

# JCCC

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Johnson  
County  
Community  
College

**Catalog of Courses      1998-1999**  
**and General Information**

JCCC

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Johnson County Community College

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

## Table of Contents

### The Johnson County Community College

<b>Vision, Values and Mission Statements</b> .....	<b>3</b>
<b>Message from the President</b> .....	<b>5</b>
<b>Board of Trustees</b> .....	<b>6</b>
<b>Academic Calendar</b> .....	<b>7</b>
<b>Admission</b> .....	<b>9</b>
Admission Policies .....	10
Admission Procedures – Credit .....	10
Programs with Selective Admission .....	13
Admission Procedures – Area Vocational School Programs .....	14
Admission Procedures – Continuing Education .....	14
<b>Registration and Costs</b> .....	<b>15</b>
Registration Procedures .....	16
Adding and Dropping a Class .....	17
Costs .....	18
Refunds .....	18
Textbook Costs .....	19
<b>Student Financial Aid</b> .....	<b>21</b>
The Purpose of Financial Aid .....	22
Financial Aid Eligibility Requirements .....	22
Financial Aid Process .....	22
Disbursement .....	23
Types of Financial Assistance .....	23
Costs .....	24
Refund/Repayment Policy .....	24
Satisfactory Academic Progress .....	25
Changes in Enrollment Status .....	26
<b>Student Support Services</b> .....	<b>27</b>
Alumni Association .....	28
Athletics, Intercollegiate and Intramural .....	28
Bookstore .....	28
Brown & Gold Club .....	28
Career Center .....	28
Cheerleading .....	29
Children’s Center .....	29
Clubs and Organizations .....	29
Cosmetology Salon .....	29
Counseling Center .....	29
Dental Hygiene Clinic .....	30
Dining Services .....	30
Forensics .....	30
Instructional Support Services .....	30
Library .....	31
Massage Therapy Clinic .....	31
Music Organizations .....	31
Phi Theta Kappa .....	31
Student Access Center .....	32
Student Activities Program .....	32
Student Senate .....	32
Student Housing .....	32
Student Publications .....	33
Testing/Assessment Services .....	33
Theater .....	33
Volunteer Program .....	33
<b>Academic and Student Policies and Procedures</b> .....	<b>35</b>
Academic Progress .....	36
Academic Records Retention .....	36
Academic Renewal .....	37
Access to Student Information .....	37
Advanced Standing Credit .....	38
Attendance .....	38
Auditing a Class .....	39

Classes by Arrangement .....	39
Credit Transferred from Other Colleges .....	39
Final Examinations .....	40
Grading System .....	40
Pass/Fail Grading System .....	40
Grade Changes .....	40
Grade Point Average .....	40
Honors .....	41
Records on Hold .....	41
Transcripts .....	41
Verification of Enrollment .....	41
Alcohol and Drugs .....	41
Fireworks, Firearms, Ammunition .....	43
Lost and Found .....	43
No-smoking Policy .....	43
Parking .....	43
Security .....	43
Unlawful Discrimination or Harassment	
Complaint Procedure .....	44
Student Code of Conduct .....	46
Student Appeals Other Than Appeals of Disciplinary Actions .....	49
Student Career Development Policy .....	50
Student Health .....	50
Student Right to Know .....	50
<b>Continuing Education and Community Services</b> .....	<b>51</b>
Continuing Education .....	52
Adult Basic Education/General Educational Development .....	52
Business and Industry Institute .....	52
Center for Professional Education .....	53
Center for Literary Culture .....	54
Citizens Forums .....	54
CLEAR Program .....	54
Community Services Courses .....	54
Cultural Education .....	54
Speakers Bureau .....	55
Special Events .....	55
Youth Program .....	55
<b>Graduation, Degree and Certificate Programs</b> .....	<b>57</b>
Graduation Requirements .....	58
Commencement Exercises .....	58
Associate Degrees .....	58
Associate of Arts Degree .....	59
Transfer Programs .....	61
Transfer Information .....	63
Career Programs .....	63
Associate of Science Degree .....	64
Associate of Applied Science Degree .....	66
Certificate of Completion .....	68
<b>Career and Certificate Programs</b> .....	<b>69</b>
Career Program Descriptions .....	70
<b>Nontraditional Programs of Study</b> .....	<b>123</b>
Honors Program .....	123
Distance Learning .....	125
International Education .....	125
Study Abroad .....	125
Television Courses .....	125
<b>Course Prefix Listing</b> .....	<b>126</b>
<b>Courses by Division Listing</b> .....	<b>127</b>
<b>Academic Offerings</b> .....	<b>129</b>
JCCC Course Listings .....	130
<b>Staff</b> .....	<b>253</b>
<b>Index</b> .....	<b>275</b>

# The Johnson County Community College Vision, Values and Mission Statements

## Vision

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

## Values

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

- a place where all faculty, students and staff share goals and work together to strengthen teaching and learning;
- a place where freedom of expression and civility are practiced, encouraged and protected among all groups;
- a place where every person is respected and where diversity is encouraged;
- a place where individuals accept their obligations to the group and where well-defined governance processes guide behavior for the good of the institution;
- a place where the well-being of each member is supported and where service to others, internally and externally, is encouraged;

- a place which shares its ideas and resources with other members of the educational community – locally, regionally, nationally and internationally; and
- a place in which the institution's rituals affirming both tradition and change are shared and where the accomplishments of its staff and students are recognized.

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

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

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

- the college assets are a community investment; accountability and responsibility must be exercised in fiscal management and in maintaining those assets for future generations;
- the college must exercise prudence in the management of the nonmonetary assets entrusted to it, seeking maximum return on the community's investment of time, trust and intellectual capital;
- the college should, through continuous assessment, assure that its programs and services are of the highest quality, continually improved, current and that defined purposes and outcomes are achieved;
- the student learning goals established by the college's instructional programs should be continuously refined and measured;
- the college should assure that students achieve the learning outcomes established by its instructional programs; and
- JCCC should provide leadership in making Johnson County a better place to live and work.

## Mission

Johnson County Community College is a comprehensive community college committed to serving the current and emerging needs of the residents of Johnson County for higher academic education, technical/vocational

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education and lifelong learning, incorporating diverse instructional methods and current technology in the teaching and learning process. The college seeks to respond to identified needs of the community by providing high-quality educational programs and student and community services that are accessible to all who can benefit from them. This is fulfilled through:

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

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

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

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

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

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

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

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## Message from the President

Dear Friends:

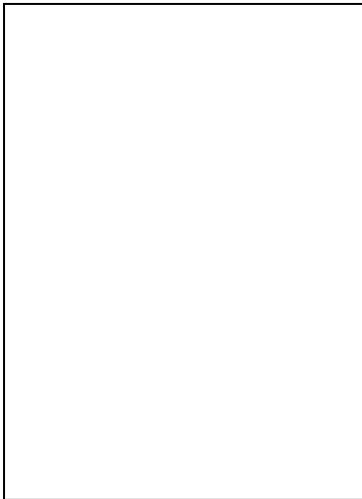
Thank you for your interest in Johnson County Community College. As you look through this catalog, you will find that JCCC

offers courses and services that will meet your unique educational needs.

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

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

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



*Charles J. Carlsen*

- We are finalizing plans to expand the Gym, which will allow us to increase our athletic, wellness and fitness classes.
- JCCC has successfully implemented technology that will allow you to register by phone and over the World Wide Web, rather than driving to campus and standing in line. More than 25 percent of all students enrolled in the spring 1998 semester used this technology, and we expect this number to increase.
- More classes are being offered over the Web, and we now schedule classes at off-campus sites throughout the county. This gives you more opportunities to learn when it's most convenient for you.
- Our Continuing Education and Community Services branch continues to expand its courses, offering short-term classes for business and professional development, as well as personal enjoyment.

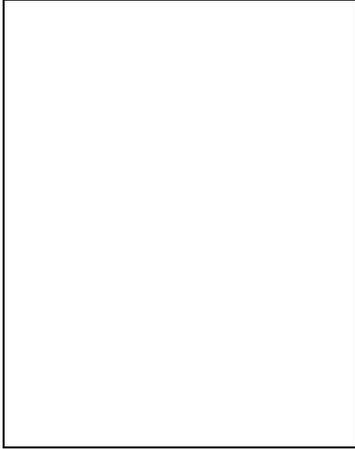
All our faculty and staff are here to work with you as you decide your educational goals. We look forward to you becoming part of our community.

Sincerely,

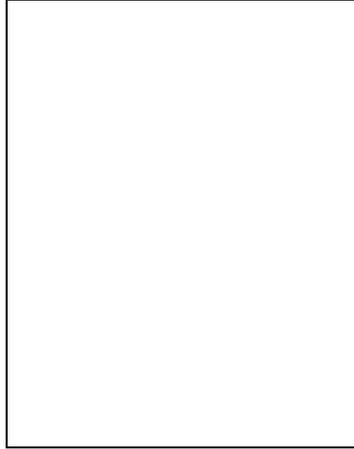
Charles J. Carlsen  
President

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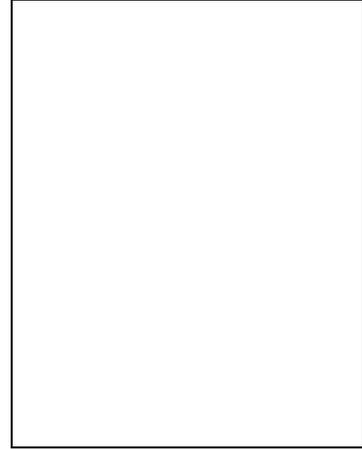
## Board of Trustees



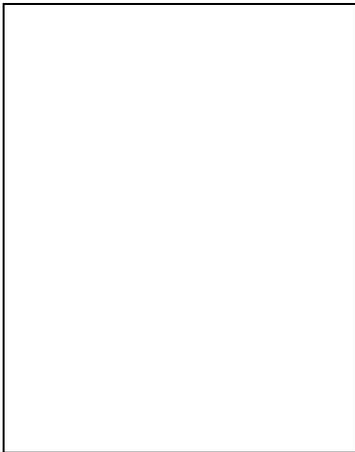
Molly Baumgardner



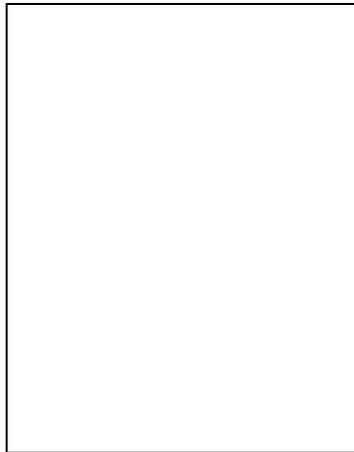
Shirley Brown-VanArsdale



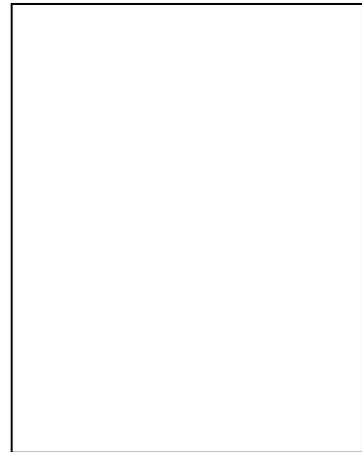
Virginia Krebs



Lynn Mitchelson



Dennis Moore



Elaine Perilla

## Academic Calendar

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

### Summer Session 1998

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

### Fall Semester 1998

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

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

### Spring Semester 1999

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

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

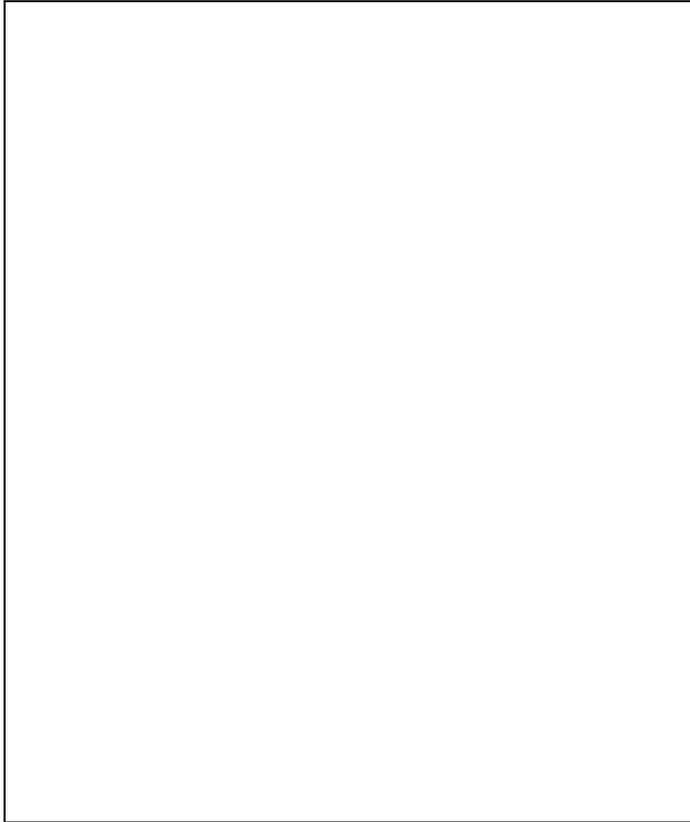
### Summer Session 1999

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



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# Admission



## Admission Policies

### Admission Procedures – Credit

- New Students
- Continuing Students
- Affiliate Programs
- Reverse Affiliate Programs
- International Students
- Resident Aliens
- Foreign Students
- Visiting Foreign Students
- College Credit Class Options for  
High School Students

