC, students will master a variety of concepts, including time management/scheduling for study, goal setting, textbook reading, note taking from textbook and from lecture, stress management, preparing for and taking examinations, and using college resources. An Academic Achievement Center instructor is available to work with the student to establish specific instructional goals and to provide individualized instruction as it is needed to complete the student's program. By arrangement.

AAC 101
STUDY SKILLS MINI-COURSE (1CR)

This class is designed to improve student ability to study efficiently. The focus is an array of skills needed by the college student, i.e., test-taking skills, taking notes, using a textbook, critical reading and memory recall, and effective listening and classroom strategies. Also covered are services the college offers to facilitate the learning experience for the college student, i.e., Writing Center, Math Resource Center, Academic Achievement Center, Student Success Center and Billington Library. The format includes reading, discussion and practice exercises. 3 hrs./wk. for 5 wks.

AAC 102
BASIC SPELLING (3 CR)

This course is for students who wish to improve their spelling ability but who have not been successful in the 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. A limited number of spelling rules are taught in the course. This course is ideal for students for whom English is a second language.

AAC 103
ADVANCED SPELLING (1CR)

This course is for the student who needs to learn or review the basic spelling concepts and to improve his or her level of spelling mastery. Based on the results of a pretest administered during the student's initial visit to the Academic Achievement Center, an individualized program is established. Using instructional material provided by the AAC, students will master a variety of concepts, including the final e-rule, the doubling rule, the y-to-I rule, forming the plurals and using possessives. In addition, the student will monitor misspellings that occur in his or her own writing and will master the correct spelling of those words. A post-test will be administered at the end of the program to measure progress. An Academic Achievement Center instructor is available to work with the student to establish specific instructional goals, provide individualized instruction and administer tests as needed to complete the student's program. (By arrangement)

AAC 104
READING COMPREHENSION (1CR)

This course is designed for students who wish to improve their understanding of written language. A pretest is administered to determine a baseline reading comprehension level. An individualized program of study, which includes both instructional material and practice material, is developed for each student. Textbooks, computer software and handouts are some of the materials used in this course. Students learn techniques for increasing reading comprehension, which include previewing, questioning, careful reading with note taking, reciting and reviewing. By arrangement.

AAC 105
READING RATE (1CR)

This course is designed for students who wish to improve the rate at which they process written language. A pretest is administered to determine a baseline reading efficiency rate. An individualized program of study, which includes both instructional material and practice material, is developed for each student. Textbooks, computer software and handouts are some of the materials used in this course. Students learn techniques for increasing reading rate and for improving skimming and scanning levels. By arrangement.

AAC 106
VOCABULARY DEVELOPMENT (1CR)

This course is designed for college students who wishes to expand both their receptive and expressive vocabulary levels. College students are expected to be able to recognize and use vocabularies specific to specialized and changing contents, i.e., data processing, sociology, business. A vocabulary placement test will be administered to determine a starting level. A variety of approaches will be used for acquiring and utilizing a powerful, up-do-date vocabulary. Included in the content are Latin and Greek derivatives, specialized vocabulary, stated and implied meanings as well as the processes of acquisition (context clues, etymology, derivatives). An Academic Achievement Center instructor is available to work with the student to establish specific instructional goals and to provide individualized instruction as it is needed to complete the student's program. By arrangement.**AAC 112**

AAC 112
BASIC MATH REVIEW (1CR)

This course is designed for the student who needs to learn or review the basic mathematical concepts. Based on the results of a pretest administered during the student's initial visit to the center, an individualized program is established. While one student may begin the program with multiplication facts, another may begin with solving proportions or equations. An Academic Achievement Center instructor is available to work with the student to establish specific instructional goals and to provide individualized instruction as it is needed to complete the student's program. By arrangement.

AAC 113
ALGEBRA PREPARATION (1CR)

This course is designed for the student who needs to learn or review basic concepts in algebra. Based on the results of a pretest administered during the student's initial visit to the center, an individualized program is established. Using instructional material provided by the AAC, students will master a variety of concepts, including the terminology of mathematics and algebra, simplifying open expressions, solving algebraic equations and other concepts. An Academic Achievement Center instructor is available to work with the student to establish specific instructional goals and to provide individualized instruction as it is needed to complete the student's program. By arrangement.

AAC 114
CHEMISTRY PREPARATION (1CR)

This course is designed for the student who needs to learn or review the basic chemistry concepts. Based on the results of a pretest administered during the student's initial visit to the center, an individualized program is established. Using instructional material provided by the AAC, students will master a variety of concepts, including chemical symbols and formulas, valences, chemical equations, the metric system, units and dimensions, temperature, numbers in exponent form, significant figures, electrical charges, acids, bases, salts and solubility. An Academic Achievement Center instructor is available to work with the student to establish specific instructional goals and to provide individualized instruction as it is needed to complete the student's program. By arrangement.

AAC 115
COLLEGE SKILLS DEVELOPMENT (1CR)

This course is designed to improve student self-awareness and institutional awareness. Focus is on strengthening the student's ability to use campus resources and services, as well as improving self-awareness in terms of communication skills, aptitudes, interests, values pertaining to career/life decisions, and self-advocacy. 3 hrs./wk. for 5 wks.

AAC 120
INDIVIDUALIZED STUDY (1CR)
AAC 121
INDIVIDUALIZED STUDY (2CR)
AAC 122
INDIVIDUALIZED STUDY (3CR)

Individualized Study is a course designed for the student who wants to improve in any of the following areas: study skills, reading comprehension, reading rate, vocabulary improvement, spelling improvement, basic math, algebra preparation or chemistry preparation. Once the area(s) of study have been determined, the student will be provided a separate syllabus for each area. A pretest will be administered by the instructor in each of these areas, and a program of study will be developed. By arrangement.

AAC 130
MEDICAL TERMINOLOGY (3CR)

This self-instructional course is designed for the student who wants to learn a systematic format for acquiring a medical vocabulary. The course begins with a study of suffixes and prefixes common to most of the body systems and guidelines for combining word parts and for forming plurals. This is followed by a study of each body system and oncological terminology. Any student who is planning a career in any facet of the health care industry will find this course beneficial. By arrangement.

AAC 135
CAREER/LIFE PLANNING (3CR)

This course helps students make decisions about their college majors, careers and other life goals. It emphasizes career research as a tool for making current career decisions and meeting changes in the future workplace. Students learn a systematic approach for making career and life decisions based on their interests, skills and values. 3 hrs./wk.

AAC 150
JOB SEARCH SKILLS (1CR)

This class presents the skills students need to conduct an effective job search, including locating job leads, writing resumes, and employment interviewing. Additionally, students will explore the importance of adapting to changes in the workplace to ensure their job survival and success. The class consists of lectures, activities, discussion and exercises in the career planning and job search process. 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 913-672-2053 for information about enrollment and courses available.

Accounting

ACCT 111
SMALL BUSINESS ACCOUNTING (3CR)

This course will introduce the basic accounting procedures needed to maintain daily records for a small business and the use of such records in the decision-making process. Upon successful completion of the course, the student will be able to maintain a set of financial records with the occasional help of an outside accountant. This course does not prepare the student for Accounting II. 3 hrs./wk.

ACCT 115
ACCOUNTING FOR
NONPROFIT ORGANIZATIONS (3CR)
Prerequisite: ACCT 121

This course is a three-hour survey course of not-for-profit accounting and its primary users: federal, state and local governments, hospitals and schools. Upon successful completion of the course, the student should be able to effectively deal with the primary funds and accounting groups, assist in the budget process, and practice variances among the major nonprofit organizations according to their authoritative pronouncements. 3 hrs./wk. 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 or ACCT 111

Upon successful completion of this course a student will be able to use the microcomputer to create a chart of accounts, accounts receivable and payable subsidiary ledgers, transaction journals, general ledgers, financial statements, reports and forecasts. 3 hrs./wk.

ACCT 140
COMPUTERIZED
ACCOUNTING PROBLEMS (3CR)

Corequisite: ACCT 122

The course will teach students how to use spreadsheet and database software to set up and solve accounting problems. 3 hrs./wk.

ACCT 221
COST ACCOUNTING (3CR)

Prerequisite: ACCT 122

Upon completion of this course, the student should be able to develop and 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. Students will recognize needed information, determine where it can be obtained and decide how this information can be used by managers to plan, control and make decisions. Material covered includes financial statement analysis, cost application and budgeting reports 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.

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.

ACCT 278
ACCOUNTING INTERNSHIP I (1CR)

Prerequisite: ACCT 121

The student will be able to gain work experience in an approved training station under instructional supervision in an accounting or accounting-related occupation. This internship is designed to give students the opportunity to apply the skills they have acquired in accounting specialty courses. The internship will require an average of 15 hours of job training per week by arrangement.

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 as a capstone experience before 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 to solve

problems, identify and apply ethical positions and effectively communicate this information to others both orally and in writing.

Administration of Justice

ADMJ 120
WRITING IN THE DISCIPLINES (1CR)

This course is designed to complement and/or support classes where writing is intrinsic to the curriculum and to provide students with a process that can be applied to the variety of written assignments typically assigned in classes other than composition. Students will practice writing a variety of short papers using a prescribed process for each assignment. The course is individualized. By arrangement.

ADMJ 121
INTRODUCTION TO
ADMINISTRATION OF JUSTICE (3CR)

The student will study and understand the following themes in the history of the criminal justice system: considerations of the causes of crime and factors shaping public attitudes toward wrongdoing, techniques of law enforcement, systems of substantive criminal application of penal sanctions, with an attempt to determine the underlying motivation for particular sanctions, and the effectiveness of the punishment. 3 hrs./wk.

ADMJ 124
CRIMINAL JUSTICE AND CORRECTIONS (3CR)

This course is a detailed exploration of the subsystems of the criminal justice system. It will begin with the history and evolution of the penal system. The law, legal system and criminal justice process will be reviewed. The major focus of the course will be a sociological perspective of the penal system. This includes a detailed examination of jails, detention facilities, probation, prisons and parole. An overview of the state, local and federal correctional systems will provide a systemic view of society's response to criminal behavior. 3 hrs. lecture/wk.

ADMJ 127
CRIMINOLOGY (3CR)

This class will explore various explanations for criminal behavior including choice, biosocial, psychological, social structural and social process theories. Society's responses to crime will also be examined. 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 effect on law enforcement techniques and procedures. 3 hrs./wk.

ADMJ 141
CRIMINAL LAW (3CR)
Prerequisite: ADMJ 124 or PL 121

After taking this course, the student will be able to state the two basic elements necessary for any crime and the philosophy behind these two elements. After a detailed exploration of common law crimes and selected Kansas and Missouri statutes, the student will be able to classify common law crimes and state the difference between a felony and a misdemeanor. The student will understand the significance of the separation of powers doctrine and its application to criminal law and the constant interplay of the U.S. Constitution in criminal law. 3 hrs./wk.

ADMJ 145
FUNDAMENTALS OF PRIVATE SECURITY (3CR)

In addition to understanding the general field of private security, the student will be able to differentiate between the security needs of industry, private business, government and selected educational institutions. 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 effects 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 170
INTRODUCTION TO SUBSTANCE USE AND ABUSE (3CR)

This course explores mood-altering substance use and abuse, including these substances' history and evolution. The course will focus on the models of abuse, addiction and treatment. The current local and federal laws governing substance use and abuse will be examined. Students will gain a comprehensive grasp of the current facts, focuses and methods of dealing with mood-alternating substances. 3 hrs. lecture/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 230
CRIMINAL BEHAVIOR (3CR)

Prerequisite: PSYC 130

This course is a detailed survey of the various psychological pathologies displayed by citizens when coming into contact with the police, as well as the sources of those pathologies. Various strategies of handling and dealing with troubled persons will be discussed. Student will learn about psychological profiling and mental status examination. Factors contributing to individual behavior will be explored. Students will receive an overview of common treatment procedures. 3 hrs. lecture/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 140 clock hours of law enforcement training provided in addition to the 400 hours required by the Kansas Minimum Standards Training Act for recruits attending the Police Academy. While the required 400-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 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.

ADMJ 285
ADMINISTRATION OF JUSTICE INTERNSHIP (3CR)

Prerequisites: Fifteen credit hours in ADMJ courses or division administrator approval, and a grade point average of 2.0 or higher

The student will gain experience in settings that reflect application of knowledge and skills acquired in the Administration of Justice program. The student is expected to interact in a structured format with a professional agency, in a role related to study and career interests, and to develop insight and information that will help refine career directions and focus further study.

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 course will be a study of the basic concepts, methods and research areas in physical anthropology. Scientific methods, forces of evolution, dating methods, archaeological techniques, primates characteristics and behavior, and the tracing of primate and human evolution through skeletal material and artifacts will be among the topics discussed. 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
NATIVEAMERICANS (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 course will be a study of the basic concepts, methods and research areas in archaeology. Archaeology methods and techniques, the earliest evidence of tools and other cultural remains, the Middle Paleolithic to Upper Paleolithic transition, the peopling of the Americas, the development of agriculture and the evidence for complex societies will be among the topics discussed. 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.

ARCH 240
ARCHITECTURAL HISTORY: ANCIENT/MIDDLE AGES (3CR)

This course will trace the development of the built environment from Antiquity to the Middle Ages and explore pre-Columbian, Islamic and other non-Western architecture. Emphasis will be placed on how materials, technological advances and natural environment influence architecture. The shaping of architecture

through cultural forces will be stressed. Fundamental design principles and analysis of the built form will also be covered. 3 hrs. lecture/wk.

ARCH 241
ARCHITECTURAL HISTORY:
RENAISSANCE/ENLIGHTENMENT (3CR)

This course will investigate the architecture of the Renaissance, Baroque and Enlightenment periods. A brief exploration on non-Western architecture paralleling the Western periods will also be presented. The focus of this course will be on the principles of design, cultural forces and concept of the built environment within its historical context. The work of prominent architects from each period will be highlighted and analyzed. 3 hrs. lecture/wk.

Art

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, texture and space. 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

This course involves intermediate problems in drawing with emphasis on individual expression based on historical as well as contemporary concerns and approaches in art. Students will work from models, still-life and conceptual presentations. A variety of media will be explored. 6 hrs./wk.

ART 135
PAINTING I (3CR)

This course is an introduction to the basic elements of painting. Students will learn basic painting skills, color properties, color mixing, color relationships, applications and proper use of tools and equipment. 6 hrs./wk.

ART 136
PAINTING II (3CR)

Prerequisite: ART 135

This course involves intermediate problems in painting with emphasis on individual expression based on historical as well as contemporary concerns and approaches in art. 6 hrs./wk.

ART 138
DIGITAL IMAGING FOR ARTISTS (3CR)

This course is an introduction to the use of the computer as a medium for making fine art. The course will emphasize 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 deals with more advanced methods and studio experiences in creative ceramic wheel expression and glaze formation. Emphasis is on development of a sense of thrown form and creative decoration or optional creative non-wheel ceramic form development.

Course focuses on advanced ceramic form production, aesthetic issues, investigative study and practice. Clay, glaze and firing techniques are investigated in depth. Student acquires a repertoire of studio skills, a deeper awareness of ceramic history and articulated criteria of judgement. Individual interpretation and conceptual development are expected. The study of aesthetics of ceramic form is undertaken. 6 hrs. lecture, lab/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. Assignments require work in sandstone, clay, wax, bronze, aluminum and steel, and involve carving, modeling and building up. 6 hrs. lecture, lab/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 with individual material choices. 6 hrs./wk.

ART 148
METAL AND SILVERSMITHING I (3CR)

This course is a basic introduction to the terms, tools and techniques involved in creating jewelry and other wearables as they relate to the human figure. Casting, fabrication and construction will be explored. 6 hrs./wk.

ART 149
METAL AND SILVERSMITHING II (3CR)
Prerequisite: ART 148

Students will study advanced casting and construction techniques. Projects should show a higher degree of design and function. 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 course is an introduction to transparent water media with emphasis on learning fundamental painting skills, the visual elements, composition, 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 that 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 will acquaint students with the arts and ideas that arose in India, China and Japan from the prehistoric to the early modern periods. 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. lecture/wk.

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

This course is an introduction to the basic elements of drawing for students wanting a concentration in drawing the human figure. Students will acquire basic competence in developing drawings involving the human form. 6 hrs./wk.

ART 232
LIFE DRAWING II (3CR)
Prerequisite: ART 231

This course is an intermediate investigation of drawing from the human form. This class is for students wanting to concentrate on figure drawing beyond Life Drawing I. 6 hrs./wk.

ART 235
STUDIO WORKSHOP I (3CR)
Prerequisite: ART 131 or ART 136

This course involves advanced problems in painting (or drawing) with emphasis on individual expression based on historical as well as contemporary concerns and approaches in art. 6 hrs./wk.

ART 236
STUDIO WORKSHOP II (3CR)
Prerequisite: ART 235

This course involves advanced problems in painting (or drawing), above and beyond those experienced in Workshop I, with emphasis on individual expression. 6 hrs./wk.

ART 244
CERAMICS WORKSHOP I (3CR)
Prerequisites: ART 143

Students will have the opportunity to pursue advanced individual research under the direction of the instructor. Emphasis is on creative expression and development of technical skills as well as the further pursuit of technical studies that have relevance for emerging personal specializations. Students will conduct a personal program of study on one aesthetic issue that emerges as personally significant and present the outcomes in an appropriate and acceptable manner at the close of the semester. Students should initiate and pursue studies in directions that inform and further their individual professional and creative growth, which leads to invention, innovation and refinement of their personal semester work, as agreed upon with the instructor. This course enables further pursuit of technical studies that have relevance for these emerging personal specializations. Skill refinement, three-dimensional imagination, with increased creative expression and creative product generation are anticipated. 6 hrs. lecture, lab/wk.

Astronomy

ASTR 120
FUNDAMENTALS OF ASTRONOMY (3CR)

This course is a study of the universe from the earth, moon and planets to the stars and the most distant galaxies. Topics include black holes, quasars, the origin of the universe and the possibility of life on other planets. Current astronomical discoveries are discussed in class as they occur. Access to astronomical Web sites is available to students in this course. 3 hrs. lecture/wk.

ASTR 122
ASTRONOMY (4CR)

This course is a study of the universe from the earth, moon, and planets to the stars and the most distant galaxies. Topics include black holes, quasars, the origin of the universe and the possibility of life on other planets. Current astronomical discoveries are discussed in class as they occur. Access to astronomical Web sites is available to students in this course. 3 hrs. lecture, 2 hrs. lab/wk., 5 nighttime telescope sessions are required.

Automotive Technology

AUTO 121
SMALL ENGINE SERVICE (3CR)

Upon successful completion of this course, the student should be able to compare and contrast operating principles of two- and four-stroke cycle engines. The student should be able to describe lubricating, cooling, fuel and governor systems; troubleshoot engine problems; inspect engine components; and service 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)

This is a beginning course that is appropriate for both the automotive major and other interested students. 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. Lectures will be supported by parts specialists in the industry. 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 engine components and parts and 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 ANDSUSPENSION (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.

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 ANDAXLES (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 will prepare students to take any of the eight basic National Institute for Automotive Service Excellence (ASE) automotive certification tests, the Advanced Engine Performance Specialist (L1) test or the three ASE Engine Machinist tests. 1 hr. lecture/wk.

AUTO 206
AUTOMOTIVE RETAILING SALES (3CR)

Prerequisite: MKT 133 or MKT 134

Upon successful completion of this course, the student should be able to demonstrate the skills necessary for competency in automotive retailing. Student awareness and understanding will be directed toward: an introduction to automotive retailing, past, present and future; professionalism in sales; the components of sales transactions; a structured sales program and product knowledge; customer satisfaction and follow-up; building a clientele; and success through self-improvement. 3 hrs. lecture/wk.

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 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, fuel pumps, injectors and controlling devices. The student should also be able to describe the operation and construction of ignition circuits to include computer-controlled and DIS 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)

Natural History of Kansas describes physical and biological processes which 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 the plants and animals of Kansas. The course will consider how the physical and biological environment relates to past and present human resource uses. 3 hrs. lecture/wk. Two Saturday 7-hr. labs required.

BIOL 122
PRINCIPLES OF BIOLOGY (3CR)

This course is an introduction to selected concepts and principles important to an understanding of how biological systems operate. The importance of scientific methods and processes will be explored. Biological organization will be studied by examining the chemical, cellular, organismal and ecological properties that are unique to life. The diversity and unity of life will be explained in terms of classical and molecular genetics. 3 hrs./wk.

BIOL 123
PRINCIPLES OF BIOLOGY LAB (1CR)

Prerequisite or corequisite: BIOL 122 or permission of the academic director

This introductory lab examines basic biological concepts by focusing on the structures and functions of plants and animals. 2 hrs./wk.

BIOL 124
OCEANUS: THE MARINE ENVIRONMENT (3CR)

This course for beginning students focuses on the marine environment as a unique feature of the planet Earth and investigates areas of intense scientific and public concern: the pervasiveness of the ocean and its effect on the Earth's weather, its stunning physical size and diversity of contained life forms, its contributions 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, growth and structure of plants. Divisions of the plant kingdom will be presented with emphasis on life cycles, anatomy, physiology and ecology of major groups. Students will do microscopic and macroscopic analysis of the major division. 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 lays in anatomical and physiological features. Students will do dissections and microscopic analysis of the major phyla. 3 hrs. lecture, 4 hrs. lab/wk.

BIOL 130
ENVIRONMENTAL SCIENCE (3CR)

Environmental Science seeks to describe problems and solutions associated with human use of natural resources. Students will study the major physical and biological processes that govern the complex interactions in natural ecosystems. Major course topics include human population growth, resource use and pollution. Practical solutions aimed at sustainability will be identified and examined. This is an introductory, nonscience-major survey course. 3 hrs./wk.

BIOL 131
ENVIRONMENTAL SCIENCE LAB (1CR)

Prerequisite or corequisite: BIOL 130

In this lab, students will learn ecological principles that are necessary for understanding and solving environmental problems. Students will sample the local environment for various types of environmental pollution, conduct lab projects, computer simulations, and attend field trips. Field trips may include a visit to a local wastewater treatment plant, a stream ecosystem and a prairie ecosystem. 2 hrs. lab/wk. plus up to three field trips.

BIOL 135
PRINCIPLES OF CELL AND MOLECULAR BIOLOGY (4CR)

This is an integrated lecture and laboratory course for biology majors and students planning to take additional courses in biology. Subjects covered include basic biochemistry, cell structure and function, cellular metabolism, Mendelian and molecular genetics, natural

selection and evolution, cell physiology and development of plants and animals from the single-celled stage to embryo. 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)
This course provides basic knowledge on human structures and their function and is for the beginning college science student. Students will study the relationship of structures to function in the organ systems of the human body. Emphasis will be on the identification of the anatomical features and their functions. This course is integrated lecture and laboratory. 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 cat and study the relationship of structures to function in the organ systems of the cat. In this laboratory course, they will also dissect the cow kidney, heart, brain and eye. Students will compare and contrast these structures and functions with the organ systems of 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 GPA)
The cells, tissues and organ systems of the body will be examined with emphasis on the head and neck. Discussion and analysis of each body region will be included, as well as embryology of the head and neck. 3 hrs. lecture, 3 hrs. lab/wk.

BIOL 150
BIOLOGY OF ORGANISMS (5CR)
Prerequisite: BIOL 135 or permission of academic director
This is a survey of the five kingdoms of life. Monera, fungi, protista, plant and animal kingdoms will be presented, with emphasis on life cycles, anatomy, physiology and ecology of the major groups. 4 hrs. lecture, 3 hrs. lab/wk.

BIOL 160
INTRODUCTION TO BIOTECHNOLOGY (2CR)
Prerequisite: BIOL 135 and CHEM122 or permission of academic director
This course is an introduction to biotechnology, including career exploration, history and applications of DNA/RNA technology, molecular biology and bioethics. Topics include cloning, DNA, antibodies, gene therapy, plant biotechnology, the human genome project, DNA fingerprinting, genetic testing, diverse products made through biotechnology, and the ethical implications of this technology. The course is supplemented with guest lecturers and demonstrations that illustrate the basic techniques of biotechnology. 3 hrs. lecture/wk.

BIOL 165
LABORATORY SAFETY (1CR)
Prerequisite: BIOL 135 and CHEM 122 or permission of academic director
This course will emphasize laboratory safety and procedures. Additionally, regulations that govern the biotechnology laboratory will be discussed. Biological, chemical and radiation safety will all be handled through lectures, videotapes, demonstrations and field trips. There will also be exposure to good manufacturing practices (GMP), quality assurance and control procedures (QA/QC), and OSHA and FDA regulations. 1 hr. lecture/wk.

BIOL 205
GENERAL GENETICS (4CR)
Prerequisite: BIOL 122 or the equivalent
This introductory course emphasizes human heredity using concepts from classical and modern genetics. Themes of advancing technologies and bioethical issues are interwoven in the basic background fabric of the course. 5 hrs./wk.

BIOL 210
PATHOPHYSIOLOGY (4CR)
Prerequisites: BIOL 144 or BIOL 140 and BIOL 225
This introduction to the physiology of disease covers common disorders of the body from the cellular to the systemic level. Topics include: causes, symptoms, diagnostic tests and treatments of disease. 4 hrs./wk. Spring.

BIOL 225
HUMAN PHYSIOLOGY (4CR)
Prerequisites: BIOL 140 or BIOL 146 and CHEM 122
This is an introduction to the dynamic functions of the human organism from the chemical and molecular mechanisms that sustain cellular processes through the

control systems responsible for homeostasis and the influence of these systems on the cellular function of organ and system operation. Laboratory investigation using selected biochemical and physiological preparations allows correlation of theory with experimental observations. 3 hrs. lecture, 3 hrs. lab/wk.

BIOL 230
MICROBIOLOGY (3CR)

Prerequisite: CHEM 122 or one year of high school chemistry

This is a general introductory course in microbiology. It provides a background in many areas of microbiology with an emphasis on medical aspects. The structure, physiology, antimicrobial agents, immunology and host-parasite relationship of microorganisms will be studied, with an emphasis on bacteria. 3 hrs./wk.

BIOL 231
MICROBIOLOGY LAB (2CR)

Prerequisite or corequisite: BIOL 230

Students will learn aseptic techniques and apply them in the isolation of pure cultures of bacteria. Students will also perform various staining techniques and chemical tests to identify these bacteria. The response of bacteria to changes in environmental conditions will also be examined. Various life stages of medically important parasites will also be observed. 4 hrs./wk.

BIOL 235
GENERAL NUTRITION (3CR)

Corequisite: BIOL 225 or the equivalent

This introductory course provides a basic knowledge of human nutrition. Students will learn the sources and functions of the various nutrients. They will also explore the interaction of diet, disease prevention and treatment. Through the use of a computerized nutrition program, students will analyze their diets for nutritional deficiencies and excesses. 3 hrs./wk.

BIOL 240
GENERAL PHARMACOLOGY (3CR)

Prerequisite: BIOL 225

This course provides a basic understanding of the science of drugs — how they work and what they do. Students will study various drug concepts including mechanism of action, pharmacologic class, pharmaco-kinetics, pharmacodynamics and clinical implications. 3 hrs. lecture/wk. Spring.

BIOL 250
ECOLOGY (4CR)

Prerequisites: BIOL 122 and BIOL 123, or BIOL 135 or approval of the academic director

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 260
BIOTECHNOLOGY METHODS (5CR)

Prerequisites: BIOL 160, BIOL 165 and BIOL 230 or permission of academic director

This course is an introduction to the theory and laboratory techniques in molecular biology, protein biochemistry and immunology, with an emphasis on gene expression and regulation, recombinant DNA, RNA transcription, and protein translation. Laboratory emphasis will be on molecular biological techniques used in modern research and industrial laboratories. Techniques include growth and maintenance of E. coli, gene cloning, DNA and protein electrophoresis, protein purification, and enzymatic and immunological assays. Lecture and laboratory exercises on the principles and practices of initiation, cultivation, maintenance, preservation of cell culture lines and applications will also be covered. 3 hrs. lecture, 6 hrs. lab/wk.

BIOL 265
BIOTECHNOLOGY INTERNSHIP (4CR)

Prerequisites: BIOL 160, BIOL 165 and BIOL 260 or consent of instructor

The internship will provide advanced students the opportunity to develop job- and career-related skills while in a work setting. Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The work will be developed cooperatively with academic, industrial and private institutional biotechnology laboratories. 3 hrs./wk.

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 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 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 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 150
BUSINESS COMMUNICATIONS (3CR)

Prerequisite: ENGL 121

Upon successful completion of this course, the student should be able to explain the role of communication in the business environment and identify the most effective methods for creating, sending, and receiving messages. In addition, the student should be able to utilize effective oral and written communication skills in business; write and evaluate business documents, including letters, memos, and reports using the principles of correct style, organization, and format; 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 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)

This course is designed to introduce the student to the global economy. Differences in political, economic and cultural forces within countries will be analyzed and national competitiveness assessed. Cross-border trade and investment and the global monetary system will be introduced and analyzed. Competition and a firm's international business strategy in the global marketplace will be examined. Ethical issues in international business will also be discussed. 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 human resources; 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 the course, the student should be able to explain the nature and role of finance in the U.S. economy and demonstrate an understanding of the concepts of corporate finance and the sources and types of corporate financing. Additionally, the student should be able to explain and accurately compute a firm's cost of capital and demonstrate an understanding of the capital budgeting process and how to manage and finance current assets. This course is required for the associate of applied science in business administration degree. 3 hrs. lecture/wk.

BUS 261
BUSINESS LAW I (3CR)

This course is designed to introduce the students to the American legal system. Principles of legal ethics in business will be introduced. Principles of common law of contracts will be discussed. Sections of Uniform Commercial Code as applied to the law of sales and law of negotiable instruments will be introduced. 3 hrs./wk.

BUS 263
BUSINESS LAW II (3CR)

Prerequisite: BUS 261

A continuation of *Business Law I*, this course will introduce the student to the principles of Uniform Commercial Code as applied to secured transactions. The law of bankruptcy, principles of agency and business organizations such as partnerships, limited partnerships, joint ventures, corporations, and sole proprietorships will be discussed. Principles of real property, personal property, bailments, estate and trusts will be introduced. 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. This course is required for the business plan certificate, the business entrepreneurship vocational certificate and the associate of applied science degree in business entrepreneurship. 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 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 the 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 240 hours of on-the-job training is required. This course is required for an associate of applied science degree in business entrepreneurship. Either BUSE 210 *Entrepreneurship Internship I* or BUSE 215 *Entrepreneurship Internship II* is required for a vocational certificate in business entrepreneurship.

BUSE 215
ENTREPRENEURSHIP INTERNSHIP II (1CR)
Prerequisite: BUSE 140
Upon the 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 240 hours of on-the-job training is required. This course is required for an associate of applied science degree in business entrepreneurship. Either BUSE 210 *Entrepreneurship Internship I* or BUSE 215 *Entrepreneurship Internship II* is required for a vocational certificate in business entrepreneurship.

Business Office Technology

BOT 101
COMPUTERIZED KEYBOARDING (1CR)
Upon successful completion of this course, the student should be able to operate a computer keyboard by touch to enter data with speed and accuracy. 1 hr./wk.

BOT 102
BUSINESS ENGLISH (1CR)

Upon successful completion of this course, the student should be able to demonstrate the basic rules of English, to develop correct sentence structure, and to use accurate English grammar and mechanics when writing documents. Students also will be able to proofread written work using standard proofreading symbols. 1 hr./wk.

BOT 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.

BOT 110
SKILLBUILDING I (1CR)

Prerequisite: BOT 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.

BOT 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 business application problems. 1 hr./wk.

BOT 118
SKILLBUILDING II (1CR)

Prerequisite: BOT 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.

BOT 120
MACHINE TRANSCRIPTION (1CR)

Prerequisite: BOT 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.

BOT 122
MEDICAL KEYBOARDING (1CR)

Prerequisite: BOT 105 or equivalent

Upon successful completion of this course, the student should be able to use a diagnostic approach to develop keyboarding speed and accuracy in medical formats. The student should also be able to improve keyboard skillbuilding by completing individualized drills and activities pertaining to the transcription of medical reports. 1 hr. lecture/wk.

BOT 125
DOCUMENT FORMATTING (1CR)

Prerequisite: BOT 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.

BOT 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.

BOT 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.

BOT 155
WORD PROCESSING APPLICATIONS I (2CR)
Prerequisite: BOT 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.

BOT 160
LEGAL TRANSCRIPTION (3CR)
Prerequisite: BOT 155 or equivalent

Upon successful completion of this course, the student should be able to demonstrate skill in spelling, defining, pronouncing and using legal terms in proper context. The student should also be able to use legal reference resources and transcribe legal documents from dictation using proper formatting rules. 3 hrs./wk.

BOT 165
MEDICAL TRANSCRIPTION (3CR)
Prerequisites: LC 130 and BOT 155 or equivalent

Upon successful completion of this course, the student should be able to transcribe medical reports using proper formats and transcription rules. These reports concern in-patients with a specific medical problem. Reports include history and physical examinations, radiology reports, operative reports, pathology reports, requests for consultation, death summaries, discharge summaries and autopsy reports. Students should be able to spell, define, pronounce and use medical terms in proper context and be able to use medical reference books. 3 hrs./wk.

BOT 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.

BOT 175
CONFLICTINTHE 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.

BOT 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 advanced formatting techniques, advanced features and advanced functions of Microsoft Excel. The following topics will be covered: working with templates, workbooks and lists; using Excel's analysis tools; managing and auditing worksheets; collaborating with workgroups; creating and editing macros; and importing and exporting data. 1 hr. lecture/wk.

BOT 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. The student should be able to identify and implement methods of troubleshooting and explain ways of getting additional help. 1 hr. lecture/wk.

BOT 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.

BOT 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.

BOT 220
PHARMACOLOGY TERMINOLOGY (2CR)

Prerequisite: LC 130

Upon successful completion of this course, the student should be able to use pharmacological terminology in an appropriate context. This course includes an investigation of medication actions, dosage forms, routes of administration, and uses. The course emphasizes the terminology necessary for transcription of medical reports. 2 hrs. lecture/wk.

BOT 255
WORD PROCESSING APPLICATIONS II (2CR)

Prerequisite(s): BOT 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, table of contents and indexes, graphics, master and subdocuments, and other advanced features of the software package. 2 hrs. lecture-demonstration/wk.

BOT 260
DESKTOP PUBLISHING FOR THE OFFICE (3CR)

Prerequisite: BOT 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.

BOT 265
COMPUTERIZED OFFICE APPLICATIONS (3CR)

Prerequisites: CPCA 110, CPCA 114, CPCA 141, BOT 255 and BOT 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 be able to use the basic features of word processing, database, spreadsheet and presentation applications. The student will also use advanced features to complete simulated office applications and to perform multitasking projects. 3 hrs./wk.

BOT 270
ADVANCED MEDICAL TRANSCRIPTION (3CR)

Prerequisite: BOT 165

Upon successful completion of this course, the student will develop medical transcription skills with emphasis on additional speed and accuracy. Students will apply language skills, decision-making skills and "common sense" skills during the transcription process. Students will become familiar with the medical transcription profession, employment opportunities, the important role of the medical transcriptionist in the health care team, and personal attributes, knowledge and skills required to produce error-free documents according to the employer's and AAMT standards. 3 hrs. lecture/wk.

BOT 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 business office technology courses. 185 hrs. work experience.

BOT 280
OFFICE INTERNSHIP II (1CR)

Prerequisite: BOT 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 assistant, administrative assistant with medical emphasis, administrative assistant with legal emphasis, or certificate options. The course will provide practical experience using skills acquired in the program. 185 hrs. work experience.

Chemistry

CHEM 120
CHEMISTRY IN SOCIETY (4 CRS)
This course is designed for non-science major students who seek an understanding of the concepts of chemistry. Historical foundations of chemistry, applications to society and daily life, controversies of contemporary concern and current research topics are explored. Inquiry-based laboratory experiments will illustrate chemical principles. 3 hrs. lecture, 2 hrs. lab/wk.

CHEM 122
PRINCIPLES OF CHEMISTRY (5CR)
This course is an introduction to the fundamental basics of chemistry, with emphasis on general concepts of inorganic chemistry and sufficient study of organic chemistry to introduce the student to biochemistry. The student will learn basic definitions and theories of chemistry, solve numerical problems related to chemical principles and apply chemical concepts in laboratory work. 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
Chemistry 131 is the second semester of a two-semester course in general chemistry in which the student will develop a working knowledge of some of the fundamental concepts and quantitative relationships involved in the study of chemical reactivity. Topics include chemical kinetics, chemical equilibrium, acid-base chemistry, chemical thermodynamics and electrochemistry, nuclear chemistry and basic organic 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
This course covers nomenclature, theory, and applications of basic organic chemistry and biochemistry in the area of carbohydrates, lipids, proteins and enzymes. The lab activities reinforce the topics presented in the lecture. 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
Organic Chemistry I is an introduction to the theories and principles of the chemistry carbon compounds. The student will develop an understanding of organic chemistry, which will be useful in the studies of chemistry and related fields such as medicine, engineering or

pharmacy. The laboratory is supportive in nature with a strong emphasis on developing laboratory techniques. Representative compounds will be prepared and used to introduce the student to instrumental analysis. 3 hrs. lecture, 6 hrs. lab/wk.

CHEM 221
ORGANIC CHEMISTRY II (5CR)

Prerequisite: CHEM 220

Organic Chemistry II is a continuation of Organic Chemistry I, the nomenclature, principles and theories of organic chemistry with emphasis on electronic theories and reaction mechanisms. Laboratory is supportive in nature with emphasis on developing laboratory techniques and preparation of representative compounds. Organic Chemistry II completes the study of organic chemistry designed to prepare the student for continued work in chemistry and related fields. 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 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 upon 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)

This course introduces the student to the terms, methods, procedures, sequences of operation and types of construction and planning in civil and building construction. 3 hrs./wk.

CET 120
ENGINEERED PLUMBING SYSTEMS I (3CR)

Upon successful completion of this course, the student should be able to use codes, engineering principles and design engineering practices to analyze and design basic plumbing systems. Topics covered include codes, materials, hangers, supports and expansion and contraction. Plumbing systems covered include fuel gas, domestic water and soil waste/vent. The student should also be able to interpret drawings related to plumbing technology. 3 hrs. lecture/wk.

CET 122
ENGINEERED PLUMBING SYSTEMS II (3CR)

Upon successful completion of this course, the student should be able to describe storm water, industrial wastes, compressed air and irrigation and fire sprinkler systems. Topics include water treatment, noise control, decorative pools, pumps, estimating, specifications and field inspection. 3 hrs. lecture/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

This course introduces the student to the basic principles of construction estimating. Topics covered include estimating quantities of materials from drawings and using reference books, tables and the C.S.I. format. Students will use industry-standard software for construction estimating. 2 hrs. lecture and 3 hrs. lab/wk.

CET 129
CONSTRUCTION MANAGEMENT (3CR)

This course is intended for students interested in learning management principles for construction projects. Upon successful completion of this course, the student should be able to perform many processes associated with construction projects and complete forms typically used in project management. Topics include contract documents, 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 133
CONCRETE TESTING (2CR)

This course covers the principles of making and testing concrete. The emphasis will be on allowing concrete to reach the highest level of durability through proper mix design, placing and finishing techniques, and curing methods. This course will help prepare the student for the ACI National Certification exam. 1½ hr. lecture, 3 hrs. lab/wk.