## Programs with Selective Admission

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

## Admission Procedures – Area Vocational School Programs

## Admission Procedures – Continuing Education

## Admission Policies

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

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

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

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

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

## Admission Procedures – Credit

### New Students

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

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

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

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

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

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

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

### Residency

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

### Continuing Students

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

### **Affiliate Programs (Cooperative Programs)**

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

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

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

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

### **Reverse Affiliate Programs (Cooperative Programs)**

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

To participate, the following requirements must be met:

1. Respiratory Care is a selective admission program. (See page 13 for specific details.)
2. Enrollment in the Hospitality Management/Chef

Apprenticeship programs is by approval of the Hospitality Management academic director. Contact the departmental head for more information.

3. Enrollment in the Electronics Technology program is by approval of the Engineering Technologies academic director.
4. Railroad Operations is a selective admission program.

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

### **International Students**

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

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

### **Resident Aliens**

Resident aliens must meet the following requirements:

1. Provide a "green card" or copies of your permanent residency application, along with the U.S. Department of Immigration and Naturalization Services receipt of filing. An employment authorization card is not sufficient. If you cannot provide your permanent residency card, out-of-state tuition will be assessed.
2. Submit official transcripts from all U.S. secondary and postsecondary educational institutions you have attended. The issuing institution must send the transcript directly to the JCCC Admissions Office. Hand-carried transcripts are not acceptable. Transcripts from foreign institutions are not required.\* **Note:** If you have been out of high school five or more years, you need not submit your high school transcript.
3. Complete the JCCC assessment and enrollment process.
  - a. Complete the JCCC assessment test.
  - b. Discuss course selection, based on your assessment results, with a JCCC counselor. Course selection may be restricted because of JCCC assessment test results.
  - c. Enroll in classes approved by a counselor.

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

### JCCC Foreign Students

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

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

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

It is strongly recommended as an international student on an I-20 issued from JCCC that you purchase medical insurance. You need to budget a minimum of \$700 a year to cover this expense.

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

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

### Visiting Foreign Students

Visiting foreign students who hold a valid visa other than an F-1 visa based upon the I-20 from JCCC must meet all college admission policies in addition to the following requirements each semester:

1. Complete a foreign student application.
2. Present your current passport and I-94 card to the Admissions Office. Your I-94 card must be valid through the end of the semester in which you wish to enroll. This procedure must be repeated prior to enrollment each semester.

3. Complete the JCCC assessment and enrollment process as described under "Resident Aliens." Course selection may be restricted because of JCCC assessment test results.

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

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

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

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

### College Credit Class Options for High School Students

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

- College Now – This program is for high school students enrolled in selected honors or advanced placement classes for which college credit equivalency has been established. Instruction is provided on the high school campus. You must submit a JCCC application and pay the \$10 application fee. Your high school transcript is not required at the time of enrollment. Approval from your high school principal is necessary. A schedule of College Now classes and registration forms will be available early each semester at participating high schools. A maximum of 32 College Now hours is allowed.
- Quick Step – This program is for high school juniors and seniors and/or students identified as gifted with a current Individual Education Plan. Instruction is provided by JCCC faculty on the college campus. You must submit a JCCC application for admission, the \$10 application fee and a signed Quick Step form at the time of enrollment indicating your high school principal's approval to take college classes. If you are home-schooled or in an approved gifted program, you must contact the Admissions Office for complete admission requirements. You will need a high school transcript sent at the time of graduation. You can find a complete list of classes each semester in JCCC's credit class schedule.

- Tech Prep – This program is for high school students enrolled in selected technical courses for which JCCC college credit equivalency has been established. Instruction is provided on the high school campus or at JC-TEC (Johnson County Area Technical Educational Cooperative).

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

Accounting	Metal Fabrication
Drafting Technology	Marketing and Management
Electronics Technology	Office Systems Technology
Fashion Merchandising	Paralegal
Information Systems	Railroad Operations
Interior Merchandising	Teleservice Representative

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

## Programs with Selective Admission

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

### Registered Nurse

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

### Articulation of Licensed Practical Nurses

Maximum number selected	Based on number of available positions in NURS 221
Application deadline	Jan. 15
Classes begin	Fall semester

### Dental Hygiene

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

### Interpreter Training

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

### Mobile Intensive Care Technician (Paramedic)

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

### Paralegal\*

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

### Railroad Operations

Contact the director of Railroad Operations.

### Respiratory Care

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

### Respiratory Care CRTT-RRT Transition

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

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

\*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.

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## **Admission Procedures – Area Vocational School Programs**

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

### **Health Occupations**

#### **Practical Nursing**

Maximum number selected 24  
Application deadline April 15  
Classes begin Fall semester

#### **Certified Nurse Aide**

#### **Certified Medication Aide**

#### **Home Health Aide**

#### **Certified Medication Aide Update**

#### **I.V. Therapy for Licensed Practical Nurses**

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

## **Admission Procedures – Continuing Education**

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

### **Cosmetology**

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

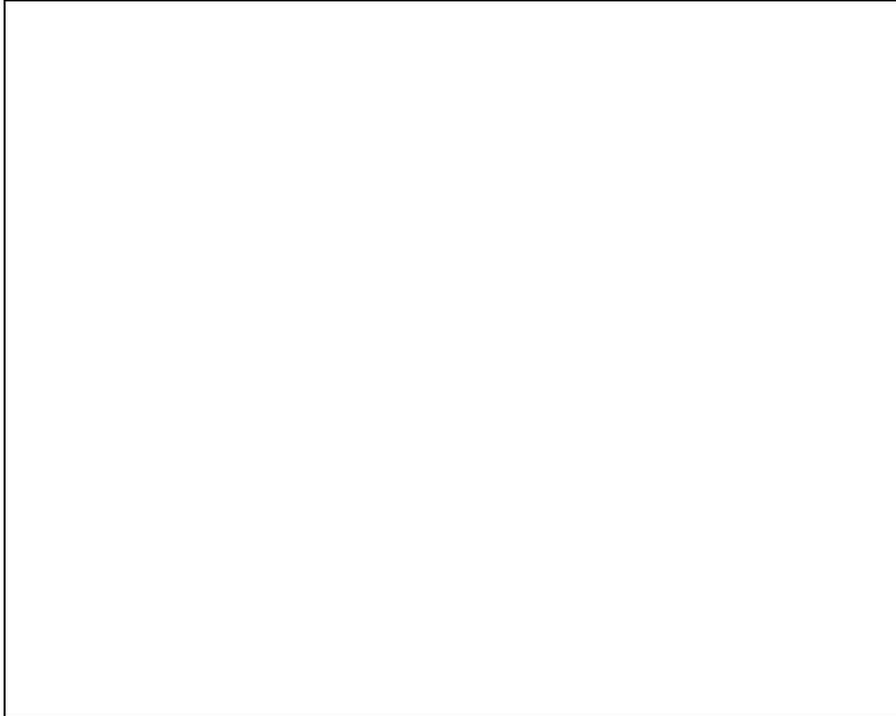
### **Cosmetology – Nail Technician**

### **Cosmetology – Esthetician**

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

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# Registration and Costs



## Registration Procedures

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

## Adding and Dropping a Class

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

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

## Costs

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

## Refunds

- Credit Class Refunds
- Continuing Education Class Refunds

## Textbook Costs

## Registration Procedures

### Registration

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

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

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

### Counseling

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

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

### Assessment

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

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

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

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

### Placement Based on Assessment

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

### Scheduling Classes

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

### Student Course Load

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

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

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

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

### **Early Registration**

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

### **On-campus Registration**

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

### **Late Registration**

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

### **Registration for Late-start Classes**

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

## **Adding and Dropping a Class**

### **Adding a Credit Class**

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

### **Dropping a Credit Class**

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

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

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

**Note:** If your records are on "hold," you will not be allowed to drop a class. See the "Records on Hold" policy, page 37.

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

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

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

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

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

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

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

### **Dropping a Course Required by Assessment**

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

### **Adding an Area Vocational Course**

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

### **Adding a Continuing Education Class**

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

### **Dropping a Continuing Education Class**

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

## **Costs**

### **Credit Class Cost per Credit Hour**

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

#### **Kansas Residents:**

**Total per Credit Hour .....\$46.00**

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

**Total per Credit Hour .....\$122.00**

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

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

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

### **Returned Check Policy**

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

If the check for your tuition and fees is returned, you will be dropped from all classes in addition to being assessed the \$25 returned check fee. Your records will be placed on hold until you pay the returned check fee and

all outstanding JCCC financial obligations. Once you have a returned check, the college will accept **only** cash, money order, MasterCard, Visa, Discover or American Express payments for two years from the time all financial obligations were satisfied.

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

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

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

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

### **Area Vocational School Registration and Fees**

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

### **Continuing Education Class Fees**

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

## **Refunds**

### **Credit Class Refunds**

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

- 100 percent of cost per credit hour if the drop form is processed by the Admissions and Records Office before – but not on – the first day of the semester or session.
- 80 percent of cost per credit hour if the drop form is processed by the Admissions Office
  - within two weeks after the beginning of 16-week classes for fall and spring semester;
  - four calendar days from the beginning of classes for an eight-week term;

- two calendar days from the beginning of classes for a four-week session;
- one calendar day after the beginning of classes for a two-week mini-session, a short course or a seminar.
- No refund will be authorized for withdrawals or registration changes made after the specified calendar days listed in the credit class schedule. The only exceptions are if the class is canceled by the college or it is necessary to revise the class schedule, in which case a 100 percent refund of cost per credit hour will be issued.

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

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

#### **Continuing Education Class Refunds**

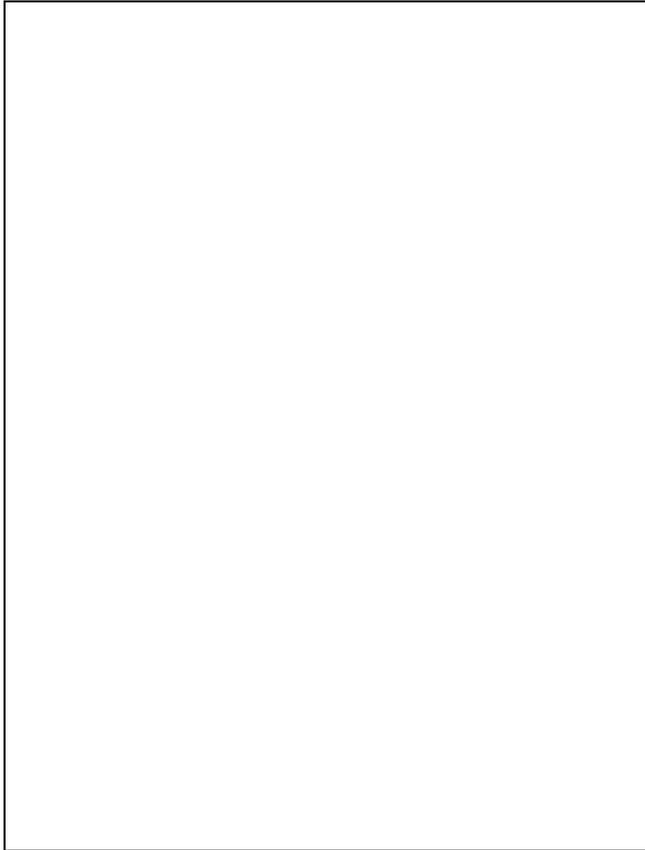
A full refund will be made if the college exercises its right to cancel a class or if the class is full when your registration is received. A request for refund will be honored if a written request is received in the JCCC Continuing Education Office three business days before the class begins. Exceptions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

## **Textbook Costs**

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

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# Student Financial Aid



## **The Purpose of Financial Aid**

### **Financial Aid Eligibility Requirements**

#### **Financial Aid Process**

To Apply for Nonneed-based Financial Aid

To Apply for Need-based Financial Aid

#### **Disbursement**

#### **Types of Financial Assistance**

Scholarships and Grants

Student Employment

Loans

Veterans Educational Benefits

Notetaker Stipends

## **Costs**

### **Refund/Repayment Policy**

Institutional Refund Policy

Repayment Policy

### **Satisfactory Academic Progress**

Financial Aid Probation and Ineligibility

Appeals

### **Changes in Enrollment Status**

## The Purpose of Financial Aid

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

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

## Financial Aid Eligibility Requirements

To be considered for financial aid you must:

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

## Financial Aid Process

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

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

### To Apply for Nonneed-based Financial Aid

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

### To Apply for Need-based Financial Aid

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

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

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

## Disbursement

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

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

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

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

## Types of Financial Assistance

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

### Scholarships and Grants

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

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

- **Federal Pell Grants** is a need-based program funded by the federal government. The award amount is

directly related to the applicant's federal application result. Pell Grant maximum amounts may vary from year to year, with the maximum being \$2,700 during the 1997-98 award year. The grant must be applied toward education-related expenses.

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

### Student Employment

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

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

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

### Loans

- **Federal Perkins Loan**, a 5-percent interest rate federal government loan, is processed through JCCC. This need-based loan ranges from \$400 to \$2,500 a year. The loan is interest-free while you are enrolled in at least six credit hours. Repayment, including interest, begins nine months after you leave school.
- **Federal Subsidized Stafford Loan** funds are processed through lenders of the student's choice. Eligibility for this federal need-based loan is determined by the JCCC Financial Aid Office. A first-year JCCC student may borrow up to \$2,625 (if eligible). A second-year JCCC student may borrow up to \$3,500 (if eligible). This loan has a variable interest not to exceed 8.25 percent; however, it is interest-free while you are enrolled in at least six credit hours. Interest begins accruing and you must begin repaying the loan six months after leaving school or being enrolled in school less than half time. The loan is subject to processing fees that are deducted from the loan proceeds.

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

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

#### Veterans Educational Benefits

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

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

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

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

#### Notetaker Stipends

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

#### Costs

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

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

#### Refund/Repayment Policy

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

#### Institutional Refund Policy

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

The number of weeks not completed by the student is divided by the total number of weeks in the term. This equals the percentage of the term not completed. This percentage is multiplied by the total costs per credit hour, which equals the amount of the scheduled refund. The scheduled refund minus any unpaid charges equals the total amount of the refund.

For federal aid recipients not attending JCCC for the first time, costs per credit hour will be refunded according to the following federal refund policy. An administrative fee may be retained before calculating the pro rata refund not to exceed \$100 or 5 percent of the total institutional charges.

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

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

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

### Repayment Policy

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

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

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

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

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

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

### Satisfactory Academic Progress

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

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

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

### 1. Grade Point Average

Students must attain a minimum cumulative G.P.A. based on the total number of credit hours completed. These minimum are:

<b>Number of successfully completed hours</b>	<b>Minimum cumulative G.P.A.</b>
1-30	1.7
31-97	2.0

### 2. Percentage of Completion

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

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

### Financial Aid Probation and Ineligibility

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

- Reinstatement his or her academic good standing according to the minimum criteria of satisfactory academic progress, or
  1. Enroll at least half time (6 credit hours during a regular academic term and 3 credit hours during a summer term), and
  2. Complete all courses with a grade of “D” or better, and
  3. Receive a 2.0 grade point average for the probation term.

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

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

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

### Appeals

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

### Changes in Enrollment Status

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

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## Student Support Services



**Alumni Association**

**Athletics, Intercollegiate and Intramural**

**Bookstore**

**Brown & Gold Club**

**Career Center**

**Cheerleading**

**Children's Center**

**Clubs and Organizations**

**Cosmetology Salon**

**Counseling Center**

**Dental Hygiene Clinic**

**Dining Services**

**Forensics**

**Instructional Support Services**

Academic Achievement Center

English as a Second Language

Computer Learning Lab for Basic Skills

Learning Strategies Program

Math Resource Center

PLATO Literacy System

Project Finish

Writing Center

**Library**

**Massage Therapy Clinic**

**Music Organizations**

**Phi Theta Kappa**

**Student Access Center**

Disability Support Services

Deaf/Hard-of-Hearing Student Services

Notice of Nondiscrimination

**Student Activities Program**

**Student Senate**

**Student Housing**

**Student Publications**

**Testing/Assessment Services**

**Theater**

**Volunteer Program**

## Alumni Association

The JCCC Alumni Association is an organization for graduates and people who have taken at least one year of credit courses at JCCC. Graduates and others interested in joining the Alumni Association should call the JCCC Foundation Office. You will be able to meet with fellow alumni, participate in college programs and plan the future of the organization.

## Athletics, Intercollegiate and Intramural

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

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

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

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

## Bookstore

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

## Brown & Gold Club

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

Membership requirements:

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

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

## Career Center

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

### 1. CHOICES

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

### 2. Counseling and job search preparation

Trained counselors will help you:

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

### 3. Employment services

Need help finding a job? We offer:

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

#### 4. Internships and service learning

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

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

### Cheerleading

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

### Children's Center

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

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

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

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

### Clubs and Organizations

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

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

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

### Cosmetology Salon

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

### Counseling Center

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

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

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

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

- **Academic advising.** At JCCC, academic advising plays a significant role in the total process of educating students. Advising at JCCC is conducted in the Counseling Center. The process is ongoing, multifaceted and the responsibility of both the student and the counselor. Advising at JCCC is developmental in nature, helping clarify life and career goals from which educational plans can be developed to realize those goals.

- **Pre-advising.** If you are not currently enrolled at JCCC, you must attend a pre-advising session. A pre-advising session provides important information that you will need for consulting with a counselor. Schedules for pre-advising sessions are listed in the credit class schedule each semester. They are also available in 155 GEB or by calling the Counseling Center.
- **Student Success Lab.** An extensive interactive resource center, which includes information from the Career Center and Counseling Center, is available for student use. Educational and career information allows for student research. Access to the college information network and the Internet is also available.

## Dental Hygiene Clinic

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

## Dining Services

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

## Forensics

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

## Instructional Support Services

### Academic Achievement Center

The Academic Achievement Center, a Kansas Excellence in Education program, helps you develop basic skills through individualized instruction, small classes and a tutor exchange. Instructors help plan a pro-

gram of study and offer guidance as needed. In addition, the center offers a 3-credit-hour medical terminology course. You may work on any of the following:

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

### English as a Second Language

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

### Computer Learning Lab for Basic Skills

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

### Learning Strategies Program

This program offers you an opportunity to acquire the thinking and learning skills you need to be a successful learner. A partial list of these skills includes reading college textbooks, taking useful class notes, organizing information, preparing for and taking tests and managing time for study. The program benefits a variety of students, including successful students who want to improve their learning efficiency as well as those who feel overwhelmed by the demands of college coursework. The information learned in Learning Strategies courses is applied to the other courses you are taking and will improve your performance in those courses. For more information, contact the Learning Strategies instructors.

## Math Resource Center

The Math Resource Center offers individualized instruction and personal assistance to help you develop math skills. The center serves students on a drop-in basis. The MRC offers a variety of resources, including free peer tutoring, group study sessions, computer programs and videotapes. You may do homework and study for exams in the MRC, using the resources or requesting assistance as needed. If you are enrolled in alternative delivery math courses such as self-paced *Introduction to Algebra*, self-paced *Intermediate Algebra* or self-paced *Trigonometry*, you may use the MRC computers and equipment as an integral part of your learning.

## PLATO Learning System

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

## Project Finish

You can improve your skills in basic reading, writing and math, or prepare to pass the GED high school equivalency test through Project Finish. A program will be developed to meet your individual needs. Instruction is free.

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

## Writing Center

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

## Library

The JCCC library maintains a collection of books, periodicals, films, slides, tapes, microfilm and other resources available to students and Johnson County

residents. A highly trained staff of librarians and library aides is available to help you find and use the resources.

Currently, the library houses 90,000 books, 600 current periodicals, 400,000 documents on microform and hundreds of slides, videotapes and audio recordings. In addition to these traditional library materials, the library offers numerous basic and advanced reference products available on networked computer workstations. These include an on-line catalog, encyclopedias and general reference works, indexes to general periodical literature, indexes to professional literature and the Internet.

Books are arranged on shelves according to the Library of Congress classification. A printed outline of the LC classification is available at the circulation desk.

Reference books, most audiovisual material, and all magazines and newspapers must be used in the library. A coin-operated photocopier is available if copies are needed.

Books are due 21 days from the day they are checked out. No fines will be assessed for overdue books, but if you fail to return library materials, you will have your records placed on hold. If a book is lost, the cost of the book plus a \$5 service charge will be assessed.

Occasionally, instructors may place materials on reserve and specify a loan period. You will be charged 25 cents an hour for each reserve item kept past the loan period or \$5, whichever is less. Registration and transcript privileges will be restricted until all library obligations are met.

## Massage Therapy Clinic

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

## Music Organizations

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

## Phi Theta Kappa

Phi Theta Kappa is a national honor society that recognizes and encourages scholarship among community college students. The JCCC chapter, Alpha Iota Gamma, provides opportunities for students to develop

leadership abilities, be of service to their community and exchange ideas in a stimulating academic environment.

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

## Student Access Center

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

### Disability Support Services

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

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

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

### Notice of Nondiscrimination

Johnson County Community College is committed to a policy of nondiscrimination involving equal access to education and employment opportunity to all regardless of sex, race, age, religion, color, national origin, handicap or veteran status. The administration further extends its

commitment to fulfilling and implementing the federal, state and local laws and regulations as specified in Title IX and Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. For assistance in these areas, contact the office of the dean of Student Services, Johnson County Community College, 12345 College Blvd., Overland Park, KS 66210-1299, (913) 469-8500, or the Director, Office of Civil Rights, HHS, Washington, D.C. 20201.

## Student Activities Program

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

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

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

## Student Senate

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

## Student Housing

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

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

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## Student Publications

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

## Testing/Assessment Services

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

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

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

## Theater

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

## Volunteer Program

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

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

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# Academic and Student Policies and Procedures

## Academic Progress

## Academic Records Retention

## Academic Renewal

## Access to Student Information

## Advanced Standing Credit

Portfolio or Certificate Evaluation

Military Credit

National Standardized Tests

Proficiency Examinations

## Attendance

## Auditing a Class

## Classes by Arrangement

Independent Study

Self-paced Study

## Credit Transferred from Other Colleges

## Final Examinations

## Grading System

## Pass/Fail Grading System

## Grade Changes

## Grade Point Average

## Honors

Honor Roll

Graduation with Honors

Recognition of Achievement Award

Academic Standards for the Honors Program

## Records on Hold

## Transcripts

## Verification of Enrollment

## Alcohol and Drugs

Standards of Conduct

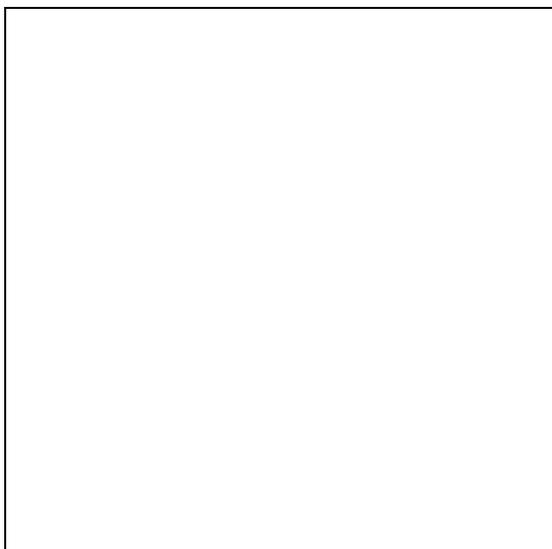
Legal Sanctions

Health Risks

Counseling, Treatment or Rehabilitation Programs

Sanctions

## Fireworks, Firearms, Ammunition



## Lost and Found

## No-smoking Policy

## Parking

Handicapped Parking

Bicycles

Emergency Parking or Loading

## Security

Reporting Accidents, Incidents or Crimes

JCCC Campus Safety and Security Annual Report

## Unlawful Discrimination or Harassment Complaint Procedure

## Student Code of Conduct

Appeals of Disciplinary Action

## Student Appeals Other than Appeals of Disciplinary Action

Academic

Nonacademic

## Student Career Development Policy

## Student Health

## Student Right to Know

## Academic Progress

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

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

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

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

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

You will be notified in writing of your probationary status no later than four weeks after the beginning of the next semester. You will be required to see a JCCC counselor.