CET 140
CIVILENGINEERING 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 DESIGN (3CR)
Prerequisite: MATH 134 or MATH 172 or MATH 173 or MATH 241

Upon successful completion of this course, the student should be able to evaluate and design force systems in equilibrium. Topics include truss analysis, stress and strain, shear, loading conditions, steel member selection, and connection design. Computer applications are included. 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 188.)

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 theoretical and perceptual techniques and processes that relate to the visual analysis of three-dimensional form and its accurate interpretation on a two-dimensional surface. Focus will be on the application of principles of linear perspective to attain structural accuracy in drawings of a purely theoretical nature as well as those done from life. 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 in conveying 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 course covers digital prepress applications, scanning, image manipulation and color output devices. The transition from conventional to digital production will be explored. Analysis of output and file management and the understanding of proofing systems will be covered. Proper usage of peripheral equipment will be emphasized. 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. Students will have the opportunity to work with professional illustrators. 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, providing experience in digital prepress and other electronic production techniques. The student will apply production skills to problems of professional scope and complexity, including specialty processes, trapping and color separation. Preparation of graphic files for screen presentation and for the Web will be explored. 6 hrs./wk.

CD 244
COMMUNICATION SYSTEMS (3CR)
Prerequisites: CD 230, CD 231, CD 235 and either CIM 135 or 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
ADVANCEDDESIGN PRACTICE (3CR)
Prerequisites: CD 230, CD 231, CD 235 and either CIM 135 or 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 their portfolios. 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 resume 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

Upon completion of this course, students will be able to use basic features and techniques of the PageMaker desktop publishing program. Students will be able to produce text material with complex tab and indent specifications and style attributes, and will be able to demonstrate a knowledge of grouping and distributing multiple text blocks. Further, students will be able to show basic proficiency with drawing tools, multiple document work, 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

In this career-related course, students will create page layout documents using a variety of basic techniques on either the Macintosh or PC computer platform. Students will produce text material with complex tabs and indents and style attributes. Students will also be able to group and distribute multiple elements, demonstrate a basic proficiency with drawing tools, multiple document work, drop caps, text rotation, locking items and threading text blocks. 1 hr. lecture/wk.

CDTP 135
DESKTOP PHOTO MANIPULATION I: PHOTOSHOP (1CR)
Prerequisite: CPCA 105 or CPCA 106

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 140
DESKTOP PUBLISHING I: INDESIGN (1CR)
Prerequisite: CPCA 105 or CPCA 106

In this career-related course, students will create page layout documents using a variety of basic techniques on either the Macintosh or PC computer platform. Students will produce text material with complex tabs and indents and style attributes. Upon successful completion of the course, students will also be able to group and distribute multiple elements and demonstrate a basic proficiency with drawing tools, multiple document work, drop caps, text rotation, locking items and threading text blocks. 1 hr. lecture/wk.

CDTP 145
DESKTOP ILLUSTRATION I: ILLUSTRATOR (1CR)
Prerequisite: CPCA 105 or CPCA 106

In this career-related course, students will create basic computer-generated illustrations using a variety of techniques on either the Macintosh or Windows PC computer platform. Students will draw simple paths and shapes, create layers, import graphics and add typographic elements in rows and columns with runarounds, baseline shifts and conversion to outlines. 1 hr. lecture/wk.

CDTP 150
DESKTOP PUBLISHING II: PAGEMAKER (1CR)
Prerequisite: CDTP 130

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)
Prerequisite: CDTP 131

In this career-related course, students will create page layout documents using a variety of basic techniques on either the Macintosh or PC computer platform. Students will produce text material with complex tabs and indents and style attributes. Students will also be able to group and distribute multiple elements, demonstrate a basic proficiency with drawing tools, multiple document work, drop caps, text rotation, locking items and threading text blocks. 1 hr. lecture/wk.

CDTP 155
DESKTOP PHOTO MANIPULATION II: PHOTOSHOP (1CR)
Prerequisite: CDTP 135

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 effects, 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 160
DESKTOP PUBLISHING II: INDESIGN (1CR)
Prerequisite: CDTP 140

In this career-related course, students will create intermediate-level page layout documents using a variety of techniques on either the Macintosh or PC computer platform. Students will learn how to work with type styles, threads, columns, special characters, hanging indents, vertical spacing and tables as well as exploring PDF files. Students will also be able to master several aspects of working with graphic images: placing images, linking, clipping paths, libraries, grids, Bezier drawing, compound paths and reflections. Finally, students will work with advanced framing techniques to nest frames within shapes. 1 hr. lecture/wk.

CDTP 165
DESKTOP ILLUSTRATION II: ILLUSTRATOR (1CR)
Prerequisite: CDTP 145

In this career-related course, students will create intermediate-level computer-generated illustrations using a variety of techniques on either the Macintosh or PC computer platform. Students will trace an object, create complex gradients with custom blends, create complex objects receding toward a vanishing point, and create an orthogonal projection to simulate depth. 1 hr. lecture/wk.

CDTP 170
DESKTOP PUBLISHING III: PAGEMAKER (1CR)
Prerequisite: CDTP 150

Upon completion of this course, students will be able to use some of the advanced features and techniques of the PageMaker desktop publishing program, particularly relating to the use of graphic images. Students will be able to produce documents that include such sophisticated techniques as brochure template design, non-printing blocks, step-and-repeat and paste-in-place, table generation, drawing graphic images and color separation techniques. Creating

multiple design applications with final art markup and separations will be covered. 1 hr. lecture/wk.

CDTP 171
DESKTOP PUBLISHING III: QUARKXPRESS (1CR)
Prerequisite: CDTP 151

In this career-related course, students will create several brochure layouts on either the Macintosh or PC computer platform which incorporate a variety of drawing techniques, including layering, blends, distribution, EPS files, Bozier shapes, merge shapes and multi-ink colors. Pre-press production for final art will also be covered. 1 hr. lecture/wk.

CDTP 175
DESKTOP PHOTO MANIPULATION III: PHOTOSHOP (1CR)
Prerequisite: CDTP 155

This course presents advanced techniques for using Photoshop. Advanced topics include painting techniques, photographic techniques, image manipulation techniques and composing techniques. Airbrushing, blending modes, channels, clipping groups, colorizing, filters, gradients, layer effects, masks and modes, levels, lighting effects, masking, perspective and depth, posterizing, restoration, retouching, texturizing, and tiling are techniques that will be covered. Students will explore and apply solutions to specific Photoshop problems by creation of individual projects. 1 hr. lecture/wk.

CDTP 180
PHOTOSHOP FOR THE WEB: PHOTOSHOP AND IMAGE READY (1CR)
Prerequisite: CDTP 155

This course is designed to explore the preparation of digital photographs and images for the Web using a variety of techniques and tools. Optimizing images for the Web, creating Web graphics using slices and rollovers, designing Web pages using multiple Adobe programs (Adobe Acrobat and Adobe GoLive), and creating animated images for the Web will be covered. 1 hr. lecture/wk.

CDTP 185
DESKTOP ILLUSTRATION III: ILLUSTRATOR (1CR)
Prerequisite: 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 microcomputer 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 will 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 drawing; introduction to spreadsheets and introduction to database management. 1 hr. lecture/wk.

CPCA 108
**WORD PROCESSING ON MICROCOMPUTERS I
(1CR)**
Prerequisite: CPCA 105 or CPCA 106

Concepts and use of word processing software will be covered. Functions such as editing, printing, merging, pagination, spell checking and centering will be included. 1 hr. lecture/wk.

CPCA 110
SPREADSHEETS ON MICROCOMPUTERS I (1CR)
Prerequisite: CPCA 105 or CPCA 106

Students will learn 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. Students will also learn to display the worksheet data graphically with the charting capabilities of the software. 1 hr. lecture/wk.

CPCA 111
SPREADSHEETS ON MICROCOMPUTERS II (1CR)
Prerequisite: CPCA 110 or CPCA 128

This course is a continuation of CPCA 110 Spreadsheets on the Microcomputer I 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

This course provides an introduction to the concepts and real-world applications of microcomputer relational database software. Foundational database competencies, including building tables, defining fields, relating tables, entering and editing data, filtering, and sorting will be covered. Students will query the database to select, calculate and summarize information. Students will build and customize forms and reports. 1 hr. lecture/wk.

CPCA 115
DATABASES ON MICROCOMPUTERS II (2CR)
Prerequisite: CPCA 114

Upon completion of this course, the student should be able to design and define a relational database; create custom forms and reports for data entry, updating and presentation; and build the necessary queries to support these objects. The student should be able to transfer data into and out of the database from various file formats, use database software to develop Web pages and hyperlinks, and manipulate the data and database with introductory macro, query language, and programming skills. The course contains a capstone project in which the student uses all of the skills learned to create a working database for a client based on a real-world situation.
2 hrs. lecture/wk.

CPCA 116
DATABASE: FILEMAKER PRO (1CR)
Prerequisite: CPCA 105 or 106

In this career-related course, students will be introduced to the essential concepts of data management so they can store, organize and synthesize information for effective use in the day-to-day business needs of even a medium-sized organization. Students will create a database file with fields, records, calculations, summaries, auto entries and pop-up lists. Several layouts will be created with links between them. Sorts and finds will be created and saved as scripts with buttons. 1 hr. lecture/wk.

CPCA 117
DATABASES ON MICROCOMPUTERS III –
ACCESS (1CR)
Prerequisite: CPCA 115

Upon successful completion of this course, the student should be able to analyze an existing database solution that is not working properly, import the data into Access and use action queries and SQL to normalize the database into an effective rational database. A case study emphasis will cover different database design and documentation issues. Students will also build complex forms and reports using Visual Basic for Applications programming code. Student will be introduced to Data Access Objects and ActiveX Data Objects.
1 hr. lecture/wk.

CPCA 118
GROUPWARE (1CR)
Prerequisite: CPCA 105

This course provides an introduction to the concepts and applications of today's robust groupware applications. Students will use groupware to compose, send and receive e-mail; post and organize discussion group messages; manage calendars, appointments and to-do lists; and use contact management features. 1 hr. lecture/wk.

CPCA 121
INTRODUCTION TO PROJECTMANAGEMENT (1CR)
Prerequisite: CPCA 105

Upon completion of this course, the student should be able to effectively manage projects using project management software. Students will learn about project management goals and terminology, create a project schedule and use project management methodologies and tools such as the Gannt Chart, critical path method (CPM) and program evaluation review technique (PERT) chart to update a project and communicate project progress to others. Students will use other project management techniques such as applying resources, leveling overallocations, evaluating constraints and analyzing planned versus projected schedule and budget variables. 1 hr. lecture/wk.

CPCA 123
PRESENTATION GRAPHICS (1CR)
Prerequisite: CPCA 105 or CPCA 106

Upon completion of this course, students should be able to organize and produce an effective on-computer or slide-generated presentation, complete with printed speaker notes and handouts, plus overhead transparencies, using the basic features of a presentation graphics program. Students will use master pages,

template files, text formatting, color schemes, various drawing tools, the automated outline feature, animation dissolve sequences and incorporate scanned photographs will be covered. 1 hr. lecture/wk.

CPCA 125
WORD PROCESSING ON MICROCOMPUTERS II (1CR)
Prerequisite: CPCA 108 or CPCA 128

This is an intermediate-level course covering the concepts and applications of word processing software. The applications course will include 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

In this career-related course, students will be introduced through lecture material and hands-on practical projects to the essential concepts of file organization, utility software installation and use, font management and back-up techniques. 1 hr. lecture/wk.

CPCA 138
WINDOWS FOR MICROCOMPUTERS (1CR)
Prerequisite: CPCA 105

At the 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.
1 hr. lecture/wk.

CPCA 139
UNIX (1CR)
Prerequisite: CPCA 105

At the completion of this course, students will be expected to know the major commands of the Unix operating system. E-mail, the vi editor and telnet will be covered. 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

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

Financial microcomputer applications are used to effectively manage the financial transactions of a small business or corporate department. This course introduces the student to software that enables them to perform basic financial processing using a microcomputer. 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. Topics covered will 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.

Computers: Web Courses

CWEB 101
INTRODUCTION TO THE WEB USING INTERNET EXPLORER (1CR)
Prerequisites: CPCA 105 or CPCA 106

This course will introduce the student to commands and techniques required for effectively utilizing the resources of the World Wide Web. Topics include how to browse, search and retrieve information on the Internet using Internet Explorer, how to create and manage bookmarks, how to send and receive electronic mail and how to create a basic home page. 1 hr. lecture/wk.

CWEB 102
INTRODUCTION TO THE WEB USING NETSCAPE NAVIGATOR (1CR)
Prerequisite: CPCA 105 or CPCA 106

This course will introduce the student to the commands and techniques required to effectively utilize the resources of the World Wide Web. Topics include how to browse, search and retrieve information on the Internet using Netscape Navigator, how to create and manage bookmarks, how to send and receive electronic mail and how to create a basic home page. 1 hr. lecture/wk.

CWEB 105
INTRODUCTION TO WEB PAGES: DREAMWEAVER (1CR)
Prerequisite: CWEB 101 or CWEB 102

This course will cover the commands and techniques required to create and revise Web pages using Dreamweaver. Topics to be covered will include basic text layout, viewing and identifying basic HTML tags, creating a site map, formatting a Web page, applying background color, inserting images and sounds, creating ordered and unordered lists, inserting files, and creating links on Web pages. 1 hr. lecture/wk.

CWEB 106
INTRODUCTION TO MICROSOFT
FRONTPAGE (1CR)

Prerequisite: CWEB 101 or CWEB 102

This course will cover the commands and techniques required for creating and revising World Wide Web pages using Microsoft FrontPage. Topics include basic text layout, viewing and identifying basic HTML tags, formatting a Web page, inserting background color, adding pictures and sounds, creating ordered and unordered lists, inserting files and creating links to other Web pages. 1 hr. lecture/wk.

CWEB 107
WEB TOOLS: MICROSOFT OFFICE (1CR)

Prerequisites: CWEB 101 or CWEB 102 and CWEB 110 or CPCA 114

Upon successful completion of this course, the student should be able to create static and dynamic Web pages based on existing Microsoft Office files, including Word documents, Excel spreadsheets, PowerPoint presentations and Access databases. 1 hr. lecture/wk.

CWEB 111
INTERMEDIATE WEB CONCEPTS AND TECHNIQUES USING INTERNET EXPLORER (1CR)

Prerequisite: CWEB 101

This course will cover commands and techniques required for utilizing various Web-based tools and programs. Topics covered will include using complex search strategies, locating and downloading freeware and shareware programs, decompressing downloaded files, checking for computer viruses, joining and leaving mailing lists, using an Internet search service to find e-mail addresses, using a Web-based chat facility and accessing and using newsgroups. 1 hr. lecture/wk.

CWEB 112
INTERMEDIATE WEB CONCEPTS AND TECHNIQUES USING NETSCAPE NAVIGATOR (1CR)

Prerequisite: CWEB 102

This course will cover commands and techniques required to utilize various Web-based tools and programs. Topics include using complex search strategies, locating and downloading freeware and shareware programs, decompressing downloaded files, checking for computer viruses, joining and leaving mailing lists, using an Internet search service to find e-mail addresses, using a Web-based chat facility, and accessing and using newsgroups. 1 hr. lecture/wk.

CWEB 115
INTERMEDIATE WEB PAGES: DREAMWEAVER (1CR)

Prerequisite: CWEB 105

This course will cover intermediate-level commands and techniques required to create and enhance a Web page using Dreamweaver. Topics to be covered will include tracing images, layers, converting layers to tables, custom tables, cascading style sheets, templates and libraries, and publishing a Web site. 1 hr. lecture/wk.

CWEB 116
INTERMEDIATE MICROSOFT FRONTPAGE (1CR)

Prerequisite: CWEB 106

This course will cover intermediate-level commands and techniques required to create and enhance a FrontPage Web site. Topics to be covered will include shared borders and themes, publishing a Web site, new Web site creation on a Web server, database integration with a FrontPage Web, and using office components and styles. 3 hrs. lecture/2 hrs. lab/wk.

CWEB 130
INTRODUCTION TO FLASH (1CR)

Prerequisite: CPCA 161 and CWEB 105 or CWEB 106

This course will cover the commands and techniques available to add Flash content to Web pages and CD-ROMs. Topics covered will include using drawing tools, manipulating text with text tools, adding and modifying sound, creating animation, and publishing your work. This class will be taught in a classroom with both Macintosh and Windows computers. 1 hr. lecture/wk.

CWEB 135
WEB-ENABLED DATABASES I – USING ACCESS (1CR)

Prerequisite: CPCA 114

Upon completion of this course, the student should be able to create dynamic Web pages used to publish database information or create user entry forms. Using a browser, students will be able to open the Web pages to find, sort, enter and update data in the underlying database. Students will be introduced to underlying Internet technologies such as Web servers, ODBC, HTML and HTTP, and how they relate to a data-driven Web site. 1 hr. lecture/wk.

CWEB 145
WEB-ENABLED DATABASES II – ACCESS (1CR)

Prerequisite: CWEB 135

Upon completion of this course, the student should be able to create advanced dynamic Web pages used to

publish database information, create complex user entry forms and analyze data interactively with advanced controls such as charts. Using a browser, students will be able to open the Web pages to manipulate and analyze data in the underlying database. Students will implement Internet technologies such as Web servers, ODBC, HTML and HTTP to build an intranet-based Web-enabled database. 1 hr. lecture/wk.

CWEB 160
INTRODUCTION TO JAVASCRIPT (1CR)

Prerequisite: CWEB 106 or CPCA 161

This course will cover the commands and techniques available to add functionality to Web pages using JavaScript. Topics to be covered include integrating JavaScript into an HTML file, creating pop-up windows, adding scrolling messages, validating forms, and enhancing the use of image and form objects. 1 hr. lecture/wk.

CWEB 230
INTRODUCTORY E-COMMERCE APPLICATIONS (1CR)

Prerequisite: CWEB 101, CWEB 102 or CPCA 141

This course will introduce students to e-commerce in a software-driven, hands-on way. It will use software tools to discuss and explore a variety of e-commerce activities. Students will examine an extensive list of e-commerce sites, such as those that support purchasing, delivery, support, auction, business-to-business, virtual community, and Web portal business goals. They will populate a store catalog, create sitewide navigation links and publish the store. 1 hr. lecture/wk.

CWEB 240
INTERMEDIATE E-COMMERCE APPLICATIONS (1CR)

Prerequisite: CWEB 230

This course will use software tools such as Internet Explorer and Netscape Communicator to discuss and explore a variety of intermediate e-commerce activities. For example, students will examine e-commerce security issues, such as cookies, privacy risks and property threats, including copyright issues, viruses, security policies, encryption, digital signatures and transaction integrity. Students will study electronics payment systems, including scrip, electronic checks, credit-card purchases, electronics wallets, smart cards and electronic cash. Students will explore international and legal issues, such as language and custom barriers, laws and regulations, and tax considerations. They will also explore ethical issues, such as trust and defamation issues. Finally, they will explore careers in electronic commerce. 1 hr. lecture/wk.

Computer Information Systems

CIS 110
INTRODUCTION TO COMPUTERS (2CR)

This course provides a comprehensive overview of the computer: What it is, what it can and cannot do, how it operates and how it may be instructed to solve problems. It will familiarize learners with the terminology of computer science. The course provides opportunities to examine the application of the computer to a broad range of organizational settings and social environments. The course is designed to prepare learners to understand and utilize computers in both their personal and professional lives. 2 hrs. lecture/wk.

CIS 124
INTRODUCTION TO COMPUTING CONCEPTS AND APPLICATIONS (3CR)

In this introductory, non-technical computer course, students study computing concepts, terminology, issues, and uses. Extensive hands-on experience with the microcomputer is provided using business applications and the operating system to reinforce the concepts. 3 hrs. lecture/wk.

CIS 134
PROGRAMMING FUNDAMENTALS (4CR)

At the completion of this course, the student should be able to use the elementary concepts of computers, including several number systems. In addition, students will design, develop and write modular programs on a microcomputer in a structured programming language using standard structured concepts. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 138
VISUAL BASIC FORWINDOWS (4CR)

Prerequisite: CIS 134

Upon successful completion of this course, students should be able to describe the Visual Basic programming environment, identifying the controls and objects available for creating Windows applications. Students should be able to define the basic terminology used by Visual Basic. They will create forms, draw the controls for each form, design menu bars, set form and control properties, write event and general procedures, and test and debug their applications. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 140
EDITOR (1CR)

Prerequisite: CIS 134

In this introductory course, students will focus on using an editor to create and manipulate files on a computer. They also will submit computer programs for execution. 1 hr. lecture, lab/wk.

CIS 145
ASSEMBLER LANGUAGE FOR MICROCOMPUTERS (4CR)

Prerequisite: CIS 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 CIS 134 or ENGR 171

Students will study and use assembler language for the microcomputer in order to understand the basic concepts of the personal computer and its use in problem-solving.Topics include the microcomputer CPU, registers and memory segmentation. Practical applications include DOS and BIOS systems services, array and bit processing and library calls. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 148
COBOL I (4CR)

Prerequisite: CIS 134 Corequisite: CIS 140 for COBOL

Student will study the use of the COBOL programming language by writing programs in Cobol in a mainframe environment. Emphasis will be on function and use of statements in the four divisions of ANSI COBOL. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 150
ASSEMBLER LANGUAGE I (4CR)

Prerequisite: CIS 134 Corequisite: CIS 140 for COBOL
It is recommended that this class be taken after CIS 148

Students will write programs using assembler language in order to understand the basic concepts of the IBM mainframe. Topics include CPU, registers and memory fetching. Practical applications include I/O, array processing and bit manipulation. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 157
RPG III BEGINNING (4CR)

Prerequisite: CIS 134 or the equivalent
Corequisite: CIS 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.

CIS 162
DATABASE PROGRAMMING (4CR)

Prerequisite: CIS 134 or the equivalent

This course covers the use of an interactive environment and programming language to create, maintain and manipulate databases using Access as the RDBMS. The use of a command-level database programming language to customize business systems and selectively retrieve information using single or multiple database tables also will be studied. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 172
INTRODUCTION TO POWERBUILDER ENTERPRISE (4CR)

Prerequisite: CIS 134 or the equivalent

This course includes information and materials that will enable the student to understand the client-server paradigm, distributed data, processing modeling, basic data modeling and the basic PowerBuilder tool set. Concepts involving effective GUI and object-oriented design will be discussed. The student should understand and be able to create basic PowerBuilder objects such as windows, data windows, controls, menus and databases. They should be able to combine these elements into a complete and functional application that will be tested and debugged using PowerBuilder debugging tools. A distributable executable file will then be generated from the completed application. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 178
AS/400 CL PROGRAMMING (4CR)

Prerequisite: CIS 134 or the equivalent
Corequisite: CIS 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.

CIS 180
AS/400 UTILITIES (4CR)

Prerequisite: CIS 134 or the equivalent
Corequisite: CIS 140 for RPG III

This course will study the data file utility (DFU), screen design aid (SDA), structured query language, Office/Vision/400 and data definition specifications (DDS) for an IBM AS/400. 3 hrs. lecture, 3 hrs. lab/wk.

CIS 184

LOTUS NOTES: APPLICATION DEVELOPMENT I (4CR)

Prerequisites: CIS 134 and CPCA 118 or equivalent experience and at least 3 months' experience working in a Lotus Notes application.

At the completion of this course, the student should be able to create single database Lotus Notes applications. Students will be able to design, build and test Lotus Notes applications utilizing forms, views, formulas, agents, navigators and other Lotus Notes design components. 4 hrs. lecture-demo/wk.

CIS 204

UNIX OPERATING SYSTEM (3CR)

Prerequisite: CS 200 using C++

This course will cover beginning concepts and principles of the multi-user, multi-tasking Unix operating system. Students will complete projects in Unix ranging from simple commands to writing shell scripts and automating repetitive tasks. 2 hrs. lecture, 2 hrs. lab/wk.

CIS 206

PROGRAMMING IN PERL (4CR)

Prerequisites: CS 200 or CS 205 or CS 201 and CPCA 139 or CIS 204

This course is an in-depth introduction to the Perl scripting language. Students successfully finishing the course should be familiar with the most common operations and language idioms used in Perl programs and should be able to produce useful Perl scripts. In addition, students will have been introduced to the more powerful and rich elements of the language. Lectures and lab projects will cover the many features of the Perl language. 3 hrs. lecture, 1.5 hrs. lab/wk.

CIS 215

OS/VS JOB CONTROL LANGUAGE (3CR)

Prerequisite: CIS 148 or CIS 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.

CIS 235

INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING USING C++(4CR)

Prerequisite: CS 200 using C++

This course is intended to prepare students to apply the object-oriented programming paradigm to solve typical business problems. The student should work with container classes such as Linked Lists, Trees, Stacks and Queues as tools in their program solutions. Students will be building application-oriented objects using the concepts of inheritance, function overloading and polymorphism. Students will also be applying techniques of dynamic memory to build arrays and objects that can adjust memory requirements at run time. Students will be exploring the object-oriented and I/O capabilities as well as the string processing capabilities of the object-oriented language. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 238

VISUAL BASIC INTERMEDIATE TOPICS (4CR)

Prerequisite: CIS 138

Upon successful completion of this course, students should be able write and test a Visual Basic program that uses the data access objects to access a local database. They will identify the commands necessary to open, display and maintain the database. They will correctly use Visual Basic keystroke events to edit and control input to the database. Students will correctly identify the keywords used to create and manipulate Visual Basic objects. The course will include project programs that edit data entry, use a multiple document interface and include an ActiveX control created and deployed by the student. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 240

ADVANCED TOPICS IN JAVA I (4CR)

Prerequisite: CS 250 or CIS 235 or CS 255

At the 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.

CIS 242

INTRODUCTION TO SYSTEM DESIGN AND ANALYSIS (3CR)

Prerequisite: One semester of a computer language beyond CIS 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.

CIS 243
OBJECT-ORIENTED ANALYSIS AND DESIGN (4CR)

Prerequisite: 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.

CIS 244
Advanced Topics in C# I (4CR)

Prerequisite: CS 250 or CIS 235 or CS 255

This course is designed to teach the experienced programmer how to develop applications using C# and the .NET architecture. The course will include, but not be limited to, object and component concepts, exception handling, graphical user interfaces, ADO, and multi-threading. 4 hrs. lecture, 1 hr. lab/wk.

CIS 248
COBOL II (4CR)

Prerequisite: CIS 148

In this advanced COBOL programming class, students will use ANSI COBOL to solve problems with data on a direct access device. They will work on methods for building, maintaining and using files in a sequential, random and indexed manner. They also will study the sort feature of COBOL. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 253
CUSTOMER INFORMATION CONTROL SYSTEM COMMAND LEVEL COBOL (4CR)

Prerequisite: CIS 248

This is an introduction to command-level CICS using the COBOL language. The class will cover 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.

CIS 254
UNIX SYSTEM ADMINISTRATION (4CR)

Prerequisite: CIS 204

This course is designed to present the skills and provide the hands-on experience required to be a Unix system and Web 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. Typical Web administration duties to be covered include installation and management of a relational database management system, installation and management of a Web server and an FTP server, kernel recompiling relevant to Web technology and audio/video streaming. 3 hrs. lecture, 2 hrs. lab/wk.

CIS 257
RPG III ADVANCED (4CR)

Prerequisite: CIS 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.

CIS 258
OPERATING SYSTEMS (3CR)

Prerequisite: CIS 145 or CIS 148 or CIS 150 or CIS 157 or CS 200

The basic concepts and principles of a digital computer operating system will be explained. Also explored through a study of a typical digital computer operating system will be the relationships between hardware and software. 3 hrs. lecture/wk.

CIS 260
DATABASE MANAGEMENT (4CR)

Prerequisite: CIS 235 or CIS 248 or CS 250 or CIS 272 or CIS 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 of a relation database are covered. Students will create and use a relational DBMS (currently Oracle) and a standard structured query language (SQL). SQL Plus and embedded SQL will be used in programs. 3 hrs. lecture, 2 hrs. lab/wk.

CIS 264
APPLICATION DEVELOPMENT AND PROGRAMMING (4CR)

Prerequisites: CIS 242; and CIS 260 or CIS 162
Corequisite: CIS 238 or CIS 253 or CIS 269 or CIS 272 or CIS 240 or CIS 257; and CPCA 121

This course is designed for students to apply the foundations of systems analysis and design, database design and programming to a significant information system. Students should work within a team to analyze a problem, develop and present a proposed information system solution, build a demonstratable prototype of the system and develop a significant portion of the system. Students should also develop a project schedule and present progress information to the class. Students should also develop job search skills and both written and oral communication skills. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 269
GUI PROGRAMMING (4CR)

Prerequisite: CIS 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 (GUI) programming language and use the appropriate GUI library. Techniques of object-oriented programming developed in CIS 235 will be applied to problems involving user interaction. The common user access (CUA) standards of GUI programming will be used throughout the course. The message queue and ordered linked lists objects used in CIS 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) before taking this course. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CIS 270
INFORMATION SYSTEMS INTERNSHIP (3CR)

Prerequisites or corequisites: CS 250 or CIS 235 or CIS 238 or CIS 248 or CIS 272 and division administrator approval

Students will work in an approved training situation under instructional supervision. The internship is designed to give the student the opportunity to use the skills learned in information systems courses. Fifteen hours on-the-job-training per week will be the usual workload for the student.

CIS 272
INTERMEDIATE POWERBUILDER ENTERPRISE (4CR)
Prerequisite: CIS 172

This course includes information and materials that will 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.

CIS 275
WEB-ENABLED DATABASE PROGRAMMING (4CR)
Prerequisites: CS 200, CIS 162, CPCA 139, or CIS 204 and CPCA 161 or CPCA 158

At the 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.

CIS 279
ENTERPRISE GUI PROGRAMMING IN C++ (4CR)
Prerequisite: CIS 243, CIS 269, CIS 260

Students will learn advanced programming techniques for Windows, including enterprise software tools, advanced user interface techniques, multimedia, ActiveX 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.

CIS 280
JAVA II (4 CR)
Prerequisite: CIS 240

At the 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: Prior to entering CIM courses, a student must have completed at least a two-year degree in one of five related fields (communication design, English or journalism, information systems, music or audio, photography or imaging or video) demonstrate basic computer competencies. Applicants for admission to the advanced certificate in Interactive Media program must demonstrate competency in the following areas: 1. using a Macintosh or Windows personal computer systems. This requirement may be met by completing either CPCA 138 or CPCA 134; 2. using page layout software, such as PageMaker, QuarkXpress or InDesign. This requirement may be met by completing either CDTP 130 or CDPT 131; 3. basic authoring using Hypertext Markup Language and basic Internet browsing and research skills using FTP, HTTP, Gopher and newsgroups. This requirement may be met by completing CPCA 141. These competencies may be demonstrated by certified transcripts, examinations, or portfolios, individually or combined as appropriate. Proficiency in using Adobe Photoshop and Illustrator software is strongly recommended but not required.

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 133
SCREEN DESIGN (4CR)

Prerequisite: A page layout software course, such as PageMaker, QuarkXPress or InDesign. This requirement may be met by completing any one of the following JCCC courses: CDTP 130 or CDTP 131 or CDTP 140

This course will cover fundamental visual principles and the creation of graphic elements, as well as the layout of those visual elements, for the computer screen. Visual perception, composition, color and typographic principles will be covered as applicable to presentation graphics, Web graphics, CD-ROM and kiosk graphics. Cross platform issues will be addressed. This course is intended to provide non-designers with fundamental visual literacy. 3 hrs.lecture, 2 hrs. lab/wk.

CIM 135
DIGITAL IMAGING AND 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. The course covers 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)

Prerequisite or 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)

Prerequisite: CIM 130

This course will focus on the icon-based scripting approach to interactive media authoring/programming. The course will introduce concepts about the way interactive media works and the development strategies used, which will orient students to the peculiarities of the CD-ROM and intranet delivery of computer-based training, interactive marketing and catalogs. Students will examine specifications for each project, carefully analyze individual applications and, as a class, establish a set of criteria that define what works, what doesn't, and why. Upon completion of this course, the student should be able to produce an Authorware interactive media presentation that 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 154
INTERACTIVE AUTHORING I: DIRECTOR (4CR)

Prerequisite: CIM 130

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 that 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 I: WEB (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. Recommended prerequisite: CIM 140. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 200
INTERACTIVE COMMUNICATION FORMS (3CR)
Prerequisites or corequisites: CIM 130 and CIM 140

This course will focus on concepts and forms of human communication historically, in current times and in the future of our 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 forms 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
Corequisite: CIM 250

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 235
ADVANCED DIGITAL VIDEO (3CR)
Prerequisite: CIM 135

This course provides advanced instruction in the production and applications of digital video. The course covers advanced concepts and techniques in video design and production, from the initial preproduction scripts and storyboards through actual shooting to nonlinear editing, mastering and output. The emphasis is on in-depth, advanced, practical experience in producing professional-level video products for a variety of applications, including education, corporate, documentary and entertainment. 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 252
INTERACTIVE AUTHORING II: AUTHORWARE (4CR)
Prerequisite: CIM 152

This course will build upon the basic skills covered in the first Authorware course. Many of these topics relate to the use of functions, variables and UCDs in Authorware. Projects will include creating a user login system with individual user bookmarks, creating an Internet browser window within an Authorware application, creating an application that reads student records information from a text file and writes student records information to a text file. Students will learn to create intelligent authoring wizards, which can dynamically create and modify Authorware icons and logic. 3 hrs. lecture/2 hrs. lab/wk.

CIM 254
INTERACTIVE AUTHORING II: DIRECTOR (4CR)
Prerequisite: CIM 154

At 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

Prerequisites or 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.

CIM 272
INTERACTIVE MEDIA INTERNSHIP (1CR)

Prerequisite: Approval by the interactive media 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 Advanced Computer Interactive Vocational Certificate program. Student interns will be required to complete a minimum of 180 hours of on-the-job training.

Computer Science

CS 180
INTRODUCTION TO ARTIFICIAL INTELLIGENCE (3CR)

Prerequisites: CS 200 or DP 138 or DP 145 or DP 148 or DP 150 or DP 157 or DP 162 or DP 172

Upon successful completion of this course, students should be able to understand simple computer programs illustrating introductory concepts in artificial intelligence, define terms and application areas in the field and describe knowledge representation and problem-resolution techniques used in artificial intelligence. 3 hrs. lecture/wk.

CS 200
CONCEPTS OF PROGRAMMING ALGORITHMS
Using C++ (4CR)

Prerequisite: CIS 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 201
CONCEPTS OF PROGRAMMING ALGORITHMS
USING C# (4CR)

Prerequisite: DP 134 Programming Fundamentals

This course emphasizes programming methodology and problem-solving using C#. Algorithm design and development, data abstraction, good programming style, testing, and debugging will be presented. 3 hrs. lecture/wk. and 1.5 hrs. lab/wk.

CS 205
CONCEPTS OF PROGRAMMING ALGORITHMS
USING JAVA (4CR)

Prerequisite: CIS 134

This course emphasizes programming methodology and problem-solving using Java. Algorithm design and development, data abstraction, good programming style, testing, and debugging will be presented. 3 hrs. lecture/1.5 hrs. lab/wk.

CS 210
DISCRETE STRUCTURES I (3CR)

Prerequisite: MATH 171; or both MATH 116 and CIS 134

Upon successful completion of this course, the student should be able to use fundamental discrete mathematics as it relates to computers and computer applications. The student will be exposed to a variety of discrete mathematical topics. The course will include fundamental mathematical principles, combinatoral analysis, mathematical reasoning, graphs and trees, and Boolean logic circuits. 3 hrs. lecture/wk.

CS 211
DISCRETE STRUCTURES II (3CR)

Prerequisite: CS 210

Upon successful completion of this course, the student should be able to use fundamental discrete mathematics as it relates to computers and computer applications. The student will experiment with a variety of discrete mathematical topics. The course will include fundamental mathematical principles, combinatoral analysis, mathematical reasoning, graphs and trees, and Boolean logic circuits. 3 hrs. lecture/wk.

CS 250
BASIC DATA STRUCTURES USING C++ (4CR)

Prerequisite: CS 200

This course will cover advanced programming topics using C++. Files, recursion, data structures and large program organization will be implemented in projects using object-oriented methodology. Students will write programs using the concepts covered in the lecture. 3 hrs. lecture, 2 hrs. laboratory/wk.

CS 255
BASIC DATA STRUCTURES USING JAVA (4CR)
Prerequisite: CS 205

This course will cover advanced programming topics using Java. Files, recursion, data structures and large program organization will be implemented in projects using object-oriented methodology. Students will write programs using queues, stacks, lists and other concept covered in the lecture. 3 hrs. lecture, 1½ hrs. lab/wk.

Computer Systems Technology

(See Electronics Technology, page 202.)

Construction Management

(See Civil Engineering Technology, page 174.)

Cosmetology

AVCO 102
NAILTECHNOLOGY (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.

AVCO 114
ADVANCEDCOSMETOLOGY (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, makeup and business practices. This course prepares the student for the Kansas State Board of Cosmetology esthetician examination.

Data Processing

(See Computer Information Systems, page 183.)

Dental Assisting

KDA 100
DEVELOPMENTAL DENTISTRY (3CR)
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 LABORATORY PROCEDURES (2CR)
Prerequisite: Admission to the dental assisting program

This course will cover basic physics and chemistry, actions, reactions and physical properties of dental materials. 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 I (5 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 operatory, 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 (3CR)

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 (2CR)

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 126
DENTAL ASSISTANT SEMINAR I (1CR)

Prerequisite: Concurrent enrollment in the KDA 125

This course is an evaluation of experiences in Clinical Practice I. 1 hr. lecture/wk.

KDA 200
BODY STRUCTURE AND FUNCTION (2CR)

Prerequisite: Admission to the dental assisting program

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 BIOMATERIALS (2CR)

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 (2CR)

Prerequisite: KDA 110

This course will emphasize dental specialities including the theory of orthodontics, periodontics, prosthodontics, oral surgery and, endodontics. There will the application of the concepts of chairside assisting to these specialties. 3 hrs. lecture, 6 hrs. lab/wk.

KDA 215
DENTAL RADIOLOGY II (1CR)

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 (2CR)

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 II (1CR)

Prerequisite: Concurrent enrollment in 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 GPA)
Corequisites: BIOL 146, DHYG 125 and DHYG 135

This course will include an introduction to the dental hygiene profession, dental hygiene services, instrumentation, patient assessment, preventive treatment, infectious diseases, infection control and exposure barriers. 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
The course is designed to provide the student with hands-on experience of dental materials used in dental hygiene and 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 or DHYG 136
Corequisites: DHYG 142, DHYG 146, DHYG 148, BIOL 225, and DHYG 136, with 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 education techniques. Selected dental specialties will be introduced. 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: DHGY 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, DHYG 142 and DHYG 148
This course will include recognition of the etiology and 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 education methods for individuals and groups with special emphasis on behavior modification, compliance, communication and motivation. Exercises in the research process and evaluation of research articles 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 will also 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
Corequisite: DHYG 245

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 and 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, students should be able to interpret orthographic multiview drawings, symbols, abbreviations, surface finishes, dimensioning and geometric form and position tolerancing. 2 hrs. lecture/wk.