Your records will be placed on hold and will not be released until grades have been posted for the current semester. If you are on academic probation, you will be allowed to enroll during continuing student enrollment only after meeting with a counselor by a date to be specified in the academic probation letter or when your semester grades are posted and one of the academic progress conditions are met. To participate in continuing student enrollment, you must achieve a 2.0 G.P.A. for the current term or raise your G.P.A. to the level required for good standing or you will be dropped from the classes in which you have enrolled and will be placed on suspension as described below.

If you do not raise your G.P.A. to the level required for good standing or achieve a 2.0 G.P.A. in the probationary

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

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

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

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

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

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

## Academic Records Retention

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

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

More information is available from the Admissions Office.

## Academic Renewal

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

1. All credits taken five or more years ago must be dropped from all colleges or universities based on the semester applying for academic renewal.
2. At least 12 semester credits must have been completed at JCCC within the last two years. The G.P.A. for all coursework taken during this time must be at least 2.0.
3. 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 dropped as a result of academic renewal cannot be used to meet course or program prerequisites or graduation requirements.
7. You must meet with a counselor before applying for academic renewal to ensure that interpretation of this policy is correct.
8. This policy applies at JCCC only. If you transfer from JCCC to another institution, you will have to follow the receiving institution's policy.

## Access to Student Information

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

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

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

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

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

The college may provide the following information:

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

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

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

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

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

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

## Advanced Standing Credit

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

Credit will not be awarded if:

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

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

### Portfolio or Certificate Evaluation

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

### Military Credit

You may be granted credit for educational experience completed while in the armed services if you have completed basic training. Applicants submitting

DD form 214, Armed Forces of the United States Report of Transfer of Educational Achievement through the United States Armed Forces Institute, may receive credit and advanced placement as recommended by the American Council on Education if the courses are equivalent to the courses offered by the college. A fee will be charged for the military credit evaluation.

### National Standardized Tests

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

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

### Proficiency Examinations

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

## Attendance

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

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

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

If you are under obligation to participate in jury duty, a generally recognized religious observance or activities where you are required to represent the college, you must give written notice to the instructor at least one week in

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

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

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

## **Auditing a Class**

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

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

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

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

## **Classes by Arrangement**

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

### **Independent Study**

By enrolling in independent study, you may explore in depth an area not covered in the regular curriculum.

You must show above-average performance in the area to be eligible. For details, contact the division administrator for the area in which you are interested.

### **Self-paced Study**

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

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

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

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

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

For additional information, contact the appropriate division office.

## **Credit Transferred from Other Colleges**

Transfer credits will be accepted from colleges and universities starting from the year that they are accredited or hold candidacy status with the North Central Association of Colleges and Schools, Middle States Association of Colleges and Schools, New England Association of Colleges and Schools, Northwest Association of Colleges and Schools,

Southern Association of Colleges and Schools, Western Association of Colleges and Schools or other institutions approved by JCCC. All transfer credit will be converted to the semester-hour system. All credits earned with an "F" grade or higher will be transferred and calculated in your cumulative G.P.A. Quality points and grade points will be transferred and averaged into your cumulative grade point earned at JCCC.

## Final Examinations

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

## Grading System

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

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

You may withdraw from a class no later than 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. This deadline can be no later than the end of the next full semester following the grading period for which the "I" was given. An "I" will be changed to an "F" if this deadline is not met. The instructor is responsible for initiating a grade change when you successfully

complete the work outlined in the contract. During the semester you are completing the "I" contract, you cannot re-enroll in the class and are not considered currently enrolled on the basis of the "I" contract. You may not withdraw from a course in which an "I" has been assigned.

- R – repeated class

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

- X – audit status (no credit awarded)

## Pass/Fail Grading System

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

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

## Grade Changes

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

## Grade Point Average

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

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

## Honors

### Honor Roll

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

### Graduation with Honors

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

### Recognition of Achievement Award

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

### Academic Standards for the Honors Program

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

## Records on Hold

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

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

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

## Transcripts

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

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

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

## Verification of Enrollment

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

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

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

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

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

## Alcohol and Drugs

The Drug-free Schools and Communities Act Amendments of 1989 require all schools and institutions of higher education to adopt and implement a program to prevent the illicit use of drugs and the abuse of alcohol

by students and employees on college property or as part of any college activities.

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

### **Standards of Conduct**

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

### **Legal Sanctions**

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

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

### **Health Risks**

Abuse of alcohol and use of drugs are harmful to one's

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

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

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

- Amphetamines – Physical dependency, heart problems, infections, malnutrition and death may result from continued high doses of amphetamines.
- Narcotics – Chronic use of narcotics can cause lung damage, convulsions, respiratory paralysis and death.
- Depressants – These drugs, such as tranquilizers and alcohol, can produce slowed reactions, slowed heart rate, damage to liver and heart, respiratory arrest, convulsions and accidental overdoses.
- Hallucinogens – These may cause psychosis, convulsions, coma and psychological dependency.

### **Counseling, Treatment or Rehabilitation Programs**

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

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

### **Sanctions**

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

The term "controlled substance" as used in this policy

means substances included in schedules I through V as defined by section 812 of title 21 of the United States Code and as further defined by the Code of Federal Regulations, 21 C.F.R. 1300.11 through 1300.15. The term does not include the use of a controlled substance pursuant to a valid prescription or other uses authorized by law.

The term "alcohol" as used in this policy means any product of distillation or a fermented liquid that is intended for human consumption and that is more than 3.2 percent by weight as defined in chapter 41 of the Kansas statutes.

## **Fireworks, Firearms, Ammunition**

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

## **Lost and Found**

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

## **No-smoking Policy**

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

## **Parking**

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

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

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

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

Offenses for which you will be ticketed and fined will include the following:

1. Parking in handicapped parking without a permit
2. Failure to display a parking sticker, if required
3. Parking in restricted parking
4. Parking in posted "No Parking" areas
5. Improper parking
6. Parking on the grass
7. Parking in a loading or service zone
8. Restricting traffic flow
9. Parking in pedestrian areas
10. Parking next to the curb
11. Overtime parking (in a 30-minute zone)

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

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

### **Handicapped Parking**

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

### **Bicycles**

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

## **Security**

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

Normal hours of operation are 5:30 a.m. to 11 p.m.

### Reporting Accidents, Incidents or Crimes

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

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

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

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

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

### Unlawful Discrimination or Harassment Complaint Procedure

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

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

<b>Johnson County Community College Campus Safety and Security Annual Report</b>						
	<b>1995</b>		<b>1996</b>		<b>1997</b>	
	Actual Offenses	Arrests	Actual Offenses	Arrests	Actual Offenses	Arrests
<b>Group A Offenses</b>						
Arson	1	0	0	0	0	0
Assault	4	0	4	0	1	0
Burglary	17	9	14	0	20	0
Counterfeiting/Forgery	0	0	0	0	2	0
Destruction/Damage/ Vandalism of Property	38	2	34	1	27	0
Drug Offenses	0	0	0	0	1	0
Gambling Offenses	0	0	0	0	0	0
Homicides	0	0	0	0	0	0
Larceny/Theft	90	7	90	0	79	0
Motor Vehicle Theft	1	0	1	0	4	0
Robbery	1	0	0	0	0	0
Sex Offenses	0	0	0	0	0	0
Weapon Law Offenses	0	0	0	0	0	0
<b>TOTAL GROUP A OFFENSES</b>	<b>152</b>	<b>18</b>	<b>143</b>	<b>1</b>	<b>134</b>	<b>0</b>
<b>Group B Offenses</b>						
Bad Checks	0	0	0	0	0	0
Curfew/Loitering/Vagrancy	0	0	0	0	0	0
Disorderly Conduct	6	0	2	0	4	0
Driving Under the Influence	0	0	0	0	0	0
Drunkenness	0	0	0	0	0	0
Family Offenses, Nonviolent	0	0	0	0	0	0
Liquor Law Violations	0	0	0	0	0	0
Peeping Tom	0	0	0	0	0	0
Runaway	0	0	0	0	0	0
Trespass of Real Property	0	0	0	0	0	0
All Other Offenses	5	0	5	0	0	0
<b>TOTAL GROUP B OFFENSES</b>	<b>11</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>4</b>	<b>0</b>
Hate Crimes	0	0	0	0	0	0

to occur. Students are assured that retaliation due to such complaints is also strictly prohibited and that if retaliation occurs, then discipline up to and including expulsion or termination will also occur.

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

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

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

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

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

may lead to discipline up to and including expulsion or termination.

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

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

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

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

The time lines set forth in this policy are implemented in

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

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

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

## Student Code of Conduct

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

1. **Alcoholic beverages** – No student shall consume or possess any alcoholic beverages, beer and/or wine on any college-owned or college-operated facility or at any college-sponsored event either on or off campus.
2. **Assembly** – No person or persons shall assemble in a manner that obstructs the free movement of people about the campus or the free and normal use of college buildings and facilities, or prevents or disrupts the normal operation of the college.

3. **Assault and Battery** – No student shall threaten or commit a physical or sexual attack on faculty, staff or another student. No student shall force or threaten to force another student, faculty or staff member to have sexual contact against that person's will. Any student charged with sexual assault on or off campus may be prosecuted under criminal statutes and disciplined under the campus code of student conduct. Even if the criminal justice authorities choose not to prosecute, the college reserves the right to pursue disciplinary action.
4. **Cheating** – No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials. This includes students who aid and abet, as well as those who attempt such behavior.
5. **Contracts** – No student shall enter into a contract with an outside agency using the name of the college. Contracts entered into in violation of this rule shall be the personal responsibility of the student.
6. **Counterfeiting and Altering** – No student shall reproduce, copy or tamper with or alter in any way, manner, shape or form any writing, record, document of identification or any form used or maintained by the college. This shall include computerized data.
7. **Disruptive Behavior** – No student shall behave in a manner that is unacceptable in a learning environment or that endangers or infringes on the rights and/or safety of himself or herself or other students or staff. If misconduct in the classroom warrants an immediate suspension from the class for the remainder of the class period, the instructor may do so without a prior hearing. If the student does not voluntarily leave the classroom, campus security officers may remove the student from the classroom upon oral request by the instructor. The instructor shall provide written notice of the suspension to the appropriate program director/division administrator and the dean of Student Services within one work day.

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

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

action if such action is warranted; or  
c. take no action.

8. **Dumping and Littering** – No student shall deposit, dump, litter or otherwise dispose of any refuse on college property, except in duly designated refuse depositories.
9. **Gambling** – No student shall engage in any form of gambling, as defined in K.S.A. 21-4302 as amended from time to time, on college-owned or college-operated property or at any college-sponsored event either on or off campus.
10. **Drugs** – No student shall unlawfully manufacture, distribute, dispense, possess or use a controlled substance, as defined in college policies as amended from time to time and/or as defined in the Controlled Substances Act (K.S.A. 65-4101 as amended from time to time) on any college-owned or college-operated property or at any college-sponsored event either on or off campus.

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

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

11. **Smoking** – No student shall be allowed to smoke in any enclosed indoor area of the college.
12. **Unlawful Discrimination or Harassment** – No student shall engage in harassment of another student, instructor or staff member of the college. This shall include harassment based on gender, race, age, disability, national origin or other basis impermissible under the law. Sexual harassment is defined as conduct involving unwelcome sexual advances, requests for sexual favors or other verbal or physical conduct of a sexual or gender-based nature.
  - A. Harassment based on race, ancestry, age, disability or national origin includes verbal, physical or other conduct of a nature specifically offensive to a person because of race, age, disability, ancestry or national origin.
  - B. Harassment based on gender, race, age, ancestry, disability, national origin or other bases protected by law is strictly prohibited when:

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

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

13. **Theft/Vandalism** – No person nor persons shall engage in the theft of or damage to property belonging to another person or to the college. This includes tampering with coin-operated machines.
14. **Use of College Facilities** – No student shall be in campus buildings except during days established in the academic calendar and on campus during normal college hours of operation. Students wishing to use college facilities at times outside of normal hours of operation must secure permission from the director of student life. For purpose of this policy, normal hours of operation will be 5:30 a.m. through 11 p.m.
15. **Weapons** – No student, except authorized law enforcement officers or security personnel, shall possess, use or threaten to use:
  - a. any weapon described and defined in K.S.A. 21-4201 as amended from time to time, and any other weapons, including but not limited to pellet guns;
  - b. any explosives, including but not limited to dynamite, nitroglycerin or any other combustible, blasting caps, fireworks, firebombs, grenades, plastic charges or devices intended for detonation purposes, and/or any other similar devices or compounds used for detonation or blasting;on any college-owned or college-operated property or at any college-sponsored event either on or off campus.

Students who violate this policy are subject to suspension from the college with loss of all credit for the current semester and no refund of tuition and fees for the semester, as well as permanent prohibition from future enrollment or participation in college or

college-sponsored activities. The student will not be allowed to enroll at the college at any future time.

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

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

### **Appeals of Disciplinary Action**

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

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

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

None of the members of the campus appeals board shall have been involved in the matter that forms the basis of the disciplinary action. If a member of the

appeals board is or has been involved in the matter in question, he or she shall recuse himself or herself from the proceedings and the academic vice president will appoint a member to replace such person.

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

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

3. Within seven business days of the date that the notice of appeal is received, the chair of the campus appeals board shall notify you in writing of the time, date and place of the appeal meeting.
4. The appeal hearing shall be held not less than seven business days, nor more than 20 business days, after the date that the chair sends the notice of the hearing.
5. You and the administration shall have the following rights during the hearing:
  - a. each party shall have the right to have legal counsel present at each party's own expense;
  - b. each party shall have the right to hear or read a full report of the testimony of the other party's witnesses;
  - c. each party shall have the right to present witnesses in person or to present their testimony by sworn affidavit;
  - d. you and the administration shall each have the right to testify and give reasons supporting your respective positions;
  - e. the hearing shall be conducted in an orderly manner;
  - f. the appeals board shall render a fair and impartial decision based on substantial evidence presented at the hearing;
  - g. the hearing shall be tape recorded.

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

6. After the hearing, the appeals board shall prepare a written decision affirming, modifying or reversing the dean's decision and summarizing the evidence supporting its decision. The appeals board's decision shall be

mailed to you and the dean of Student Services no later than 10 business days after the close of the hearing.

7. If you are dissatisfied with the decision of the appeals board, that decision may be appealed to the college president by delivering a written notice of appeal to the president's office within seven business days of the date the appeals board's decision is mailed to you. The written notice of appeal to the president shall state the reasons that you believe that the board's decision should be modified or reversed. If you do not deliver a written notice of appeal to the president's office within the time limit, you will be deemed to have waived the right to appeal and the decision of the appeals board will be deemed final.
8. If you file the notice of appeal with the president within the time limit, the president shall review the matter by reviewing the tape-recorded record of the appeal board's hearing and any written materials submitted as part of the appeal board's hearing. In his sole discretion, the president may request that the parties submit additional evidence and, if additional evidence is requested, it shall be presented in a manner granting substantially the same procedural rights to both parties as were afforded during the appeal to the appeals board. Neither party shall have the right to request that the president hear additional evidence. The president shall issue a written decision affirming, modifying or reversing the decision of the appeals board. The president's decision shall be final.
9. Unless appealed, any disciplinary action imposed by the dean of Student Services shall become effective as of the date that the time to file an appeal with the appeals board has expired. However, the college reserves the right to exclude from campus any person who it has reason to believe poses a threat to the safety of any other person on campus or who has disrupted college activities or operations. If you appeal to the campus appeals board, the effective date of any disciplinary action will be the date after the appeals board issues its decision or such other date as may be designated by the appeals board. An appeal to the president will not alter the effective date of any disciplinary action imposed by the appeals board.

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

### **Academic**

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

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

1. You are encouraged to discuss any academic concern with the faculty member directly as it occurs. Your counselor may be consulted and be included in these discussions.
2. Where resolution is impossible or unsatisfactory to either party, the issue should be appealed in writing to the program director or his or her designee, preferably within the same academic semester or term, but no later than 20 business days after the end of the semester or term. For the purpose of this policy, a "business day" shall be a weekday during which regular classes are held at the college. The program director will respond to you in writing within five business days after the meeting, describing resolution to the appeal.
3. Should you consider the response of the program director an unsatisfactory resolution, you may appeal to the assistant dean responsible for the area. To appeal, you must file with the appropriate assistant dean, within 10 business days of receipt of the program director's response, a written statement with supporting information on the problem. The assistant dean will send you a written response within five working days.
4. Should you consider the response of the assistant dean an unsatisfactory resolution, you may appeal to the dean of Instruction. To appeal, you must file with the dean of Instruction, within 10 business days of the receipt of the assistant dean's response, a written statement with the supporting information on the problem. Similar written statements may be provided by the faculty member. The dean of Instruction's decision is final. The dean of Instruction will send you a written response within five business days.

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

## Nonacademic

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

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

1. You will attempt to rectify the grievance with the supervisor of the area in which the alleged violation occurred within 10 business days. Every effort will be made to resolve the grievance at the lowest possible level.
2. Where resolution is impossible or unsatisfactory to either party, the issue should be appealed in writing to the appropriate supervisor. The supervisor must inform you in writing of any decision made and the reason for that decision within five business days. If you feel the grievance has not been resolved, you may submit a written grievance to the dean of Student Services within 10 business days from the time the complaint was filed at the previous level.
3. You will submit a written grievance to the dean of Student Services and request a conference. The dean must, within five college working days, inform you in writing of any decision made and the reasons for making that decision. The decision of the dean of Student Services is final. The dean will notify the affirmative action/Title IX officer of the college in writing of any grievance involving alleged illegal discrimination, including any claim that you have been subjected to illegal discrimination on the basis of race, sex, national origin, age, religion or disability. Claims of illegal discrimination will be investigated by the designated officer who will make a report to the president.

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

## Student Career Development Policy

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

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

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

## Student Health

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

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

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

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

## Student Right to Know

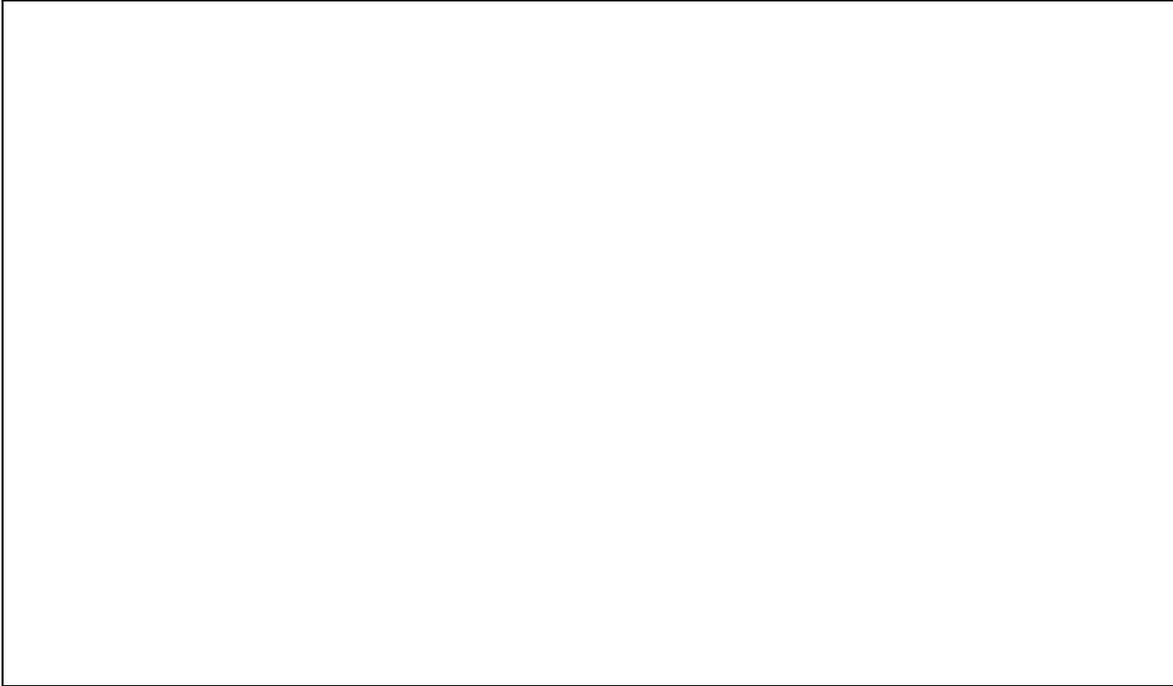
In 1995-1996, the completion or graduation rate for students who entered Johnson County Community College in fall 1993 as first-time, full-time, degree-seeking students was 7.0 percent. Thirteen and three-tenths percent of these students were still attending JCCC in fall 1996.

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

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

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## Continuing Education and Community Services



### **Continuing Education**

#### **Adult Basic Education/ General Educational Development**

ABE/GED Program  
Intensive English Program

#### **Business and Industry Institute**

#### **Center for Professional Education**

#### **Center for Literary Culture**

#### **Citizens Forums**

### **CLEAR Program**

#### **Community Services Courses**

#### **Cultural Education**

Vol-Stars, JCCC's Cultural Volunteers

#### **Speakers Bureau**

#### **Special Events**

#### **Youth Program**

## Continuing Education

### Continuing Education Courses/Special Events

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

## Adult Basic Education/ General Educational Development

### ABE/GED Program

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

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

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

### Intensive English Program

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

## Business and Industry Institute

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

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

- **On-campus Training.** Continuing education courses, seminars, workshops and programs in technology and business are offered at JCCC. Courses and programs can be designed to meet the specifications of your individual business.
- **Business and Office Skills.** Skill-oriented seminars and workshops are available both on campus and on site at company locations.
- **Economic Development.** The institute is active in helping new and expanding industries obtain state funding to pay for training and job skills development.
- **Management and Professional Development.** Professional, skill-oriented management and supervisory seminars and workshops are offered both on campus and on site at company locations.
- **Computer Learning Program.** Employees are trained in business applications, using much of today's best-selling software. The clearly written manuals and concentrated hands-on experience significantly reduce the time required for you to become productive. The training labs are continuously upgraded with the latest equipment and the newest versions of software.
- **Academy for Information Technology.** High-end computer users can now study at the academy for continuing education or college credits.
- **Small Business Development Center.** The Small Business Development Center offers a wide range of small business services, including training programs, counseling, applied research and a library for small business owners and potential owners in Johnson, Wyandotte and Miami counties. There is no charge for the counseling service, and results are strictly confidential.
- **Workplace Skills Enhancement.** Customized, job-specific basic skills in written and spoken language, math and thinking skills can be developed to improve performance on the job. After a job analysis and assessment process, an on-site training program is offered to meet a specific organization's employee needs.
- **Supervisory Skills Assessment Center.** Supervisors are assessed against 10 dimensions. A plan is then created for focused development.
- **Certification Programs.**
  - Supervisory Skills
  - Team Leader Facilitator

## Center for Professional Education

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

- **On-campus Training.** Continuing education courses, seminars and workshops, most of which are approved by state licensing boards in Kansas and Missouri for continuing education credit.
- **On-site Training.** Courses and programs that are custom-designed to meet the special needs of the institution, agency or company. These courses are offered at your workplace and are scheduled at times convenient to you.
- **Open Computer Lab.** Computerized independent study modules approved for RN, LPN and LMHT relicensure credit in Kansas are offered in JCCC's open computer lab. Also offered are computerized studies for real estate relicensure credit.
- **Cosmetology.** This program provides theory and skill development in hair care, nail technology, skin care and makeup application. Three options are available in the cosmetology program: nail technologist, cosmetologist and esthetician.
- **Cosponsorships.** The center works cooperatively with a variety of associations, institutions and agencies to provide high-quality continuing education programs at JCCC and elsewhere in the metropolitan area.
- **Videoconferences.** High-quality videoconferences are offered for a wide range of professionals, including offerings of the American Law Institute, American and Kansas Bar Associations, Practicing Law Institute, CPCU Society and many others.
- **Consortium for Health Education and Consortium for Law Enforcement Education.** Reduced-cost continuing education opportunities for employees of member agencies, organizations and institutions.
- **Education.** Seminars and workshops for teachers at all levels, including early childhood, primary, secondary and postsecondary. The Learning Technologies Institute offers workshops that train educators to integrate computing and information technologies in support of teaching and learning.
- **Health and Human Services.** Approved programs for registered nurses, licensed practical nurses, social workers, counselors, psychologists, mental health technicians, dietitians, dental hygienists, dentists, adult care home administrators, nursing home

administrators, physical therapists, occupational therapists, respiratory care practitioners and other health care professionals. Self-study modules are also available.