DRAF 124
TECHNICAL DRAFTING (4CR)

Prerequisites: DRAF 120 or equivalent and BOT 101 or approval of the division administrator

This is a first-semester course that 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. The student will draw multiview orthographic views with dimensions and pictorial 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)

Prerequisite: 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 provides a basic knowledge of computer-aided drafting (CAD). Students will learn basic AutoCAD LT commands and the use of 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. This course is for beginning AutoCAD users. 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. Students will learn software commands and terminology. Students will be provided with in-depth coverage of the selected software and be given hands-on experience. Emphasis will be placed on the application of software to industry projects. 2 hrs. lecture, 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 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
CIVILDRAFTING (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 view commands, wire-frame and surface construction, as well as solid modeling and rendering. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 232
CAD APPLICATIONS WORKSTATION ENVIRONMENT (2CR)
Prerequisite: DRAF 230 or approval of division administrator
This course provides instruction for customizing the CAD workstation and handling files in a network environment. 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)
Prerequisite: DRAF 230

This course covers techniques for automation of AutoCAD drafting procedures through the use of the AutoLISP programming language. The scope of this course will include basic AutoLISP functions, creation of AutoLISP expressions and program files. It covers basic techniques and concepts needed to begin using AutoLISP effectively. 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 CAD-related software. Students will learn software commands and terminology. Students will be provided with in-depth coverage of the selected software and be given hands-on experience. Emphasis will be on the application of the selected software to industry projects.
2 hrs. lecture, lab/wk.

DRAF 250
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 252
STRUCTURAL DRAFTING (3CR)
Prerequisite: 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 261
GRAPHIC COMMUNICATIONS I
FOR INTERIOR DESIGN (3CR)

Upon successful completion of this course, the student should be able to interpret residential drawings, draft architectural drawings and use industry references. Drawings studied include floor plans, exterior elevations, interior elevations, sections, details and

schedules. In addition to workbook assignments, students will draft on coldpress board, vellum and plastic film. 2 hrs. lecture, 3 hrs. 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 LT 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 draft 3-dimensional representations of interior spaces, furniture, window treatments and decorative accessories. 1-point and 2-point perspective drawing, isometric drawing and perspective grids are covered. Student will draft in pencil on vellum and ink on mylar. 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. 16 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 explores 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 CURRICULUMI (3CR)
Prerequisite or 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 205
CONCEPTS IN EARLY CHILDHOOD EDUCATION (3CR)
Prerequisite: EDUC 130

This course will provide early childhood care and education professionals, and those aspiring to the profession, with the opportunity to apply early childhood education experience and continuing professional education to college credit. Students will gain and apply knowledge in many aspects of teaching young children in child-care and educational settings. The student will spend seven hours a week (105 clock hours total) in a supervised practical experience at The Children's Center at JCCC and will complete 1.5 CEUs in Early Childhood Education. Credit for prior experience may be substituted for completing this course. The program facilitator must assess the documents (i.e., CDA) provided by the student and/or arrange and evaluate the practical experience before offering credit for this course. Completion of an application for this credit is required and may be obtained from the program facilitator. 3 hrs. lecture/wk.

EDUC 210
CREATIVE EXPERIENCES FOR YOUNG CHILDREN (3CR)
Prerequisites: EDUC 130 and one of the following: PSYC 215 or PSYC 218 or EDUC 270

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)
Prerequisite: EDUC 130

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. The course 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. Topics covered during the course are the history of child rearing methods, an overview of child development, types of families, parent/guardian fears and concerns, purposes of child behavior and effective communication techniques. Problem prevention and resolution, nurturing self-esteem in children, and building effective, collaborative relationships between teachers and families are also covered. 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 include 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 EDUCATION (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 EDUCATION (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 20 hours a week (320 clock hours total) in at least two different early childhood settings, serving children of two different ages.

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 who 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 198.)

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.

Electrical Technology

ELTE 122
NATIONAL ELECTRICALCODE 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 and branch circuits and discern between wiring methods used in difference occupancies. 4 hrs. lecture/wk.

ELTE 123
ELECTROMECHANICAL SYSTEMS (4CR)

This is a beginning course in electrical theory that is required for HVAC, Electrical and Power Plant Technology but is appropriate for all interested students. Common components found in the HVAC industry are used to develop these skills. Upon successful completion of this course, the student should be able to identify electrical components and their relationships to the various repair and troubleshooting techniques. The materials in this course will prove useful to service technicians whose background in electricity is limited. The course includes material from basic electrical theory to troubleshooting complex electrical circuits. This course will provide practice in application of electrical theory as well as in the interconnection of components of heating and cooling 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.

ELTE 125
RESIDENTIAL WIRING METHODS (4CR)

Prerequisite/corequisite: ELTE 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: ELTE 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
CODECERTIFICATION 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 215
GENERATORS, TRANSFORMERS AND MOTORS (4CR)

Prerequisites: ELTE 123 and one of the following: ELTE 122 or ELTE 125 or ELTE 200 or equivalent experience and division administrator approval

This is an advanced course on the use of generators, transformers and motors. Upon successful completion of this course, the student should be able to interpret and apply the rules of the 1999 National Electrical Code to wiring systems comprised of these electrical components. Also, the student will gain a working knowledge of the theory of these single-phase and three-phrase electrical components and their practical applications in everyday use in the electrical industry. 4 hrs. lecture/wk

ELTE 271
ELECTRICALINTERNSHIP 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 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. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

ELTE 272
ELECTRICALINTERNSHIP II (3CR)

Prerequisite: ELTE 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 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. 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)

Prerequisites: MATH 133 and ELEC 120

This course covers resistive circuits having DC sources. Analysis topics include Ohm's law, Kirchoff's law, Thevenin's theorem, the 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. The course will include topics necessary to prepare students to buy, optimize, upgrade and maintain personal computers. Course topics will be supported by laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 125
DIGITAL ELECTRONICS I (4CR)

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

ELEC 130
ELECTRONIC DEVICES I (4CR)

Prerequisite or corequisite: ELEC 140

This is the first course in electronic devices. Topics include diodes and transistors, special purpose diodes and diode application circuits. Both bipolar junction transistors (BJTs) and field effect transistors (FETs) are examined and application circuits for both transistor types are constructed. 3 hrs. lecture, 3 hrs. lab/wk.

ELEC 131
INTRODUCTION TO SENSORS AND ACTUATORS (3CR)

This course examines types and uses of industrial sensors and actuators. Topics include temperature, pressure, optical, position, and flow sensors. Operation of AC and DC motor drives will also be covered. The course will also include wiring and troubleshooting of sensors and actuators. Lecture topics will be supported by hands-on lab projects. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 133
PROGRAMMABLE CONTROLLERS (3CR)

This is an introductory course in programmable logic controllers. The course is designed for individuals without extensive electrical or controller backgrounds. Hardware aspects and programming aspects of controller operation are covered. The foundational controller logic symbols and controller logic operations necessary to interpret and write ladder logic programs are taught in this class. Students will enter, edit and test controller programs through assigned laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 140
CIRCUIT ANALYSIS II (3CR)
Prerequisites: ELEC 122 and MATH 134

The analysis techniques presented in Circuit Analysis I will be applied to complex circuits driven by AC and pulsed sources. The responses of circuits having resistance, inductance and capacitance will be analyzed. Other topics include transformers and electrical filters. 3 hrs. lecture/wk.

ELEC 150
INTRODUCTION TO TELECOMMUNICATIONS (3CR)

This is an introductory-level course in telecommunications principles that includes both voice and data communications. Topics include voiceband communications, digital transmission, switching and signaling and emerging technologies. 3 hrs. lecture/wk.

ELEC 165
ADVANCED PROGRAMMABLE CONTROLLERS (3CR)
Prerequisite: ELEC 133

This course is a continuation of ELEC 133. Principle topics include sequences, file and block transfers, analog control and PID functions. In addition, methods of networking of PLCs and advanced user interface will be covered. Lecture topics will be supported by laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 175
TELECOMMUNICATIONS (3CR)
Prerequisite or corequisite: ELEC 130

This course provides study of the hardware and software functions of telecommunication systems. Topics include both voice and data aspects of telecommunications, terminology, telephone sets, interfaces, protocols, transmission media, networks and networking technologies. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 185
LAN CABLING AND INSTALLATION (3CR)

This course is designed to provide specialized skills for installing and testing local area network cabling and wireless installation. Twisted-pair, coax and fiber cables will be introduced and contrasted based on their characteristics and applications. Laboratory exercises for terminating and testing network cables and installing wireless systems will accompany the lectures. Students will be trained on how to use common wiring tools and testing instruments. Methods of documenting LAN systems will also be introduced. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 225
DIGITAL ELECTRONICS II (3CR)
Prerequisite: ELEC 125

Students will complete their study of basic digital concepts, will learn how to build digital circuitry using digital integrated circuit chips and will learn basic concepts of computer organization. Additionally, emphasis will be placed on learning how to troubleshoot digital circuits and digital systems. Each student will build a digital computer through a series of laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 230
ELECTRONIC DEVICES II (3CR)
Prerequisite: ELEC 130

This class is a continuation of the electronic devices sequence. Topics include operational amplifiers, thyristors and voltage regulators. Operational amplifier applications include comparators, summing amplifiers, integrators and differentiators, and active filters. Additional topics include frequency response of operational amplifiers. 2 hr. lecture, 3 hrs. lab/wk.

ELEC 240
ELECTRONIC COMMUNICATION SYSTEMS (4CR)
Prerequisite or corerequisite: ELEC 230

This course provides a study of electronic communication systems. Topics include the electromagnetic spectrum, decibels, noise, amplitude

modulation, antennas, transmission lines and the global positioning satellite system. 3 hrs. lecture, 3 hrs. lab/wk.

ELEC 245
MICROPROCESSORS (3CR)
Prerequisite: ELEC 225

This course provides students with a basic knowledge of microprocessors and how microprocessors are interfaced with other devices to create microcomputer systems. Students will learn how to write assembly language and machine language programs for a microprocessor as well as how to interface memory, input devices and output devices to a microprocessor. Additionally, emphasis will be placed on learning how to troubleshoot microprocessor-based systems. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 250
MICROCOMPUTER MAINTENANCE (3CR)
Prerequisite: ELEC 124

This course is a continuation of the study of personal computers and will further the student's ability to maintain and repair personal computers. In addition, this course will assist the student in preparing for computer-maintenance certification. Topics will include interaction of hardware and operating systems, resource conflicts, networking capabilities, common hardware and software problems, hardware differences of portable computers, and upgrading computers. The course topics will be supported by laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

ELEC 271
ELECTRONICS INTERNSHIP I (1-3CR)
Prerequisite: Approval of the division administrator

This course affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide selected advanced electronics technology students with appropriate on-the-job experience with area employers, under instructional oversight, that will promote the student's career goals. 18 hrs. 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. 18 hrs. of approved and appropriate work activity/wk.

Emergency Medical Science

EMS 115
EMERGENCY MEDICAL CONCEPTS FOR TELECOMMUNICATORS (3CR)

This course is designed specifically for students preparing to enroll in the medical segment of the anticipated telecommunicators degree program. Training in CPR, medical terminology, anatomy, physiology and basic first-aid principles will prepare the student for the concepts, terms and principles presented in the telecommunicators program. 3 hrs/wk.

EMS 121
CPR I – BASIC LIFE SUPPORT HEALTHCARE PROVIDER (1CR)

This course provides an overview of the cardiovascular and respiratory systems, a discussion of medical and environmental emergencies leading to the need for CPR, introduction to diagnostic signs and triage, as well as insight into the structure and function of the emergency medical services system. The most current practical CPR skills will be taught, including CPR and airway obstruction techniques for adults, children and infants. Upon successful completion of all American Heart Association standards, the student will receive affirmation at the Healthcare Provider level. 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 and affirmation of Basic Rescuer techniques, practice in the design and implementation of CPR courses, demonstration of manikin maintenance and decontamination procedures and mini-lectures. Upon successful completion of this class, students will be eligible for affirmation by the American Heart Association as a BLS Instructor. Each participant must teach or co-teach a CPR class while being monitored by an AHA faculty member before the instructor affirmation card will be issued. 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 an emergency incident. Fire, police, civil defense personnel; school bus drivers, day-care providers, utility workers and industrial workers are a few examples of persons who would benefit from this

training. 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 exam 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: BASIC (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

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 (BEMS). It addresses information and techniques currently considered the responsibility of the EMT according to the United States Department of Transportation, National Standard Curriculum. The program consists of didactic instruction, practical skill training and clinical experience. Students participate in 7 hours of lecture and 4 hours of lab per week. Attendance in approximately two Saturday sessions (4-8 hrs. each) is also required. Saturday dates and times will be announced during the first class session. Classroom instruction includes anatomy, physiology, recognition and care of medical emergencies and trauma-related injuries. CPR, bandaging, splinting, childbirth techniques and airway management are among the skills taught. An extrication session will give students hands on experience with auto accident situations. Upon instructor recommendation, students will participate in clinical and field observation. All transportation to and from off-campus sites is the responsibility of the student. Students completing this course with a grade of "C" or better will be allowed to sit for the Kansas EMT State Certification Examination administered by the BEMS.

EMS 133
EMT PRACTICUM (3CR)

Prerequisite: EMS 130 or equivalent and a copy of current EMT-B card

This course is designed to give the newly certified EMT-B the additional skills and confidence needed to successfully compete for a position as an EMT-B with an EMS service. Skills will include ambulance operation, driving, map reading, insurance billing and unit maintenance. This course will also provide high-fidelity scenario training in all aspects of the EMS call as well as extensive field lab time with a local EMS service. Students will participate in realistic medical emergency scenarios with "actors" playing lifelike patients and bystanders as well as numerous field internship shifts on a licensed ambulance. Students will work through all phases of an ambulance call and will be presented with complex patient-care situations that require the development of critical thinking and decision-making skills. Students will be tested on their ability to lead a team of pre-hospital caregivers in the diagnosis, proper treatment and evacuation of a patient. Scenario simulations will be set up to be as lifelike as possible. 2 hrs. lecture, 10 hrs. lab/wk.

EMS 140
BASIC CARDIOLOGY AND ECG RECOGNITION (3CR)

Prerequisites: Prospective students should be certified in a health profession, i.e., EMT, RN, LPN, EMT-P. Permission of the academic director is required.

The health care worker with an understanding of ECG tracing will function more effectively when providing care for the cardiac patient. Increasing numbers of professionals are being called upon to utilize the ECG tracing in their work setting, but without adequate knowledge of its use. This course will serve as both continuing education and the preparation for the job entry and/or job advancement. During the course, students will learn to apply monitoring and 12 lead electrodes, diagnose ECG dysrhythmias and infarct locations, treat ECG dysrhythmias and defibrillate ventricular fibrillation. 3 hrs. lecture/wk.

EMS 203
KANSAS EMERGENCY MEDICAL TECHNICIAN – INTERMEDIATE/DEFIBRILLATOR (11CR)

Prerequisites: EMT-B and additional prerequisite and/or documentation requirements. See academic director for details.

This course will cover selected advanced emergency medical care concepts and practices. This intermediate level course advances the basic emergency medical technician's knowledge and skills in patient assessment, airway management, intravenous cannulation, and manual defibrillation. The KS EMT-I/D's knowledge and skills are intermediate between the EMT-Basic and the EMT-Paramedic. Upon successful completion of this course, the student will be able to utilize the assessment findings to formulate a field impression and implement the treatment

plan for the patient suffering a medical or trauma emergency. As the KS-EMT-I/D demonstrates cognitive and motor skill competency in the classroom and skills laboratory, his/her training will proceed to the clinical and field environments, where the knowledge skills and attitudes necessary for professional practice will be practiced, synthesized and perfected. 7 hrs. lecture 5 hrs. lab, 10 hrs. clinical, field experience/wk.

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 course covers the basic tenets of adult education as they apply to teaching emergency medical services provider courses. Students are oriented to all Kansas requirements for conducting initial courses of instruction for ambulance attendants. Successful completion will be the first step toward certification as a Kansas EMS Instructor Coordinator. This program has been approved by the Kansas Board of Emergency Medical Services (BEMS). It addresses information and techniques currently considered the responsibility of the EMT-IC according to the United States Department of Transportation, National Standard Curriculum.
5 hrs. lecture-demo/wk. for 8 wks.

Mobile Intensive Care Technician

EMS 220
MICT I (10CR)

Prerequisite: Admission to the MICT Program
MICT I is the first of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. In this narrowly focused but intense foundational course, the paramedic student will gain a significant knowledge of patient assessment, pharmacology and medication administration techniques, electrocardiography, advanced airway management and paramedic scope of practice. Much material will be covered rapidly, and emphasis is on organization, internalization and synthesis of the basic knowledge of the discipline in this nine-week course. Additionally, during the initial psychomotor teaching lab,s students will gain the ability to assess patients, administer medications, treat dysrhythmias and manage the airway through manikin practice. 24 hrs. lecture/wk.

EMS 225
MICT II (10CR)

Prerequisite: EMS 220 with a minimum grade of "C"

MICT II is the second of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. This course builds on the foundational knowledge developed in MICT I, and covers advanced management of medical and trauma emergencies in the out-of-hospital environment. Much material will be covered rapidly, and emphasis is on organization, internalization, synthesis and application of the basic knowledge of the discipline in this nine-week course. Students demonstrate competency at motor skill performance, and extensive simulation practice is afforded. Students begin field observation with a paramedic ambulance crew and complete an Advance Cardiac Life Support Course. 24 hrs. avg. lecture/wk., 12hrs. lab/field observation avg./wk.,

EMS 230
MICT III CLINICALS (12CR)

Prerequisite: EMS 225 with the minimum grade of "C"

MICT III is the third of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. During MICT III, paramedic students have the opportunity to take the knowledge and skills gained in MICT I and II and apply them in actual supervised clinical practice. MICT III represents a brief, intense 14-week course in which knowledge and skills are synthesized and applied on patients under supervision of physicians and nurses in clinical practice in the emergency department, critical care unit, surgery/recovery room, labor/delivery room, pediatric emergency department and burn center. Field observation lab and classroom and laboratory review are included as well. 4 hrs. lecture avg./wk., 44 hrs. clinical/lab/field avg./wk.

EMS 271
MICT IV FIELD INTERNSHIP (15CR)

Prerequisite: EMS 230 with a minimum grade of "C"

MICT IV is the final of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. During MICT IV, paramedic students have the opportunity to take the knowledge and skills gained in MICT I, II and III and apply them in actual practice environment. MICT IV represents an intense 4-month course in which knowledge and skills and professional behaviors are synthesized and applied on victims of sudden trauma or

medical under supervision of paramedic preceptors at

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 provides basic instruction in speaking and listening, writing and grammar for students who are non-native English speakers. Students will learn to converse, write and give oral presentations in an integrated setting. The course includes conversations and dialogs, written compositions, grammar and editing practice, and oral reports. This course is for beginner to intermediate-level ESOL students. 3 hrs./wk.

ENGL 101
ENGLISH AS A SECOND LANGUAGE II (3CR)

Prerequisite: ENGL 100 or appropriate assessment score

This course provides integrated instruction in speaking, listening, writing and grammar for students who are non-native English speakers. Students will learn to converse clearly, write effectively and correctly, and summarize orally. The course will include conversation and dialogs, short written compositions and essays, grammar and proofreading practice, and oral presentation based on readings. This course is for intermediate and advanced-level ESOL students. 3 hrs./wk.

ENGL 102
WRITING STRATEGIES (3CR)

Prerequisite: Appropriate placement test score

This course assists the student in developing strategies for sentence writing. The course is designed to meet a variety of learning styles, levels and needs. Students will develop strategies for self-monitoring errors in written products. Students are taught strategies for writing a variety of sentence formats and have extensive practice in writing sentences as a means of implementing new information. 3 hrs./wk.

ENGL 103
PRACTICAL WRITING SKILLS (1CR)

At the completion of this course, the student should be able to recognize and write complete sentences. The student will write a variety of sentences using

strategies for building sentences with phrases and clauses and editing sentences through coordination and subordination. The student will then practice developing paragraphs in various organizational modes. Along with the writing the student will read selected prose and write responses to the reading. The course is designed specifically to aid non-native speaking students to acquire writing skills through individualized instruction. The aim of this course is to enhance/supplement the English as a Second Language program already offered at JCCC. Also, because our hearing impaired students have similar difficulties with the English language as do our ESL students, this course addresses the challenges often faced by this student population. By arrangement.

ENGL 105
BASIC ENGLISH GRAMMAR (3CR)

The aim of English 105 is to introduce the student to the basic structures in English grammar: parts of speech, sentence types, phrases and clauses. Students learn to use correct punctuation. Moving from joining short phrases to the basic sentence, students learn to combine ideas to form a variety of sentence structures. Students practice skills, working in class (often in pairs or groups) and making use of computer programs in the Writing Center. Grammar games are used to help prepare students for a test. 3 hrs./wk.

ENGL 106
INTRODUCTION TO WRITING (3CR)

Prerequisite: ENGL 102 or appropriate placement test score

Beginning with a review of basic sentence skills, this course focuses on paragraph development, including subject selection, topic sentences, methods of development, transitional devices and effective introductions and conclusions. The last part of the course will focus on developing multi-paragraph essays. 3 hrs./wk.

ENGL 107
SENTENCE PATTERN SKILLS (1CR)

At the completion of this course, the student should be able to identify the parts of speech, elements of a sentence and the basic sentence patterns. Emphasis is on sentence combining and sentence composing. Students are told that grammar in isolation will not improve writing skills, and they are encouraged to practice writing. By arrangement.

ENGL 108
COMPOSING SKILLS (1CR)

After completing Composing Skills students will be able to choose a topic, narrow the topic and organize and develop with supporting evidence a variety of paragraph modes. The student will be able to achieve paragraph unity, coherence and emphasis. Also, the student will learn revision and editing strategies. By arrangement.

ENGL 109
PROOFREADING SKILLS

This one-credit module is designed to provide students with strategies and rules that will help them to recognize and repair common grammar, usage and mechanical errors in their writing. This course focuses on the major and minor errors as set forth in the English program objectives (available in the Writing Center). Students will learn to recognize and correct these errors, not only on exercise sheets, but also in their own writing. By arrangement.

ENGL 110
ENGLISH GRAMMAR REVIEW

English Grammar Review helps students to review the parts of speech, elements of a sentence, basic sentence patterns, major sentence level errors, agreement errors and punctuation. Students are encouraged to practice writing. By arrangement.

ENGL 112
RESEARCH SKILLS

Research Skills is a review of the various aspects of the research process, beginning with limiting the subject and moving to revising the finished product. Emphasis is on the gathering of resource materials, synthesizing the information and developing an essay in which the resource information is used to support a thesis and is documented in an approved academia form. By arrangement.

ENGL 115
REVISION SKILLS (1CR)

Revision Skills is designed to instruct the practicing writer in skills needed to revise all writing, including business, college and personal. Students will use computer programs and self-paced materials. Revision Skills intends to complement courses where writing is assigned. Students will be encouraged to bring in business communication or college assignments to apply the learned skills. By arrangement.

ENGL 120
WRITING IN THEDISCIPLINES (1CR)

This course is designed to complement and/or support classes where writing is intrinsic to the curriculum and to provide students with a process that can be applied to the variety of written assignments typically assigned in classes other than composition. Students will practice writing a variety of short papers using a prescribed process for each assignment. The course is individualized. By arrangement.

the emergency scene and in the ambulance. Entry-level competence into the profession is demonstrated as the student demonstrates the ability to assess the scene and the patient, develop a plan for therapeutic intervention as well as scene management, and effectively lead the out of hospital resuscitation team's effort. Classroom and laboratory review are included. 4 hrs. lecture avg./wk., 56 hrs. clinical/lab/field 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 will meet professional engineers during field trips to engineering companies and work sites. The primary intent of this course is to introduce students to the engineering problem-solving process and to help each student make the best career decision. 2 hrs. lecture/wk.

ENGR 131
ENGINEERING GRAPHICS (4CR)

Corequisite: MATH 133, MATH 171, MATH 172, MATH 173 or MATH 241

Upon successful completion of this course, the student will be able to apply graphic principles used in the engineering design process. The student will master graphics concepts using computer-aided drafting (CAD) software. Topics include 2-D and 3-D CAD commands; geometric construction; multi-view, orthographic projection; sectional views; isometrics; dimensioning; and descriptive geometry. 3 hrs. lecture, 4 hrs. lab/wk.

ENGR 171
PROGRAMMING FOR ENGINEERING AND SCIENCE

(3CR)

Prerequisite: MATH 171

At the completion of this course, the student should be able to design algorithms for the solution of engineering and science problems using pseudocoding and flowcharting techniques, code the solution in the FORTRAN programming language and compile, test and debug the program. Programming concepts covered will include data input from the keyboard and data files, formatted output, sequence, selection and iteration structures, function and subroutine subprograms and array processing. Proficiency with conversions and math in the decimal, binary and hexadecimal numbering systems will also be attained. This is a beginning course that will prepare students for more advanced studies in engineering and science 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. 2 hrs. lecture, 3 hrs. lab/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. 3 hrs. lecture/wk.

ENGR 254

DYNAMICS (3CR)

Prerequisite: 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 will 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

ENGL 121
COMPOSITION I (3CR)

Prerequisite: ENGL 106 or appropriate placement test score

Composition I focuses on writing nonfiction prose suitable in its expression and content to both its occasion and its audience. Students will have an opportunity to improve in all phases of the writing process: discovering ideas, gathering information, planning and organizing, drafting, revising and editing. Each essay written in the course should clearly communicate a central idea or thesis, contain sufficient detail to be lively and convincing, reflect the voice of the writer and use carefully edited standard written English. 3 hrs./wk.

ENGL 122
COMPOSITION II (3CR)

Prerequisite: ENGL 121

Because so much writing required in college and in the workplace demands the ability to synthesize information gathered from various sources, Composition II will focus on skills essential to gathering, comprehending, analyzing, evaluating and synthesizing information. Composition II also emphasizes organizing and polishing steps important in composing expository, evaluative and persuasive prose. 3 hrs./wk.

ENGL 123
TECHNICAL WRITING I (3CR)

Prerequisite: ENGL 121

This course provides a basic knowledge of technical writing. Students will learn the writing process (prewriting, writing and rewriting) to follow when constructing correspondence, including memos, letters, e-mail, reports, instructional manuals and Web pages. Students also will learn seven key traits of effective technical writing: clarity, conciseness, document design, organization, audience recognition, audience involvement and accuracy. Accuracy specifically entails the need for students to adhere to rules of grammar and mechanics. Students will learn how to create computer-generated graphics and learn word processing skills. Finally, the students will learn how to work in teams, modeling Total Quality Management skills. 3 hrs./wk.

ENGL 130
INTRODUCTION TO LITERATURE (3CR)

Prerequisite: ENGL 121

Students will read, discuss and analyze works from three literary genres: the short story, the poem and the play. Students will learn and apply the technical vocabulary

used in the criticism of these literary forms. Students will be introduced to representative works from various literary traditions and cultures, including numerous works from contemporary writers. 3 hrs./wk.

ENGL 140
WRITING FOR INTERACTIVE MEDIA (3CR)
Prerequisite: ENGL 121

This course is designed to have students apply the writing process as well as the fundamental rhetorical and composition skills to various interactive media, including Web pages, CD-ROMs/DVD, e-mail, kiosks, computer program packages and other electronic media. The course will focus on skills essential to selecting, evaluating and synthesizing information from primary and secondary sources; in addition, it will emphasize the different approaches to organization that these media require, as well as the variety of discourse styles used in informative, instructional, persuasive and entertainment media texts. This course also fulfills an elective requirement for the Computer Interactive Media certificate. 3 hrs. lecture/wk.

ENGL 210
TECHNICAL WRITING II (3CR)
Prerequisite: ENGL 123

This course provides an advanced knowledge of technical writing. Students will learn the writing process (prewriting, writing and rewriting) to follow when constructing correspondence. Types of technical writing covered in this course include memos, letters, e-mail, short reports, long reports, instructional manuals, Web pages, PowerPoint presentations, brochures, newsletters, journal articles, resumes and online resumes. Students also will learn seven key traits of effective technical writing: clarity, conciseness, document design, organization, audience recognition, audience involvement and accuracy. Accuracy specifically entails the need for students to adhere to rules of grammar and mechanics. Students will learn how to create computer-generated graphics and learn word processing skills. Finally, the students will learn how to work in teams, modeling Total Quality Management skills. 3 hrs./wk.

ENGL 222
ADVANCED COMPOSITION (3CR)
Prerequisite: ENGL 122

This course offers challenging insights into the act of writing. We will move beyond Comp I and Comp II, focusing on writing persuasively to a select audience, working together to anticipate and to defuse objections, supply convincing evidence, synthesize the ideas of others to support our ends, look critically at all sources, and perfect a mature, polished style that is suitable to

audience and occasion. 3 hrs./wk.

ENGL 223
CREATIVE WRITING (3CR)
Prerequisite: ENGL 122

Students will study and practice writing in three of the major literary modes of writing: poetry, fiction and drama. The reading assignments are based on the premise that to be good writers, students must have knowledge of literary techniques and be perceptive readers and critics. Students will examine techniques of three of the literary genres and then apply their knowledge to write in each genre. Also, students will receive information on marketing their work. 3 hrs./wk.

ENGL 224
CREATIVE WRITING WORKSHOP (3CR)
Prerequisite: ENGL 223

In this workshop, students explore writing and marketing techniques for both fiction and nonfiction. They will produce a substantial amount of written work, which may include, among other types, fiction narratives like the short story and novel and nonfiction pieces such as the profile and interview article. They will read other students' work and provide useful feedback on that work. 3 hrs./wk.

ENGL 230
INTRODUCTION TO FICTION (3CR)
Prerequisite: ENGL 122

This course features significant opportunities to write about the literature and the reader's response. Students will learn the historical precedents of the short story, the similarities and differences between the short story and other narrative forms such as the novel, between the short story and its historical precedents, between short stories and film adaptations of them, and between commercial and literary short stories. Students will discover the place of short stories in major literary movements, the key elements of short stories and interpretive approaches to short stories. 3 hrs./wk.

ENGL 231
AMERICAN PROSE (3CR)
Prerequisite: ENGL 122

American Prose presents a series of literary works by American writers that reflect the attitudes and identity of our national literature and culture. By grappling with the ideas and characterizations presented in each literary work, the student develops meaningful insights into the attitudes and human conditions that influence America's national literary identity. 3 hrs./wk.

ENGL 232
INTRODUCTION TO CHILDREN'S LITERATURE (3CR)
Prerequisite: ENGL 122

Children's Literature is meant for all students interested in bringing children and books together, but especially for students with English or education majors, for teachers already in the elementary school classroom, for parents, for those working with children in pre-schools, day-care centers and libraries, and for grandparents and prospective parents. The course would also be beneficial for those exploring the field of writing and illustrating for children. The students will identify children's needs and interests, list the criteria for choosing books for children and demonstrate the means by which we can bring children and books together. Students will read, examine, and critique a variety of children's literature selected by author, genre and historical time period. 3 hrs./wk.

ENGL 235
DRAMAAS LITERATURE (3CR)
Prerequisite: ENGL 122

This course introduces students to the analysis of plays as literature. Beginning with the Greek dramatists and ending with the contemporary scene, students will read full-length plays and the comments of playwrights, directors, actors and critics. They will analyze drama from psychological, historical, philosophical, structural and dramatic perspectives. Students will write essays demonstrating their understanding of the works studied. 3 hrs./wk.

ENGL 241
BRITISH WRITERS (3CR)
Prerequisite: ENGL 122

This course emphasizes reading and discussion of works by selected major British writers and includes related writing projects. Students will identify important biographical details; explore the historical, cultural, and artistic context of major writers and their works; and identify and evaluate the use of significant literary devices. The course emphasizes the relationships among influential writers, their lives and times and their works important to our cultural heritage. 3 hrs./wk.

ENGL 243
THE LITERATURE OF SCIENCE FICTION (3CR)
Prerequisite: ENGL 122

This course examines the literature of science fiction, especially from 1960 through the 1990s, presenting the concepts of science and technology as communicated through imaginative narratives of the past, present and future. Students read short stories and/or novels, view science fiction films and discuss key science fiction concepts, occasionally practicing these concepts through the use of role playing, discussion groups and/or gaming activities. Students verify their judgments by summarizing, analyzing and synthesizing these concepts, using the spoken word and writing effective, well-organized essays in response to science fiction presentations featuring key concepts. 3 hrs./wk.

ENGL 245
WRITING LITERATURE FOR CHILDREN (3CR)
Prerequisite: ENGL 232

Writing Literature for Children is a continuation of Introduction to Children's Literature, aimed primarily at those students interested in writing and publishing literature for children. The students will review children's needs and interests, research topics and collect data for possible books. Then students will write and assemble a variety of children's literature. Students will critique their own work and that of their peers and revise their work accordingly. Finally, students will compose all correspondence typically required by publishers. 3 hrs./wk.

ENGL 250
WORLD MASTERPIECES (3CR)
Prerequisite: ENGL 122

World Masterpieces introduces students to literary study using major literary works composed from the times of Homer to Shakespeare and which have been influential in shaping and expressing values of Western culture. Students will read selections representative of the epic, tragic, comic and lyric traditions primarily to gain a knowledge of the works assigned. In addition, students will analyze the assigned texts as literary works and as cultural artifacts and influences. Finally, students will compare and contrast contemporary understandings of the individual and of society with those expressed in the works studied. In completing the course objectives, students will learn the conventions of writing about literature and become familiar with general reference materials useful in studying literature. 3 hrs./wk.

ENGL 254
MASTERPIECES OF THE CINEMA (3CR)

Prerequisite: ENGL 122

This course examines the development of cinema from the early experiments in the late 1800s up to the present day, presenting the history and art of both American and international cinema. Students read the textbook, view short and full-length films and discuss important cinematic techniques and concepts. Students verify their judgments by summarizing and analyzing these important concepts, by using discussions and writing effective, well-organized essays in response to cinematic presentations and explanations. 3 hrs./wk.

ENGL 256
AMERICAN POETRY (3CR)

Prerequisite: ENGL 122

American Poetry presents a planned reading schedule and directed discussion of poems that reflect the attitudes of American poets and American culture. By grappling with the ideas and characterizations presented in these poems, students can develop meaningful insights into the attitudes and human conditions that have influenced America's national literary identity. 3 hrs./wk.

Fashion Merchandising and Design

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 I(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. Fall.

FASH 135
IMAGE MANAGEMENT (1CR)

Upon successful completion of this course, the student should be able to conduct an extensive wardrobe inventory. In addition, the student should be able to apply principles of personal grooming, elements of design and fabric and accessory knowledge to the development of an individual professional wardrobe plan based on individual budget constraints. 1 hr./wk.

FASH 140
GARMENT DESIGN I (3CR)
Prerequisite: FASH 123

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
TAILORING (4CR)
Prerequisite: FASH 124

Upon successful completion of this course, the student should be able to apply advanced construction principles, techniques and skills in the production of tailored garments. This course is a continuation of FASH 124 Apparel Construction II. The class will use lecture, demonstration and hands-on experience as the student completes a trial muslin for a jacket or coat plus a finished 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 properties and characteristics of natural and man-made fibers, fabric 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 elements and principles of design in evaluating and designing women's, men's and children's apparel. A project of designing a line will apply the student's aesthetic knowledge, the relationship of apparel design to the current socioeconomic conditions and apparel production knowledge. Projects use computer-aided design software. 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 225
STORE PLANNING (3CR)
Prerequisite: FASH 125

Upon successful completion of this course, the student should be able to demonstrate the skills needed to plan and execute the display methods and store planning concepts for promoting merchandise within a large or small store interior. These plans will use the student's understanding of design, fixtures, traffic patterns, floor sets, graphics/signage and materials. This course is a requirement for the Visual Merchandising certificate. 3 hrs. lecture/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 successful completion of this course, the student should be able to describe the management structure of retail merchandising operations, contrast merchandising functions among various types of retail operations, explain the buying process, explain the financial operations of retail merchandising and apply these principles in computer-simulated case situations. 3 hrs./wk. Spring.

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. Spring.

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. Spring.

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. Fall.

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. Spring.

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-resistive 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 stand-pipe systems are covered in detail in a separate course.) 3 hrs./wk.

FIRE 150
INTRODUCTION TO FIRE SCIENCE (3CR)

This survey course covers career opportunities; history of fire protection; fire loss analysis; public, quasi-public and fire protection services; specific fire protection functions; and fire chemistry and physics. 3 hrs./wk.

FIRE 159
FIRE SERVICE HYDRAULICS (4CR)

Hydraulic principles and formulas are studied, including hydraulic experiments that emphasize fire service applications. 4 hrs./wk.

FIRE 160
FIRE APPARATUS AND EQUIPMENT (3CR)

Fire apparatus design, specifications, capabilities and use in emergencies are explored. 3 hrs./wk.

FIRE 162
FIRE TACTICS AND STRATEGY (3CR)

Fire control through manpower, equipment and extinguishing agents will be explored, including theoretical models and practical applications. 3 hrs./wk.

FIRE 169
RESCUE TECHNIQUES (4CR)

Advanced rescue techniques (rope, high angle, confined space, extrication) are covered, including practical simulations. 5 hrs./wk.

FIRE 170
SPRINKLER AND STANDPIPE SYSTEMS (3CR)

Types of sprinkler and standpipe systems used in fire protection and their operation will be demonstrated and discussed. 3 hrs./wk.

FIRE 175
ESSENTIALS OF FIREFIGHTING (9CR)

Prerequisite: HPER 240

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 presents 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 133
BASIC SPANISH FOR HOSPITALITY MANAGEMENT

In this basic course, students will be introduced to terminology related to the hospitality industry, basic Spanish grammar and phrases related to work.
2 hrs. lecture/wk.

FL 140
ELEMENTARY FRENCH I (5CR)

Areas covered in this basic course 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 learn the basic sounds, vocabulary and structural patterns of Russian. Emphasis 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 completes the presentation begun in Elementary Russian I. Students will gain listening comprehension, speaking, reading and writing skills appropriate to a second-level course. 5 hrs./wk.

FL160
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 will introduce students to the basic sounds, vocabulary, grammar and usage, characters and reading of the Chinese language. The emphasis will be on developing basic conversational skills. Students will develop an understanding and appreciation of Chinese culture. 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. Students will develop 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 readings 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 175
ELEMENTARY BRAZILIAN PORTUGUESE I (5CR)

In this basic course, students will study Portuguese grammar, conversation, composition and the culture of Brazil. 5 hrs. lecture/wk.

FL 176
ELEMENTARY BRAZILIAN PORTUGUESE II (5CR)

Prerequisite: FL 175

This course will continue the presentation of the material introduced in Elementary Brazilian Portuguese I. Graded reading selections are added as a basis for conversation and composition in discussion periods. 5 hrs. lecture/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. Students will practice reading, listening comprehension, speaking and writing at the intermediate level. 3 hrs./wk.

FL 179
INTERMEDIATE RUSSIAN II (3CR)

Prerequisite: FL 178 or three years of high-school Russian

Students will study Russian language and culture that would prepare them to travel in a Russian-speaking country and engage in simple conversation with the citizens. 3 hrs./wk.

FL 180
ELEMENTARY AMERICAN SIGN LANGUAGE I (3CR)

This course will focus on the development of beginning American Sign Language communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. 3 hrs. lecture/wk.

FL 181
ELEMENTARY AMERICAN SIGN LANGUAGE II (3CR)

Prerequisite: FL 180

This course will focus on continued development of elementary American Sign Language skills beyond those taught in Elementary ASL I. Students will work on developing communication competencies, concentrating on comprehension and production skills. Information about the linguistic and cultural features will be included in the context of language learning experiences. 3 hrs. lecture/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 readings of the Japanese language. 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 readings of the Japanese language. 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. lecture/wk.