- **The Insurance Institute.** Semester-length courses leading to professional designations in the insurance industry, including chartered property and casualty underwriter, associate in claims, chartered life underwriters, associate in risk management, associate in underwriting and certified professional insurance woman/man. Seminars and workshops are offered to meet the Kansas and Missouri continuing education requirements of licensed property/casualty, life/health and title insurance agents.
- **Law.** Seminars, workshops and videoconferences for attorneys and paralegals.
- **Mediation.** Training and professional development courses for mediation certification in the state of Kansas are offered every semester. Upon completion of JCCC's training and practicum experience, a participant is eligible to apply for certification with the Kansas Supreme Court.
- **The Police Academy.** The regional police academy offers 500 hours of instruction to full-time law enforcement officers in order to meet the Kansas state mandate for basic police certification. The academy is offered in cooperation with area law enforcement agencies and serves more than 16 police jurisdictions in Kansas.
- **Public Safety Training.** Training and professional development courses for public safety professionals, including law enforcement officers, emergency medical technicians, mobile intensive care technicians and firefighters.
- **The Real Estate Institute.** Prelicense instruction to prepare you to sit for the Kansas real estate salesperson's license examination. Approved continuing education for relicensure of Kansas and Missouri real estate agents and brokers. Courses leading to professional designations and state relicensure/certification in real estate appraisal.
- **Technical Training.** Hands-on technical training for code enforcement officers, plumbers, electricians, pest control and water quality inspectors and HVAC technicians.
- **Therapeutic Massage.** Classroom and clinical instruction in therapeutic massage, which satisfies the education and training requirements for licensure established by the city of Overland Park. The 500-hour curriculum includes classes in massage theory and technique, human sciences, professional business, ethics and movement.

## Center for Literary Culture

The Center for Literary Culture is a national, award-winning program for writers and those who love to read. The center sponsors an annual writers conference and various creative writing workshops.

## Citizens Forums

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

## CLEAR Program

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

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

## Community Services Courses

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

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

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

Exercise  
Exercise  
Foreign Language  
Health and Lifestyles

Tours and Travel  
Youth Program  
Youth Sports Clinics

Also offered are:

- **Flexible Training Lab.** Computerized instruction in basic skills, including reading, writing, computational skills and preparation for the GED, is available in our new all-computerized flexible training lab.
- **Career/Life Planning.** Career/life planning programs and services can be offered on site to help individuals assess their skills and interests and develop a plan to maximize their potential. One- or two-day workshops are available.

## Cultural Education

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

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

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

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

- The Kansas City Symphony, including the annual *SummerFare* and *FamilyFare* concerts.
- American Youth Ballet holiday performances of *Sleeping Beauty* and *Cinderella*
- Overland Park Arts Commission presenting the Kansas City Symphony featuring Dudley Moore, Doc Severinsen and Manhattan Transfer
- Barbershop quartet, Sweet Adelines and Shriners regional competitions
- Overland Park Regional Medical Center presentations
- The U.S. Air Force Airlift Command Band

- Kansas City Camerata
- Kansas City Civic Orchestra concerts
- The UMKC Conservatory of Music
- Kansas City Youth Symphony
- KU Alumni Association

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

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

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

- *The Center Series*, with theater, dance, music and comedy by a variety of nationally known performers
- *The Metropolitan Performing Arts Collaborative*, with Missouri Repertory Theatre, Lyric Opera, the Kansas City Symphony and State Ballet of Missouri
- *The New Millennium Aarts Festival*, presenting cutting-edge theater, dance and performance artists

- *The World Culture Sampler Series*, featuring emerging classical artists in recital
- Partnerships with more than 50 community organizations that have produced many projects

### **Vol-Stars, JCCC's Cultural Volunteers**

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

### **Speakers Bureau**

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

### **Special Events**

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

### **Youth Program**

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

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# **Graduation, Degree and Certificate Programs**

**Graduation Requirements**

**Commencement Exercises**

**Associate 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**

**Certificate of Completion**



## Graduation Requirements

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

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

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

Thus, Johnson County Community College's philosophy of general education combines two traditional approaches, one based on distribution requirements and the other based on student achievement of outcomes. **Distribution:**

All programs of substantial length require students to complete a certain number of general education hours, depending upon the particular degree or certificate. Courses are identified by the Educational Affairs Committee as general education courses if they address in a substantial manner those outcomes expressed in the Aims of General Education in the curriculum handbook.

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

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

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

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

Written appeals for deadline extensions may be made to the director of Admissions and Records. If you apply

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

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

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

## Commencement Exercises

You will be awarded a diploma or certificate when you have successfully completed your program requirements. These awards will be issued at the end of each semester or term. Commencement will be held only once a year in May. If you completed degree or certificate requirements in previous semesters or terms, you will be invited to participate in commencement exercises. Diplomas are available approximately six weeks after the ceremony. You must pick up the diploma at the Admissions and Records Office; diplomas cannot be mailed.

## Associate Degrees

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

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

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

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

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

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

### Implementation

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

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

## Associate of Arts Degree

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

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

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

Communications .....	9 hours
Humanities .....	6 hours
(History is included in this category)	
Social Science and/or Economics.....	6 hours
Science and Mathematics .....	9 hours
(Must include one course from a lab science and one from mathematics)	
Health and/or Physical Education.....	1 hour

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

#### I. Communications – 9 hours

##### A. English Composition – 6 hours

ENGL 121	Composition I .....	3
ENGL 122	Composition II .....	3
COM 125	Oral/Written	
	Communications * .....	6

\* Satisfies both Composition I and Oral Communication requirements.

##### B. Oral Communication – 3 hours

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

#### II. Humanities – 6 hours

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

##### A. Literature/Theater

ENGL 130	Introduction to Literature.....	3
ENGL 230	Introduction to Fiction .....	3
ENGL 231	American Prose.....	3
ENGL 235	Drama as Literature.....	3
ENGL 241	British Writers.....	3
ENGL 250	World Masterpieces.....	3
ENGL 254	Masterpieces of the Cinema.....	3
ENGL 256	American Poetry .....	3
THEA 120	Introduction to Theater.....	3

##### B. Foreign Language

(Note: These courses have prerequisites that must be satisfied before enrollment.)

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

C. History		C. Political Science	
HIST 124	Community Life/Values .....3	POLS 122	Political Science.....3
HIST 125	Western Civilization I.....3	POLS 124	American National Government.3
HIST 126	Western Civilization II .....3	POLS 126	State and Local Government....3
HIST 130	European History from 1750.....3	POLS 132	Introduction to Comparative Government.....3
HIST 135	Eastern Civilization.....3	POLS 135	International Relations.....3
HIST 140	U.S. History to 1877 .....3	D. Psychology	
HIST 141	U.S. History Since 1877 .....3	PSYC 121	Applied Psychology.....3
HIST 151	World History I: The Traditional World.....3	PSYC 130	Introduction to Psychology.....3
HIST 152	World History II: The Modern World.....3	E. Sociology	
HIST 160	Modern Russian History .....3	SOC 122	Sociology .....3
HIST 162	Modern Latin America .....3	SOC 125	Social Problems.....3
D. Humanities		SOC 131	Marriage and the Family .....3
ART 180	Art History: Ancient/Renaissance.3	SOC 160	Social Power: Motivation and Action .....3
ART 182	Art History: Renaissance/Modern.3	IV. Science and/or Mathematics – 9 hours	
HUM 122	Introduction to Humanities.....3	Must include one course from a lab science and one from mathematics.	
HUM 136	The Human Experience .....3	A. Life Science	
HUM 145	World Humanities I .....3	BIOL 122/3	Principles of Biology/Lab .....3/1
HUM 146	World Humanities II.....3	BIOL 124	Oceanus: The Marine Environment.....3
HUM 164	Civilisation.....3	BIOL 125	General Botany .....5
MUS 121	Introduction to Music Listening...3	BIOL 127	General Zoology.....5
MUS 125	Introduction to Jazz Listening...3	BIOL 130/1	Environmental Science/Lab ...3/1
PHOT 140	History of Photography .....3	BIOL 140	Human Anatomy .....4
PHOT 141	Issues of Contemporary Photography .....3	BIOL 144	Human Anatomy/Physiology....5
REL 120	Exploring World Religions.....3	BIOL 150	Biology of Organisms .....5
E. Philosophy		BIOL 225	Human Physiology .....4
PHIL 121	Introduction to Philosophy.....3	BIOL 230/1	Microbiology/Lab .....3/2
PHIL 124	Logic and Critical Thinking .....3	B. Physical Science	
PHIL 143	Ethics.....3	ASTR 122	Astronomy.....4
PHIL 154	History of Ancient Philosophy ..3	CHEM 120/1	The World of Chemistry/Lab..3/1
PHIL 176	Philosophy of Religion.....3	CHEM 122	Principles of Chemistry.....5
III. Social Science/Economics – 6 hours		CHEM 124/5	General Chemistry I/Lab .....4/1
No more than one course from each of the five areas may count toward the six required hours.		CHEM 131/2	General Chemistry II/Lab.....4/1
A. Anthropology		CHEM 140	Principles of Organic Chemistry...5
ANTH 125	Cultural Anthropology .....3	CHEM 227	Introduction to Quantitative Analysis .....5
ANTH 126	Physical Anthropology.....3	GEOS 130	General Geology .....5
ANTH 130	World Cultures.....3	GEOS 132	Historical Geology .....5
ANTH 210	Peoples of the World .....3	GEOS 140/1	Physical Geography/Lab .....3/2
B. Economics		IDSP 175	Global Resources from Geologic and Economic Viewpoints .....3 (Nonlab science)
ECON 130	Basic Economics.....3	PHYS 130	General Physics I.....5
ECON 132	Survey of Economics .....3	PHYS 131	General Physics II .....5
ECON 230	Economics I .....3	PHYS 220	Engineering Physics I .....5
ECON 231	Economics II.....3	PHYS 221	Engineering Physics II.....5
IDSP 175	Global Resources from Geologic and Economic Viewpoints .....3	PSCI 120	Physical Science.....4

C. Mathematics

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

V. Health and/or Physical Education – 1 hour

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

VI. Electives (33 hours)

**Note:** The associate of arts degree is designed as a transfer curriculum. You also should refer to the transfer program sheets in the Counseling Center.

The following is an example of a first-year program plan if you are an undecided transfer student. If you are interested in a specific major or degree, you should talk with a JCCC counselor.

<b>First Semester</b>	<b>CR</b>
Composition I.....	3
Social Science Elective .....	3
Math/Natural Science Elective.....	3-5
Humanities Elective .....	3
General Elective.....	3
TOTAL CREDIT HOURS .....	<b>15-17</b>

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

## Transfer Programs

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

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

### Individual Transfer Program

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

### University Transfer Program for Undecided Students

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

Generally, a total of 124 to 128 hours are required for most four-year degrees.

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

### University Transfer Programs for Specific Majors

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

- Accounting
- Architecture
- Art
- Business Administration
- Clothing and Textiles
- Computer Science
- Construction Science
- Dietetics

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

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

General education requirements for area four-year colleges and universities also are available in the Counseling Center.