FL 192
INTERMEDIATE CHINESE I (3CR)

Prerequisite: FL 166 or equivalent

This course is a continuation of study of the Chinese language and culture, emphasizing the sounds, vocabulary, grammar, usage and readings of the Chinese language. Focus will be on developing more advanced conversational skills by increasing vocabulary and variety of sentence patterns. Cultural understanding will also be stressed. 3 hrs. lecture/wk.

FL 193
INTERMEDIATE CHINESE II (3CR)

Prerequisites: FL 192 or equivalent

This course is a continuation of study of the intermediate Chinese language and culture, emphasizing the sounds, vocabulary, grammar, usage and readings of the Chinese language. Focus will be on developing more advanced conversational skills by

increasing vocabulary and variety of sentence patterns. Cultural understanding will also be stressed.
3 hrs. lecture/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

By applying vocabulary and structures presented in the text and handouts and by applying knowledge gained in a systematic review of German, the successful student will be able to communicate in German in situations that typically arise while traveling in a German-speaking country. 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 270
INTERMEDIATE AMERICAN SIGN LANGUAGE I (3CR)
Prerequisite: FL 181

This course will focus on the development of intermediate American Sign Language communication skills. Emphasis will be on teaching in context comprehension skills and linguistic features of the language. 3 hrs. lecture/wk.

FL 271
INTERMEDIATE AMERICAN SIGN LANGUAGE II (3CR)
Prerequisite: FL 270

The study of intermediate American Sign Language will continue in this course. It is designed to further intermediate communication skills in American Sign Language. Information about the linguistic and cultural features will be included in the context of language learning experiences. 3 hrs. lecture/wk.

FL 298
FRENCH CULTURE AND CIVILIZATION (3CR)

In this travel-for-credit course, students will visit selected sites in France, where they will compare the French and U.S. languages, values, culture and institutions. Summer.

Geoscience

(Also see Physical Science, page 273.)

GEOS 130
GENERAL GEOLOGY (5CR)

In this introductory course the students will survey the geologic processes that form and shape the Earth over geologic time utilizing the models of the rock cycle, the hydrologic cycle and the tectonic cycle. In the laboratory they will conduct hands-on activities designed to enhance and reinforce the geologic concepts they have studied. 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 as a system and the subsystems of the atmosphere, hydrosphere, lithosphere and biosphere constitute the major units of study. Students will acquire basic terminology that they will use to explain the Earth, the atmosphere and the landscape, and the processes that occur on earth to change the landscape. The topics may include mapping with topographic maps and remote sensing; development and structure of the atmosphere; weather; water resources; climate; rock formation; mountain building; chemical and physical weathering; mass movement; soil formation; erosion, transportation, and deposition by running water, wind, ice, currents, waves and tides; and the foundation that these processes build for the biosphere on earth. 3 hrs./wk.

GEOS 141
PHYSICAL GEOGRAPHY LAB (2CR)

Corequisite: GEOS 140 or equivalent

Students in this course will practice their knowledge of physical geography through the collection and analysis of atmospheric data and the identification and interpretation of landforms on topographic maps and remotely sensed imagery. 4 hrs. lab/wk.

GEOS 145
WORLD REGIONAL GEOGRAPHY (3CR)

In this introductory course the student will first review the basic theories of the discipline of geography, the relationship of world population and resources and the factors affecting development. Next, the student will survey the major regions of the world to identify each region's distinguishing geographic characteristics, summarize its past development and explain the key issues impacting the region's future development. 3 hrs. lecture/wk.

Grounds and Turf Management

KAGB 101
GENERALBIOLOGY (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 DESIGNANDMAINTENANCE (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
DECIDUOUSTREES ANDSHRUBS (3CR)

This is a practical study of woody plants, shade trees, ornamental and flowering trees and deciduous and flowering shrubs indigenous to the Midwest. Designed for the practitioner in agribusiness, the course provides an in-depth study of environmental adaptability, cultural practices, diseases, pests and seasonal effects in the Midwest. 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
ADVANCEDLANDSCAPE 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 Care Delivery

HC 101
INTRODUCTION TO HEALTH CARE DELIVERY (3 CR)

This course is an introduction to health care delivery systems with an overview of health careers and the roles and responsibilities of members of the health care team. Emphasis will be on how to work within a health care team, effective communication skills, professional safety and workplace skills, and legal and ethical rights and responsibilities of patients and health care workers. 3 hr. lecture/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. 4.5 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. 3.5 hrs./wk.

KMRT 163
CLASSIFICATION SYSTEMS, NOMENCLATURES,
INDEXES AND REGISTERS I (4CR)
Prerequisites: KMRT 200

This course is a study of nomenclatures and classification systems used for coding and indexing diagnoses and procedures with emphasis on ICD-9-CM. 5.5 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. 3.5 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 170
INTRODUCTION TO MEDICAL INSURANCE
AND OFFICE PROCEDURES (1.5CR)
Prerequisite: KMRT 151

This course is an overview of medical office systems and administrative procedures, with emphasis on medical billing, compliance with regulatory agencies and technology tools, including medical transcription. 2 hrs./wk.

KMRT 171
PHARMACOLOGY (1.5CR)
Prerequisites: KMRT 151 and BIOL 144

This course is an introduction to basic pharmacology, with a body systems approach to disease. 2 hrs./wk.

KMRT 175
SPECIALIZED HEALTH RECORD SYSTEMS (2CR)
Prerequisite: KMRT 164 or program coordinator approval

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. 4 hrs./wk.

KMRT 184
INTRODUCTION TO MEDICAL TRANSCRIPTION (3CR)
Prerequisites: BIOL 144, KMRT 160, KMRT 161, KMRT 151 and typing 40 w.p.m.

In this course, students will be introduced to the transcription of medical record reports using correct terminology, punctuation and format. 4 hrs./wk.

KMRT 200
INTRODUCTION TO CLASSIFICATION SYSTEMS (1CR)
Prerequisites: BIOL 144 and KMRT 151

This course examines classification systems used to organize clinical data in health care. The ICD-9-CM classification system will be introduced. 1 hr./wk.

KMRT 210
CLASSIFICATION SYSTEMS AND NOMENCLATURES FORAMBULATORY CARE (3CR)
Prerequisites: BIOL 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. 4 hrs./wk.

KMRT 291
ORGANIZATION AND ADMINISTRATION IN HEALTH INFORMATION (3CR)
Prerequisites: KMRT 163, KMRT 164 and KMRT 167

This course covers general principles of management and organization as applied to health information settings. Also included is budget development and control, personnel recruitment and retention, performance appraisal, progressive discipline, office design, productivity monitoring, work simplification, job analysis and descriptions and quality management. 3.5 hrs./wk.

Health Occupations

AVHO 102
CERTIFIED NURSEAIDE (96 CONTACT HOURS)

This course provides classroom and clinical instruction for the primary care of clients in long-term and acute-care facilities. Students learn skills for daily hygiene, bedside care, vital sign measurement, positioning and safe transfer of clients. The class prepares and schedules the student to take the Kansas CNA examination.

AVHO 104
CERTIFIEDMEDICATION AIDE (80 CONTACT HOURS)
Prerequisite: Proof of Kansas CNA certification

This course includes the development of knowledge related to many commonly prescribed medications. Students will learn the classifications, side effects and techniques of administration, including preparation and accurate distribution of medications. Safe administration of oral medications is discussed and demonstrated. Students will be scheduled to take the Kansas CMA examination.

AVHO 106
HOME HEALTHAIDE (21 CONTACT HOURS)
Prerequisite: Proof of Kansas CNA certification

This course provides the student with information necessary for nutritional meal planning, task modification, emotional support and personal service to clients and families needing health care assistance at home. Students 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 110
CPR FOR HEALTH CARE PROVIDER (8 CONTACT HOURS)

This course includes discussion of the cardiac and respiratory systems. The student will demonstrate CPR skills and airway obstruction techniques. With successful completion of this course, the student will receive Basic Rescuer level (Health Care Provider) affirmation.

AVHO 112
REHABILITATIVE AIDE (32 CONTACT HOURS)
Prerequisite: Proof of Kansas CNA certification

This course includes both classroom and laboratory instruction for the aging process as well as the role of the rehabilitative aide as a member of the health care team. Students learn the skills required to enhance the mobility of elderly residents in long-term care as well as the skills required to care for residents with special needs. A certificate from the college will be issued.

AVHO 115
I.V. THERAPY FOR LPNs (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.

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.

Health, Physical Education and Recreation

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, Ohm's Law, series-parallel circuits, voltage imbalance, compressors and compressor failures. Also includes: gas furnace controls, capacity control condensers and evaporators, properties of gas, metering devices, gas combustion, gas burners, ventilation and combustion air. The student will be required to provide ANSI Z87 safety glasses. 2 hrs. lecture/wk.

HVAC 121
BASIC PRINCIPLES OF HVAC (4CR)
Prerequisite or corequisite: HVAC 123

This is a beginning course in heating, ventilation and air conditioning technology that is appropriate for both the HVAC major and other interested students. Upon successful completion of this course, the student should be able to identify the function of the basic components of an air conditioning system. Topics will include heat laws, refrigerants, oils and refrigeration cycles of residential and light commercial systems. In the lab, students will design, assemble and operate a working refrigeration system. Competencies will include brazing, wiring, evacuating and charging a system. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 123
ELECTROMECHANICAL SYSTEMS (4CR)

This is a beginning course in electrical theory that is required for HVAC, Electrical and Power Plant Technology, but is appropriate for all interested students. Common components found in the HVAC industry are used to develop these skills. Upon successful completion of this course, the student should be able to identify electrical components and their relationships to the various repair and troubleshooting techniques. The materials in this course will prove useful to service technicians whose background in electricity is limited. The course includes material from basic electrical theory to troubleshooting complex electrical circuits. This course will provide practice in application of electrical theory as well as in the interconnection of components of heating and cooling 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)
Prerequisite: 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 by-products of each and the problems that might be encountered. Some student research will be included in the context of the course. Emphasis will be on the most promising or effective alternate energy technologies available. 2 hrs. lecture/wk.

HVAC 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)
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 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 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 various components such as input, output, and diagrams. The structure, symbols and terminology of ladder logic diagrams will be introduced. Logic or decision-marking functions are presented along with practice in creating ladder logic diagrams.
2 hrs. lecture/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. 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 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 shall 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, 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 have knowledge and confidence necessary to pass the EPA exam and properly, efficiently and responsibly handle refrigerants as set forth in the Clean Air Act of 1990. 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 digital 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, P.E. switches, calibration and setup of pneumatics 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 hours lecture, 1.5 hrs. lab/wk.

HVAC 218
ELECTRONIC CONTROL SYSTEMS (2CR)
Prerequisite: HVAC 123

Upon successful completion of this course, the student should be able to identify the components in an electronic control system as applied to HVAC systems. Components, wiring diagrams and sequences of operation will be covered. Laboratory competencies include identification of electronic sensors and their respective controllers, using modular control motors and calibration of electronic controllers. Interactive instructional medial 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. 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 should be able to identify 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 psychometrics, pressure-enthalpy diagrams and commercial load calculations. 3 hrs. lecture, 3 hrs. lab/wk.

HVAC 223
COMMERCIAL SYSTEMS: HEATING (4CR)
Prerequisite: HVAC 123

Upon successful completion of this course, the student should be able to identify large heating systems used in commercial, institutional and industrial applications. Types of equipment include hot water, low-pressure and high-pressure steam boilers, auxiliary, safety and flame safeguard controls; steam traps; condensate return; and water treatment systems. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools. 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. 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 and 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 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. 1 hr lecture, minimum 15 hrs. on-the-job training/wk.

History

HIST 120
LOCAL AND KANSAS HISTORY (3CR)

This course introduces students to the history of Kansas from the beginning of the Late Ceramic Period (1500) to the present. Emphasis will be on the examination of the living patterns of the various peoples who have inhabited the region during this time frame. This course will also analyze the social and economic factors and political objectives that transformed the central plains from the domain of the bison-hunting Plains Indian to a society based in a market-agricultural economy. 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)

The courses explores the major developments, ideas and personalities that have shaped Western civilization. Organized around a readings and discussion format, student engage some of the world's most provocative and influential literature. Western Civilization I begins with the ancient cultures of the Middle East, Greece and Rome and follows the development of Western thought from the medieval period to the Renaissance and Reformation. 3 hrs./wk.

HIST 126
WESTERN CIVILIZATION:
READINGS AND DISCUSSION II (3CR)

The course explores the major developments, ideas and personalities that, for the past 500 years, have shaped Western civilization. Organized around a readings and discussion format, the course allows students to engage some of the world's most provocative and influential literature. Western Civilization II begins with the three revolutions that define modernity – Scientific, French, and Industrial. The course also highlights the new ideologies of the 19th century and more recent themes of modernization and the cultural crisis of the 20th century. 3 hrs./wk.

HIST 130
EUROPEAN HISTORY FROM 1789 (3CR)

This course covers the major political, intellectual and economic and social developments in Europe from the end of the 18th century to the present, including modern political ideologies, major wars, the growth of strong governments, the impact of modern science on social and political thought, the Industrial Revolution, the creation of large middle classes and the impact of modern technology. 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 137
AFRICAN-AMERICAN STUDIES (3CR)

This course surveys the major themes and developments in African-American culture and history from the colonial period to the present. The course is divided into 3 five-week segments. Each segment relates to a historical period – slave, post-emancipation and contemporary – but each segment also permits a flexible, interdisciplinary approach that will include literature, fine arts and the social sciences. 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 provides students an introduction to the history of the major world civilizations up to approximately 1500. Upon successful completion of the course, students will be able to identify the major political, social, economic and technical developments in the histories of Egypt, Mesopotamia, other Near Eastern civilizations, Rome, Greece, India, China, sub-Saharan Africa, pre-Columbian America and medieval Europe. Students will be able to define the concept of a traditional, as opposed to a modern, society. They will be able to compare these societies with each another and with the modern society of the contemporary United States. 3 hrs./wk.

HIST 152
WORLD HISTORY II: THE MODERN WORLD (3CR)

This course provides students an introduction to the history of the world since approximately 1500. Upon successful completion, students will be able to describe and analyze the development of modernism, which occurred first in the West, including the scientific revolution, secularism, industrialism and the rise of new political ideologies. They will be able to trace the expansion of modernization in both the Western and non-Western worlds and the response to modernism in the non-Western countries. 3 hrs./wk.

HIST 160
MODERN RUSSIAN HISTORY (3CR)

This course will survey the history, culture, foreign policy, politics and socioeconomic events in Russia from the time of Peter the Great to the present day. 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. The thrust of the course is geared to exploring the themes that permeate the Japanese experience over the past two centuries.

Home Economics

HMEC 151
NUTRITION AND MEAL PLANNING (3CR)

Upon successful completion of this course, the student should be able to identify basic food groups, their use in meal planning, their functions and their nutritional values. In addition, the student should be able to describe the current trends in eating, diet and exercise, as well as fad diets and life-cycle nutritional needs. The student should also be able to describe the effects of nutrient intake on growth and development. 3 hrs./wk.

Honors Program

HON 250
HONORS FORUM: IN SEARCH OF SOLUTIONS (3CR)

This course will focus on two topics during the semester and how the topic affects the local, national and global communities. It complements other courses in the curriculum by combining an emphasis on both specific content and on skill development in the areas of interaction, analysis, synthesis and conflict resolution. Students will study each issue in a historical and contemporary context, develop a greater understanding of the issues and take a position on the issues. This position will be subjected to further challenge and dialogue. In this course, the process of reflecting, researching, analyzing and evaluating are as important as content. As points of view concerning the issue are developed, the students must articulate and defend these as they are challenged by others and make judgments among alternative options.

The first topic is selected by the faculty members, then midway through the semester, the students will select the second topic. This course will require students to utilize many forms of research, including the use of the Internet and other forms of electronic databases; in addition, the students will be expected to have an e-mail account and use it for sharing information with classmates and instructors.

Horticulture

HORT 115
HOME HORTICULTURE (2CR)

This course provides basic knowledge for the design and management of the home lawn, flower and vegetable gardens, and landscape trees and shrubs. Students will learn basic plant anatomy and physiology concepts; how to recognize some common plant deficiency symptoms; the use of fertilizers and pesticides; identification of some common trees, shrubs and garden plants; and the major considerations of good landscape design. 1 hr. lecture, 2 hrs. lab/wk.

HORT 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.

HORT 130
LANDSCAPE DESIGN AND MAINTENANCE (3CR)

This course is designed to familiarize students with aspects of landscape design, plant selection and maintenance. Upon completion, the student will be able to analyze both the site and the preferences of the person requesting the design. The student will be introduced to the concepts and principles of landscape design as well as the walls and ceilings of the outdoor room or landscape. The course will cover form, texture and color in both plant selection and embellishments. The student will learn how to complete and apply a landscape design and make a hand drawing as well as being introduced to the concept, application and procedures of computer-aided design. 3 hrs. lecture/wk.

HORT 140
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.

HORT 150
VEGETABLES, FRUITS AND HERBS (2CR)

This course is designed to familiarize garden center employees with plant materials and production of crops used and grown by many homeowners. This course will help the employee answer many homeowner questions about production, varieties and potential crop problems. Home hobbyist may also wish to enroll in this course. 1 hr. lecture, 2 hrs. lab/wk.

HORT 160
GARDEN CENTER OPERATIONS (3CR)

This course is designed for garden center employees and provides background on elements necessary for success in a competitive retail environment. The business organization is emphasized, including environmental monitoring, selling, inventory issues, merchandising, advertising, cost effectiveness and labor/team relationships and customer service. In addition, safety and legal issues are examined. 3 hrs. lecture/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 provides basic knowledge of the art and science of sexual and asexual methods of propagating plants. Students study the processes of seed development, seed dormancy, germination, root initiation and grafting. Students will learn basic seed sowing, cutting and grafting skills. The students will be able to demonstrate the selection of appropriate propagation methods and choose the proper environmental conditions necessary to achieve successful propagation of seeds or cuttings. 2 hrs. lecture, 2hrs. lab/wk.

HORT 210
CONCEPTS OF FLORAL DESIGN (3CR)

This is an introductory course for students to learn the design basics of flower arranging. The course will help the students develop an eye for color combinations, flow of lines, balance, geometric shapes and texture uses in

flower arranging. The student will become familiar with materials used, mechanics of design, customer perspectives and the post-harvest care of floral materials. 2 hrs. lecture, 5 hrs. lab/wk.

HORT
WOODY PLANT MATERIALS I (3CR)

This course will assist the grounds maintenance, landscaper, garden center employee and home hobbyist in identifying plant materials used in the landscape. This class places emphasis on deciduous trees sold in garden centers and used in climatic zones 5 and 6. Plant uses, specific characteristics, cultivation, seasonal effects and influences that affect plant choices will be taught. 2 hrs. lecture, 3 hrs. lab/wk.

HORT 215
WOODY PLANT MATERIALS II (3CR)

Prerequisite: HORT 214

This course is a continuation of Woody Plants I. The course will assist the grounds maintenance, landscaper, garden center employee and home hobbyist in identifying evergreen trees and shrubs and flowering shrubs sold in garden centers and used in climatic zones 5 and 6. Plant uses, specific characteristics, cultivation, seasonal effects, and influences that affect plant choices and customer services attributes will be taught. 2 hrs. lecture, 3 hrs. lab/wk.

HORT 220
HERBACEOUS PLANTS (3CR)

This course will focus on the identification and uses of perennials, annuals, bulbs, ground covers and vines. This course will assist the grounds maintenance, landscaper, garden center employee and home hobbyist in identifying and selecting herbaceous plant materials used in the landscape. Culture and care will be covered, with additional emphasis on uses and maintenance. The student will also cover the more creative aspects of landscape enhancement and uses of herbaceous plants in garden design. 2 hrs. lecture, 3 hrs. lab/wk.

HORT 225
PLANT PROBLEMS (3CR)

Prerequisite: HORT 214 and HORT 220

This course is a broad-spectrum overview of plant insects, diseases and nutrition. Students will look at plants to identify the common characteristics found when diagnosing plant problems. Identification, treatment and treatment alternatives will be considered to help customers make diagnostic decisions for the use of chemicals and integrated pest management techniques (IPM). 2 hrs. lecture, 3 hrs.

lab/wk.

HORT 230
LANDSCAPE MAINTENANCE AND TECHNIQUES (4CR)

Prerequisite: HORT 225

This course prepares the garden center professional and lawn care professional for the total care of the landscape. Mowing, edging, pruning techniques, fertilization, watering, spray schedules and weed control will be covered. Mulches, construction materials and equipment used in maintaining landscapes and seasonal enhancements are examined, as they pertain to the landscape. Irrigation systems repair and maintenance for residential and commercial landscapes will be discussed. In addition, the student will learn to design preventive strategies, identify and examine disease and insect damage as well as maintain good customer relations. 2 hrs. lecture, 3 hrs. lab/wk.

HORT 240
TURFGRASS MANAGEMENT II (3CR)

Prerequisite: HORT 140

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.

HORT 250
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.

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.

HMGT 123
BASIC FOOD PREPARATION (3CR)

Upon successful completion of this course, the student should be able to demonstrate skills in grilling, frying, broiling, sauteing, recipe conversion, salad preparation and the production of the five basic sauces. Also, the student should be able to operate the food service equipment used in commercial kitchens in a safe manner. 3 hrs./wk.

HMGT 126
FOOD MANAGEMENT (4CR)
Prerequisites: HMGT 123, HMGT 145, HMGT 230, HMGT 277

Upon successful completion of this course, the student should be able to explain and demonstrate 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 participate in the operation of the campus restaurant, including food preparation, service, sales promotion, purchasing and costing. 7 hrs./wk.

HMGT 128
SUPERVISORY MANAGEMENT (3CR)

Upon successful completion of this course, the student should be able to analyze and explain basic supervisory management skills, management styles, motivation with emphasis on human relations, delegation, training, evaluation and communication. In addition, the hiring and firing functions within FLSA guidelines will be covered. 3 hrs./wk.

HMGT 130
HOSPITALITY LAW (3CR)

This course offers an overview of product and dram shop liability as well as of the various areas of federal and state legislation that regulate the hospitality industry. Emphasis will be on familiarizing the hospitality manager with ways to avoid costly and time-consuming lawsuits. A manager's or owner's legal rights and responsibilities also will be discussed. Upon successful completion of this course, the student should be able to recognize potential legal problems. 3 hrs./wk.

HMGT 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. 2 hrs./wk.

HMGT 145
FOOD PRODUCTION SPECIALTIES (3CR)
Prerequisite: HMGT 123

This course covers the fundamentals of convenience baking, hors d'oeuvre and cold kitchen preparation. It provides a knowledge and basic skills in the pastry kitchen where the student can handle convenience products from the frozen or dried state and produce finished pies, cakes and dessert items. It provides a further knowledge and skill in the garde manger kitchen of making salads, cocktail hors d'oeuvres, cocktail sandwiches and making economic purchases for gourmet food items. In addition, the student will learn how to make intermezzo ices, identify different cheeses, design and carve ice blocks for display and learn how to make a general plan for a buffet. 1½ hrs. lecture, 2 hrs. lab/wk.

HMGT 203
HOTEL SALES AND MARKETING (3CR)
Prerequisite: HMGT 121

Upon successful completion of this course, the student should be able to describe hotel sales and marketing functions, write a marketing plan and develop an advertising campaign for a hotel. The course will also focus on identifying target markets, prospecting for sales leads and using practical sales techniques. 3 hrs. lecture/wk.

HMGT 221
DESIGN TECHNIQUES (3CR)
Prerequisites: HMGT 123 and HMGT 271

This course includes detailed information about food service design that covers layout, design and equipment specifications. Upon successful completion of this course, the student should be able to understand and develop a food service design concept, including the menu, the location and the type of clientele expected.

3 hrs./wk.

HMGT 223
FUNDAMENTALS OF BAKING (3CR)
Prerequisite: HMGT 145

Upon successful completion of this course, the student should be able to demonstrate an understanding of bakeshop 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 bakeshop products. The class includes lecture and participation. 3 hrs./wk.

HMGT 226
GARDE-MANGER (3CR)
Prerequisite: HMGT 123 and HMGT 145

This course is designed for the student to learn cold food production and charcuterie. The course will allow the student to develop fundamental principles of the cold kitchen and modernize traditional methods of salad preparation. 1 hr. lecture, 2½ hrs. lab/wk.

HMGT 228
ADVANCED HOSPITALITY MANAGEMENT (3CR)
Prerequisite: Approval of hospitality management academic director

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 be able to describe the skills necessary to secure a position in management within the hospitality industry. 3 hrs./wk.

HMGT 230
INTERMEDIATE FOOD PREPARATION (3CR)
Prerequisite: HMGT 123

This course is designed to help the student's transition from basic to intermediate food skills. Upon successful completion of this course, the student should be able to demonstrate the skills necessary to prepare standard menu items as well as a range of American regional cuisines. This course consists of lecture, demonstration and participation in food preparation. 1 hr. lecture, 2.5 hrs. lab/wk.

HMGT 231
ADVANCED FOOD PREPARATION (4CR)
Prerequisite: HMGT 145 and HMGT 230

This course is designed to develop a student's advanced culinary skills in preparation of international cuisine commonly served in today's operations in Latin America, Europe, Asia, the Middle East and the Far East. 4 hrs./wk.

HMGT 240
ADVANCED BAKING (4CR)
Prerequisites: HMGT 123 and HMGT 223

Upon successful completion of this course, the student should be able to prepare a variety of specialty bakery products. Lectures, demonstrations and actual participation in advanced baking procedures prepare the student for entry into the baking industry. Student projects will cover specialty yeast and rich dough products and baked and chilled desserts. 4 hrs. lecture, lab/wk.

HMGT 248
CONFECTIONERY ARTS (3CR)

This course covers the design and production of artistic centerpieces made from confections. It provides a knowledge and basic skills in making decorative dining table centerpieces, using food products such as cooled and pulled sugar syrup, isomalt, pastillage, rolled fondant, marzipan and chocolate. The student will be instructed in the preparation of the said ingredients and will construct center and showpieces after viewing demonstrations. 4.5 hrs. lecture, lab/wk.

HMGT 250
INTRODUCTION TO CATERING (3CR)

Upon successful completion of this course, the student should be able to explain the different types of catered events within the hospitality industry. The student should also be able to explain the importance of marketing, contract writing, food production, room arrangements and required personnel relative to specific catered events. 3 hrs. lecture/wk.

HMGT 265
FRONT OFFICE MANAGEMENT (3CR)

Upon completion of this course, a student should be able to follow the flow of business through the front office of a hotel, beginning with the reservations process and ending with checkout and settlement. The student should be able to demonstrate an understanding of the various elements of effective front office management, front office procedures, guest service, night audit procedures, revenue management and the role the front office plays within the context of the overall operation of the hotel. 3 hrs./wk.

HMGT 268
HOTEL ACCOUNTING (3CR)
Prerequisites: MATH 120, HMGT 121 and HMGT 273

Upon successful completion of this course, the student should be able to describe hotel accounting concepts, procedures, processing of data and the flow of financial information within the various hotel departments.

Students also will discuss, prepare and evaluate an income statement and balance sheet and read and interpret a statement of cash flow. 3 hrs. lecture/wk.

HMGT 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.

HMGT 273
SEMINAR IN HOSPITALITY MANAGEMENT: ACCOUNTING (3CR)
Prerequisites: MATH 120 or higher and HMGT 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. 2 hrs./wk.

HMGT 275
SEMINAR IN HOSPITALITY MANAGEMENT INTERNSHIP (3CR)

Upon successful completion of this course, the student should be able to demonstrate an understanding of an actual operation and identify and explain operational problems. In addition, the student should be able to construct and contrast solutions to these problems. While enrolled in this course, a student must work a minimum of 320 hours in an approved position in the hospitality industry. By arrangement.

HMGT 277
SEMINAR IN MENU PLANNING AND SALES PROMOTION (3CR)
Prerequisite: HMGT 123

Upon successful completion of this course, the student should be able to explain the components of menu planning for every type of service and facility. In addition, the student should be able to demonstrate an understanding of menu layout, selection and development, price structures and the theory of menu design. A minimum of 15 hours a week is required in a supervised work situation in an approved area of the hospitality industry. Work experience is concurrent but does not necessarily concentrate on the subject being taught in the course. 2 hrs./wk.

HMGT 279
BEVERAGE CONTROL (3CR)

Upon successful completion of this course, the student should be able to demonstrate an understanding of beverage control and how it is used in all types of operations. This course covers the history of wines and their use and storage procedures. The student will take part in an in-depth study of spirits, internal control systems and local and state alcoholic beverage control laws. 3 hrs./wk.

HMGT 281
CULINARY ARTS PRACTICUM I (2CR)
Prerequisite: Acceptance into the American Culinary Federation Chef Apprenticeship training program and approval of hospitality management academic director

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation.

HMGT 282
CULINARY ARTS PRACTICUM II (2CR)
Prerequisite: HMGT 281

A qualified chef who is a member of the American Culinary Federation 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. This is a continuation of Culinary Arts Practicum I.

HMGT 285
CULINARY ARTS PRACTICUM III (2CR)
Prerequisite: HMGT 282

A qualified chef who is a member of the American Culinary Federation 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. This is a continuation of Culinary Arts Practicum II.

HMGT 286
CULINARY ARTS PRACTICUM IV (2CR)
Prerequisite: HMGT 285

A qualified chef who is a member of the American Culinary Federation 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. This is a continuation of Culinary Arts Practicum III.

HMGT 287
CULINARY ARTS PRACTICUM V (2CR)
Prerequisite: HMGT 286
A qualified chef who is a member of the American Culinary Federation 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. This is a continuation of Culinary Arts Practicum IV.

HMGT 288
CULINARY ARTS PRACTICUM VI (2CR)
Prerequisite: HMGT 287 and approval of hospitality management academic director
A qualified chef who is a member of the American Culinary Federation 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. This is a continuation of Culinary Arts Practicum V.

Humanities

HUM 122
INTRODUCTION TO THE HUMANITIES (3CR)
This interdisciplinary study begins with a look at artistic and technical elements of several art forms, including painting, sculpture, architecture, music, theater, film, dance and literature. Major themes expressed in the works and their reflection of the values of their culture are also examined. 3 hrs./wk.

HUM 136
THE HUMAN EXPERIENCE (3CR)
This course introduces students to the major artistic and philosophical outlooks of the modern and post-modern periods – Neoclassicism, Romanticism, Realism, Naturalism, Late Romanticism, Symbolism, Surrealism, Modernism and Post-Modernism – emphasizing the varying insights into the human condition and self-identity that they provide. 3 hrs./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 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 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 WORLDHUMANITIES I (3CR)
This course will acquaint students with the arts and ideas of the world's major civilizations, from antiquity through the late Middle Ages (pre-Renaissance). The approach will be interdisciplinary, covering the artistic values embodied in painting, sculpture, architecture, literature, theater, music and dance as they have emerged out of their historical contexts. In addition to providing the fundamental principles, methodologies and theories used in the study of the humanities, the course aims to enhance students' understanding of the contemporary world. 3 hrs./wk.

HUM 146
INTRODUCTION TO WORLDHUMANITIES II (3CR)
This course will acquaint students with the arts and ideas of the world's major civilizations, from the Renaissance to the present. The approach will be both interdisciplinary and chronological, covering the artistic values embodied in painting, sculpture, architecture, literature, theater, music and dance as they have emerged from their historical contexts. In addition to providing the fundamental principles, methodologies and theories used in the study of the humanities, the course aims to enhance students' understanding of the contemporary world. 3 hrs./wk.

HUM 155
CLASSICAL MYTHOLOGY (3CR)

This course provides a systematic study of the myths and epic cycles of the Greeks and Romans in both literature and art, and investigates their survival and metamorphosis in the literature and visual arts of Western Europe. In addition, this course provides several methodological frameworks with which to analyze several types of tales and their relation to history, religion, rituals and art. 3 hrs./wk.

HUM 164
CIVILISATION (3CR)

This course covers the major ideas and events of Western civilization communicated through the arts. Based upon the text *Civilisation* by the art historian Kenneth Clark, the course begins after the fall of the Roman Empire and includes material to the 20th century. By arrangement.

Industrial Technology

INDT 125
INDUSTRIALSAFETY (3CR)

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. 3 hrs. lecture/wk.

INDT 140
QUALITY IMPROVEMENT USING SPC (2CR)

Upon successful completion of this course, the student should be able to describe and apply basic 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. lecture/wk.

INDT 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 his/her 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.

Information Technology

IT 200
NETWORKING TECHNOLOGIES (3CR)

This course is designed to provide students with the fundamentals of networking technology. Concepts covered include network terminology and protocols, network standards, LANs and WANs, the layers of the OSI reference model, cabling practices, network topologies, and IP addressing. This course is offered in a online format with no labs. 3 hrs/wk.

IT 205
IMPLEMENTING WINDOWS CLIENT (3CR)

The focus of this course is the use of Microsoft Windows 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, 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 IT 205 or IT 220

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)

Prerequisite: 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
WINDOWS 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 SERVER (3CR)

Prerequisites: IT 200 and ELEC 124 and either IT 205 or IT 220

This course is designed to provide students with the necessary knowledge and skills to perform competently in the role of a network administrator utilizing the Window 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 SERVER IN THE ENTERPRISE (3CR)

Prerequisite: IT 221

This course is designed to provide Windows NT network administrators with information that enhances their network managing and monitoring 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 225
WINDOWS ACTIVE DIRECTORY SERVICES (3CR)

Prerequisites: IT 205 or IT 220 and, either as a prerequisite or corequisite, IT 221

The focus of this course is using Microsoft Windows 2000 Server or Advanced Server software to install, configure and troubleshoot Active Directory components, Domain Name Space (DNS) for Active Directory and Active Directory security solutions. The course also emphasizes the skills required to manage, monitor and optimize the desktop environment using Group Policy. 2 hrs. lecture, 3 hrs. lab/wk.

IT 227
SQL SERVER ADMINISTRATION (3CR)

Prerequisite: IT 221

Upon successful completion of this course, the student should be able to administer an SQL server installation. Topics covered include installing, upgrading and configuring SQL servers using SQL utilities, working with databases and users, backing up and restoring databases and log files, automating maintenance tasks, managing copying and moving data, replicating, tuning, and troubleshooting. 2 hrs. lecture, 3 hrs. lab/wk.

IT 230
UNIX ADMINISTRATION AND NETWORKING (3CR)

Prerequisites: IT 200 and ELEC 124 and either IT 205 or IT 220

This course is designed to provide students with a fundamental understanding of the Unix operating system environment. Students successfully completing this course will be able to plan server rolls and subsequent requirements, execute common Unix commands and utilities, and to accomplish basic system tasks such as navigating the file system, applying file system security, managing user accounts, installing and

configuring user software, using the printing environment, and managing the resources of a basic Unix system. 2 hrs. lecture, 3 hrs. lab/wk.

IT 231
UNIX ADMINISTRATION IN THE ENTERPRISE (3CR)
Prerequisite: IT 230

This course is designed to provide students with the necessary knowledge and skills to perform competently in the role of a system and/or network administrator using the Unix operating system. Students successfully completing this course should be able to accomplish basic system and network administration tasks, including installing, configuring, and troubleshooting the Unix operating system, maintaining file systems, implementing the printing environment, scheduling and managing system processes, and establishing network services. 2 hrs. lecture, 3 hrs. lab/wk.

IT 245
NETWORK INFRASTRUCTURE (3CR)
Prerequisite: IT 221

This course is designed to provide an in-depth understanding of the ability to install, manage, monitor, configure and troubleshoot DNS, DHCP, Remote Access, Network Protocols, IP Routing and WINS in a Windows 2000 network infrastructure. In addition, it will provide an in-depth understanding of the ability to manage, monitor and troubleshoot Network Address Translation and Certificate Services. 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 247
INTRODUCTION TO WIDE-AREA NETWORKS (3CR)
Prerequisite: IT 246

This course is designed to provide students a fundamental understanding of internetworking. Topics include Local Area Network segmentation using switches and routers. Wide-area network physical technologies will be studied. Configuring WAN protocols using PPP, ISDN and Frame Relay will be presented. Securing the network with standard and

extended access lists will be performed. IP and IPX routing will be covered. Programming and configuration will be conducted using Cisco routers and switches. Laboratory exercises will accompany lectures. 2 hrs. lecture, 3 hrs. lab/wk.

IT 250
NETWORKING SEMINAR (3CR)
Prerequisites: ELEC 185 and either IT 211 or IT 222

This course is designed to teach advanced concepts in information technology. Topics covered are section specific and include e-mail servers, Web servers, database servers, routing, switching and advanced LAN design concepts. Prerequisites are posted for each section. Students may use this course as a capstone for applying concepts and procedures developed in previous courses using realistic business scenarios. 2 hrs. lecture, 3 hrs. Lab/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. Student will work a total of 225 hours per semester at an approved job site.

IT 272
INFORMATION TECHNOLOGY INTERNSHIP II (3CR)
Prerequisites: IT 271 and approval of the division administrator

This course is a continuation of IT 271 Internship I. It provides the student additional opportunity to apply classroom knowledge to an actual work environment. Students will work 15 hours per week for a total of 225 hours of approved work experience.

Information/Word Processing

(See Business Office Technology, page 85.)

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 Design

ITMD 121
INTERIOR DESIGN I (3CR)

This course provides basic introductory knowledge about interior design. Upon successful completion of this course, the student should be able to understand the significance of interior design, complete projects using the elements and principles of design and color theory in interior spaces, use space planning skills to arrange furniture on a floor plan, and present the floor plan and its decorative scheme. This course is required in the interior design, interior merchandising and interior entrepreneurship associate of applied science degrees, interior products sales representative certificate and interior design retail sales/manufacturers representative certificate programs. 3 hrs./wk.

ITMD 122
INTERIOR DESIGN II (3CR)
Prerequisites: ITMD 121 and DRAF 261

This is an advanced course focusing on residential design. 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; demonstrate the ability to coordinate fabrics, colors, texture, patterns and finishes in a complete floor plan for a residential unit; and produce floor plans enhanced by color and shadow. This is a required course in the interior design, interior merchandising and interior entrepreneurship associate of applied science degree programs. 3 hrs./wk.

ITMD 125
INTERIOR TEXTILES (3CR)

This course is a comprehensive study of textiles used in interior design. 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. Specific course content includes 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. This is a required course for the interior design, interior merchandising, and interior entrepreneurship associate of applied science degrees, interior products sales representative certificate and interior design retail sales/manufacturers representative certificate. 2 hrs. lecture, 2 hrs. lab/wk.

ITMD 127
ELEMENTS OF FLORAL DESIGN (1CR)

This course provides in-depth knowledge and hands-on application of floral design. 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. This is an elective course in the interior design, interior merchandising, interior entrepreneurship associate of applied science degrees and interior design retail sales/manufacturers representative certificates. 1.5 hr. integrated lecture, lab/wk.

ITMD 132
INTERIOR PRODUCTS (3CR)

This course provides in-depth knowledge about products used in interior spaces. 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/or 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. This course is a required course in the interior design, interior merchandising, interior entrepreneurship associate of applied science degrees, interior products sales representative certificate and interior design retail sales/manufacturers representative certificate programs. 3 hrs./wk.

ITMD 133
FURNITURE AND ORNAMENTATION/ ANTIQUITY TO RENAISSANCE (3CR)

This course provides in-depth knowledge in the study of Western furniture and ornament. 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 to correctly use vocabulary related to each era. This is a required course in the interior design, interior merchandising and interior entrepreneurship associate of applied science degree programs. 3 hrs./wk.

ITMD 140
DRAPERIES, TREATMENTS AND CONSTRUCTION (1CR)
Prerequisites: ITMD 121 and ITMD 125
Corequisite: ITMD 275
This course provides comprehensive knowledge about draperies, treatments and construction. 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 used in the drapery industry, distinguish appropriate textiles and hardware for specific window treatments, measure for window treatments and describe and select the proper suspension system for specific window treatments. The student will measure, select and present the proper style, fabric and suspension system for a specific window treatment. This course is a required course in the interior design, interior merchandising, interior entrepreneurship associate of applied science degrees and an elective in the interior design retail sales/manufacturers representative certificate. 1 hr./wk.

ITMD 145
UPHOLSTERY CONSTRUCTION (1CR)
Prerequisites: ITMD 121 and ITMD 125
Corequisite: ITMD 275
This course provides comprehensive knowledge about upholstery construction. Upon successful completion of this course, the student should be able to demonstrate the use of correct vocabulary relating to upholstery construction, explain the equipment used in the upholstery industry, identify appropriate textiles and materials for upholstery use, and describe the various suspension systems used in bench-constructed and mass-produced furniture. This course is a required course in the interior design, interior merchandising and interior entrepreneurship associate of applied science degrees and an elective in the interior design retail sales/manufacturers representative certificate. 1 hr./wk.

ITMD 147
LIGHTING DESIGN AND PLANNING (1CR)
Prerequisite: I: ITMD 121 or FASH 147
This course provides in-depth knowledge about lighting design and planning. Upon successful completion of this course, the student should be able to define and use vocabulary relating to lighting design and planning. The student should be able to recognize and explain lighting application and technology used in the lighting industry. Additionally, the student should be able to identify and describe proper fixtures and equipment for lighting applications and demonstrate skills in selecting proper lighting designs for specific applications. This course is a required course in the interior design, interior merchandising and interior entrepreneurship associate of applied science degrees and an elective in the interior design retail sales/manufacturers representative certificate. 1 hr./wk.

ITMD 148
HISTORY OFORIENTALFURNITURE ANDORNAMENTATION (2CR)
This course provides in-depth knowledge in the study of Asian furniture and ornament. Upon successful completion of this course, the student will be able to analyze and compare furniture, ornamentation, design motifs and textiles of the Near East and Far East during historical periods from antiquity to modern times. The student should be able to identify the religious, political and social influences on the ornamentation and furnishings of each period. In addition, the student will be able to identify the craftsmanship and materials used in the furniture of each historical period and to demonstrate the use of correct vocabulary related to each era. This is a required course in the interior design associate of applied science degree and an elective in the interior merchandising and interior entrepreneurship associate of applied science degree programs. 2 hrs./wk.

ITMD 150
ASIAN RUGS AND CARPETS (1CR)
This course provides in-depth knowledge in the study of Asian carpets and rugs. Upon successful completion of this course, the students will be able to analyze and compare materials, ornamentation, design motifs and textiles of the Near East and Far East during historical periods from antiquity to modern times. The student should be able to identify the religious, political and social influences on the ornamentation and furnishings of each period. In addition, the student will be able to demonstrate the use of correct vocabulary. This is a required course in the interior design associate of applied science degree and an elective in the interior merchandising and interior entrepreneurship associate of applied science degree programs. 1 hr/wk.

ITMD 175
ADVANCED FLORAL DESIGN (1CR)
This course is a continuation of Elements of Floral

Design and provides the student with a more comprehensive application of floral design for home interiors. Upon successful completion of this course, the student will be able to determine the appropriate floral design for an existing home, design a variety of florals for specific placement, work with other students on a specific projec,t and learn how to buy and price interior floral designs. This is an elective course for the interior design associate of applied science degree program. 1 hr. lecture, 1.5 hrs. lab/wk.

ITMD 180
LEADERSHIP IN DESIGN (1CR)

Upon successful completion of this course, the student should be able to identify leadership skills necessary to have successful involvement in the field of interior design and professional organizations. Topics include group communication methods, time management, team-building skills, and organizing and facilitating meetings. Students desiring leadership opportunities in the ASID or other organizations are encouraged to enroll. This course is an elective in the interior design, interior merchandising and interior entrepreneurship associate of applied science degree programs. 1 hr. lecture, 1 hr. lecture/wk.

ITMD 223
CONTRACT DESIGN (3CR)
Prerequisites: ITMD 122 and DRAF 264

This is an advanced course focusing on contract design. Upon successful completion of this course, the student will be able to define and use vocabulary related to contract design, identify and use proper architectural symbols common to contract floor plans and elevations, and explain the differences between residential and contract design. Additionally, the student should be able to demonstrate the skills necessary to convert, redesign and create contract design space; explain the concept of open office planning; and compare and analyze the costs and benefits of open planning versus closed planning. This is a required course in the interior design associate of applied science degree and an elective in the interior merchandising and the interior entrepreneurship associate of applied science degree programs. 1 hr. lecture, 3 hrs. lab/wk.

ITMD 231
FURNITURE AND ORNAMENTATION/ RENAISSANCE TO 20TH CENTURY (3CR)

This course provides in-depth knowledge in the study of Western furniture and ornament. 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 the social, religious and political 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 to correctly use vocabulary related to each era. This is a required course in the interior design, interior merchandising, interior entrepreneurship associate of applied science degrees and an elective in the interior design retail sales/manufacturers representative certificate. 3 hrs./wk.

ITMD 234
KITCHEN AND BATH: PLANNING AND DESIGN (3CR)
Prerequisites: ITMD 122 and DRAF 264

This is a comprehensive course in kitchen and bath design and planning. Upon successful completion of this course, the student should be able to define and use proper vocabulary related to kitchen and bath design and construction, identify and use proper architectural symbols common to kitchen and bath plans and elevations, state the space relationships required for proper kitchen and bath usage, convert to metric measurements and draw a kitchen and bath floor plan and elevation. This is a required course in the interior design associate of applied science degree and an elective in the interior merchandising and interior entrepreneurship associate of applied science degree programs.2 hrs. lecture, 1 hr. lab/wk.

ITMD 239
CAPSTONE: PORTFOLIO AND PRESENTATION (2CR)
Prerequisite: Approval of program facilitator

This course is designed as a capstone for the interior design program. It should be taken in conjunction with or after completion of the final interiors studio course or in the graduating semester. 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 resume, conduct a job search and present written and oral presentations based on resource and product files from other classes. This is a required course in the interior design, interior merchandising and interior entrepreneurship associate of applied science degree programs. 2 hrs. lecture/wk.

ITMD 250
20TH-CENTURY DESIGNERS (1CR)

This course provides in-depth knowledge in the study of 20th-century designers. Upon successful completion of this course, the student should be able to analyze and compare furniture, ornamentation, design motifs and textiles of various 20th-century designers. Recognition of periods and individual styles is stressed. The student

will have an opportunity to study a specific designer in-depth. This is an elective course in the associate of applied science degrees in interior design, interior merchandising and interior entrepreneurship. 1 hr./wk.

ITMD 273
INTERIORS 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, appropriate business forms and contracts; define the types of business legal structure; and solve business organizational and ethical problems through use of case studies. This course is required in the associate of applied science in interior design, interior merchandising or interior entrepreneurship degree and is an elective in the interior design retail sales/manufacturers representative certificate. 2 hrs./wk.

ITMD 275
INTERIORS SEMINAR: BUDGET AND ESTIMATING (2CR)
Prerequisite: ITMD 121

Upon successful completion of this course, the student should be able to describe methods of pricing interior design/merchandising materials and services; measure accurately for materials; demonstrate the use of business math in interior design/merchandising applications; and compute cost in cases. This course is required in the associate of applied science degrees in interior design, interior merchandising and interior entrepreneurship and the interior design retail sales/manufacturers representative certificates. 2 hrs./wk.

ITMD 282
INTERIORS INTERNSHIP 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 interiors industry. A minimum of 15 hours each week on-the-job training is required. This course is required in the associate of applied science degrees in interior design, interior merchandising and interior entrepreneurship and the interior product sales and interior design retail sales/manufacturers representative certificate.

ITMD 284
INTERIORS INTERNSHIP 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 interiors industry. A minimum of 15 hours each week on-the-job training is required. This course is required in the associate of applied science degrees in interior design, interior merchandising and interior entrepreneurship, and the interior product sales and interior design retail sales/manufacturers representative certificates.

ITMD 295
FIELD STUDY: DESIGN AND MERCHANDISING (3CR)
Prerequisites: ITMD 121 and approval of the program facilitator

This travel-for-credit course consists of visits to manufacturing plants, a market showroom and a merchandise mart in a major market city. This is an elective course for the interior design and interior merchandising and entrepreneurship applied science degree programs. Summer.

ITMD 296
INTERIOR DESIGN: THE ORIENT (3CR)

Upon successful completion of this course, the student should be able to recognize and identify Asian 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. This is an elective course for the interior design associate of applied science degree program. 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 offers 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 a continuation of Conversational ASL I, leading to the development of basic conversational skills.

INTR 120
ELEMENTARY AMERICAN SIGN LANGUAGE I (3CR)

This course will focus on the development of beginning American Sign Language communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. 3 hrs. lecture/wk.

INTR 121
ELEMENTARY AMERICAN SIGN LANGUAGE II (3CR)

Prerequisite: INTR 120

This course will focus on continued development of elementary American Sign Language skills beyond those taught in Elementary ASL I. Students will work on developing communication competencies, concentrating on comprehension and production skills. Information about the linguistic and cultural features will be included in the context of language learning experiences. 3 hrs. lecture/wk.

INTR 122
INTERMEDIATE AMERICAN SIGN LANGUAGE I (3CR)

Prerequisite: INTR 121

This course will focus on the development of intermediate American Sign Language communication skills. Emphasis will be on teaching in context comprehension skills and linguistic features of the language. 3 hrs. lecture/wk.

INTR 123
INTERMEDIATE AMERICAN SIGN LANGUAGE II (3CR)

Prerequisite: INTR 122

The study of intermediate American Sign Language will continue in this course. It is designed to further intermediate communication skills in American Sign Language. Information about the linguistic and cultural features will be included in the context of language learning experiences. 3 hrs. lecture/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: INTR 120 or admission to the interpreter training program

This course provides an introduction to interpreting as an occupation. Students will come to understand interpersonal skills, professional ethics, parameters of responsibilities, community resources and legal ramifications as they relate to the interpreter. 3 hrs./wk.

INTR 132
AMERICAN SIGN LANGUAGE II (ASL) (5CR)

Prerequisite: INTR 125

This class will focus on the development of intermediate communication skills. Comprehension and skills and linguistic features of the language taught in context will be emphasized. 1 hr. lecture, 9 hrs. lab/wk.

INTR 135
THEORY OF AMERICAN SIGN LANGUAGE (ASL) (3CR)

Prerequisite: INTR 121 or INTR 125

The structural and grammatical principles of ASL are provided 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

This course is a continuation of ASL II. Students will continue to develop intermediate ASL skills. Emphasis will be on signing comprehension and production skills. Linguistic and cultural features will be presented in the context of language learning experience. 1 hr. lecture, 9 hrs. lab/wk.

INTR 142
FINGERSPELLING I (3CR)

Prerequisite: INTR 121 or INTR 125

Students will work on developing beginning expressive and receptive fingerspelling skills based on word recognition principles. 2 hrs. lecture, 3 hrs. lab/wk.

INTR 145
DEAF CULTURE (3CR)
Corequisite: INTR 120 or 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

This course provides knowledge of stress management as applied to both the physical demands and mental conditions of sign language interpreting. The course also identifies and describes critical components of self-esteem development and maintenance. Additionally, the course provides knowledge of career development theory, career decision making and the job search process. The course is intended for second-year interpreter training students. 2 hrs./wk.

INTR 230
AMERICAN SIGN LANGUAGE IV (ASL) (4CR)
Prerequisite: INTR 140

This course is a continuation of ASL III, including culturally significant topics related to the deaf community, more complex ASL grammatical features and conversational skill development. ASL vocabulary development, comprehension and production skills will be emphasized. The students will be given opportunities to expand their vocabulary related to the common experiences (both in formal/informal setting). The students then will utilize what they learned about advanced ASL, through class activities, dialogues, short stories, general conversations and class discussions. 1 hr. lecture, 7 hrs. lab/wk.

INTR 242
FINGERSPELLING II (2CR)
Prerequisite: INTR 142

This course focuses 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 continued development of English-to-ASL, ASL-to-English and transliteration skills development. 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)
Via books, newspapers, magazines, recordings, movies, radio, television, new technologies and the related areas of advertising and public relations, each of us is exposed to and affected by the mass media on a daily basis. This course will increase student awareness of the various media and help them understand the influence of the media on their daily activities, beliefs, decisions and goals. As a result, the student will become a more astute critic of the messages delivered by the mass media. 3 hrs./wk.

JOUR 122
INTRODUCTION TO NEWSWRITING (3CR)
Prerequisite: Basic typing skills or concurrent enrollment in BOT 110

Introduction to Newswriting is structured for students interested in the basics of journalistic-style writing. The gathering of information and writing of stories is conducted under strict deadlines in order to prepare the student for a professional position. Basic newswriting and style principles will be emphasized, with a focus on proper interviewing techniques. Practical application will be gained by writing stories for JCCC's student newspaper, *The Campus Ledger*. 3 hrs./wk.

JOUR 125
FUNDAMENTALS OF ADVERTISING (3CR)
Fundamentals of Advertising introduces the student to the contemporary advertising process. Research, planning, creativity, production, media placement and sales are discussed, along with individual mediums, their form, function and roles in society. Major emphasis is placed on the areas of advertising/marketing research, planning and creativity, including integrated marketing communications. 3 hrs./wk.

JOUR 127
INTRODUCTION TO BROADCASTING (3CR)
This course serves as a general introduction to students interested in pursuing knowledge or a career in radio and television broadcasting. The course includes a study of the industry's development, its form and function, job responsibilities, basic production techniques, audience measurement, FCC regulations, and ethics. Class time will include discussion of current trends and issues in the field, with students developing an understanding of broadcast media. Productions in the college's audio booth and TV facilities offer an opportunity to experience the field of broadcasting. These experiences will allow students to evaluate broadcasting as a possible career

choice. 3 hrs./wk.

JOUR 130
PRINCIPLES OF PUBLIC RELATIONS (3CR)
This course is intended to provide the student with an overview of the history, principles and real-life functions of public relations. Public relations is a rapidly growing field. The ability to work with the public is essential in business, education, health care and numerous other fields. This course is designed to give students the background to develop their PR skills, both verbally and in writing. 3 hrs./wk.

JOUR 202
BROADCAST PERFORMANCE (3CR)
Students will learn how to improve their speaking voices and body language as well as the techniques necessary to effectively communicate messages through basic announcing skills. Interviewing, radio and television news, and commercial announcing are some of the topics covered in this course, which will allow students to polish their skills through performances in the college's television 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 the discernment, critical thinking and writing skills of student journalists. Specific English language rules and principles plus AP newswriting style will be emphasized in the production of incisive, well-defined news stories, features, profiles, editorials and personal columns. Professional writings in various media will be examined and critiqued, and class members will have the opportunity to participate in hands-on editing and layout. Students will gain additional experience by preparing for and participating in news conferences and events, as well as interacting with area media writers. 3 hrs./wk.

JOUR 225
PROMOTIONAL WRITING (3CR)
Prerequisite: JOUR 125 or JOUR 130

Students will study the elements of layout and copywriting for promotional purposes with emphasis on advertising, direct mail and public relations writing. 3 hrs./wk.

JOUR 227
BASIC TV PRODUCTION (3CR)
Prerequisite: JOUR 127

This course provides students with the fundamentals of

television production. The goal is to teach students basic video techniques. Topics covered include technology, lighting, camera operations, audio and editing. Students will gain hands-on experience in the college's Television Services. 3 hrs. lecture/wk.

JOUR 271
JOURNALISM INTERNSHIP (3CR)
Prerequisite: Approval of the division administrator
A journalism/media internship allows students to gain work experience at an approved training center under staff supervision. Emphasis is on learning new skills related to a particular program or department at a media facility. Students may learn the application of writing techniques needed to produce news, broadcast news, and/or advertising or public relations promotional copy or production. On-the-job training involves approximately 15-20 hrs./wk. 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 and works of classic literature. The course will lead to the development of a personal leadership philosophy. 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 students 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 students' 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 note-taking 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. 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 strategies 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

This course offers students an opportunity to explore their own learning styles and to develop appropriate strategies for improving test performance through improved learning procedures. Emphasis will be 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 LEARNINGMETHODS (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. 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 Studies

LAW 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 provides an overview of the legal system and knowledge of specific legal topics, including torts, criminal law, contracts, family law, business law, real estate and probate. This course is a requirement for applying to the paralegal program and for completion of the legal nurse consultant program. 3 hrs. lecture/wk.

LAW 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.

LAW 131
LEGAL RESEARCH (3CR)

Prerequisites: Legal nurse consultant students – CPCA 105 and LAW 225 and LAW 121 or BUS 122. Paralegal program students – admission to the program

This course will familiarize the student with library organization and the types of informational resources used for performing legal research. The student will become acquainted with the major characteristics of these resources and usage techniques and will learn a systematic method for researching legal issues. Numerous opportunities will be provided for skill development in the use of these resources.
3 hrs. lecture/wk.

LAW 132
CIVIL LITIGATION (3CR)

Prerequisite: Admission to the paralegal program or division administrator approval

This course will acquaint the student with the major characteristics of the civil litigation process. Students will become familiar with the various types of procedural rules regulating the civil litigation process and their application. Emphasis will be on the role of the legal assistant in a civil litigation practice and will include the drafting of pleadings. 3 hrs. lecture/wk.

LAW 140
ALTERNATIVE DISPUTE RESOLUTION (3CR)

Prerequisites: Legal nurse consultant students – LAW 260 Paralegal program students – LAW 132

This course examines the various methods utilized by our legal system for dispute resolution and the role of the legal assistant in those methods. Upon successful completion of this course the students should be able to explore the nature of conflict and the principles of negotiation and review the traditional litigation system. The course will concentrate on the major alternatives to litigation, including mediation, arbitration, summary jury trials, mini-trials and moderated settlement conferences. Other alternatives that will also be addressed include med/arb, med/rec, "rent-a-judge," neutral evaluation, facilitated case management, negotiated rule making and the use of ombudspersons.
3 hrs. lecture/wk.

LAW 142
TORTS (3CR)

Prerequisites: Legal nurse consultant students – LAW 260 Paralegal program students – LAW 132

Upon successful completion of this course, the student should be able to explain the major principles of tort law and personal injury litigation. The student should be able to discuss and compare the elements of

negligence torts, intentional torts and strict liability torts, as well as the types of damages available and defenses to each of these torts. 3 hrs. lecture/wk.

LAW 148
CRIMINAL LITIGATION (3CR)

Prerequisites: Legal nurse consultant students – LAW 260 Paralegal program students – LAW 132

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 student will be able to explain the role of the paralegal in criminal litigation practice and to draft documents used in the criminal litigation process.
3 hrs. lecture/wk.

LAW 152
REAL ESTATE LAW (3CR)

Prerequisite: Paralegal program students – 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.

LAW 162
FAMILY LAW (3CR)

Prerequisite: Paralegal program students – 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, including issues related to adoption, divorce, custody, support and visitation. The student will also be able to draft pleadings including petition for divorce, petition for adoption, decrees, settlement agreements and motions for modification.
3 hrs. lecture/wk.

LAW 171
LAW OFFICE MANAGEMENT (3CR)

Prerequisite: Paralegal program students – Admission to the paralegal program or division administrator approval

This course will acquaint the student with the general principles of law office management and emphasizes the unique characteristics of organizing and managing the law office or legal department. Projects will provide students with opportunities for practical application of law office management concepts. 3 hrs. lecture/wk.

LAW 173
JUDICIAL ACADEMY(1CR)
Prerequisite: Admission to the paralegal program

Upon successful completion of this course, students should possess an in-depth understanding of the trial courts of Kansas. In order to achieve this goal, students will learn the main components of the Johnson County District Court, including discussion of the court structure, judicial qualifications, jury service, criminal justice system, juvenile court system and family matters. 1 hr. lecture/wk.

LAW 205
LEGAL WRITING (3CR)
Prerequisite: LAW 131 or division administrator approval

Upon successful completion of this course, the student should be able to research complex legal problems, communicate the results of this research and other law-related information clearly and effectively and analyze legal problems using the skills of logic and reasoning. 3 hrs. lecture/wk.

LAW 212
BUSINESS ORGANIZATIONS (3CR)
Prerequisite: Paralegal program students – 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.

LAW 220
COMPUTER-ASSISTED LEGAL RESEARCH (2CR)
Prerequisites: Legal nurse consultant students – LAW 131 and CPCA 141. Paralegal program students – LAW 131

Upon successful completion of this course, the student should be able to access general and legal resources on the Internet and conduct electronic legal research using online and CD-ROM databases.

LAW 223
COMPUTER APPLICATIONS IN THE LAW OFFICE (3CR)
Prerequisites: Paralegal program students – Admission to the paralegal program and either CIS 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.

LAW 225
LEGAL NURSE CONSULTANT PROFESSION (1CR)
Prerequisite: Admission to the Legal Nurse Consultant Program

In this course, students will examine the functions of legal nurse consultants and available career opportunities, including relevant issues regarding employment and independent contracting. 1 hr. lecture/wk.

LAW 241
WILLS, TRUSTS AND PROBATE ADMINISTRATION (3CR)
Prerequisite: Paralegal program students – 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.

LAW 245
ELDER LAW (3CR)
Prerequisite: Paralegal program students – 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.

LAW 250
MEDICOLEGAL RESEARCH AND WRITING (3CR)
Prerequisites: Admission to the legal nurse consultant program and LAW 131 and CPCA 141

This courses emphasizes the role of the legal nurse consultant in the preparation of, and contribution to, various documents used in the context of a medicolegal-related law practice. Topics include the use of medical and science-related information resources and the preparation of such documents as legal memoranda, legal-related correspondence, summaries of medical/science literature, summaries of health-care

records, summaries of health-care expenses and settlement brochures, particularly in the context of intentional torts, negligence, products liability, strict liability and medical-malpractice litigation.
3 hrs. lecture/wk.

LAW 260
PERSONAL INJURY LAW (3CR)

Prerequisites: Admission to the legal nurse consultant program and LAW 131

Upon successful completion of the course, the student should 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.

LAW 266
EMPLOYMENT LAW (3CR)

Prerequisites: Paralegal program students – 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 Civil Rights Act of 1964, the Age Discrimination Employment Act and the Americans with Disabilities Act. Students will also study employee benefits plans, including medical, disability income, death, pension and profit sharing programs. 3 hrs. lecture/wk.

LAW 268
BANKRUPTCY (2CR)

Prerequisite: Paralegal program students – Admission to the paralegal program or division administrator approval

This course will familiarize the student with the purpose and application of the federal Bankruptcy Code. Topics

---

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 integers, fractions, decimals, proportions and percents along with an overview of percents, measurement, geometry, statistics and linear equations. Fundamentals of Math provides the mathematical foundation upon which subsequent studies in mathematics and other areas depend. 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

This is a beginning course in algebra, designed to help students acquire a solid foundation in the basic skills of algebra. Students will learn to simplify arithmetic and algebraic expressions, including exponential expressions, polynomials, rational expressions and radical expressions; solve equations and inequalities, including linear equations and quadratic equations; graph linear equations; and analyze linear equations.

---

will include Bankruptcy Court procedures and the preparation of bankruptcy forms and documents. Emphasis will be on the role of the legal assistant in a bankruptcy practice. 2 hrs. lecture/wk.

LAW 270
ADMINISTRATIVE LAW (3CR)

Prerequisites: Admission to the legal nurse consultant program and LAW 225 and LAW 121 or admission to the paralegal program

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, the Americans with Disabilities Act and Occupational Safety Health Administration. 3 hrs. lecture/wk.

LAW 271
LEGAL ETHICS, INTERVIEWING
AND INVESTIGATION (3CR)

Prerequisites: Legal nurse consultant students LAW 260 Paralegal students LAW 132

Corequisite: Legal nurse consultant students LAW 250

Paralegal students LAW 205

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, as well as the development of interviewing and investigating skills. 3 hrs. lecture/wk.

LAW 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 on-the-job experience. The student must work 240 hours a semester in law-related activities. By arrangement.

LAW 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 on-the-job experience. The student must work 240 hours a semester in law-related activities. By arrangement.

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 Billington 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. 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 appropriate application. The student should also be able to apply selling principles through role play. 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 should be able to analyze the elements and influences that affect consumer behavior. In addition, the student should be able to apply the basic principles of consumer behavior and insight to the application of consumer-research findings used in the professional practice of marketing. 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 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 hrs./wk. 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 hrs./wk. 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 hrs./wk. 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 hrs./wk. 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

MATH 116
INTERMEDIATE ALGEBRA (3CR)
Prerequisite: MATH 115 with a grade of "C" or better or appropriate score on the math assessment test
This course focuses on arithmetic and algebraic manipulation, equations and inequalities, graphs and analysis of equations and graphs. Students will simplify arithmetic and algebraic expressions including those containing rational expressions, rational exponents, radicals or complex numbers; solve equations and inequalities including linear, quadratic, quadratic in form and those containing rational expressions, radicals, or absolute value; graph linear inequalities and basic conics; and analyze functions and nonfunctions. 3 or 5 hrs./wk.

MATH 118

GEOMETRY (3CR)

Prerequisite: MATH 115 with a grade of "C" or better or appropriate score on the math assessment test

This course is an informal 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: Grade of "C" or higher in MATH 111 or appropriate score on the math assessment test

This is a course for the business student who needs specific skills in mathematics to address business problems and business applications. Students will learn the mathematics involved in retailing, payroll, financial analysis, interest, and money management. Students will use a calculator and computer to solve a variety of applications. 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 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, 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 will emphasize the beauty, scope, practical applications and relevance of mathematics. It is designed to involve the students with the concepts as well as quantitative skills. Topics include inductive and deductive reasoning, mathematical patterns, sets, introduction to trigonometry, Euclidian geometry, probability, statistics and matrices. The common themes throughout the course are 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

Note: Not available for credit for students with credit in MATH 173.

Note: Math 173 is an accelerated course recommended for students with a strong high-school math background (three to four years) who plan to take Calculus.

This course focuses on the study of functions and their graphs, techniques of solving equations and the recognition and creation of patterns. Students will analyze and graph functions, including constant, linear, absolute value, square root, polynomial, rational, exponential and logarithmic functions and non-functions; solve equations and inequalities, including polynomial equations, exponential equations, logarithmic equations, systems of linear equations and systems of linear inequalities; and analyze and create algebraic and numerical patterns. 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

Note: Not available for credit for students with credit in MATH 173

This is a course in trigonometric functions and graphs. Emphasis will be on understanding function notation, definitions, algebraic relations, real-world applications, graphing in the real and complex plane, inverse functions, polar functions and vectors.

MATH 173
PRECALCULUS (5CR)

Prerequisite: MATH 116 with a grade of "C" or better or appropriate score on the math assessment test

Note: MATH 173 is an accelerated course recommended for students with a strong high school math background

(3 to 4 years) who plan to take calculus. Not available for credit for students with credit in MATH 171 and 172

This course focuses on the study of functions and their graphs, trigonometry, techniques of solving equations and the recognition and creation of patterns. Students will analyze and graph functions, including constant, linear, absolute value, square root, polynomial, rational, exponential, logarithmic and trigonometric functions and nonfunctions; solve equations and inequalities, including polynomial equations, exponential equations, logarithmic equations, trigonometric equations, systems of linear and nonlinear equations and systems of linear and nonlinear inequalities; and analyze and create algebraic and numerical patterns. 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

This course is designed to present the beauty, scope, practical applications and relevance of mathematics. It will focus on applications of general interest drawn primarily from the social and biological sciences and business. Topics will be placed in a historical context, and mathematical reasoning will be stressed. Many of the applications will be computer-oriented. 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, the skill of making sense of raw data — constructing graphical representations of data, developing models for making predictions, performing tests to determine significant change and finding intervals for population values. Students will learn the basics of descriptive statistics, probability, sampling, confidence intervals, distributions, hypothesis testing, regression and correlation. Computer applications will be incorporated into course topics. 3 hrs./wk.

MATH 225
MATH AS A DECISION MAKING TOOL (3CR)

Prerequisite: Grade of "C" or higher in MATH 171 or MATH 173 or appropriate score on the math assessment test

The focus of this course is to develop quantitative skills and reasoning ability necessary to help students read critically and make decisions in our technical

information society. A project tying this course to the student's own interests is a course requirement. Major topics include collecting and describing data, inferential statistics and probability, geometric similarity, geometric growth, symmetry, and patterns. 3 hrs./wk.

MATH 231
BUSINESS AND APPLIED CALCULUS I (3CR)

Prerequisite: Grade of "C" or higher in MATH 171 or MATH 173 or appropriate score on the math assessment test

This is the first course in calculus as it applies to business, psychology and the physical sciences. Concepts include measuring the slope of a curve, writing equations of tangent lines, finding maximum and minimum points, determining the rate of change of a function and measuring the area under a curve. Algebraic skills and application problems are stressed. Specific calculus topics include finding limits, differentiation of algebraic, exponential and logarithmic functions, and integration of algebraic and exponential functions. 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 that covers five techniques of integration, differentiation and integration of trigonometric functions, differential equations, and functions of several variables as applied to business, statistics, biology and the social sciences. 3 hrs./wk.

MATH 237
CALCULUS FOR BIOLOGY AND MEDICINE (5CR)

Prerequisites: Grade of "C" or higher in MATH 173 or MATH 171 and MATH 172 or equivalent

This course focuses on the study and mathematical modeling of biological systems. Through a host of biological and medical applications, the rudiments of calculus are developed. Concepts include measuring the slope of a curve, writing equations of tangent lines, maximizing and minimizing a function, determining the rate of change of a function, and measuring the area under a curve. Solution techniques, both analytic and numeric, for difference and differential equations are used. Modeling activities are heavily emphasized. Qualitative analysis of solutions of differential equations is incorporated in modeling activities. Application areas include mathematical physiology, pharmacology, cell biology and populations biology. 5 hrs./wk.

MATH 241
CALCULUS I (5CR)

Prerequisite: Grade of "C" or higher in MATH 171 and MATH 172 or MATH 173 or equivalent course

This is the first of a three-semester sequence on calculus designed for engineering, physics and math majors. Rates of change, areas and volumes will be studied. To accomplish this, students will study and apply limits and continuity. Differentiation and integration of algebraic, trigonometric and transcendental functions will also be a major focus of this course. 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 course of a three-semester sequence on calculus. The emphasis will be an analytic, numerical and graphical approach to techniques of integration, infinite series and vectors in the plane including scientific 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 include vector-valued functions, functions of several variables, multiple integration, vector analysis and 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 equations that involve rates of change. In particular, this is an introductory course in equations that involve ordinary derivatives. Both qualitative and quantitative approaches will be utilized. Standard types and methods will be covered, including Laplace transforms and numerical methods. 3 hrs./wk.

MATH 246
ELEMENTARY LINEAR ALGEBRA (3CR)

Prerequisite: Grade of "C" or higher in either MATH 242 or MATH 232

This sophomore-level introduction to linear algebra uses a matrix-oriented approach, with an emphasis on problem solving and applications. The course focus is on matrix arithmetic, systems of linear equations, properties of Euclidean n-space, eigenvalues and eigenvectors, orthogonality, and vector spaces. The use of technology is a major feature of the course. 3 hrs. lecture/wk.

MATH 250
ADVANCED ENGINEERING MATHEMATICS (5 CR)
Prerequisite: MATH 242

The focus of the course will be the study and mathematical modeling of engineering systems, both mechanical and electrical. Solution techniques, both analytic and numeric, for a single ordinary differential equation and for systems of first-order ordinary differential equations and for systems of first-order ordinary differential equations are used. Also, Laplace transforms and their applications are used as they apply to engineering systems. Linear algebraic systems of equations and the concepts of vector spaces, basis, dimension, and subspaces are encountered as well. 5 hrs. lecture/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 CIS 124 or CIS 134

This is a beginning course in calculus-based statistical analysis, the skill of making sense of raw data – constructing graphical representations of data, developing models for making predictions, preforming tests to determine significant change and finding intervals for population values. Students must have an understanding of calculus concepts in order to successfully complete this course. Students will learn the basics of 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)

Upon successful completion of this course, the student should be able to perform oxy-fuel cutting (OFC), oxy-fuel welding (OFW) and brazing, and shielded metal arc welding (SMAW) and gas metal arc welding (GMAW) equipment. The SMAW portion of the course will cover positions but will be limited to fillet welds. All welds will be tested according to industry 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. 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 carbon arc cutting with air (CAC-A). The SMAW process will be used to weld v-groove butt joints in the flat, horizontal, vertical up and overhead positions with root and face U-bend test being performed on the welds made in the vertical position. 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 127
WELDING PROCESSES (2CR)

Upon successful completion of this course, the student should be able to identify various welding processes used by industries. 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.

MFAB 130
GAS METAL ARC WELDING I (4CR)
Prerequisite: MFAB 121

Upon 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 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 in selected weld positions. A root and face guided u-bend test will be performed on vertical up GMAW weld test coupons. 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 140
MAINTENANCE REPAIR WELDING (3CR)
Prerequisite: MFAB 121 or division administrator approval

Upon successful completion of this course, the student should be able to perform oxyfuel cutting (OFC), shielded metal arc welding (SMAW), gas metal arc welding (GMAW) and plasma arc cutting (PAC). Basic blueprint and welding symbols will be introduced, and selected welds and assignments will be tested according to industry standards. The student will be required to provide ANSI Z-97.1 approved safety glasses and may

be expected to provide other basic hand tools and/or equipment as required by employers. This course is designed for individuals who have welding experience or who are employed by a company that requires welding skills. 1 hr. lecture, 2 hrs. lab/wk.

MFAB 152
MANUFACTURING MATERIALS AND PROCESSES (3CR)

This is a beginning course in metal fabrication technology that is appropriate for both the metal fabrication major and other interested students. 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 by demonstrations of various processes and equipment. Students are required to wear safety glasses during demonstrations. 3 hrs. lecture-demonstration/wk.

MFAB 160
GASTUNGSTEN ARCWELDING (4CR)
Prerequisite: MFAB 121

This course will cover 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 guided U-bend test being performed on mild steel. Students will also use the plasma arc cutting system (PAC) on selected assignments. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

MFAB 170
BASIC MACHINE TOOL PROCESSES (4CR)

Upon successful completion of this course, the student should be able to practice the basic principles of machining as well as setup and operation of machines. Lab will include the use of lathes, mills, drills, cut-off and other types of equipment. 2 hrs. lecture, 4 hrs. lab/wk.

MFAB 180
BLUEPRINT AND SYMBOLS READING FOR WELDERS (2CR)

Upon successful completion of this course, the student should be able to identify basic welding positions and explain, list, sketch, draw, use or describe current American Welding Society (AWS) welding symbols and weld joint configurations. The student will be

introduced to several methods of producing welding blue prints, object representatives and specific meanings of selected lines, surface features, sectional views, and basic math formulas used in the welding industry. The student will be able to identify the symbols used for fillet welds and groove welds made with and without backing. Topics such as pipe welding representations, pipe welding connections, pipe welding classifications, welder certification, metallurgical effects of heat on metals and the importance of weld quality will be studied. 4 hrs. lecture/wk.

MFAB 230
GAS METAL ARCWELDINGII (4CR)
Prerequisite: MFAB 130

Upon 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 1-inch mild steel with side bend test being made on the overhead and horizontal weldments. 1 hr. lecture, 6 hrs. lab/wk.

MFAB 240
METALLURGY (2CR)

Metallurgy is the study of the science and technology of metals. This course covers the extractive, mechanical and physical phases of metallurgy. Topics include the identification of metals, types and classification of metals, heat treatment procedures and common steel manufacturing processes. 2 hrs. lecture-demonstration/wk.

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. 1 hr. lecture, 15 hrs. minimum on-the-job training/wk.

Music

MUS 121
INTRODUCTION TO MUSIC LISTENING (3CR)

This course is designed to enhance student music listening. Students will learn to identify changes in the elements of music through the different stylistic periods of classical music. Factual and historical information will be presented to broaden the student's cultural and music appreciation. Students will hear recorded examples of music from the Medieval, Renaissance, Baroque, Classical, Romantic and 20th century eras, as well as popular American forms and non-Western cultures. 3 hrs./wk.

MUS 123
INTRODUCTION TO MUSIC FUNDAMENTALS (2CR)

This course is designed to present the fundamentals of music theory to students who have no previous background or training in music theory. Students will receive detailed instruction in the naming of notes, the building of scales, intervals and chords, and correlating these skills to the keyboard. 2 hrs./wk.

MUS 125
INTRODUCTION TO JAZZ LISTENING (3CR)

This is an entry-level course for the student with little or no prior knowledge of the American art form of jazz music. Through reading and listening, the student will learn the basic structure of the elements of music and how these are organized to create jazz. Topics to be covered will 'include: rhythm, harmony, and form; Dixieland style, swing style, bop and contemporary jazz. 3 hrs./wk.

MUS 131
SIGHT-SINGING AND EAR TRAINING I (2CR)

This course is an introduction to sight singing and ear training. Basic methods of reading music are presented and practiced. Students are also trained to recognize aurally and notate the basic elements of music: intervals, diatonic melodies, simple rhythms, chord qualities and basic harmonic progressions. The content is designed to complement the Harmony I course though it is not necessary that they are taken in the same semester. 2 hrs./wk.

MUS 132
SIGHT-SINGING AND EAR TRAINING II (2CR)

Prerequisite: MUS 131

This course is a continuation of Sight-singing and Ear Training I. The content is designed to complement the Harmony II course though it is not necessary that they are taken in the same semester. 2 hrs./wk.

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

Prerequisite: MUS 132

This course is a continuation of Sight-singing and Ear Training I and II. The content is designed to complement the Harmony III course though it is not necessary that they are taken in the same semester. 2 hrs./wk.

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

Prerequisite: MUS 133

This course is a continuation of the first three courses in sight-singing and ear training. Students are trained to produce and hear the most complex aspects of music theory in the common practice era (1650-1920). The content is designed to complement the Harmony IV course though it is not necessary that they are taken in the same semester. 2 hrs./wk.

MUS 141
MUSIC THEORY: HARMONY I (3CR)

The course is a basic study of the harmonic system used in music composed from 1650 to 1900 and still in use in certain areas of music composition. Students will both write and analyze music of the period as well as play simple chord progressions on the piano. Students will gain further understanding of harmonic practices through selected software programs. 3 hrs./wk.

MUS 142
MUSIC THEORY: HARMONY II (3CR)

Prerequisite: MUS 141

Harmony II 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 covers use of non-harmonic tones, supertonic and dominant sevenths, functions of the submediant and mediant triads, advanced melodic writing and secondary dominant chords. Students will learn to harmonize melodies at the keyboard and play simple chord progressions on the piano. Music of the period will be analyzed. 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

Harmony IV 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 the use of secondary leading tone chords, Neapolitan sixth chords and augmented sixth chords, ninth, eleventh and thirteenth chords, and modulation using inharmonic chords. Students will work with keyboard harmony exercises of increasing difficulty that pertain to these topics. An introduction to all important 20th century compositional practices will also be included toward the end of the semester. Selected software programs will enhance student skills and understanding.

MUS 151
MIXED VOCAL ENSEMBLE I (1CR)
Prerequisite: Audition

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles, but not in others. The ensemble will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs./wk.