Programs are updated and approved annually by these four-year colleges and universities:

Avila College  
 Baker University  
 Central Missouri State University  
 Cleveland Chiropractic College  
 Emporia State University  
 Gallaudet University  
 Kansas City Art Institute  
 Kansas State University  
 MidAmerica Nazarene College  
 Missouri Western College  
 Ottawa University  
 Park College  
 Pittsburg State University  
 Rockhurst College  
 Southwest Missouri State University  
 St. Mary College  
 University of Kansas  
 University of Missouri-Columbia  
 University of Missouri-Kansas City  
 University of Missouri-Rolla  
 Washburn University  
 Webster University  
 Wichita State University  
 William Jewell College

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

## Transfer Information

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

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

## Career Programs

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

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

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

Accounting, A.A.S.  
Administration of Justice, A.A.  
    Corrections Option\*  
    Law Enforcement Option  
Automotive Technology, A.A.S.  
Aviation Maintenance Technology, A.A.S.\*  
    Airframe Option  
    Powerplant Option  
Business Administration, A.A.S.  
Business Entrepreneurship, A.A.S.  
Chef Apprenticeship, A.A.S.  
Civil Engineering Technology, A.S.  
Communication Design, A.A.S.  
Computer Information Systems, A.A.S.  
Cosmetology  
Dental Hygiene, A.S.  
Drafting Technology, A.S.  
    Civil Option  
    Machine Option  
Early Childhood Education, A.S.  
Electrical Technology, A.A.S.  
Electronics Technology, A.S.  
    Communications Option  
    General Electronics Option  
    Industrial Controls Option  
    Medical Electronics Option  
    Microcomputer Maintenance Option  
Emergency Medical Science, A.S., A.A.S.  
Fashion Merchandising, A.A.S.  
Fire Services Administration, A.A.  
Grounds and Turf Management, A.A.S.\*  
Health Information Technology, A.A.S.\*  
Heating, Ventilation and  
    Air Conditioning Technology, A.A.S.  
Hospitality Management, A.A.S.  
    Food and Beverage Management  
    Hotel/Motel Management  
Information Technology, A.A.S.  
Interior Merchandising, A.A.S.  
Interpreter Training, A.A.S.  
Marketing and Management, A.A.S.  
Metal Fabrication Technology, A.A.S.  
Nursing, A.S.  
Occupational Therapy Assistant, A.A.S.\*  
Office Systems Technology, A.A.S.  
    Administrative Office Management Option  
    Legal Office Specialist Option  
    Medical Office Specialist Option  
Paralegal, A.A.  
Physical Therapist Assistant, A.A.S.\*  
Radiologic Technology, A.A.S.\*

Railroad Operations, A.S.  
 Conductor Option  
 Dispatcher Option  
 General Option  
 Industrial Technology  
 Mechanical Option  
 Respiratory Care, A.S.  
 Science Technology, A.S., A.A.S.  
 Chemical Specialty Option  
 Surgical Technology Vocational Certificate\*  
 Travel and Tourism Management, A.A.S.\*  
 Veterinary Technology, A.A.S.\*  
 \* Cooperative program

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

### Associate of Science Degree (available for career programs only)

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

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

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

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

\*\* Satisfies both Composition I and Oral Communication requirements.

- B. Communications Elective – 3 hours  
 (one of the following)  
 ENGL 122 Composition II .....3  
 ENGL 123 Technical Writing 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 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	Sociology.....	3
SOC 125	Social Problems.....	3
SOC 131	Marriage and the Family.....	3
SOC 160	Social Power: Motivation and Action .....	3
IV. Science and Mathematics – 12 hours		
Must include at least one course in mathematics and at least one in a lab science.		
A. Mathematics		
The mathematics requirement will be satisfied by any mathematics course except Fundamentals of Mathematics and Introduction to Algebra.		
B. Science		
The laboratory science requirement will be satisfied by any of the following:		
1. Life Science		
BIOL 122/3	Principles of Biology/Lab...3/1	
BIOL 124	Oceanus: The Marine Environment.....	3
BIOL 125	General Botany.....	5
BIOL 127	General Zoology .....	5
BIOL 130/1	Environmental Science/Lab.3/1	

BIOL 140	Human Anatomy.....	4
BIOL 144	Human Anatomy/Physiology ..	5
BIOL 150	Biology of Organisms .....	5
BIOL 225	Human Physiology.....	4
BIOL 230/1	Microbiology/Lab.....	3/2
2. Physical Science		
ASTR 122	Astronomy .....	4
CHEM 120/1	The World of Chemistry/Lab.3/1	
CHEM 122	Principles of Chemistry .....	5
CHEM 124/5	General Chemistry I/Lab...4/1	
CHEM 131/2	General Chemistry II/Lab..4/1	
CHEM 140	Principles of Organic Chemistry.....	5
CHEM 227	Introduction to Quantitative Analysis.....	5
GEOS 130	General Geology.....	5
GEOS 132	Historical Geology .....	5
GEOS 140/1	Physical Geography/Lab .....	3/2
IDSP 175	Global Resources from Geologic and Economic Viewpoints (Nonlab science) ..	3
PHYS 125	Technical Physics I .....	4
PHYS 126	Technical Physics II.....	3
PHYS 130	General Physics I .....	5
PHYS 131	General Physics II.....	5
PHYS 220	Engineering Physics I.....	5
PHYS 221	Engineering Physics II .....	5
PSCI 120	Physical Science .....	4

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

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

Additional programs may offer the associate of science degree in the future. You should consult a counselor with questions about degree requirements for particular programs.

## Associate of Applied Science Degree (available for career programs only)

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

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

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

### I. Communications – 3 hours

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

\* Satisfies both the Composition I and Oral Communication requirements.

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

ENGL 122 Composition II.....3  
 ENGL 123 Technical Writing 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 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			B. Physical Science				
POLS	122	Political Science .....	3	ASTR	122	Astronomy.....	4
POLS	124	American National Government.....	3	CHEM	120/1	The World of Chemistry/Lab..	3/1
POLS	126	State and Local Government..	3	CHEM	122	Principles of Chemistry.....	5
POLS	132	Introduction to Comparative Government.....	3	CHEM	124/5	General Chemistry I/Lab ..	4/1
POLS	135	International Relations.....	3	CHEM	131/2	General Chemistry II/Lab..	4/1
D. Psychology				CHEM	140	Principles of Organic Chemistry..	5
PSYC	121	Applied Psychology .....	3	CHEM	227	Introduction to Quantitative Analysis.....	5
PSYC	130	Introduction to Psychology ..	3	GEOS	130	General Geology .....	5
E. Sociology				GEOS	132	Historical Geology .....	5
SOC	122	Sociology.....	3	GEOS	140/1	Physical Geography/Lab ...	3/2
SOC	125	Social Problems.....	3	IDSP	175	Global Resources from Geologic and Economic Viewpoints (Non-lab science).	3
SOC	131	Marriage and the Family.....	3	PHYS	125	Technical Physics I.....	4
SOC	160	Social Power: Motivation and Action .....	3	PHYS	126	Technical Physics II .....	3
IV. Science and Mathematics – 3 hours				PHYS	130	General Physics I.....	5
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.				PHYS	131	General Physics II .....	5
A. Life Science				PHYS	220	Engineering Physics I .....	5
BIOL	122/3	Principles of Biology/Lab ..	3/1	PHYS	221	Engineering Physics II.....	5
BIOL	124	Oceanus: The Marine Environment .....	3	PSCI	120	Physical Science.....	4
BIOL	125	General Botany .....	5	V. Health and/or Physical Education – 1 hour			
BIOL	127	General Zoology.....	5	HPER		Any Activity Course.....	1
BIOL	130/1	Environmental Science/Lab..	3/1	EMS	121	CPR I – Basic Rescuer.....	1
BIOL	140	Human Anatomy .....	4	HLT	260	Lifetime Wellness .....	3
BIOL	144	Human Anatomy/Physiology..	5	HMEC	151	Nutrition and Meal Planning ....	3
BIOL	150	Biology of Organisms .....	5	HPER	192	Wellness for Life.....	1
BIOL	230/1	Microbiology/Lab .....	3/2	HPER	200	First Aid/CPR.....	2
				HPER	202	Personal and Community Health .....	3
				HPER	205	Individual Lifetime Sports .....	2
				HPER	240	Lifetime Fitness .....	1
				HPER	255	Introduction to Physical Education .....	3

## Certificate of Completion

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

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

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

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

Approved certificate programs are:

Administration of Justice  
Emergency Services Dispatcher  
Postsecondary Certificate\*

Automotive Technology  
Automotive Technology Vocational Certificate

Business Entrepreneurship  
Business Entrepreneurship Vocational Certificate  
The Business Plan Vocational Certificate

Civil Engineering Technology  
Construction Management Vocational Certificate

Communication Design  
Interactive Media Vocational Certificate

Computer Information Systems  
AS/400 Operations Vocational Certificate  
Mainframe Programmer/Analyst Vocational Certificate  
Microcomputer Programmer/Analyst  
Vocational Certificate  
Desktop Publishing Applications Specialist  
Vocational Certificate  
Advanced Data Processing Vocational Certificate  
Personal Computer Support Vocational Certificate  
Personal Computer Applications Specialist Certificate

Cosmetology  
Cosmetology Vocational Certificate  
Esthetics Vocational Certificate  
Nail Technology Vocational Certificate

Drafting  
Computer-Aided Drafting (CAD) Vocational Certificate

Electrical Technology  
Electrical Technology Vocational Certificate

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

Emergency Medical  
Emergency Medical Technician Vocational Certificate  
MICT Vocational Certificate

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

Heating, Ventilation and Air Conditioning  
HVAC Postsecondary Certificate  
HVAC Vocational Certificate

Information Technology  
Local Area Network Administrator  
Vocational Certificate  
Local Area Network Technology Specialist  
Vocational Certificate

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

Metal Fabrication  
Metal Fabrication Vocational Certificate

Nursing-Practical Nursing  
Practical Nursing Vocational Certificate

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

Paralegal  
Paralegal Postsecondary Certificate  
Legal Nurse Consultant Vocational Certificate

Railroad Electronics  
Railroad Electronics Vocational Certificate

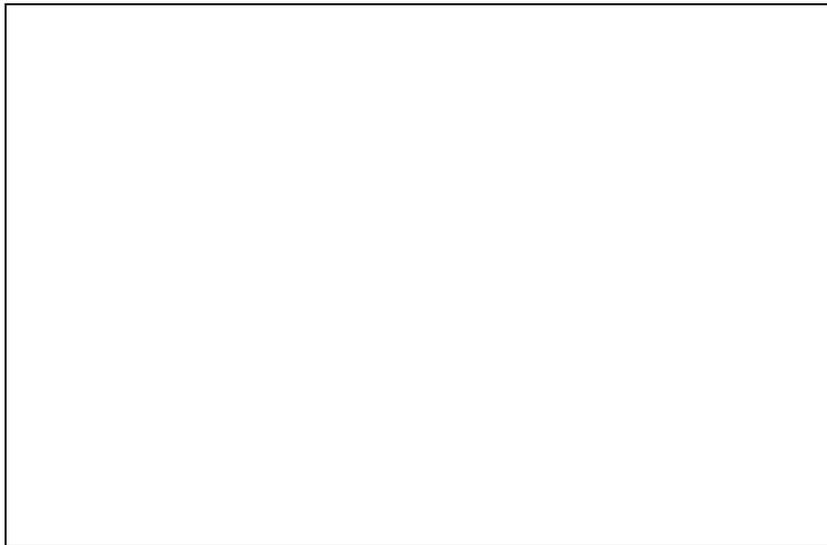
Railroad Industrial Technology  
Railroad Carman Welding Vocational Certificate  
Railroad Machinist Welding Vocational Certificate  
Structural Welding Vocational Certificate  
Supervisors Welding Vocational Certificate  
Track Welding Vocational Certificate  
Welding Postsecondary Certificate

Respiratory Care  
Respiratory Care Postsecondary Certificate Program  
Certified Respiratory Therapy Technician (CRTT)  
Transition Postsecondary Certificate  
Surgical Technology Vocational Certificate\*

\*Cooperative program

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## Career and Certificate Programs



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

## Career Program Descriptions

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

### Accounting

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

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

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

#### Associate of Applied Science Degree

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

#### *Second Semester*

ACCT	122	Accounting II.....3
BUS	150	Business Communication.....3
BUS	261	Business Law I.....3
		Business Electives.....6
		<b>TOTAL CREDIT HOURS.....15</b>