MUS 152
MIXED VOCAL ENSEMBLE II (1CR)
Prerequisite: MUS 151

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles, but not in others. The ensemble will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs./wk.

MUS 153
MIXED VOCAL ENSEMBLE III (1CR)
Prerequisite: MUS 152

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles, but not in others. The ensemble will

learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs./wk.

MUS 154
MIXED VOCAL ENSEMBLE IV (1CR)
Prerequisite: MUS 153

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles, but not in others. The ensemble will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs./wk.

MUS 156
MIDI MUSIC COMPOSITION I (3CR)

MIDI Music Composition I is designed to create a technical and conceptual foundation for further studies in electronic music. Students will learn and demonstrate basic compositional techniques, including form, melody, rhythm and harmony. Also, the student will demonstrate the ability to use computers and software to create and perform music. Emphasis will be on developing skills appropriate to the beginning student for the purpose of creative and technical expression. 2 hrs. lecture, 2 hrs. lab/wk.

MUS 157
MIDI MUSIC COMPOSITION II (3CR)
Prerequisite: MUS 156

MIDI Music Composition II is designed to put into practical use and to build on skills acquired in MIDI Music Composition 1. Students will demonstrate the ability to create, store and utilize new, original sonorities via the graphic editing process. The course emphasizes each student's portfolio: a comprehensive example of the student's work to be used either for personal, commercial or academic purposes. 2 hrs. lecture, 2 hrs. lab/wk.

MUS 161
CHAMBER CHOIR I (1CR)
Prerequisite: Audition

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs./wk.

MUS 162
CHAMBER CHOIR II (1CR)
Prerequisite: MUS 161

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs./wk.

MUS 163
CHAMBER CHOIR III (1CR)
Prerequisite: MUS 162

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs./wk.

MUS 164
CHAMBER CHOIR IV (1CR)
Prerequisite: MUS 163

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs./wk.

MUS 171
VOICE CLASS I (1CR)

This course is designed to introduce the student to beginning vocal technique, vocal vocabulary, performance experience and solo vocal repertoire. 1 hr./wk.

MUS 172
VOICE CLASS II (1CR)
Prerequisite: MUS 171

This course is designed to continue instruction in proper vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

MUS 173
VOICE CLASS III (1CR)
Prerequisite: MUS 172

This course is designed to continue instruction in proper vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

MUS 174
VOICE CLASS IV (1CR)
Prerequisite: MUS 173

This course is designed to continue instruction in proper vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

MUS 176
JAZZ BAND I (1CR)
Prerequisite: Audition

This is an entry level course in the jazz band performing format for the student with little or no experience in this course of study. The student will learn, through rehearsal and performance, the basic elements of music and how these are utilized in the jazz band. Topics will include simple rhythms, basic melodic construction and major scale construction. 3 hrs./wk.

MUS 177
JAZZ BAND II (1CR)
Prerequisite: MUS 176

This is a beginning-level course for the student with at least one semester of prior jazz band experience. Through rehearsal and performance, the student will learn beginning elements of music as applied to the jazz band performing format. Topics covered will include syncopated rhythm, Dorian minor scales and blues form. 3 hrs./wk.

MUS 178
JAZZ BAND III (1CR)
Prerequisite: MUS 177

This is an intermediate-level course for the student with at least two semesters of prior jazz band experience. Through rehearsal and performance, the intermediate levels of jazz band performance will be learned. Topics covered will include Latin style, Mixolydian scales and the 32-bar song form. 3 hrs./wk.

MUS 179
JAZZ BAND IV (1CR)
Prerequisite: MUS 178

This is an advanced-level course for the student with at least three semesters of prior jazz band experience. Advanced elements of jazz music will be learned through rehearsal and performance. Topics covered will include Lydian scales and ensemble performance techniques. 3 hrs./wk.

MUS 187
JAZZ IMPROVISATION I (2CR)
Prerequisite: Audition

This is an entry-level course for the student with little or no jazz improvisation experience. Through written

work and performance on the instrument of choice, the student will learn the basic elements of jazz improvisation. Topics to be covered will include identification and performance of basic intervals, major scales, Dorian modes, Mixolydian modes, major seventh chords, minor seventh chords, dominant seventh chords, and the basic blues form. 2 hrs./wk.

MUS 188
JAZZ IMPROVISATION II (2CR)

Prerequisite: MUS 187

This is an advanced-level course for the student with at least one semester of jazz improvisation. Through performance on chosen instrument and written studies, the student will learn advanced concepts of jazz improvisation. Topics to be covered include jazz performance style, construction of the improvised solo and 32-bar song form. 2 hrs./wk.

MUS 191
CONCERT BAND I (1CR)

Prerequisite: Audition

This is an entry-level course in the concert band format for the student with little or no experience in this format. Students will learn the basic elements of music as related to the concert band through rehearsal and performance. Topics include counting and subdividing duple, triple and quadruple rhythm; assembling melodic motifs into melodies; and differentiating between major and minor tonalities. 3 hrs./wk.

MUS 192
CONCERT BAND II (1CR)

Prerequisite: MUS 191

This is a beginning-level course in the concert band format for the student with at least one semester of prior experience in this format. Students will learn the beginning-level elements of music as related to the concert band through rehearsal and performance. Topics to be covered include odd meters, minor scales and homophonic texture. 3 hrs./wk.

MUS 193
CONCERT BAND III (1CR)

Prerequisite: MUS 192

This is an intermediate course for the student with at least two semesters of prior concert band experience. Through rehearsal and performance the student will learn intermediate levels of the elements of music in the concert band format. Topics will include parade march style, concert march style and concert overture style. 3 hrs./wk.

MUS 194
CONCERT BAND IV (1CR)

Prerequisite: MUS 193

This is an advanced course for the student with at least three semesters of prior concert band performing experience. Through rehearsal and performance, the student will learn the advanced concepts of concert band performance. Topics will include polyphonic texture, concert suite style and medley style. 3 hrs./wk.

MUS 195
VOCAL JAZZ ENSEMBLE I (1CR)

Prerequisite: Audition

This is an entry-level course in the vocal jazz performing format. Through rehearsal and public performance, the student will learn the basic elements of music as applied to vocal jazz. Topics will include 8th note swing, jazz syncopation and 32-bar song form. 3 hrs./wk.

MUS 196
VOCAL JAZZ ENSEMBLE II (1CR)

Prerequisite: MUS 195

This is an beginning-level course in the vocal jazz performing format. Through rehearsal and public performance, the student will learn the basic elements of music as applied to vocal jazz. Topics will include Dorian minor scales, Mixolydian scales and 12-bar blues form. 3 hrs./wk.

MUS 197
VOCAL JAZZ ENSEMBLE III (1CR)

Prerequisite: MUS 196

This is an intermediate-level course in the vocal jazz performing format. Through rehearsal and public performance, the student will learn the basic elements of music as applied to vocal jazz. Topics will include beginning improvisation, Latin rhythm and major scales. 3 hrs./wk.

MUS 198
VOCAL JAZZ ENSEMBLE IV (1CR)

Prerequisite: MUS 197

This is an advanced-level course in the vocal jazz performing format. Through rehearsal and public performance the student will learn the basic elements of music as applied to vocal jazz. Topics will include scat, improvisation in 32-bar song form, Lydian scales and ballad style. 3 hrs./wk.

MUS 201
CHAMBER ENSEMBLE I (1CR)

Prerequisite: Audition

This is an entry-level course for the student with little or no experience in the chamber ensemble performing format. Through written work and performance on the chosen instrument, the student will learn the basic fundamentals of this performing medium. Topics to be covered will include tone quality, intervals and rhythmic patterns. 2 hrs./wk.

MUS 202
CHAMBER ENSEMBLE II (1CR)

Prerequisite: MUS 201

This is a beginning-level course for the student with at least one semester of experience in the Chamber Ensemble performing format. Through written work and performance on the chosen instrument the student will learn the basic fundamentals of this performing medium. Topics to be covered will include minor scales, chord construction, and compound rhythms. 2 hrs./wk.

MUS 203
CHAMBER ENSEMBLE III (1CR)

Prerequisite: MUS 202

This is an intermediate-level course for the student with at least two semesters of chamber ensemble experience. Through written work and performance on the chosen instrument, the student will learn intermediate-advanced concepts of chamber ensemble performance. Topics to be covered include sight reading, intonation and style. 2 hrs./wk.

MUS 204
CHAMBER ENSEMBLE IV (1CR)

Prerequisite: MUS 203

This is an advanced-level course for the student with at least three semesters of prior ensemble experience Through performance on chosen instrument, the student will learn the advanced concepts of chamber ensemble performance. Topics to be covered will include balance and cooperative expression. 2 hrs./wk.

MUS 211
ORCHESTRA I (1CR)

Prerequisite: Audition

This is an entry-level course in the orchestra format for the student with little or no experience in this format. Students will learn the basic elements of music as related to the orchestra through rehearsal and performance. Topics include counting and subdividing duple, triple and quadruple rhythm; assembling melodic motifs into melodies; and differentiating between major and minor tonalities.

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 beginning level course in the orchestra format for the student with at least one semester of prior experience in this format. Students will learn the beginning-level elements of music as related to the orchestra through rehearsal and performance. Topics to be covered include odd meters, minor scales and homophonic texture. 2 hrs. (1 evening)/wk.

MUS 213
ORCHESTRA III (1CR)

Prerequisite: MUS 212

This is an intermediate course for the student with at least two semesters of prior orchestra experience. Through rehearsal and performance the student will learn intermediate levels of the elements of music in the orchestra format. Topics will include parade march style, concert march style and concert overture style. (1 evening)/wk.

MUS 214
ORCHESTRA IV (1CR)

Prerequisite: MUS 213

This is an advanced course for the student with at least three semesters of prior orchestra performing experience. Through rehearsal and performance, the student will learn the advanced concepts of orchestra performance. Topics will include polyphonic texture, concert suite style and medley style.(1 evening)/wk.

MUS 221
PIANO CLASS I (2CR)

This course provides a basic knowledge of music and the essential techniques required to play the piano. Students will learn essential musical terminology, including musical notation and symbols, major and minor key signatures, and the harmonization of melodies using tonic and dominant triads. Specific piano-related terminology will include finger exercises, basic keyboard repertoire using major and minor five-finger patterns, major and minor scales, major and minor triads in root position, ensemble playing of two to four parts, and the formation of good practice habits. Group Piano II should follow the successful completion of this course. Private piano lessons are encouraged for students who successfully complete both courses. 2 hrs./wk.

MUS 222
PIANO CLASS II (2CR)

Prerequisite: MUS 221 or permission of the instructor

This is a beginning-level course that provides a basic knowledge of keyboard instruments. Students will learn and review musical terminology, musical notation and symbols, and specific piano-related terminology. Topics covered will include major and minor key signatures; exercises and repertoire using major and minor scales; exercises and repertoire using major, minor, diminished and augmented triads in root position and inversions; chord progressions; ensemble playing of two to four parts; use of the damper pedal. This course is the continuation of MUS 221. Completion of this course should precede Applied Piano I. This course is for beginners able to progress at a fast pace, students with minimal previous experience or students who have completed MUS 221. 2 hrs./wk.

MUS 223
PIANO CLASS III (2CR)

Prerequisite: MUS 222 or permission of the instructor

This is an intermediate course that provides a basic knowledge of keyboard instruments. Students will learn and review musical terminology, musical notation and symbols, and specific piano-related terminology. Topics covered will include: major and minor key signatures; exercises and repertoire using major and minor scales and modes; exercises and repertoire using major, minor, diminished and augmented triads in root position and inversions; chord progressions; ensemble playing of two to four parts; use of the damper pedal. This course is the continuation of MUS 222. Completion of this course should precede Applied Piano I. This course is designed for students who have completed one year of study or who have completed MUS 222. 2 hrs./wk.

MUS 224
PIANO CLASS IV (2CR)

Prerequisite: MUS 223 or permission of the instructor

This is an advanced level course for the student with at least three semesters of prior class piano instruction. Students will learn the advanced concepts of piano playing. Topics to be covered will include basic music notation, major and minor key signatures, tempo indications, major and minor arpeggios, finger patterns, practice method chord progressions, and the use of the damper pedal. 2 hrs./wk.

MUS 226
APPLIED GUITAR I (Class) (1CR)

Students will be provided with a foundation in guitar technique upon which to base further study of the instrument. The course consists of an introduction to the use of the guitar s a solo, accompaniment and ensemble instrument. 1 hr./wk.

MUS 227
APPLIED GUITAR II (Class) (1CR)

Prerequisite: MUS 226

This continuation of MUS 226 builds a foundation in guitar technique upon which to base further study of the instrument. The course continues to teach techniques that enable students to use the guitar as a solo, accompaniment and ensemble instrument. 1 hr./wk.

MUS 228
APPLIED GUITAR III (Class) (1CR)

Prerequisite: MUS 227

This continuation of MUS 227 is designed to move students from basic skill levels to intermediate skill levels. The course continues to teach techniques that enable students to use the guitar as a solo, accompaniment and ensemble instrument. 1 hr./wk.

MUS 229
APPLIED GUITAR IV (Class) (1CR)

Prerequisite: MUS 228

This is a continuation of MUS 228 at an intermediate level of guitar playing skills. The course continues to teach techniques that enable students to use the guitar as a solo, accompaniment and ensemble instrument. 1 hr./wk.

MUS 231
APPLIED VOICE I (Private) (1CR)

This course is designed to introduce the student to beginning vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

MUS 232
APPLIED VOICE II (Private) (1CR)

Prerequisite: MUS 231

This course uses private lessons to continue instruction in beginning vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

MUS 233
APPLIED VOICE III (Private) (1CR)

Prerequisite: MUS 232

This course uses private lessons to continue instruction in beginning intermediate vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

MUS 234
APPLIED VOICE IV (Private) (1CR)

Prerequisite: MUS 233

This course uses private lessons to continue instruction in intermediate vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

MUS 236
APPLIED PIANO I (Private) (1CR)

This is an entry-level course for the student with little or no prior piano training. This course provides a basic knowledge of keyboard instruments. Students will learn essential musical terminology, musical notation and symbols, and specific piano-related terminology. Topics covered will include major and minor key signatures; exercises and repertoire using major and minor five-finger patterns; exercises and repertoire using major and minor scales.

MUS 237
APPLIED PIANO II (Private) (1CR)

Prerequisite: MUS 236

This is a beginning-level course for the student with at least one semester of prior applied piano study. Students will learn the intermediate-level concepts of piano performance. Topics to be covered will include major scales and the natural and harmonic forms of the minor scales, rhythmic patterns and subdivisions of duple and triple meter and perform the basic keyboard literature of the intermediate level.

MUS 238
APPLIED PIANO III (Private) (1CR)

Prerequisite: MUS 237

This is an intermediate-level course for the student with at least two semesters of prior applied piano study. Students will learn the intermediate-level concepts of piano performance. Topics to be covered will include the melodic form of the minor scale, rhythmic patterns and subdivisions of compound meter, and perform the basic keyboard literature of the intermediate level.

MUS 239
APPLIED PIANO IV (Private) (1CR)

Prerequisite: MUS 238

This is an advanced-level course for the student with at least two semesters of prior applied piano study. Students will learn the intermediate level concepts of piano performance. Topics to be covered will include Dorian and Mixolydian modes and pentatonic scales.

MUS 241
APPLIED GUITAR I (Private) (1CR)

In this private study in basic guitar technique, emphasis will be upon playing position, posture, tone production and basic music reading skills. Students will begin with studies and short pieces.

MUS 242
APPLIED GUITAR II (Private) (1CR)

Prerequisite: MUS 241

This is a continuation of private study in basic guitar technique. Emphasis will be upon playing position, posture, tone production and basic music reading skills. Students will begin with studies and short pieces.

MUS 243
APPLIED GUITAR III (Private) (1CR)

Prerequisite: MUS 242

In this private study in intermediate guitar technique, emphasis will be upon playing position, posture, tone production and intermediate music reading skills. Students will progress toward playing literature requiring intermediate skill levels.

MUS 244
APPLIED GUITAR IV (Private) (1CR)

Prerequisite: MUS 243

In this continuation of private study in intermediate guitar technique emphasis will be upon playing position, posture, tone production and intermediate music reading skills. Students will progress toward playing literature requiring intermediate skill levels.

MUS 246
APPLIED CLASSICAL GUITAR I (Private) (1CR)

Private study in basic classical guitar technique and repertoire. Emphasis will be upon classical left and right hand technique, playing position, posture, tone production and standard classical guitar literature. Students will begin with studies and short pieces.

MUS 247
APPLIED CLASSICAL GUITAR II (Private) (1CR)

Prerequisite: MUS 246

This continuation of private study in basic classical guitar technique and repertoire will emphasize classical left and right hand technique, playing position, posture, tone production and standard classical guitar literature. Students will continue with studies and short pieces, then progress toward longer pieces with the intent of performing these in a recital situation.

MUS 248
APPLIED CLASSICAL GUITAR III (Private) (1CR)
Prerequisite: MUS 247

In this private study in intermediate classical guitar technique and repertoire., emphasis will be upon classical left and right hand technique, playing position, posture, tone production and standard classical guitar literature. Students will progress toward playing and performing more advanced pieces and guitar studies.

MUS 249
APPLIED CLASSICAL GUITAR IV (Private) (1CR)
Prerequisite: MUS 248

This continuation of private study in intermediate classical guitar technique and repertoire will emphasize classical left and right hand technique, playing position, posture, tone production and standard classical guitar literature. Students will progress toward playing and performing more advanced pieces and guitar studies.

MUS 251
APPLIED BRASS I (Private) (1CR)

This is an entry-level course for the student with little or no experience in performing on a brass instrument. Through written exercises and performance on the instrument of choice the student will learn the basic concepts of brass performance. Topics to be covered include tone production, basic musical intervals and major scales.

MUS 252
APPLIED BRASS II (Private) (1CR)
Prerequisite: MUS 251

This is a beginning-level course for the student with at least one semester of prior brass instrument study. Through written exercises and performance on the instrument of choice the student will learn the beginning concepts of brass performance. Topics to be covered include embouchure development, minor scales and duple and triple rhythmic patterns.

MUS 253
APPLIED BRASS III (Private) (1CR)
Prerequisite: MUS 252

This is an intermediate-level course for the student with at least two semesters of prior brass instrument study. Through written exercises and performance on the instrument of choice the student will learn the intermediate concepts of brass performance. Topics to be covered include the chromatic scale, quadruple rhythmic patterns and chord construction.

MUS 254
APPLIED BRASS IV (Private) (1CR)
Prerequisite: MUS 253

This is an advanced-level course for the student with at least three semesters of prior brass instrument study. Through written exercises and performance on the instrument of choice the student will learn the advanced concepts of brass performance. Topics to be covered include the pentatonic scale, whole tone scale and melodic contours.

MUS 256
APPLIED PERCUSSION I (Private) (1CR)

This is an entry-level course for the student with little or no training in the percussion instruments. The student will learn the very beginning concepts of percussion performance. Topics to be covered include basic duple and triple rhythm, snare drum rudiments and basic snare drum performance patterns.

MUS 257
APPLIED PERCUSSION II (Private) (1CR)
Prerequisite: MUS 256

This is a beginning-level course for the student with at least one semester of prior instruction in the percussion instruments. The student will learn beginning concepts of percussion performance. Topics to be covered include compound rhythm, snare drum rudiments and basic timpani skills.

MUS 258
APPLIED PERCUSSION III (Private) (1CR)
Prerequisite: MUS 257

This is an intermediate-level course for the student with at least two semesters of prior instruction in the percussion instruments. The student will learn beginning concepts of percussion performance. Topics to be covered include snare drum rudiments, basic mallet percussion skills and suspended cymbal skills.

MUS 259
APPLIED PERCUSSION IV (Private) (1CR)
Prerequisite: MUS 258

This is an advanced level course for the student with at least three semesters of prior instruction in the percussion instruments. The student will learn advanced concepts of percussion performance. Topics to be covered include snare drum rudiments, crash cymbal techniques and drum set skills.

MUS 261
APPLIED WOODWIND I (Private) (1CR)

This is an entry-level course for the student with little or no experience performing on a woodwind instrument.

Through written exercises and performance on the instrument of choice, the student will learn the basic elements of woodwind performance. Topics to be covered include tone production, basic intervals and major scales.

MUS 262
APPLIED WOODWIND II (Private) (1CR)
Prerequisite: MUS 261

This is a beginning-level course for the student with at least one semester of prior woodwind study. The student will learn beginning concepts of woodwind performance on the chosen instrument through written exercises and performance. Topics to be covered include embouchure development, minor scales and duple and triple meters.

MUS 263
APPLIED WOODWIND III (Private) (1CR)
Prerequisite: MUS 262

This is an intermediate-level course for the student with at least two semesters of prior woodwind study. The student will learn the intermediate concepts of woodwind performance through written exercises and performance. Topics to be covered include chromatic scale, quadruple rhythmic patterns and chord construction.

MUS 264
APPLIED WOODWIND IV (Private) (1CR)
Prerequisite: MUS 263

This is an advanced-level course for the student with at least three semesters of prior woodwind study. Through written exercises and performance the student will learn the advanced concepts of woodwind performance. Topics to be covered include pentatonic scale, whole tone scale and melodic contour.

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 144 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, 16-20 hrs. clinic/wk.

NURS 122
NURSING ACROSSTHE LIFESPAN – PART I (9CR)
Prerequisites: NURS 121, BIOL 144 and PSYC 130
Corequisites: PSYC 218, Communications elective

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, 16-20 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 ACROSSTHE LIFESPAN – PART II (9CR)
Prerequisites: NURS 122 or NURS 123, BIOL 144, PSYC 130, PSYC 218 and ENGL 121
Corequisite: SOC 122 or SOC 125

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, 16-20 hrs. clinic/wk.

NURS 222
MANAGING CLIENTCARE (9CR)
Prerequisite: 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, 16-20 hrs. clinic/wk.

Nursing
Practical Nursing

AVPN 115
NURSING I
Prerequisites: CNA certification, admission to the practical nursing program, BIOL 144, 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 (2CR)

This course is an introduction to the history, philosophy and practice of occupational therapy and the exploration of diversity and the role it plays in health care. 2 hrs./wk.

KOT 101
PEDIATRICS (3CR)
Prerequisites: KOT 112, BIOL 145 or BIOL 225 and KOT 100, KOT 104, KOT 103, KOT 106 and KOT 116, each with a minimum grade of "C"

This course covers the practice of occupational therapy as it relates to individuals from birth to early adolescence as well as the study of normal growth and development. 3 hrs./wk.

KOT 103
CLINICAL CONDITIONS (2CR)
Prerequisite: Admission to the occupational therapy assistant program

This course covers etiology, clinical process and prognosis of common diseases and illnesses. Topics include the effect of disease or illness on an individual's performance and the impact this has on the person, family and society. 2 hrs./wk.

KOT 104
DOCUMENTATION GUIDELINES (2CR)

Prerequisite: Admission to the occupational therapy assistant program

This course covers guidelines for documentation of occupational therapy services. 2 hrs./wk.

KOT 105
GERONTOLOGY (3CR)

Prerequisites: KOT 204 and American Institutions, each with a minimum grade of "C"

Emphasis of this course will be on the concepts and process of aging and the role of occupational therapy with the elderly. 3 hrs./wk.

KOT 106
THERAPEUTIC INTERVENTIONS (4CR)

Prerequisite: Admission to the occupational therapy assistant program

This course covers the use of techniques and low-tech devices commonly used in occupational therapy practice to assist individuals in improving their performance of daily life tasks and an introduction to architectural barriers. 5.5 hrs./wk.

KOT 112
BASIC EMERGENCY PATIENT CARE (1CR)

This course introduces current cardiopulmonary resuscitation skills, including adult, child and infant resuscitation according to American Heart Association standards. Medical and environmental emergencies are reviewed.

KOT 116
LEVEL I FIELDWORK I (1CR)

Prerequisite: Admission to the occupational therapy assistant program

This course is an introduction to the role, policies and procedures of fieldwork. It is a directed experience in a specified community setting. 1.5 hrs./wk.

KOT 117
LEVEL I FIELDWORK II (.5CR)

Prerequisites: BIOL 145 or BIOL 225 and KOT 112, KOT 100, KOT 103, KOT 104, KOT 106 and KOT 116, each with a minimum grade of "C," and concurrent enrollment in KOT 101

This course is a directed experience in a specified community setting. 1 hr/wk.

KOT 118
ASSISTIVE TECHNOLOGY (2CR)

Prerequisites: BIOL 145 or BIOL 225 and KOT 100, KOT 103, KOT 104, KOT 106, KOT 112 and KOT 116, each with a minimum grade of "C"

This is hands-on instruction to high tech assistive technology and augmentative communication. 3 hrs./wk.

KOT 130
ANALYSIS OF PHYSICAL PERFORMANCE (3CR)

Prerequisites: BIOL 145 or BIOL 225, and KOT 100, KOT 103, KOT 104, KOT 106, KOT 112 and KOT 116, each with a minimum grade of "C"

This course covers analysis and evaluation of the components of physical performance and their relationship to functional activities. 4 hrs./wk.

KOT 154
APPLIED NEUROLOGY (2CR)

Prerequisites: BIOL 145 or BIOL 225, and KOT 100, KOT 103, KOT 104, KOT 106, KOT 112 and KOT 116, each with a minimum grade of "C"

This course covers foundations of neuroscience necessary for practice as a rehabilitation professional. Topics included are anatomy and function of the nervous system and correlation of clinical problems with pathology of the nervous system. 2 hrs./wk.

KOT 201
OCCUPATIONAL THERAPY IN MENTAL HEALTH (2.5CR)

Prerequisites: American Institutions with a minimum grade of "C"

The focus of this course is occupational therapy assessment and treatment techniques in the mental health setting. 3 hrs./wk.

KOT 202
OCCUPATIONAL THERAPY IN PHYSICAL DYSFUNCTION (3CR)

Prerequisite: American Institutions with a minimum grade of "C"

The emphasis of this course is occupational therapy assessment and treatment used with the physically and cognitively challenged populations. 3 hrs./wk.

KOT 203
SPLINTING (2CR)

Prerequisite: American Institutions with a minimum grade of "C"

Principles of splinting and guidelines for fabrication are covered in this course. 3 hrs./wk.

KOT 211
LEVEL I FIELDWORK III (2CR)

Prerequisites: American Institutions with a minimum grade of "C" and concurrent enrollment in KOT 201 and KOT 202

This course is a directed experience in specified community settings. 4 hrs./wk.

KOT 217
FIELDWORK SEMINAR (3CR)

Prerequisite: American Institutions with a minimum grade of "C"

This course is preparation for full-time clinical practice, the national certification process, state licensure and future employment. 2 hrs./wk.

KOT 222
LEVEL II FIELDWORK (12CR)

Prerequisites: KOT 105, KOT 201, KOT 202, KOT 203, KOT 211 and KOT 217, each with a minimum grade of "C"

This is a directed clinical experience in different practice areas of occupational therapy. 40 hrs./wk.

Office Systems Technology

(see Business Office Technology, page 85.)

Paralegal

(see Legal Studies, page 245.)

Philosophy

PHIL 121
INTRODUCTION TO PHILOSOPHY (3CR)

This course is a study of the basic questions of philosophical inquiry, such as the nature of being, the ways we acquire knowledge and man's moral, social, religious and political values. Emphasis is on the application 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 are the basis for critical thinking. Argumentative and nonargumentative 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 causal claims. Relations between categorical propositions and Venn diagrams are examined and, finally, the course suggests strategies for fresh attacks on conceptual problems. 3 hrs./wk.

PHIL 138
BUSINESS ETHICS (1CR)

This course applies classical and contemporary theories of morality to problems, questions and dilemmas arising in business. Using the major concepts and principles of deontological, consequentialist and perfectionist theories, it examines and analyzes cases involving such areas as employer/employee relations, corporate responsibility, truth telling in business and workplace diversity. Emphasis is on the development of moral reasoning skills that allow for meaningful analysis and evaluation of moral situations. 1 hr./wk.

PHIL 143
ETHICS (3CR)

This course provides a systematic and critical study of values related to human conduct. It focuses on both traditional standards of ethical conduct and qualities of personal character. What we hold to be right or wrong, the basis for believing so, and what we consider to be virtues or vices are examined with an eye to understanding our current ethical situation. 3 hrs./wk.

PHIL 154
HISTORY OF ANCIENT PHILOSOPHY (3CR)

This course provides a thorough exploration of ancient Greek and Roman philosophical thought from the original efforts of the Pre-Socratics to understand the fundamental operations of the natural world to concerns about the way a person might live successfully in nature and society. Also explored are the notable Athenians of the classical period, Protagoras, Socrates, Plato and Aristotle, and the later schools of thought such as cynicism, skepticism, hedonism, and stoicism. In the process, it provides a comprehensive understanding of the philosophical foundations of the Western world view. 3 hrs./wk.

PHIL 161
ELEMENTARY SYMBOLIC LOGIC (3CR)

This course is a beginning course in symbolic logic and should be of particular benefit to those students who will pursue more advanced studies in linguistics, philosophy of language, mathematics or computer science. Students will be introduced to modern analytical techniques of formal deductive logic. Students should gain the ability to use a formal language to translate English language arguments and the ability to demonstrate the validity or invalidity of symbolic arguments using the techniques of truth-table

analysis and formal proof. Some attention will also be given to the historical development of symbolic 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, the arguments offered as proof for and against the existence of God, apparent contradictions between scientific and religious teachings, special problems raised by religious language and changes religion and philosophy of religion have made to accommodate a modern world view. 3 hrs./wk.

PHIL 210
HISTORY OF MODERNPHILOSOPHY (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 and covers the period from the Renaissance to the 20th century. The course will cover the epistemological, metaphysical and relevant axiological issues of the major philosophers and philosophical movements of this period. The course will also examine the influence of modern philosophy on contemporary thought. 3 hrs./wk.

Photography

PHOT 121
FUNDAMENTALS OF PHOTOGRAPHY (3CR)

This course provides an introduction to the tools, procedures, concepts and application of photographic imaging. Students will use cameras, light meters and darkroom equipment for film developing and printing to make images to meet the requirements of a series of assignments designed to develop specific skills, competencies and points of view and to stimulate the students' creative capacities for personal expression, communication and self-understanding. This course also includes a basic introduction to color printing concepts and digital imaging equipment and software. Students must provide their own camera with adjustable focus, shutter speeds and aperture. 6 hrs. lecture, lab/wk.

PHOT 122
ADVANCED PHOTOGRAPHY (3CR)

Prerequisite: PHOT 121

This course provides an introduction to advanced techniques, tools, procedures and concepts of photographic imaging with an emphasis on black-and-white photography as a fine art. Students will use Zone System tests and procedures to determine their true film speed, "N" and "N-1" film developing times and their personal "S.E.T." (standard enlarging time) to produce prints of maximum quality. Students will use advanced darkroom techniques, including print toning for permanence and aesthetics, split-developers for contrast control, multiple-imaging and archival processing and print presentation. Several "alternative" printing processes will be discussed and demonstrated. This course also includes a basic introduction to medium format (2¼) and large format (4 x 5) camera equipment and technique. Students will use both medium and large format equipment. Students will apply the above to make images for a series of conceptually advanced, project/series-oriented assignments designed to develop specific skills, competencies, and points of view and to stimulate the students' creative capacities for personal expression, communication and self-understanding. 6 hrs. lecture/lab/wk.

PHOT 123
STUDIO PHOTOGRAPHY (3CR)

Prerequisite: PHOT 121

This course provides an introduction to advanced techniques, tools, procedures and concepts of studio and commercial photography. Students will use professional camera and studio equipment, including studio electronic flash and hand-held light/flash meters. This course also includes an introduction to professional medium format (2¼) and large format (4 x 5) equipment and advanced camera techniques for total image control. Students will use studio lighting for various portraiture styles and for small-product, tabletop photography. They will use professional Polaroid and color transparency films. Students will research and employ the services of commercial photography service bureaus. Applications of digital photography as they apply to studio photographic processes will be introduced. Students will apply the above to make images for a series of advanced studio assignments designed to develop specific skills, competencies, and points of view and to stimulate the students' creative capacities for problem solving, visual communication and collaboration. This course is designed to satisfy some of the requirements for students seeking a degree or certificate in the Communication Design and Computer Interactive Multimedia programs. 6 hrs. lecture/lab/wk.

PHOT 125
PHOTOGRAPHY FOR PUBLICATION (3CR)
Prerequisite: PHOT 121

This course provides an introduction to the concepts and application of photographic imaging for media publication. Students will use cameras, computers, software, scanners and image output devices to master the issues, concepts and constraints involved in creating images for a broad range of publication needs. They will prepare and format digitized image files for storage, transmission and print-based and Web-based reproduction. This course is designed to meet the photographic imaging needs of journalism students. 6 hrs. lecture/lab/wk.

PHOT 127
COLOR PHOTOGRAPHY (3CR)
Prerequisite: PHOT 121

This course provides and introduction to the materials, techniques, tools, processes and theories of color photography. Students will use various color film emulsions, chemicals, filters for color-balance corrections, enlargers with integral color-heads with dial filtration, a pro-lab quality processor, color printing papers, and quality controls and manipulations to produce professional-quality color enlargements and transparencies. Applications of digital photography and image editing software as they apply specifically to color controls, corrections and manipulation will be introduced. Students will research and employ some of the services of commercial photography service bureaus. Students will use the above to make color images to meet the requirements of a series of assignments designed to develop specific skills, competencies and points of view and to stimulate the students' creative capacities for personal expression, communication and self-understanding. 6 hrs. lecture, lab/wk.

PHOT 128
DIGITAL PHOTOGRAPHY (3CR)

This course is an introduction to the concepts, tools and technology of digital imaging for photographers. Students will develop competence in the use of digital photographic equipment, software, storage devices and printers to produce digital photographic images satisfying the requirements a series of assignments designed to develop specific skills and competencies. Students will "capture," manipulate, correct, transmit, store and output images. They will use digital technology to produce images for commercial and/or artistic applications. Ethics and cultural implications of the technology will be discussed. 6 hrs. lecture, lab/wk.

PHOT 140
HISTORY OF PHOTOGRAPHY (3CR)

This course provides an introduction to the history of photography. Students will examine the aesthetic and technological evolution of photography as an art form, as a visual tool of and influence upon other artistic disciplines, and as a statement of perceived reality. The course will examine the elements that distinguish various aesthetic movements, the styles of major periods and the influences of individual photographers. Attention will be paid to the relationship between photographic imagery and various cultural and historical contexts. Recommended prior course is PHOT 121. 3 hrs. lecture/wk.

PHOT 150
PROFESSIONAL PHOTOGRAPHY PORTFOLIO (2CR)
Prerequisites: Completion of 15 credit hours of JCCC photography courses

In this course, students will create a professional photographic portfolio. The course will stress the organization and presentation of the student's work in a variety of formats appropriate to the photographic profession. The student will write and design a resume and cover letter that will support the photographic portfolio. 2 hr. lecture/wk.

PHOT 152
PHOTOGRAPHY INTERNSHIP (3CR)
Prerequisites: By permission of faculty based on an assessment of photographic skills; completion of at least 15 credit hours of JCCC photography courses with a minimum grade of B in those courses.

This course allows students to gain work experience in an approved training situation under staff supervision. Emphasis is placed on learning new skills related to a particular aspect of the photographic profession. Students will learn the application of photographic techniques needed to produce images that pertain to the industry. On-the-job training requires at least 180 hours in a semester.

Physical Education, Health and Recreation

HPER 100
BASKETBALL (BEGINNING) (1CR)

Students will have an opportunity to learn fundamental basketball skills through demonstration and discussion of strategies for team play. Emphasis is on individual participation. 2 hrs./wk.

HPER 101
BASKETBALL (INTERMEDIATE) (1CR)

Prerequisite: HPER 100

Students will have an opportunity to learn intermediate basketball skills through demonstration and discussion of strategies for team play. This course will advance the skills of the student who successfully completed the beginning basketball course. Emphasis is on individual participation and competition team play. 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 student will have the opportunity to learn and practice the fundamentals of bowling. The student will be introduced to the history of the game, rules, equipment and lane specifications, scoring, handicap calculations and operation of automatic scoring equipment. 2 hrs./wk.

HPER 107
BOWLING (INTERMEDIATE) (1CR)

Prerequisite: HPER 105

Students will demonstrate advanced fundamentals of bowling. The student will acquire advanced knowledge of the history of the game, rules, equipment and lane specifications. Intermediate to advanced bowling competition will be explored. 2 hrs./wk.

HPER 110
RACQUETBALL (BEGINNING) (1CR)

A brief history of rules and terminology of racquetball will be followed by instruction and actual practice and application of the fundamentals. 2 hrs./wk.

HPER 112
RACQUETBALL (INTERMEDIATE) (1CR)

Prerequisite: HPER 110

Students will review the rules and terminology of racquetball, as well as demonstrate the basic skills. The student will demonstrate skills and strategies in a competitive format and utilize the mental preparation and conditioning aspects of the game of racquetball. The intermediate racquetball student will apply skills in a competitive format. 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 basic skills of volleyball taught in this class include the forearm pass, overhead set, serve, block and spike (attacking). Elementary offense and defense along with volleyball rules, scoring and officiating will be covered. 2 hrs./wk.

HPER 118
POWER VOLLEYBALL (INTERMEDIATE) (1CR)

Prerequisite: HPER 117

Students will have the opportunity to build upon the basic fundamentals of the Power Volleyball (Beginning) class. Intermediate, skills, strategies, offensive and defensive systems and rules will be covered for 6-player, 4-player, 3-player and 2-player volleyball. 2 hrs./wk.

HPER 130
RUNNING AWARENESS AND EXERCISE (1CR)

The course will introduce the student to aerobic fitness through the activity of running. The training principles for running and competitive racing will be covered, and the individual will complete a personal running and/or racing training program. 2 hrs./wk.

HPER 134
WEIGHT TRAINING (BEGINNING) (1CR)

In this class, muscular strength and endurance will be developed through weight training activity. A workout program will be implemented for each student. The muscular system, basic terminology of weight training and weight training theory will be discussed. 2 hrs./wk.

HPER 135
WEIGHT TRAINING (INTERMEDIATE) (1CR)

Prerequisite: HPER 134

In this class, muscular strength and endurance will be developed. A self-designed and directed resistance workout program will be implemented. The proper use of a training log and personal fitness evaluation techniques will be discussed. 2 hrs./wk.

HPER 137
TENNIS (BEGINNING) (1CR)

Students will get individualized instruction in this course on the rules, terminology and history of tennis. The student will receive instruction on the basic strokes of tennis, as well as the strategies of singles and doubles play. 2 hrs./wk.

HPER 138
TENNIS (INTERMEDIATE) (1CR)
Prerequisite: HPER 137

Students will review the rules, terminology and history of tennis. The student will receive instruction on the strokes of tennis, as well as the strategies of singles and doubles play in a competitive format. Emphasis will be on the mental and physical conditioning of the game. 2 hrs./wk.

HPER 140
MODERN DANCE (BEGINNING) (1CR)

This course emphasizes the movement between positions rather than the picture-perfect poses of ballet and other dance styles. Moving through space, off and onto the floor, breathing and moving improvisationally will be explored. 2 hrs./wk.

HPER 142
MODERN DANCE (INTERMEDIATE) (1CR)
Prerequisite: HPER 140

A continuation of Modern Dance (Beginning), this course presents more difficult and longer movement combinations. Students further explore their creativity through elements of improvisation, choreography and performance, while gaining greater muscular flexibility and strength. 2 hrs./wk.

HPER 150
AEROBICS (BEGINNING) (1CR)

Motor skills, jogging and dance steps are combined in this exercise program to improve muscle tone and cardiovascular fitness. 2 hrs./wk.

HPER 152
AEROBICS (INTERMEDIATE) (1CR)
Prerequisite: HPER 150

The motor skills, jogging and dance steps are performed at faster pace for a longer period of time than in Aerobics (Beginning). The course will introduce the student to the fitness benefits from increased duration and intensity of aerobic activities. 2 hrs./wk.

HPER 155
BALLET (BEGINNING) (1CR)

This progressive ballet system is designed to produce muscular strength and flexibility and a working knowledge of anatomy, plus the aesthetic satisfaction of expressing yourself through a classical art form. Offered to students of all ages and experience, both beginners as well as those who have had some training. 2 hrs./wk.

HPER 157
BALLET (INTERMEDIATE) (1CR)
Prerequisite: HPER 155

A continuation of Beginning Ballet , this progressive ballet system explores multilayered ballet movement in simple dance combinations. 2 hrs./wk.

HPER 158
JAZZ DANCE (BEGINNING) (1CR)

An introduction to the concepts and motor skills involved with jazz dance. Basic body position will be introduced, as well as basic terminology, jazz history, various jazz styles and the basic techniques involved, isolations, combinations, choreography and musical/ rhythmic influences. 2 hrs./wk.

HPER 159
JAZZ DANCE (INTERMEDIATE) (1CR)
Prerequisite: HPER 158 or equivalent

A continuation of Beginning Jazz Dance, this course will require students to assimilate and execute more difficult isolated dance moves as well as utilize the basic skills acquired in Beginning Jazz Dance 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 student will receive instruction in the basic fundamentals of karate, including stances, blocks, kicks, strikes and self-defense techniques. 2 hrs./wk.

HPER 166
KARATE II (1CR)
Prerequisite: HPER 165
The student will review the skills from the prerequisite

course of Karate I. Students will demonstrate techniques that include the moving block, kicks and positions for karate. The course will also cover combination moves, as well as, the defensive techniques. 2 hrs./wk.

HPER 167
KARATE III (1CR)
Prerequisite: HPER 166
Students will have the opportunity to achieve higher levels of proficiency, routines, kumite (sport/free fighting) and self-defense. 2 hrs./wk.

HPER 168
KARATE IV (1CR)
Prerequisite: HPER 167 (Beginning Japanese is a suggested prerequisite)
Students in this course will have the opportunity to achieve the advanced level of karate in the following: taiso (exercise), kata (forms), kumite (sport/free fighting) and self-defense application. 2 hrs./wk.

HPER 172
TRACK AND FIELD (BEGINNING) (1CR)
This course will introduce the student to the sport of track and field. Through activity and discussion the student will improve his/her motor ability to perform track and field events. 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)
Beginning foil fencing will provide the student with the fundamental rules and techniques of foil fencing. The student will utilize these skills in a fencing bout. The student will also be instructed in the rules and procedures of officiating foil fencing. 2 hrs./wk.

HPER 182
SWIMMING (BEGINNING) (1CR)
Students in beginning swimming will learn basic swimming skills and safety information that are fundamental to safe swimming performance. 1 hr./wk.

HPER 183
SWIMMING (INTERMEDIATE) (1CR)
Prerequisite: HPER 182 or the equivalent
Students in intermediate swimming will learn more advanced swimming strokes, skills and safety information along with increasing personal fitness levels through continuous endurance swimming. 1hr./wk.

HPER 185
ARCHERY (1CR)
Students will receive individualized instruction in the basic skills of archery as a recreational sport lending itself as a lifetime leisure interest. Safety, fundamental care and usage of archery tackle, and beginning archery skills will be taught along with a survey of the history of archery. 2 hrs./wk.

HPER 190
GOLF (1CR)
The beginning golfer will be given instruction in the rules of and basic swing fundamentals for the game of golf. Proper golf equipment, proper use of this equipment and golf etiquette will be reviewed. 2 hrs./wk.

HPER 192
WELLNESS FORLIFE (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. 1 hr. lecture/wk.

HPER 194
SPORTS CONDITIONING (BEGINNING) (1CR)
Students will have the opportunity to learn the fundamentals of general and sports specific conditioning. All aspects of physical and psychological development are incorporated in this class. Strength, power, speed, acceleration, muscular hypertrophy and endurance, cardiovascular endurance, motor skills and agility drills are taught and practiced. The class will include general physical preparation, sport fitness, plyometrics, agility drills and sport-related specific conditioning. The students will learn about the principle of year-round conditioning, including conditioning appropriate to the off season, preparatory period, pre-competition period and competition period. 2 hrs./wk.

HPER 197
SPORTS CONDITIONING (INTERMEDIATE) (1CR)
Prerequisite: HPER 194
Students will have the opportunity to build upon principles and practices of general and sports-specific conditioning learned in Sports Conditioning (Beginning). All aspects of physical and psychological development are incorporated in this class. Strength,

power, speed, acceleration, muscular hypertrophy and endurance, cardiovascular endurance, motor skills and agility drills are taught and practiced. The class will include general physical preparation, sport fitness, plyometrics, agility drills and sports-related specific conditioning. The students will continue to learn about the principle of year-round conditioning, including conditioning appropriate to the off season, preparatory period, pre-competition period and competition period. 2 hrs. lecture/wk.

HPER 200
FIRST AID/CPR (2CR)

After completing this course, students should be able to perform the basic skills of first aid. The course will cover cause, prevention and first aid care of common emergencies. Certification may be earned in first aid and cardiopulmonary resuscitation.2 hrs./wk.

HPER 202
PERSONAL AND COMMUNITY HEALTH (3CR)

This course is designed to provide the student with the knowledge and understanding to make positive, healthy lifestyle choices. In addition, the student will learn about issues within the community that affect their daily health both directly and indirectly. 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, and proper nutrition. 3 hrs./wk.

HPER 205
INDIVIDUAL LIFETIME SPORTS (2CR)

This course provides a basic knowledge of several individual lifetime sports including badminton, bowling, golf, racquetball and tennis. Students will learn fundamental skills for each sport as well as history, benefits, equipment, rules, etiquette, safety, scoring and strategy. 3 hrs./wk. Fall.

HPER 208
INTRODUCTION TO EXERCISE PHYSIOLOGY (3CR)

This introduction to exercise physiology will introduce the effects of exercise on the muscular system, the cardiovascular system and the metabolic system. The course will prepare the student in the design of and principles for an individual exercise program. 3 hrs./wk. Fall.

HPER 217
COACHING AND OFFICIATING OF BASKETBALL (2CR)

This course introduces students to the theory and principles of coaching basketball and the rules and mechanics of officiating. Students will have the opportunity to learn how to organize, coach and plan daily practice sessions. 2 hrs./wk.

HPER 220
SPORTS OFFICIATING (3CR)

The rules and practical application of officiating will be covered for the following sports: volleyball, football, basketball baseball and softball. 3 hrs./wk.

HPER 224
OUTDOOR RECREATION (3CR)

This course introduces the student to activities that create interaction between the individual and/or individuals and elements of the outdoor recreational setting. This outdoor recreation class will plan activity projects such as camping, hiking, nature observation, alpine skiing, Nordic skiing and biking. 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 teach in the area of elementary physical education and/or elementary education. This course will provide the students with knowledge and background in planning, classroom management techniques, teaching methodology, legal liability, evaluation, wellness, special students, sports and games related to elementary physical education. The course will include observation and teaching. 3 hrs./wk. Spring.

HPER 255
INTRODUCTION TO PHYSICAL EDUCATION (3CR)

This course will introduce the student to the field of physical education and sport. This course will discuss the historical, biomechanical, physiological and psychological foundations of physical education and sport. This course will examine the role of physical activity as a means to help individuals acquire the skills, fitness levels and knowledge that contribute to the arena of physical development and organized competition. This course will discuss the role physical education and sports play in our society, and each individual will develop a personal philosophy for physical education and sports. 3 hrs./wk. Spring.

Physical Science

(Also see Geoscience, page 219.)

PSCI 120
PHYSICAL SCIENCE (4CR)

This course is an introduction to the fundamental concepts and principles of physics, chemistry, geology and astronomy. Topics include energy, electricity, magnetism, modern physics and chemical bonding. It is counted toward laboratory science requirements and is intended for nonscience majors. It includes presentation of material using audiovisual, computer and other multimedia aids. Three hours of class and three hours of work in a scheduled lab are required each week. 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 (4CR)

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

KPT 153
KINESIOLOGY (4CR)

Prerequisites: BIOL 104, KPT 152 and KPT 160 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 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. 3 hrs. lecture, 2 hrs. lab/wk.

KPT 158
THERAPEUTIC EXERCISE (4CR)

Prerequisite: 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)

Prerequisites: 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: BIOL 140, CHEM 122, LC 130 and KOT 151 with a minimum grade of "C" and acceptance into the program

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, KPT 160 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. Clinical 5.

KPT 164
PEDIATRICS ANDGERONTOLOGY (2CR)
Prerequisite: 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 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)
Prerequisite: 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 (12CR)
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 coursework. Students will rotate internships in selected hospitals and clinic sites throughout the United States under the guidance of a physical therapist. 40 hrs. lab/wk.

Physics

PHYS 125
TECHNICAL PHYSICS I (4CR)
Prerequisite: MATH 133

In this introductory course students will learn the fundamentals of classical physics. Included topics involve mathematical approaches to mechanics, wave motion and thermodynamics. This class is an applied study of the concepts of force, work, rate and resistance, and power in mechanical, fluidic, 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

In this introductory course for pre-professional and general education, students will learn the fundamentals of selected areas of classical physics. Using the tools of algebra and trigonometry, the course develops the topics of mechanics, heat and thermodynamics and concludes with waves. The two-semester PHYS 130/131 sequence is designed to meet the requirements of area preprofessional programs. This is a transfer course that meets the college's requirements for associate degree programs and also meets transfer requirements of area colleges and universities. The course includes an integrated laboratory component whose completion is a necessary part of the total instructional package. 4 hrs. lecture, 3 hrs. lab/wk.

PHYS 131
GENERAL PHYSICS II (5CR)
Prerequisite: PHYS 130

In this introductory course for preprofessional and general education, students will learn the fundamentals of selected areas of classical physics. Using the tools of algebra and trigonometry, the course develops the topics of electricity and magnetism, light and optics and some elements of modern physics such as relativity and quantum physics. The two semester PHYS 130/131 sequence is designed to meet the requirements of area pre-professional programs. This is a transfer course that meets the college's requirements for associate degree programs and also meets transfer requirements of area colleges and universities. The course includes an integrated laboratory component whose completion is a necessary part of the total instructional package. 4 hrs. lecture, 3 hrs. lab/wk.

PHYS 133
APPLIED PHYSICS (5CR)
Prerequisite: MATH 133 or higher

This is a one-semester, comprehensive physics course intended for students enrolled in the biotechnology certificate program and associate of applied science degree program. The course will cover all areas of

applied physics, including mechanics, heat, thermodynamics, waves, electricity, magnetism, light, optics and some elements of modern physics. Emphasis will be placed on concepts and applications to real-life problems. This course includes an integrated laboratory component whose completion is a necessary part of the total instruction package. 4 hrs. lecture, 1 hr. 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

This is an introduction to physics for engineering and science students. Included are mathematical approaches to the study of electricity, magnetism, sound, optics and modern physics. 4 hrs. lecture, 3 hrs. lab/wk.

Political Science

POLS 122
POLITICAL SCIENCE (3CR)

This entry-level course explores political thought and institutions in the world and examines the role of communism, capitalism, fascism, nationalism and democracy in political systems. This course prepares students to interpret and analyze political ideas, processes and systems. 3 hrs./wk.

POLS 124
AMERICAN NATIONAL GOVERNMENT (3CR)

This course is an examination of the current national policy-making process. Topics of study include American political culture, constitutional principles, basic political and economic concepts, intergovernmental relations, public opinion, political parties, interest groups, media, budget construction and decision-making institutions. 3 hrs./wk.

POLS 126
STATE AND LOCAL GOVERNMENT (3CR)

This survey of organization, theory and practice of state and local governments examines executive, legislative, judicial and service functions in the United States in general and Kansas in particular. The course includes guest lectures by elected officials, government personnel and community activists. 3 hrs./wk.

POLS 132
INTRODUCTION TO COMPARATIVE GOVERNMENT (3CR)

This course is an introduction to the comparative study of political systems. Ideology, economic development, patterns of government and administration, party structures and policy formation will be examined in competitive political systems, industrially developed and industrially developing nations, and Western and non-Western nations. 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.

Power Plant Technology

PPT 130
BASIC HYDRAULICS, MECHANICS AND PNEUMATICS (3CR)

This introductory course is designed to give a general overview of hydraulics, mechanics and pneumatics. Upon successful completion of this course, the student should be able to describe the concepts involved in industrial maintenance of hydraulic, mechanical and pneumatic equipment and identify the major components and their functions. Topics will include hydraulics, pneumatics, rigging, ladders, scaffolds, lubrication, drive belts, vibrations, mechanical drives, alignments and bearings. This course is appropriate for power plant technology majors or other interested students. 3 hrs. lecture/wk.

PPT 140
GENERATING PLANT FUNDAMENTALS (3CR)

This is an introductory course designed to give a general overview of power plant operations and functions. Upon successful completion of this course, the student should be able to describe the concepts involved in converting energy to electricity through a steam generation power plant and identify the major components and their functions. Topics will include fossil fuels, boilers, turbines, feedwater heaters, ash removal, condensate, power plant controls, and temperature and pressure relationships. This course is appropriate for power plant technology majors or other interested students. 3 hrs. lecture/wk.

PPT 230
INTRODUCTION TO WATER CHEMISTRY/TREATMENT (3CR)

This introductory course is designed to give a general overview of water chemistry and water treatment in power plants. Upon successful completion of this course, the student should be able to describe the concepts and solve the problems associated with water treatment in boiler operations. Topics will include hydrology, specific gravity of liquids, acids, bases, measurements, cooling towers, control devices, pumps, head calculations, ion exchange and filtration. This course is appropriate for power plant technology majors or other interested students. 3 hrs. lecture/wk.

PPT 250
INTRODUCTION TO POWER PLANT COMBUSTION/EXHAUST (3CR)
Prerequisite: PPT 140

Upon successful completion of this course, the student should be able to describe the concepts involved in the combustion of fuel for energy generation. Topics will include fuel handling, combustion requirements, combustion control and by-products of combustion. This course is appropriate for power plant technology majors or other interested students, with the permission of the instructor. 3 hrs. lecture/wk.

PPT 251
INTRODUCTION TO POWER PLANT STEAM/ WATERCYCLE (3CR)
Prerequisite: PPT 140

Upon successful completion of this course, the student should be able to describe the steam water cycle in a steam generation plant. Topics will include boilers, turbines, feedwater heaters, condensers, cooling towers and auxiliary equipment. Enrollment in the course is limited to power plant technology majors or by permission of the instructor. 3 hrs. lecture/wk.

PPT 271
POWER PLANT TECHNOLOGY INTERNSHIP (3CR)

Prerequisite(s): PPT 140 Generating Plant Fundamentals, minimum of 15 credit hours of completed work, minimum of 6 credit hours of completed PPT course work, academic director's approval

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. This course is only available to students who have declared a power plant technology major. 20 hrs. on-the-job training/wk, or a minimum of 40 hrs./wk. on the job for summer semester.

PPT 280
POWER PLANT OPERATIONS/PROCESS (3CR)

Prerequisites: PPT 250 and PPT 251

Upon successful completion of this course, the student should be able to describe the concepts involved in operating a steam generation power plant and identify the major components and their functions. Topics will include cold start-up, warm start-up, shutdown, normal operations, load changes, safety checks and power plant controls. This course is designed to give a general overview of power plant operations and functions. This course is appropriate for power plant technology majors or other interested student with the permission of the instructor. 3 hrs. lecture/wk.

Psychology

PSYC 121
APPLIED PSYCHOLOGY (3CR)

This course will focus on learning how to apply psychological principles in order to better understand one's own experience (cognitive, behavioral and emotional) and that of other people. This course is not a substitute for Introduction to Psychology and will not meet the prerequisite requirement for advanced psychology courses. 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 basic introduction to psychology includes the study of biological aspects of behavior, the brain, consciousness, sensation and perception, motivation and emotion, stress, maturation and development, learning and memory, normal and abnormal personality and social psychology. This course is the prerequisite for all advanced-level psychology courses. 3 hrs./wk.

PSYC 200
INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY (3CR)

Prerequisite: PSYC 130

The course will examine human behavior and psychological principles in an industrial/personnel context. It will also focus on how organizational factors contribute to individual behavior and how individuals affect groups and organizational functioning. Topics include recruiting, selecting and training personnel; evaluating job performance, work motivation, job satisfaction and other attitudes; leadership; and organization and job design. 3hrs/wk.

PSYC 205
HUMAN SEXUALITY (2CR)

Prerequisites: PSYC 130

PSYC 205 Human Sexuality is 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 a unit 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.

The course integrates genetic, biological, physical and anthropological influences with psychological processes and explores determinants of behavior from a genetic and environmental perspective. 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 course is designed to be an undergraduate-level introduction to the psychology of social behavior. It will provide a systematic attempt to understand how the "thought, feeling and behavior of individuals are influenced by the actual, imagined or implied presence of others." Consideration will be given to such concepts as methodology, attitude and attitude change, aggression, leadership, affiliation, obedience and conformity. The course is intended to introduce students to critical analysis, application and the mechanical and intellectual challenges of college work.. 3 hrs./wk.

PSYC 225
EDUCATIONAL PSYCHOLOGY (3CR)

Prerequisite: PSYC 130

This course addresses various issues that apply theories of psychology to the educational environment. Topics included in the study of educational psychology include research methodology, theories of human development, principles of learning, the psychology of motivation, theories of intelligence, testing and assessment techniques and career development. A 20-hour observation in an educational setting is required. 3 hrs./wk.

PSYC 230
PERSONALITY THEORY (3CR)

Prerequisite: PSYC 130

The general viewpoints or paradigms in psychology will be studied with emphasis on each system's contribution to understanding human personality. The assumptions of each system will be critically analyzed using evidence from research and criticisms from philosophy. Usefulness of theories will be presented, and the systems will be compared and contrasted. General theories covered will include psychoanalysis, trait, biological, humanistic, behavioral/social and cognitive. 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 covers content, methods and theory regarding the interplay between psychological and biological determinants of health and illness and examines how these factors relate to health status. The course focus is on the application of psychological methods, principles of maintenance of health, prevention of disease, treatment of illness, and rehabilitation and recovery from impaired health. It follows an interdisciplinary approach to content and instruction. 3 hrs. lecture/wk.

Radiologic Technology

KRAD 150
INTRODUCTION TO RADIOLOGIC TECHNOLOGY (1CR)

This introduction to the profession of radiologic technology includes the duties of the radiologic technologist in the health care environment. 1 hr./wk.

KRAD 160
SURVEY OF 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. 15.4 hrs.

KRAD 162
IMAGEPROCESSING (2CR)

Prerequisite: Admission to the program and KRAD 160, KRAD 172, KRAD 173, each 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 with a minimum grade of "C"

This is the study of patient care and the skills required for patient care in the procedures of radiology. 2 hrs./wk.

KRAD 170
RADIATION BIOLOGY/PROTECTION (3CR)

Prerequisite: KRAD 160 with concurrent enrollment in corresponding semester of clinical training

Radiation biology, radiation protection and techniques used to protect the patient and personnel from the effects of exposure to ionizing radiation will be covered. 3 hrs./wk.

KRAD 171
RADIOGRAPHIC EXPOSURES I (3CR)

Prerequisite: Admission to the program

Radiographic image formation and the factors affecting or controlling it will be examined. Students will conduct related experiments. 3.5 hrs./wk.

KRAD 172
RADIOGRAPHIC POSITIONING I (3CR)

Prerequisite: KRAD 160 with a minimum grade of "C" and concurrent enrollment in KRAD 165 and 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: KRAD 160 with a minimum grade of "C" and concurrent enrollment in KRAD 165 and KRAD 172

This class will offer training in basic radiographic procedures and related tasks that correlate with KRAD 172 course content. Training is under the supervision of a radiologic technologist. 16 hrs. clinic/wk.

KRAD 174
RADIOGRAPHIC EXPOSURES II (3CR)

Prerequisites: KRAD 160, KRAD 171, KRAD 172 and KRAD 173, each with a minimum grade of "C"

Topics will include analysis and quality control measures used for image-producing equipment including tests and calibration requirements. Computer-assisted image production will be studied in detail including the technology of computer-assisted tomography (C.A.T.) and magnetic resonance imaging (M.R.I.) scanners. 3.5 hrs./wk.

KRAD 175
CLINICAL TRAINING II (4CR)

Prerequisites: KRAD 165, KRAD 172 and KRAD 173, each with with a minimum grade of "C," and concurrent enrollment in KRAD 172

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. 24 hrs. clinic/wk.

KRAD 176
RADIOGRAPHIC POSITIONING II (3CR)

Prerequisite: BIOL 140 and KRAD 165, KRAD 172 and KRAD 173, each with a minimum grade of "C," and concurrent enrollment in KRAD 162 and 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 perform patient examinations in a clinical setting under the supervision of a radiologic technologist. Average 20 hrs./wk.

KRAD 278
IMAGING MODALITIES AND PATHOLOGY (3CR)

Prerequisites: KRAD 279, KRAD 280 and KRAD 285, each with a minimum grade of "C," and concurrent enrollment in KRAD 282

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 176 and KRAD 178, each with a minimum grade of "C," and concurrent enrollment in KRAD 280, KRAD 281 and KRAD 285

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 162, KRAD 176 and KRAD 178, each with a minimum grade of "C," and concurrent enrollment in KRAD 279, KRAD 281 and 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 171 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 279, KRAD 280, KRAD 281 and KRAD 285, each with a minimum grade of "C," and concurrent enrollment in KRAD 278

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 278 and KRAD 282, each with a minimum grade of "C"

Students will prepare for the National Registry examination by using tests and materials designed to simulate ARRT examinations. Completion of this course and all radiologic technology courses with a "C" or better is required for qualification for the National Registry exam. 3 hrs./wk.

KRAD 284
CLINICAL TRAINING VI (2CR)

Prerequisites: KRAD 178, KRAD 281 AND KRAD 282, each with a minimum grade of "C"

Students will perform patient examinations in a clinical setting under the supervision of a radiologic technologist. 2 hrs./wk.

KRAD 285
SPECIAL PROCEDURES (2CR)

Prerequisites: KRAD 170, KRAD 171 and KRAD 178, each with a minimum grade of "C," and concurrent enrollment in KRAD 279, KRAD 280 and KRAD 281

This course will cover anatomy, positioning, equipment and special tasks related to the circulatory, nervous and lymphatic systems. The role of the technologist will be stressed. 2 hrs./wk.

KRAD 288
SPECIALTY TRAINING (9CR)

Prerequisite: Approval of the instructor

This course will cover specialized training in fields such as nuclear medicine, ultrasound, radiation therapy and computer-assisted tomography, or in other radiologic areas approved by the instructor. 17 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 will be able to list and explain the significance of major events in North American railroading. 3 hrs. lecture/wk.

RRT 121
RAILROADTECHNICAL 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 relationships 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 will be able to define the current North American railroading 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 CONDUCTORSERVICE (4CR)
Prerequisite: Admission to the JCCC's Railroad Operations Program, conductor option
This is an introductory course for the conductor service option within the railroad operations program. 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 car 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 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 CODEOF 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 completion of this course, the student should be able to demonstrate abilities to apply the General Code of Operating Rules 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, students should demonstrate their ability to use centralized traffic control equipment, computerized track warrant control equipment, and management information systems that record and report train movement. Students will also 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. In addition, the student will spend an additional one week observing dispatching related activities in the field in conjunction with this course. 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

Railroad Dispatching Field Application is a 10-week period where students will observe and practice operations under the supervision of experienced dispatcher mentors in actual dispatching offices. Upon successful completion of this course, students will be able to apply skills learned in classroom-based dispatching instruction to those operations. 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 completion of the course, students should be able to describe apprenticeship program structures, benefits, organizational 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 teaches the principles of diesel engine operation. Upon successful completion of this course, students will be able to identify 2-cycle and 4-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 teaches the basic types and purposes of railroad freight cars. Upon successful completion of this course, students will he able to identify five types of railroad freight cars, explain their functions, describe their basic construction and explain purposes and references for AAR rules and regulations governing freight cars. 1.5 hrs. lecture, 1 hr. lab/wk.

RRTM 254
BASICLOCOMOTIVE ELECTRICITY AND ELECTRONICS (2CR)

Prerequisite: Admission to the JCCC's railroad operations program, mechanical option and completion of RRTM 124 and RRTM 170 with a grade of "C" or better

This course teaches the theory and operation of electrical and electronic circuitry on board modem locomotives and complements EMD and GE electrical systems classes. Upon successful completion of this course, students will 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 RAILROAD ELECTRONICS (1CR)

Prerequisites: Approval of the railroad training administrator and the JCCC division administrator

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to state basic safety procedures in electronics, explain basic principles of electronics, perform basic electronic calculations and use basic electronic tools. 2.5 hrs. lecture, 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 ANDCIRCUITS (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 approval of the railroad training administrator and 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
APPLIEDMICROPROCESSORS (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, Harmon HLC 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 oxyacetylene welding (OAW) and oxyfuel (OFC) and shielded metal arc welding (SMAW). The OAW 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 shielded metal arc welding (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 properly use oxy-fuel cutting (OFC), shielded metal arc welding (SMAW) and air carbon arc cutting (CAC-A) equipment. The SMAW portion of the course will concentrate on 1G and 2F welds with bend tests being performed on selected weldments. 1 hr. lecture, 4 hrs. lab/wk. 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 the railroad and other industries. 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 should also be able to clean a used crucible, assemble a crucible and temper new and used crucible. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 136
RAIL AND SWITCH POINT REPAIR 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 and/or produce in a safe manner high-quality welding repairs and correct welding techniques to railroad track components to include maintenance, grinding, welding and repairs of switches, track rail ends, track wheel burns, battered welds, rail transition ramp building methods, Pandrol weld on shoulders, proper placement of work piece connections and approved switch point welding procedures, as specified by the Burlington Northern Santa Fe Railway. This course will involve the study of different welding processes, welding safety, proper grounding techniques, rail heaters, and metallurgy. The effects of heat in relationship to specific rail steel components will be discussed. Students will be required to experience all appropriate methods and processes of welding, cutting, grinding, straight edging rail steel and preparing switch points for proper mating surface according to current industry standards. Evaluation will be in a classroom and laboratory setting. 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 should be qualified to weld with SMAW according to AWS D1.1.96 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 prescribed standards in AWS D1.1.96. 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 should be qualified to weld with FCAW according to AWS D1.1.96 code. All welding will be made in the vertical (3G and 3F) and overhead (4G and 4F) positions. Passing or failing will be determined by the student's ability to successfully produce welds according to prescribed standards in AWS D1.1.96. 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 (5G). Passing or failing will be determined by the student's ability to successfully produce test welds. 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 American Welding Society (AWS) standards. The oxyfuel cutting (OFC) portion will include cutting metal 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 oxy-fuel cutting (OFC) will be used to prepare mild steel for welding. 1 hr lecture, 4 hrs. lab/wk.

RRIT 143
THERMITE WELDING FORSUPERVISORS (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 students should also be able to clean a used crucible, assemble a crucible and temper new and used crucible. 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 manganese frog casting according to Burlington Northern Santa Fe Railway standards. This course will involve the study of different welding and cutting processes with emphasis on the FCAW process. Metallurgy and the effects of heat in relationship to austenitic manganese steel will be discussed. Students will be required to cut, grind, straight edge, dye penetrant test, weld and monitor heat input during the repair process on austenitic steel frog castings for evaluation in actual laboratory setting. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 147
COMPONENT WELDINGFOR 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 describe methods and processes used to weld railroad track components. This course will introduce the student to various types of welding and cutting processes. Metallurgy and the effects of heat on rail steel and manganese frog castings will be discussed.

Instructor demonstration and student hands-on experience will be provided regarding welding, cutting and grinding on rail steel, frog castings, carbon arc cutting with air (CAC-A), straight edging, temperature monitoring and dye penetrants on both rail steel and frog castings in an actual laboratory setting. 1.5 hrs. lecture, 1 hr. lab/wk.

RRIT 155
RAILROADWELDING REVIEW (2CR)
Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be able to identify currently used rail, frogs, switch points, crossings, Conley's and insulated joint plugs. The student should be able to locate operating procedures in an approved manual and apply them to the appropriate component. In addition, the student should be able to describe the proper application of OFC, OFW, heating, SMAW, FCAW, CAC-A and thermite welding procedures. 1.5 hrs. lecture, 1 hr. lab/wk.

RRIT 156
RAIL AND FROG WELDING REVIEW (3CR)
Prerequisite: Approval of BNSF manager of engineering maintenance training and the JCCC division administrator

Upon successful completion of this course, the student should be able to identify currently used types and sizes of rail, frogs, switch points and insulated joints. 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 Oxygen Fuel Cutting (OFC), Oxy-Fuel heating, Shielded Metal Arc Welding (SMAW), Flux Core Arc Welding (FCAW), Carbon Arc Cutting with Air (CAC-A), Thermite Welding (TW) and grinding procedures. 3 hrs. lecture/wk.

Railroad Maintenance of Way

RRMW 132
RAILROADSTRUCTURES 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
CONCRETETECHNOLOGY (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 Work Equipment

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 correctly. 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 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.

RRWE 192
ADVANCEDELECTRONIC 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.

Reading

RDG 124
BASIC VOCABULARY ANDREADING SKILLS (3CR)
Prerequisite: Appropriate assessment score
This is the beginning course in a reading-course sequence designed especially for those who have difficulty understanding English in print. It focuses on building a functional vocabulary and for increasing comprehension on the sentence, paragraph and multi-paragraph level. 3 hrs./wk.

RDG 125
FUNDAMENTALS OF READING (3CR)
Prerequisite: LC 124 or appropriate assessment score
This is the second class in a sequence of mandatory reading courses. It is designed for students who need to improve their understanding of written expression. The focus is on vocabulary, dictionary usage, literal comprehension and written communication. 3 hrs./wk.

RDG 126
READING SKILLS IMPROVEMENT (3CR)
Prerequisite: LC 125 or appropriate assessment score
This final course in a sequence of mandatory reading courses is 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 Newsweek magazine to apply and practice skills learned in the class and to provide a background for written assignments. 3 hrs./wk.

RDG 127
COLLEGE READING SKILLS (3CR)
Prerequisite: LC 126 or appropriate assessment score
In this advanced course, designed for students who wish to further improve their reading, students will develop critical reading skills, expand background knowledge through reading, increase vocabulary, develop flexible reading techniques, and improve study and writing skills. Students use National Geographic and Atlantic Monthly to apply and practice skills learned in the class and to provide a background for written assignments and class discussions. 3 hrs./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./wk.

Respiratory Care

RC 125
BEGINNING PRINCIPLES OF RESPIRATORY CARE (4CR)
Prerequisite: Admission to the respiratory care program
This is an introduction to the basic therapeutic modalities used in respiratory care, including: patient safety and comfort considerations, infection control and standard precautions, medical gas delivery, humidity and aerosol therapy, basic respiratory pharmacology, secretion clearance techniques and lung expansion therapy. Emphasis is on patient assessment, clinical application of therapies, therapy evaluation and communication techniques. The role of respiratory care in the health care system and basic respiratory care service scope, organization and operation are also introduced. Students will have the opportunity to work with patients after two to three weeks of introductory lecture and lab demonstration and practice. 6 hrs. lecture, 16 hrs. lab/wk. Summer.

RC 130
RESPIRATORY CARE EQUIPMENT (4CR)
Prerequisite: Admission to the respiratory care program
This course is an introduction to basic respiratory care equipment. The operation, function, calibration, troubleshooting and maintenance will be addressed for oxygen administration devices, aerosol generators, humidifiers and hyperinflation devices. Medical gas production and storage will also be addressed. 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 that provides a detailed review of the respiratory and cardiac system anatomy and physiology and the clinical implications of normal and abnormal function. 2 hrs./wk. Summer.

RC 220
CLINICAL CARDIOPULMONARY PHYSIOLOGY (2CR)
Prerequisite: Successful completion of the summer sequence of respiratory care courses

This is a comprehensive study of the physiology and pathophysiology of the pulmonary, cardiovascular and renal systems as they relate to respiratory care. 2 hrs./wk. Fall.

RC 230
CLINIC TOPICS AND PROCEDURES I (4CR)
Prerequisite: Successful completion of the summer sequence of respiratory care courses

This course supplements the fall clinical experiences. Concepts, techniques and procedures learned in the summer semester are reinforced. The student will develop new understandings and skills in the acute care, basic emergency care and introductory-level critical care settings. Emphasis will be on arterial blood gas procurement and analysis, cardiac rhythm assessment and management, airway equipment and management procedures, patient management of obstructive lung disorders, perioperative care and chest trauma. In addition, basic mechanical ventilation concepts and techniques will be addressed, as they relate to physiologic effects, ventilator commitment, management and basic troubleshooting. 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

This course supplements the spring clinical experiences. Concepts, techniques and procedures learned in the fall semester are reinforced. The student will refine understandings and skills in the acute care, basic emergency care and critical care settings. Emphasis will be on ventilator management of patients with specific lung insults, neurological compromise and the cardiac patient. Advanced mechanical ventilation concepts and techniques will be addressed as they relate to physiologic effects, management and troubleshooting. Home care, pulmonary rehabilitation, physician-assisted procedures, cardiopulmonary stress testing, patient case management and department management will also be addressed. 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 assessments, and associated patient management in the acute, critical, emergency care, transport and home 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 the second in a series of three courses that provide a detailed review of the physical and diagnostic assessments of the cardiopulmonary patient and the related clinical implications of the assessment findings. 2 hrs. lecture/wk. Fall.

RC 236
CARDIOPULMONARY MEDICINE III (2CR)
Prerequisite: Successful completion of the fall sequence of respiratory care courses

This is the third in a series of three courses that provide a detailed review of pulmonary disorders, their pathology and their management. 2 hrs. lecture/wk. Spring.

RC 240
CARDIOPULMONARY PHARMACOLOGY (2CR)
Prerequisite: Successful completion of the summer sequence of respiratory care courses

This course acquaints the student with general principles of pharmacology and provides a comprehensive review of all drugs and drug groups that are either administered by respiratory care practitioners or play an integral part in the management of patients they may encounter. Emphasis is on the clinical application of pharmacologic agents, their therapeutic effects, mechanism of action and adverse effects, rather than the biochemistry involved. 2 hrs. lecture/wk. Fall.

RC 245
CRT-RRT CLINIC TOPICS AND PROCEDURES (4CR)
Prerequisite: Admission to the respiratory care program CRT to RRT transition process

This course is a transition course for the certified respiratory therapist 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 (6CR)
Prerequisite: Successful completion of the summer sequence of respiratory care courses

This course is the clinical application of respiratory care therapeutic and diagnostic procedures. Students with close supervision will have the opportunity to work with patients to further develop their skill and understanding

of basic respiratory care procedures for adults and children. The course objectives progress throughout the semester to involve the student initially in basic care of the less critically ill patient and as the students' comfort level and exposures progress, the students are allowed to work with the more critically ill patients. 24 hrs./wk. Fall.

RC 272
CLINICAL PRACTICE II (6CR)

Prerequisite: Successful completion of the fall sequence of respiratory care courses

This course is the clinical application of respiratory care therapeutic and diagnostic procedures. Students with close supervision will have the opportunity to work with patients to further develop their skill and understanding of critical respiratory care procedures for adults and children. Students will also be involved in specialty activities to include: physician rounds, pulmonary rehabilitation, home care, pulmonary function and cardiopulmonary stress testing. 24 hrs./wk. Spring.

RC 274
CRT-RRT CLINICAL PRACTICE TRANSITION (4CR)

Prerequisites: RC 233 and RC 245

Students will assess and manage the adult, pediatric and neo-natal patient with respiratory and/or cardiac-related conditions using the basic respiratory care 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
INTRODUCTION TO 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 will be analyzed. Problems associated with race, gender, class, deviance, crime and ecology will be examined as perennial issues in contemporary society. In addition, other topics will be analyzed as they arise or as the instructor and students determine them to be significant. The history and development of each problem, as well as possible solutions, will be examined from a variety of perspectives. 3 hrs. lecture/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
INTRODUCTION TO SOCIAL WORK ANDSOCIAL WELFARE (3CR)

This course will introduce the student to the profession of social work and the history and development of social welfare and social service systems in the United States. This is a required introductory course in the sequence of study leading to a professional degree (B.S.W., M.S.W. or D.S.W.) in social work. 3 hrs./wk.

SOC 147
SOCIAL WORK AND SOCIAL JUSTICE (3CR)

The history of social movements in the U.S. will be integrated into exploration of current economic, political, religious and psychosocial issues, at micro and macro levels, relevant to the professional practice of social work at the B.S.W. or M.S.W. level of practice. This course supports the National Association of Social Workers (NASW) Code of Ethics and Council of Social Work Education (CSWE) requirements for culturally competent practice. 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 165
CHINESE SOCIETY: PAST AND PRESENT (3CR)

An introduction to Chinese society since 1949. The course examines Chinese society and culture and focuses on contemporary social change while tracing the historical roots of Chinese culture and institutions. Social processes such as social movements, institutional development, political change, social organization and conflict are examined and analyzed. 3 hrs. lecture/wk.

SOC 200
INTERCULTURAL APPLICATIONS (3CR)

Prerequisite or corequisite: SPD 180

This course will provide students with direct experience with people from other cultures and with community organizations. Through their work with international representatives and service agencies, students will gain experiential and reflective knowledge of various cultures, social institutions and social issues, and will develop skills needed to successfully negotiate intercultural settings. Enrollment in the course requires participation in a weekend retreat and some additional hours in activities outside the classroom. 3 hrs. lecture/wk.

Speech

SPD 120
INTERPERSONAL COMMUNICATION (3CR)

This basic speech course deals with the oral communication process through the study of interpersonal communication. Principles of effective speech communication in one-to-one and small-group relationships are studied and applied in a variety of learning situations. Individualized talks may be given, but everyday communication is stressed. 3 hrs./wk.

SPD 121
PUBLIC SPEAKING (3CR)

This course is designed to meet the needs of people who wish to improve their ability to prepare and deliver effective oral presentations before an audience. This fundamental speech course emphasizes creation of ideas, audience analysis, organization skills and delivery techniques. Students will extemporaneously deliver a variety of speeches, including informative and persuasive types of speeches. 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)

This course is concerned with the most frequently used human communication skills, interpersonal communication and public speaking. The course demonstrates the natural relationships between communicating one-to-one and in public, showing that skills in one can be employed in the other and giving practice in both. Focus will be on communication theory, listening, concepts of self, language, perception and types of public speaking, including impromptu, informative and persuasive. 3 hrs./wk.

SPD 128
BUSINESS AND PROFESSIONAL SPEECH (3CR)

Students will improve their verbal communications 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)

This course is designed for those students interested in participating in competitive intercollegiate debate. Through the course, students will learn debate theory, debate skills and techniques, and methods of becoming successful intercollegiate competitors. Specific skills in research, argument construction, debate format, intercollegiate debate speaking style and refutation will be developed. Students enrolling in this course will be required to participate as members of the intercollegiate debate team and 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 course is designed for those students interested in participating in competitive intercollegiate debate. Through the course, students will learn debate theory, debate skills and techniques, and methods of becoming successful intercollegiate competitors. Specific skills in research, argument construction, debate format, intercollegiate debate speaking style and refutation will be developed. Students enrolling in this course will be required to participate as members of the intercollegiate debate team and will attend two to eight weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

SPD 140
ORAL INTERPRETATION OF LITERATURE (3CR)

The student will develop techniques for effective spoken performance of literature. Using poetry, fiction and non-fiction, students will create literary interpretations and then master both the verbal and nonverbal methods necessary for effective spoken expression of those interpretations. This course includes topics such as selecting literary works for performance, interpretation of literary works, audience analysis and performance. Skills acquired in this course will be essential to actors, broadcast journalists, educators and other public speakers. 3 hrs. lecture/wk.

SPD 141
VOICE AND SPEECH (3CR)

The student will develop techniques to expand breath support, vocal range and dynamics, precise articulation, and to strengthen the connection between thought and sound. Through the use of exercises to free, develop, and strengthen the voice, the student will be better able to communicate the full range of human emotion and all the nuances of thought. Skills acquired in this course are essential for actors, broadcast journalists, educators and other public speakers. 3 hrs. lecture/wk.

SPD 180
INTERCULTURAL COMMUNICATIONS (3CR)

This course utilizes concepts drawn from sociology, psychology, anthropology and communication. Upon successful completion of the course, students will recognize how communication is influenced by culture and how culture is influenced by communication. Students will identify the cultural bases of beliefs, attitudes, values and behaviors. Students will be able to recognize commonalities across cultures; tolerate ambiguity in a variety of situations; develop a more global multicultural perspective; identify and appreciate other cultural orientations; and recognize and assign cultural explanations to specific behaviors. The intercultural communication course is concerned with communication theory. Students will be required to identify the principles and terminology of human communication. With a commitment to perform at your best and actively participate in classroom and outside activities, the competencies listed below, as well as many others, will be successfully satisfied. 3 hrs. lecture/wk.

SPD 230
INTERMEDIATE DEBATE II (3CR)

Prerequisite: SPD 132 or the equivalent

This course is designed for those students interested in participating in competitive intercollegiate debate. Through the course, students will learn debate theory, debate skills and techniques, and methods of becoming a successful intercollegiate competitor. Specific skills in research, argument construction, debate format, intercollegiate debate speaking style and refutation will be developed. Students enrolling in this course will be required to participate as members of the intercollegiate debate team and will attend two to eight weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

SPD 235
ADVANCED DEBATE (3CR)

Prerequisite: SPD 230 or the equivalent

This course is designed for those students interested in participating in competitive intercollegiate debate.

Through the course, students will learn debate theory, debate skills and techniques, and methods of becoming successful intercollegiate competitors. Specific skills in research, argument construction, debate format, intercollegiate debate speaking style and refutation will be developed. Students enrolling in this course will be required to participate as members of the intercollegiate debate team and will attend two to eight weekend intercollegiate 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

KST 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.

KST 102
FUNDAMENTALS OF OPERATING ROOM
TECHNIQUE (11CR)

This course explores the application of the principles of medical and surgical asepsis, preparation and maintenance of the sterile field, and 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.

KST 104
BODY STRUCTURE AND FUNCTION (2CR)

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, 2 hrs. lab/wk.

KST 105
PHARMACOLOGY FOR THE SURGICAL TECHNOLOGIST (2CR)

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.

KST 106
ASEPTIC TECHNIQUE FOR THE SURGICAL TECHNOLOGIST (2CR)

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.

KST 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.

KST 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.

KST 111
CAREER DEVELOPMENT FOR THE SURGICAL TECHNOLOGIST (2CR)

This course focuses on resume development, interviewing techniques and introduction to the current health care market. Emphasis is on self-evaluation of professional skills and their application to the health care market. 2 hrs./wk.

KST 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 (2CR)
Prerequisite: THEA 130

The student will be introduced to theater improvisation, which will emphasize creative stage activities not requiring a written script. Participation in activities of this course will release and enhance the work of serious acting students and show the students how to approach characterization viscerally rather than intellectually, spontaneously rather than intentionally. 2 hrs. lecture/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 131
VOICE AND SPEECH (3CR)

The student will develop techniques to expand breath support, vocal range and dynamics; learn precise articulation; and strengthen the connection between thought and sound. Through the use of exercises to free, develop and strengthen the voice, the student will be better able to communicate the full range of human emotion and all the nuances of thought. Skills acquired in this course are essential for actors, broadcast journalists, educators and other public speakers. 3 hrs. lecture/wk.

THEA 133
TECHNICAL PRACTICUM I (1CR)

Students gain practical experience in technical theater in this course. The student completes the course objectives by working on the Theatre department's productions and/or working in the scene/costume shop during the semester. 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
STAGE MAKEUP (2CR)

This course will provide an understanding of, and practical skill in, the design and application of makeup for theatrical performance. Students will learn how to apply basic corrective makeup as well as specialized techniques, such as creating aged skin, scars and false facial hair. They will also work with hair and wigs, airbrushing techniques and prosthetic pieces. These techniques will enable students to create makeup designs that reflect the traits of characters in plays. 2 hrs./wk.

THEA 136
BASIC COSTUMING (3CR)

This 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 137
MOVEMENT FOR THE STAGE (3CR)

The student will develop techniques to expand kinesthetic awareness, flexibility, physical freedom and the language of movement. Through the use of exercises to free, develop and strengthen physical vocabulary, the student will be better able to communicate the physical life of a character. Skills acquired in this course will include mime, stage combat, commedia, improvisation and circus techniques. 3 hrs./wk.

THEA 138
ORAL INTERPRETATION OF LITERATURE (3CR)

The student will develop techniques for effective spoken performance of literature. Using poetry, fiction and non-fiction, students will create literary interpretations and then master both the verbal and nonverbal methods necessary for effective spoken expression of those interpretations. This course includes topics such as selecting literacy works for performance, interpretation of literary works, audience analysis and performance. Skills acquired in this course will be essential to actors, broadcast journalists, educators and other public speakers. 3 hrs./wk.

THEA 140
BASIC STAGECRAFT (3CR)

This course introduces the general student and theater major to basic stagecraft. Through lectures, in-class demonstrations and hands-on experiences, the student will gain a working and appreciative knowledge of technical theater. The course includes 15 lab hours and attendance at two live theatrical productions. 2 hrs. lecture, 2 hrs. lab/wk.

THEA 145
INTRODUCTION TO THEATERDESIGN (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 create a portfolio of his/her 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 poetry, prose and dramatic literature and present public performances. Through the process of reading, studying, investigating, rehearsing and performing literary and non-literary works, the student will learn to pay particular attention to the voice embodied in a given text and the cultural and social context within which that voice speaks. 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.

THEA 233
TECHNICAL PRACTICUM II (1CR)
Prerequisite: THEA 133

Students gain practical experience in technical theater in this course. The student completes the course objectives by working on the Theatre Department's productions and/or working in the scene/costume shop during the semester. 2 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 granted upon being cast in a JCCC production. 2 hrs. lab/wk.

THEA 235
TECHNICAL PRACTICUM III (2CR)
Prerequisite: Permission of instructor

Students will gain professional technical theater experience in this course by working as an apprentice for the theater department and an outside professional performing arts agency. While on campus and/or on location, students will build and install a stage and/or scenery as they work alongside theater professionals to execute theatrical productions. 4 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 100
BASIC RESERVATION SKILLS (1CR)
Prerequisite: Permission of the instructor

This course provides specialized job skill training for students newly employed in the airline industry. The course will reinforce and complement company training with an emphasis on building habits for success.
1 hr. lecture/wk.

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 ANDRESERVATIONS (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 AGENCY 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 REGION 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,

Staff
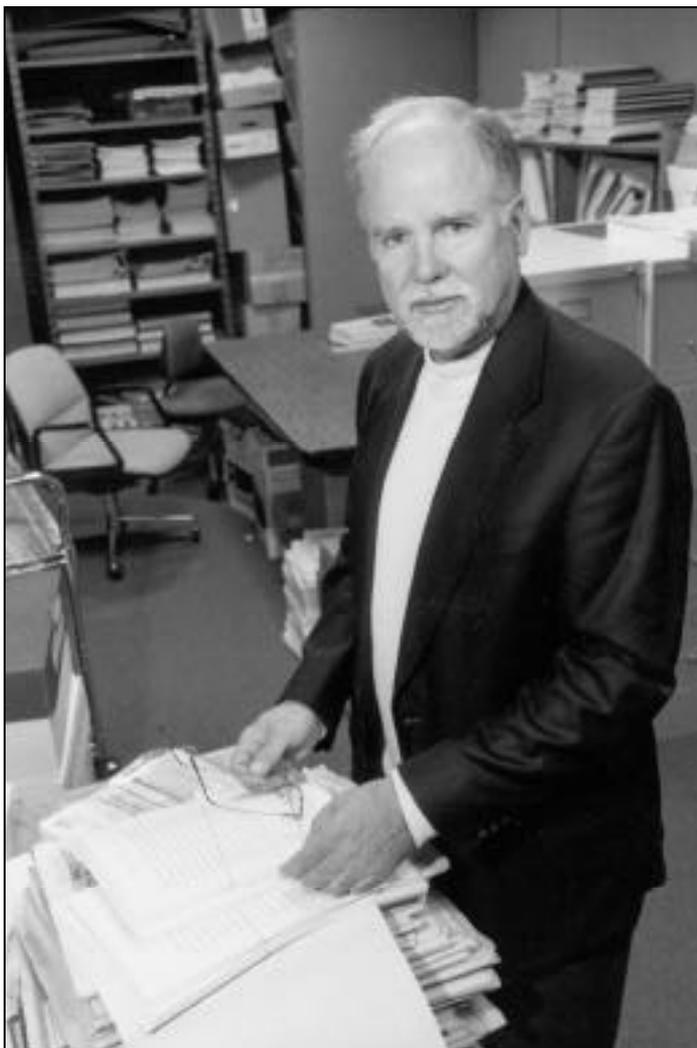
Larry Able
Program Director, Professional Education
B.A. University of Texas-Arlington
M.S. Baker University

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
Professor, Life Science
B.S., University of Kansas
M.A., University of Missouri-Kansas City

Douglas Allen
Chief Information Officer
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
Associate 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
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

Jay Antle
Assistant Professor, History
A.A., Lee College
B.A., Angelo State University
M.A., Arizona State University

Dennis Arjo
Associate Professor, Philosophy
B.A., University of California-Santa Cruz
M.A., University of Colorado-Boulder
Ph.D., University of California-Santa Barbara

Renee Arnett
Outreach Counselor/Community Coordinator
B.S., Loyola University
M.S., University of Missouri-Kansas City
M.S. Emporia State University

Ona Ashley
Assistant Professor, Hospitality Management
B.S. Pittsburgh State University

Jonathan P. Bacon
Academic Director, Educational Technology Center
B.A, M.A., Michigan State University

Brian Badger
Associate Professor, Information Technology
B.S., Central Missouri State University

Gerald Baird
Executive 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

Rhonda Barlow
Assistant Professor, Information Technology
B.S., M.S., University of Central Oklahoma

John Barnes
Professor, Metal Fabrication
B.S., Metropolitan State College

Charles Barnett
Senior Computer Support Analyst
B.A., M.B.A., MidAmerica Nazarene University

Brian Baumgardner
Professor, Life Science
A.A., Johnson County Community College
B.S., Pittsburg State University
D.D.S., University of Missouri-Kansas City

Stuart A. Beals
Professor, Interactive Media
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

Sean Bergman
Master Electrician
B.A., University of Kansas

Roslyn Bethke
Associate Professor, Reading/
   Academic Achievement Center
B.A., Fort Hays State University
M.S., University of Kansas

Mary Jean Billingsley
Program Director, Career Services
B.S., M.Ed., University of Missouri-Columbia

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

Stacy Boline
College Information Writer/Editor
B.S., Kansas State University

Amy Bonham
Manager, Student Life
  and Leadership Development
B.S., Kansas State University
M.S., Emporia State University

Mitch Borchers
Director, Purchasing
B.B.A., Iowa State University

Marilyn Bottrell
Senior Buyer
B.S., University of Nebraska-Kearney

Roger Box
Professor/Career Program Facilitator,
  Railroad Operations
B.S., M.S., Pittsburg State University

Gary Boyd
Programmer/Analyst
B.S., M.A., Southwest Missouri State University

Robert Brannan Jr.
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

Andrea Broomfield
Assistant Professor, English
B.A., M.A., University of Kansas
Ph.D., Temple University

John (Bill) Brown
Academic Director, Industrial Technology Programs
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

William J. Brown
Assistant professor, Automotive Technology
B.S., Pittsburg State University

Mark Browning
Professor, English
B.A., William Jewell College
M.A., University of Missouri-Kansas City
Ph.D., University of Kansas

Elizabeth Bryant
Academic Director, Social Sciences/Social Services
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

Larry Bunce
Market and Survey Research Analyst
B.S., Pittsburg State University
M.S., Ph.D., Kansas State University

Albert Bundons
Academic Director, Community Outreach Programs
B.S., Columbus College
M.B.A., Northwest Missouri State University

N. Burgess Burch
Academic Director, Electronics and
  Information Technology
B.A., Hendrix College
B.S.C.E., M.S.C.E., University of Arkansas

C. David Burgess
Academic Director, HPER
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, Drafting, Engineering and Railroad
  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

Gayle Callahan
Manager, Billing and Accounts Receivable
B.S., Pittsburg State University
M.B.A., University of Kansas

Terry Callihan
Associate Professor, Dental Hygiene
A.A.S., Penn Valley Community College
A.S., Johnson County Community College
B.S., M.S., University of Missouri-Kansas City

Carol Campbell
Associate Professor/Librarian
B.A., University of Virginia
M.L., University of Washington

Gloria Campbell
Counselor
A.A., Ottumwa Heights College
B.S., Emporia State Teachers College
M.S.Ed., University of Kansas

Kevin P. Cannell
Associate 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

Robert Carney
Assistant Professor, Information Technology
B.S., Southwest Missouri State University
M.B.A., University of Missouri-Kansas City

Nancy Carpenter
Professor, Mathematics
B.S., Elizabethtown College
M.A., University of Missouri-Kansas City

Dana Elaine Carr
Counselor
A.A., Johnson County Community College
B.S.E., M.A., M.S., 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

Becky Centlivre
Employment Services Coordinator
A.A., Washburn University
B.A., MidAmerica Nazarene University

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

Isabelle (Ching Luan) Chen
Assistant Professor, Data Processing
B.A., Tamkang University
M.S., Texas A&M University

Shu-Dong Chen
Associate 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

Thomas Clayton
Insurance and Risk Manager
B.A., University of Missouri-Kansas City
M.B.A., Baker University

Gene Clegg
Professor, Mathematics
B.A., Bethany Nazarene College
M.A., University of Oklahoma

Lydia Cline
Professor, Drafting
B.A., Iowa State University

Charlyn Cloud
Professor, Respiratory Care
B.S., Cornell College

Percy Cody
Assistant Professor, Electronics
B.S., University of Kansas
M.S., Naval Postgraduate School

Kenneth L. Coffey
Academic Director, Business
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

Lisa Cole
Assistant Professor, Accounting
B.S., Southwest Missouri State University
M.S. University of Missouri-Kansas City

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
Professor, Economics
B.A., M.A., 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
Associate Professor, Accounting
B.S., M.B.A., Kansas State University

Julia Cotter
Professor, Fashion Merchandising and Design
B.S., University of Missouri-Columbia
M.S., University of Kansas

Jeffrey Couch
Program Coordinator, Intensive English Program
B.S., M.A., Central Missouri State University

John Courtney
Professor/Career Program Facilitator, Hospitality
Management
B.S., M.S., Mississippi Valley State University

Marsha Cousino
Associate Professor/Librarian
B.A., Kansas State University
M.L.S., University of Michigan

Julane Crabtree
Professor, Mathematics
B.S., M.A., West Virginia University

Clarissa Craig
Academic Director, Respiratory Care
A.S., Penn Valley Community College
B.S., Rockhurst University
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

Michael Culey
Systems Programmer/Analyst
A.A.S., Johnson County Community College

Jan Cummings
Professor/Career Program Facilitator,
   Interior Design
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

David Davis
Professor, English
B.A., Coe College
M.A., University of Kansas

Debra Davis
Financial Aid Accountant
B.S., University of Missouri-Columbia

Dennis Day
Dean, Student Services
B.S., M.S., Southwest Missouri State University
Ph.D., University of Kansas

Kami Day
Associate Professor, English
B.A., University of Utah
M.S., Cameron University
Ph.D., Indiana University of Pennsylvania

Wendy Dayton
Systems Specialist
B.S., William Jewell College

Mary Deas
Assistant Professor, Mathematics
B.S., M.Ed., South Carolina State College

Paul Decelles
Associate 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
Professor, Sociology/Anthropology
B.A., Adams State College of Colorado
M.A., University of Northern Colorado
Ph.D., University of Kansas

Kristin Downing
Counselor
B.A., M.S., Emporia State University

Holly Dressler
Access Services Adviser/Program Facilitator
B.S., University of Illinois
M.S.Ed., Southern Illinois University-Carbondale

James Drone
Senior Computer Support Analyst
B.S., Emporia State University

Donna Duffey
Professor/Career Program Facilitator,
   Marketing/Management/Entrepreneurship
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

David Dumler
Senior Systems Analyst
B.A., University of Kansas

Scott Duncan
Senior Network Analyst

Csilla Duneczky
Associate Professor, Physical Science
B.A., University of Colorado
Ph.D., University of Pennsylvania

Nancy Efros
Bookstore Accountant
B.S., Kansas State University
M.B.A., Keller Graduate School

Angela Elliot
Program Director, Training and Development Services
B.A., Faulkner University
M.Ed., Auburn University

David Ellis
Counselor
B.S., M.S., Emporia State University

Daniel Epley
Systems Specialist
B.S., Baker University

Janie Epstein
Professor, Information Systems
A.A., Graceland College
B.A., University of Missouri-Kansas City

Saul Epstein
Senior Educational Technology Analyst
B.A., University of Kansas

Terri Erickson-Harper
Assistant Professor, Communication Design
B.F.A., Michigan State University

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
M.A., Central Missouri State University

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

Douglas Flick
Assistant Professor, Hospitality Management
A.O.S., Culinary Institute of America

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
Associate 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

Carolyn Foster
Counselor/Coordinator of Internships
B.S., Southwest Baptist University
M.S., University of LaVerne

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
Associate Professor/Program Facilitator, Honors
A.A., Johnson County Community College
B.A., MidAmerica Nazarene University
M.A., Baker University

Carl Frailey
Professor, Life Science
B.A., Southern Illinois University
M.S., University of Florida
Ph.D., University of Kansas

Philip Franklin
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
Associate 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

Janette Funaro
Assistant Professor, Foreign Language
B.A., Grinnell College
M.A., University of Chicago

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., Rockhurst University

Sean T. Garvey
Systems Administrator
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 University
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

Minnie Gilmer
Tech Prep Coordinator
B.A., MidAmerican Nazarene College
M.A., University of Missouri-Kansas City

Linda Gill
Financial Aid Officer
B.S.Ed., Emporia State University

Phyllis Goldberg
Counselor
B.A., Hunter College
M.A., Webster University

Jerry Gordon
Assistant Professor, Information Technology
A.A., Jackson State College
B.A., Oklahoma Baptist University
M.Div., Midwestern Baptist Seminary

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 University
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

Scott Gregory
Chief Audio Engineer
B.A., University of Missouri-Kansas City

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

Roy K. Hammack
Laboratory Specialist
B.S., M.S., Ed.S., Pittsburg State University

Russell Hanna
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

Terry Haren
Manager, Computer Resource Center
B.A., University of Kansas
M.B.A., Webster University

Jean Harpst
Professor, Mathematics
B.A., Dana College
M.S., University of Nebraska-Omaha

Greg Harrell
Associate Professor, Journalism, English
 and Learning Strategies
B.S., Ball State Teacher's College
M.S., Northwestern University

Nancy Harrington
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

Robin L. Harwood
Professor, Nursing
B.S.N., Pittsburg State University
M.N., University of Kansas

Sandra Hastings
Professor, English
B.A., Hollins College
M.L.A., Baker University

John Head
Associate Professor, Hospitality Management
A.A.S., Johnson County Community College
B.A., University of Missouri-Kansas City
M.S., University of Southern California
M.S., University of Kansas

Mary Hedberg
Associate Professor, Office Systems Technology
B.S., Minot State University
M.S., Central Missouri State University

Carl Heinrich
Director, HPER and Athletics
B.S., University of Kansas
M.S., Northwest Missouri State University

Gina Helget
Registrar
B.A., M.S., University of Kansas

Teresa Helmick
Professor, Speech
B.S.E., M.A., Central Missouri State University
Ph.D., University of Kansas

Michael Hembree
Professor, History
B.A., Florida Presbyterian College
M.A., Ph.D., Florida State University

Suzanne Henkle
Systems Specialist
A.A.S., Hawkeye Institute of Technology
B.S., Upper Iowa University

Barry F. Herron
Associate 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

Roxanne Hillman
House Manager
B.A., Southern Illinois University

Barry Hincks
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
Associate 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

Monica Hogan Adams
Associate Professor, English
B.A., B.A., M.A., University of Missouri-Kansas City

Daniel Holmes
Systems Programmer/Analyst
A.A., Johnson County Community College

Matthew Holmes
Systems Manager

Elizabeth Holmgren
Supervisor, Math Resource Center
B.S., Morningside College

Donna Hoopes
Professor, Mathematics
B.S., University of Kansas
M.S., Wichita State University

James Hopper
Associate Professor, Interactive Media
B.A., University of Missouri-Kansas City
M.A., University of Kansas

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
Associate Professor, Business Administration
B.S., Iowa State University
M.S., M.B.A., Central Missouri State University

Jeremy Hutchins
Associate Professor, Speech/Debate Coach
A.A., Wharton County Junior College
B.A., McNeese State University
M.A., Southwest Texas University

Christopher Imm
Assistant Professor, Mathematics
B.S., Northwest Missouri State University
M.S., University of Missouri-Columbia

Janalee Isaacson
Associate Professor, Nursing
B.S., M.S., University of Kansas

Mary Beth Izard
Professor, Business and Entrepreneurship and
   Management
B.S., Indiana State University
M.B.A., University of Missouri-Kansas City

Gretchen Janis
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
Professor/Coach
B.S.Ed., M.Ed., Georgia Southern University

Darren Jenkins
Senior Support Analyst
B.S., Kansas State University

Susan Johnson
Associate Professor/Career Program Facilitator,
   Engineering Technology
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
Project Director/Professor, Interpreter Training
B.A., M.Ed., University of Arizona
Ed.D., University of Kansas

David Jones
Senior Educational Tech Analyst
A.A., Dixie College
B.A., Utah State University

Gayle Jones
Program Director, Academy for Information Technology
B.S., Central Missouri State University
Middle Degree, Sorbonne

Kelly Jones
Professor, Dental Hygiene
A.A., Johnson County Community College
B.S., University of Missouri-Kansas City

Robin Judkins
Senior Network Analyst, Telecommunications

Carolyn J. Kadel
Professor, Political Science
A.B., Elmira College
M.A.T., Brown University

Bobanne Kalkofen
Associate Professor, Interior Design
B.S., University of Missouri-Columbia
M.L.A., Baker University

Marziah Karch
Senior Educational Technology Analyst
B.F.A., University of Kansas

Norman H. Karl
Professor, Business Administration
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

Cherie Kennedy
Assistant Professor,
Business Administration/Office Technology
B.S., M.Ed., University of Central Oklahoma

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

Russell D. Kinion
Senior Support Analyst

Landon C. Kirchner
Professor, Philosophy
A.S., Flint Junior College
A.B., A.M., University of Michigan

Shirly Kleiner
Professor, Career Program Facilitator, Accounting
B.A., Avila College
M.B.A., University of Kansas

Toby Klinger
Professor, Psychology
B.A., Douglass College
M.A., M.Ed., Columbia Teachers College

Lin Knudson
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
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

Donna Krichiver
Professor, Mathematics
B.A., M.A., Northeastern Illinois State College

Dennis Kuder
Buyer
B.B.A., Baker University

Dennis Kurogi
Academic Director, Emergency Medical Science

Mark LaBarge
Professor, Life Science
B.S., M.S., Emporia State University

Karen LaMartina
Assistant Professor, Nursing
B.S.N., University of Kansas
M.S.N., University of Missouri-Kansas City

Bill Lamb
Dean, Liberal Arts
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

Anthony LaRocco
Senior Support Analyst
B.S., Kansas State University

Darwin D. Lawyer
Counselor
A.A., Estherville Junior College
B.A., Northwest Missouri State College
M.Ed., University of Missouri-Columbia

Timothy Lednicky
Associate 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

Jeffrey Lewis
Associate Professor, Mathematics
B.S., M.Ed., University of Wisconsin

Susan Lindahl
Program Director, Testing Services and Center
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

Jonathan Long
Vice President, Student Services
B.A., Ed.D., University of Kansas
M.A., University of Missouri-Kansas City

Kathi Loper
Associate Manager, Convenience, Espresso
   and Vending

David Loring
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
Senior Data Analyst-Integration
B.S., Fort Hays State University

Edward Lovitt
Technical Training Coordinator
B.A., B.S., Kearney State College
M.S., Pittsburg State 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

Kevin Lutz
Senior Network Analyst
A.A., Wichita State University

Janelle Mabe
Internal Auditor
B.S., Kansas State University

Gerald Magliano
Professor, Personal Computer Applications
B.A., University of Detroit
M.B.A., Rockhurst University

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
Assistant Professor, Physical Education
B.S., Bethel College
M.A., Wichita State University

Doreen Maronde
Academic Director, Arts and Humanities
B.A., Hamline University
M.S., Iowa State University

Darren Marshall
Senior Support Analyst

Penny Marshall
Professor, Nursing
B.S.N., Washburn University
M.N., Ph.D., University of Kansas

Chad Martin
Programmer Analyst
A.A.S., Ozarks Technical Community College
B.S., Southwest Missouri State University

Dana Martin
College Information Writer/Editor
B.A., University of Missouri-Kansas City

Michael Martin
Associate Professor, Mathematics
B.S., M.A., University of Kansas

Daniel Martinez
Assistant Professor, Physical Science
A.A., Penn Valley Community College
B.S., University of Missouri-Rolla
M.S., Arizona State University

Karen Martley
Program Director, Seminars and Special Events
B.S., Avila College
M.S., Pittsburg State University

Tama Matthews
Assistant Professor, Esthetics
A.A., Johnson County Community College

Pamela Mayfield
Systems Specialist
B.A., Park College

Charlotte McAnerney
Associate Professor, Cosmetology

Joan E. McCrillis
Professor/Career Program Facilitator,
Fashion Merchandising and Design
B.S., M.S., Kansas State University

Kristin McDaniel
Development Coordinator
B.A., MidAmerica Nazarene University

Sara McElhenny
Program Director, Children's Center
B.A., University of Kansas
M.S., Emporia State University

Judi McKenzie
Associate Professor, Cosmetology

William McKown
Associate Professor, Physical Science
B.A., Sterling College
M.A., Sam Houston State University
Ph.D., University of Minnesota

Mary P. McQueeny
Associate Professor, English
B.S., M.A., Ph.D., University of Kansas

James McWard
Associate Professor, English
B.A., M.A., University of Missouri-Columbia
Ph.D., University of Kansas

Philip Mein
Systems Manager/Analyst
B.S., University of Kansas

Angel Mercier
Program Director, Art Education
B.A., Stephens College
M.S., Illinois State Univesity

Jeffery Merritt
Assistant Professor/Facilitator,
Academic Achievement Center
A.A., Johnson County Community College
B.A., M.A., University of Kansas

Deana Miller
Assistant Professor, Speech
B.A., M.A., Southern Nazarene University

Sam Mirsepasi
Senior Support Analyst

Cathy Misenhelter
Staff and Organizational Development Coordinator
B.A., Southwest Baptist college
M.S., Baker University

Bridgitt Mitchell
Assistant Professor, Early Childhood Education
B.G.S., M.A., University of Kansas

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

Michael Moreland
Assistant Professor, Instrumental Music
B.A., University of Kansas
M.A., Univerity of Missouri-Kansas City

Jeff Morgan
Senior Systems Analyst
A.O.S., Electronics Institute
A.A.S., Brown Mackey College

Michelle Moriarty
Associate Professor, Psychology
B.A., Rockhurst University
M.S., Avila College
Ph.D., University of Kansas

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 Nasseri
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, Information Technology
B.A., University of Colorado

Zohreh Niknia
Professor, Economics
B.A., University of Minnesota
M.A., Ph.D., 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
Professor, Mathematics
B.A., New York University
M.A., State University of New York-Binghamton

Cathleen O'Neil
Assistant Professor, Mathematics
B.A., Texas A&M University
M.S., Ph.D., 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

William Osborn
Dean, Community Outreach for Credit Instruction
B.S.E., Emporia State University
M.S.E., Pittsburg State University
Ed.D., University of Kansas

Mary O'Sullivan
Technical Operations Supervisor
A.A., Johnson County Community College
B.A., MidAmerica Nazarene College

Lynne Overesch-Maister
Professor, Foreign Language
B.A., Michigan State University
M.A., Ph.D., University of Kentucky

Silverio Pagano
Assistant Manager, Dining Services-Food
A.O.S., Culinary Institute of America

Ronald Palcic
Associate Professor, Mathematics
A.A., Palomar Community College
B.S., California Lutheran University
M.Ed., Utah State University

Laura Pappenfort
Director, Network Services
B.B.S., Texas Christian University

Robert Parker
Assistant Professor, Emergency Medical Science
B.S., Northeastern University

James D. Patterson
Assistant Professor, Physical Science
B.S., Central Missouri State University
M.S., Ball State University

David Pearce
Senior Computer Support Analyst
A.A., Johnson County Community College

Keith Pembleton
Warehouse and Postal Services Supervisor

Michael Pener
Professor, Paralegal
A.B., University of Missouri-Columbia
J.D., L.L.M., University of Missouri-Kansas City

Donald Perkins
Director, Budget and Auxiliary Services
B.A., St. Xavier College

Anthony Perry
Assistant Technical Director

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
Ph.D., University of Kansas

Susan Pettyjohn
Professor, Mathematics
A.B., William Jewell College
M.A., University of Missouri-Kansas City

Sheilah Philip-Bradfield
Professor, Theatre
B.A., M.S., Fort Hays State University
M.F.A., University of Missouri-Kansas City

Robert W. Pinker
Professor, Physical Science
B.S., Capital University
M.S., Ohio State University
M.B.A., University of Kansas

Julie Pitts
Success Center Manager
B.S., Northwest Missouri State University
M.S., University of Nebraska at Kearney

Robert Pitts
Senior Support Analyst

Polly Pope
Professor, Dental Hygiene
B.S., University of Minnesota
A.S., North Dakota State School of Science
M.S., University of Kansas

Rory Porter
Senior Educational Technology Analyst
A.A., Johnson County Community College
B.A., M.E.D., MidAmerica Nazarene College

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

Mary Rack
Professor, Mathematics
B.A., College of St. Elizabeth
M.A., University of Rochester

Dan Radakovich
Executive Vice President, Academic Affairs
B.A., M.A., Ed.D., University of Wyoming

Virginia Radom
Associate Professor, Health Occupations
B.S.N., Fort Hays State University
M.S., Central Michigan University

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

Harold Reuber
Counselor
A.B., Drury College
M.A., University of Missouri-Kansas City

Larry Reynolds
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
Vice President, Instruction
B.A., M.A., Ph.D., University of Houston

Brenda Rice
Professor, Paralegal
A.A., Louisburg College
B.A., University of Texas-Arlington
J.D., Southern Methodist University

Susan Rider
Manager, Business Office/Bursar
B.S., Central Missouri State University

Laura Roberts
Instructional Facilitator, Information Technology
B.S., Kansas State University

Michael Robertson
Professor, Humanities
B.A., M.A., Ph.D., Florida State University

Lindy Robinson
Academic Director, Hospitality, Fashion and Interiors
A.A., Johnson County Community College
B.A., M.A., Ottawa University

Timothy Robinson
Senior Support Analyst

Lawrence Rochelle
Professor, English
B.Ed., University of Toledo
M.A., University of Dayton
Ed.S., University of Toledo

Charles Rogers
Director, Carlsen Center
B.A., University of Kansas
M.A., University of Illinois

Teresa Ronnebaum
Compensation and Benefits Manager
B.S., Troy State University

Richard Rowe
Professor/Career Program Facilitator, Metal Fabrication
B.S., University of Mary
M.S., Pittsburg State University

Claudinna Rowley
Professor, Mathematics
B.A., M.S., Kansas State University

Debbie Rulo
Program Director, Computer Training and Development
B.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
Associate Professor, Communication Design
A.A., Longview Community College
B.F.A., Kansas City Art Institute
M.F.A., Virginia Commonwealth University

Catherine Sawyer
Associate Professor, Reading/
   Academic Achievement Center
B.A., University of Nebraska
M.A., University of Kentucky

Anne Schmidt
Associate Professor, Health Occupations
A.A., Johnson County Community College
B.A., University of Kansas

Mary Schneider
Assistant Professor, Electronics
B.S., Wichita State University
M.S., University of Kansas

Nancy Schneider-Wilson
Professor, Interactive Media
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

Denise Scofield
Assistant Professor, Personal Computer Applications
B.S., M.S., Kansas State University

Thomas Scofield
Manager, Academic Computing Services
A.A., Johnson County Community College
B.S., Rockhurst University
M.B.A., MidAmerica Nazarene University

Richard Scott
Academic Director, Speech, Language and
  Academic Enhancement
B.A., Fort Hays State University
M.S., Pittsburg State University
Ed.D., Nova University

Sean Scott
Senior Network Analyst

Elma Jean Scott-Palmer
Program Director, Management
  and Professional Development
A.A., Tulsa Junior College
B.S., Langston University
M.S., Kansas State University

Penny Seavertson
Professor, Mathematics
B.A., San Jose State University
M.S., Ed.D., University of Kansas

David Seibel
Professor, Life Science
B.S., Southwest College
M.Phil., Ph.D., University of Kansas

Marilyn Senter
Associate 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
Director, Enrollment Management
B.S., Kansas State University
M.S., Emporia State University

Marcia Shideler
Coordinator, Community-based Learning
B.A., Kansas 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 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
Associate Professor, Personal Computer Applications
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/Career Program Facilitator,
  Office Systems Technology
A.A., Hutchinson Community Junior College
B.S., Emporia State University

Carol Smith
Assistant Professor, Personal Computer Applications
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

Robert Sobieraj
Associate Professor, Hospitality Management
A.S., Johnson and Wales University
B.S., M.B.A., University of New Haven

Samuel Sommerville
Associate Professor, Foreign Language
B.S., Escuela Normal Victor Mercante
M.A., University of Kansas

Joseph Sopcich
Director, Institutional Advancement
B.A., M.B.A., University of Notre Dame

Michael Souder
Program Director, Marketing
B.S., U.S. Military Academy at West Point
M.S., Naval Postgratuate School

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
Senior Support Analyst
B.A., MidAmerica Nazarene University

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

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
Associate Professor, Instrumental Music
B.M.E., Wichita State University
M.M., Yale University

William Stockton
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

Patricia Sumner
Information Analyst
B.S., M.S., University of Missouri-Kansas City

Lynda Swander
Professor, Life Science
B.S., Wittenberg University
M.A., 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

Ronald Symansky
Assistant Professor, Interpreter Training
B.A., Gallaudet University
M.A., New York University

Frank Syracuse
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

Terri Teal
Associate Professor, Vocal Music
B.S., Louisiana College
M.M., University of North Texas

Anita Tebbe
Professor/Career Program Facilitator, Paralegal
B.A., Mundelein College
M.A., University of Missouri-Kansas City
J.D., Washburn University

Sandra Tebbenkamp
Professor, Mathematics
B.A., William Jewell College
M.A., Hunter College

John Thomas
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
Assistant Professor, Architecture
B.S., Ohio State University
M.A., M.F.A., Kansas State University

John Thomson III
Academic Director, Writing, Literature and Media
Communication
B.A., University of Memphis
M.A., University of Minnesota
Ph.D., University of Iowa

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

Rick Tyrell
Senior Network Analyst
B.S., Bethel College

Carolyn Urbom
Associate Professor, Information Technology
A.A.S., Johnson County Community College
B.B.A., M.A., Wichita State University

Richard Vallandingham
Academic Director, Student Development
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 Life
   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

Phillip Wallack
Associate Professor, Information Systems/
   Computer Science
B.S., M.S., City College of New York

Jeanne Walsh
Academic Director, Nursing
A.D.N., Olney Central College
B.S.N., M.S.N., University of Evansville

Sandra Warner
Director, Administrative Computing Services
B.A., University of Kansas
M.B.A., University of Missouri-Kansas City

Michael Waugh
Academic Director, Television Services
B.S., M.S., University of Kansas

Frederick L. Webb II
Professor/Career Program Facilitator,
   Business Administration
B.S., Baker University
M.B.A., Avila College

Michael Weible
Associate Professor/Career Program Facilitator,
   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

Cynthia Werthmann
Systems Programmer/Analyst
B.S., University of Nebraska

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
M.S., Kansas State University

James Wheeler
Academic Director, Computer Information Systems
Ed.B., M.S., State University College at Buffalo, N.Y.

Theodore H. White
Dean, Science, Health Care and Math
B.G.S., B.S., University of Kansas
M.S., Wichita State University
Ph.D., University of Michigan

Ann Wiklund
Associate Professor, Art History
B.A., Tulane University
M.A., University of Kansas

Carmaletta Williams
Professor, English
B.A., M.A., University of Missouri-Kansas City
Ph.D., University of Kansas

James M. Williams
Dean, Business and Technology
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

Janna Willnauer
Access Services Supervisor
A.A., JCCC
B.S., Morningside College
M.A., University of Kansas

Dina L. Wilson
Professor, Nursing
B.S.N., M.S., University of Pittsburgh

LeAnna Wilson
Director, Center for Business and Technology
A.A., Johnson County Community College
B.A., MidAmerica Nazarene College
M.S., Kansas State University
M.S., Emporia State University

Steve Wilson
Professor, Mathematics
B.A., M.A.T., University of Chicago

Randy Winchester
Program Coordinator, Computer Training
B.S., Kansas State University

Sally Winship
Vice President, 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
Associate Professor, Emergency Medical Science
B.A., Clark University
M.A., University of Missouri-Kansas City

Luanne Wolfgram
Assistant Professor, Life Science
B.S., University of Wisconsin-LaCrosse
Ph.D., Johns Hopkins University

Jerry Wolfskill
Director, 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

Christopher Worthington
Manager, Bookstore

Jeffrey Wright
Professor, Accounting
B.S., M.B.A., University of Kansas

Ray Wright
Professor, Emergency Medical Science
B.A., Bethel College

Robert D. Xidis
Professor, English
B.A., University of Kansas
A.M., Indiana University
Ph.D., University of Kansas

Kathy Yeager
Program Director, Sales
B.S., Ball State University
M.A., Webster University

Philip Yeager
Assistant Professor, Information Technology
B.S., Ball State University
M.B.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
Professor, Speech
B.S., Northwest Missouri State University
M.A., University of Northern Colorado

Index