#### *Third Semester*

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

#### *Fourth Semester*

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

**Note:** Business electives are any course with the "BUS" or "BUSE" prefix.

### Administration of Justice/ Law Enforcement

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

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

#### Associate of Arts Degree

<i>First Semester</i>		<b>CR</b>
ENGL	121	Composition I.....3
		Social Science Course *.....3
ADMJ	121	Introduction to Administration of
		Justice ***.....3
ADMJ	124	Criminal Justice System.....3
ADMJ	127	Criminology.....3
		<b>TOTAL CREDIT HOURS.....15</b>

#### *Second Semester*

ENGL	122	Composition II.....3
		Social Science Course *.....3
ADMJ	133	Juvenile Delinquency.....3
ADMJ	136	Police and the Public.....3
ADMJ	140	Constitutional Case Law ***.....3
		<b>TOTAL CREDIT HOURS.....15</b>

### Third Semester

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

### Fourth Semester

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

### Required Program Electives (9 hours – any three courses)

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

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

#### Group 1:

American National Government  
State and Local Government

#### Group 2:

Introduction to Psychology

#### Group 3:

Social Problems or Sociology

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

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

### Correctional Services Option

Offered at Longview Community College

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

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

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

### Emergency Services Dispatcher

#### Postsecondary Certificate

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

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

### Automotive Technology

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

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

#### Associate of Applied Science Degree

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

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

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

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

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

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

<b>Technical/Related Electives</b>		
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	138 FastTrac Business Plan.....	3
BUSE	140 FastTrac Feasibility Plan.....	2
CPCA	105 Introduction to Personal Computing: IBM..	1
DP	124 Introduction to Computing Concepts and Applications .....	3
ELEC	120 Introduction to Electronics .....	3
RRT	165 Railroad Safety, Quality and Environment..	3

### **Automotive Technology Vocational Certificate**

The Automotive Technology Certificate program is designed to meet the needs of today's beginning and experienced auto technicians. With the completion of the certificate program, the student will have a well-rounded background in the repair required for dealership and independent service personnel. Completion of courses should assist students in preparing for ASE certification tests. Most automotive trades expect applicants to pass one or more of the ASE tests, which will enable them to qualify for technical positions in service repair.

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

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

#### **Required Courses**

INDT	125 Industrial Safety.....	1
AUTO	163 Automotive Steering and Suspension.....	3
AUTO	165 Automotive Engine Repair .....	4
AUTO	167 Automotive Brake Systems .....	2
AUTO	168 Automotive Manual Drivetrain and Axles.....	3
AUTO	234 Automotive Electrical Systems .....	4
AUTO	250 Automatic Transmissions and Transaxles ..	4
AUTO	254 Automotive Engine Performance.....	5
AUTO	230 Automotive Heating and Air Conditioning.....	3
MFAB	121 Introduction to Welding .....	4
	<b>TOTAL CREDIT HOURS .....</b>	<b>33</b>

### **Aviation Maintenance Technology**

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

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

Because the program content is determined by the FAA, program courses and credit hours are subject to change because of requirement changes at the degree-granting

institution. Contact Maple Woods Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

**Full-time Aviation Maintenance Program**

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

**Associate of Applied Science Degree**

*Degree granted by Maple Woods Community College*

**First Semester (General Aviation I) CR**

KAV	100	Introduction to Aviation Maintenance I..	14
KAV	110	Technical Mathematics/AVMT .....	4
ENGL	121	Composition I.....	3
		<b>TOTAL CREDIT HOURS .....</b>	<b>21</b>

**Second Semester (General Aviation II)**

KAV	111	Introduction to Aviation Maintenance II.....	4.5
KAV	108	Aircraft Electrical Systems .....	5.5
KAV	203	Electrical Generator/Alternator.....	5.5
SPD	121	Public Speaking .....	3
		<b>TOTAL CREDIT HOURS .....</b>	<b>18.5</b>

**Third Semester (Airframe I)**

KAV	102	Wood and Fabric .....	3
KAV	104	Assembly and Rigging .....	5
KAV	200	Sheet Metal Structures.....	4
KAV	202	Fuel and Fire Protection Systems.....	4
		<b>TOTAL CREDIT HOURS .....</b>	<b>16</b>

**Fourth Semester (Airframe II)**

KAV	106	Hydraulic and Pneumatic Systems.....	7
KAV	204	Communication and Navigation Systems..	6
KAV	206	Airframe Inspection and Welding.....	5.5
		<b>TOTAL CREDIT HOURS .....</b>	<b>18.5</b>

**Fifth Semester (Powerplant I)**

KAV	101	Carburetion and Lubrication .....	7
KAV	103	Aircraft Reciprocating Powerplant.....	6
KAV	107	Jet Propulsion Powerplant.....	5
		<b>TOTAL CREDIT HOURS .....</b>	<b>18</b>

**Sixth Semester (Powerplant II)**

KAV	105	Propellers.....	5
KAV	109	Ignition and Starting Systems.....	6
KAV	201	Powerplant Testing.....	2.5
KAV	205	Fire Protection Systems.....	5.5

American Institutions Option* .....	3
<b>TOTAL CREDIT HOURS .....</b>	<b>22</b>
<b>TOTAL PROGRAM CREDIT HOURS.....</b>	<b>114</b>
<b>TOTAL POWERPLANT CREDIT HOURS.....</b>	<b>79.5</b>

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

**Part-time Aviation Maintenance Program**

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

**Associate of Applied Science Degree**

*Degree granted by Maple Woods Community College*

**First Semester (General Aviation I-N) CR**

KAV	100	Introduction to Aviation Maintenance I..	14
ENGL	121	Composition I.....	3
		<b>TOTAL CREDIT HOURS .....</b>	<b>17</b>

**Second Semester (General Aviation II-N)**

KAV	111	Introduction to Aviation Maintenance II	4.5
KAV	110	Technical Mathematics/AVMT .....	4
ENGL	101	Composition/Reading I (optional).....	3
		<b>TOTAL CREDIT HOURS .....</b>	<b>11.5</b>

**Third Semester (General Aviation III-N)**

KAV	108	Aircraft Electrical Systems.....	5.5
KAV	203	Electrical Generator/Alternator.....	5.5
SPD	121	Public Speaking.....	3
		<b>TOTAL CREDIT HOURS .....</b>	<b>14</b>

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

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

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

KAV	104	Assembly and Rigging .....	5
KAV	106	Hydraulic and Pneumatic Systems.....	7
		<b>TOTAL CREDIT HOURS .....</b>	<b>12</b>

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

KAV	204	Communication and Navigation Systems.....	6
KAV	206	Airframe Inspection and Welding.....	5.5
		<b>TOTAL CREDIT HOURS .....</b>	<b>11.5</b>

**Seventh Semester (Powerplant I-N)**

KAV 103 Aircraft Reciprocating Powerplant .....6  
KAV 107 Jet Propulsion Powerplant .....5  
TOTAL CREDIT HOURS .....11

**Eighth Semester (Powerplant II-N)**

KAV 101 Carburetion and Lubrication .....7  
KAV 105 Propellers .....5  
TOTAL CREDIT HOURS .....12

**Ninth Semester (Powerplant III-N)**

KAV 201 Powerplant Testing .....2.5  
KAV 205 Fire Protection Systems .....5.5  
KAV 109 Ignition and Starting Systems .....6  
American Institutions Option\* .....3  
TOTAL CREDIT HOURS .....17  
**TOTAL PROGRAM CREDIT HOURS.....117**  
**TOTAL POWERPLANT CREDIT HOURS.....82.5**

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

**Business Administration**

JCCC's Business Administration Career program offers training in the many skills required to manage a wide variety of businesses.

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

Program graduates have career opportunities in entry-level management and supervisory positions in a wide variety of businesses. Johnson County's continued growth as the business center for the Kansas City area means job opportunities will be available locally.

**Associate of Applied Science Degree**

**First Semester**

**CR**

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

CPCA or CDTP Any 4 credit hours from the CPCA or CDTP course selections higher than CPCA 105 and 106

DP 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 (if needed) .....1  
TOTAL CREDIT HOURS .....16  
**TOTAL PROGRAM CREDIT HOURS.....64**

**Recommended Electives**

BUS 120 Management Attitudes and Motivation ..3  
BUS 140 Principles of Supervision .....3  
BUS 271 Management Seminar .....3

## Business Entrepreneurship

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

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

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

### Associate of Applied Science Degree

<i>First Semester</i>		<b>CR</b>
BUSE	140 FastTrac Feasibility Plan.....	2
ENGL	121 Composition I or higher.....	3
MATH	120 Business Math or higher.....	3
PHIL	138 Business Ethics.....	1
OST	101 Computerized Keyboarding.....	1
BUS	230 Marketing.....	3
BUS	225 Human Relations.....	3
TOTAL CREDIT HOURS.....		<b>16</b>

### *Second Semester*

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

### *Third Semester*

BUS	150 Business Communications.....	3
DP	124 Introduction to Computing Concepts and Applications.....	3
BUSE	180 Seminar: The Small Business Environment.....	2

BUSE	210 Entrepreneurship Internship I.....	1
BUSE	131 Financial Management/Small Business ...2 Health and/or Physical Education Elective.....	1
	Electives.....	3
TOTAL CREDIT HOURS.....		<b>15</b>

### *Fourth Semester*

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

### Recommended Electives

BUS	120 Management Attitudes and Motivation ...	3
BUS	121 Introduction to Business.....	3
BUS	123 Personal Finance.....	3
BUS	235 Introduction to International Business...3	
BUS	141 Principles of Management.....	3
BUS	243 Human Resource Management.....	3
BUS	261 Business Law I.....	3
BUS	263 Business Law II.....	3
CPCA	105 Introduction to Personal Computing: IBM.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	
HMG T	121 Hospitality Management Fundamentals ...3	
MKT	121 Retail Management.....	3
SPD	120 Interpersonal Communications.....	3
SPD	121 Public Speaking.....	3

### Business Entrepreneurship

#### Vocational Certificate Program

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

<i>First Semester</i>		<b>CR</b>
ACCT	111 Small Business Accounting.....	3
	or	
ACCT	121 Accounting I .....	3
BUSE	140 FastTrac Feasibility Plan.....	2
BUS	230 Marketing .....	3
BUSE	160 Legal Issues for Small Businesses.....	2
DP	124 Introduction to Computing Concepts and Applications* .....	3
MATH	120 Business Math or higher.....	3
	<b>TOTAL CREDIT HOURS .....</b>	<b>16</b>

\* These courses may be substituted for DP 124:

CPCA	105 Introduction to Personal Computing: IBM.1	
CPCA	108 Word Processing on Microcomputers I.....	1
CPCA	110 Spreadsheets on Microcomputers I.....	1

#### *Second Semester*

BUS	145 Small Business Management.....	3
BUSE	131 Financial Management/Small Business ...	2
BUSE	190 Entrepreneurship Seminar: Small Business Analysis .....	2
BUSE	210 Entrepreneurship Internship I.....	1
	or	
BUSE	211 Entrepreneurship Internship II.....	1
BUSE	138 FastTrac Business Plan .....	3
MKT	133 Salesmanship .....	3
	or	
MKT	134 Creative Retail Selling.....	3
	<b>TOTAL CREDIT HOURS .....</b>	<b>14</b>
	<b>TOTAL PROGRAM</b>	
	<b>CREDIT HOURS.....</b>	<b>30</b>

#### **The Business Plan Vocational Certificate Program**

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

BUSE	140 FastTrac Feasibility Plan.....	2
BUSE	138 FastTrac Business Plan .....	3
	<b>TOTAL PROGRAM</b>	
	<b>CREDIT HOURS.....</b>	<b>5</b>

### **Chef Apprenticeship**

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

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

#### **Associate of Applied Science Degree**

##### *First Semester* **CR**

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

##### *Second Semester*

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

##### *Summer*

ENGL	121 Composition I.....	3
SPD	125 Oral Communications.....	3
	<b>TOTAL CREDIT HOURS.....</b>	<b>6</b>

##### *Third Semester*

HMGT	130 Hospitality Law .....	3
HMGT	271 Seminar in Hospitality Management: Purchasing .....	3
HMGT	145 Food Production Specialties.....	3
HMGT	285 Culinary Practicum III .....	2
	<b>TOTAL CREDIT HOURS .....</b>	<b>11</b>

##### *Fourth Semester*

HMGT	226 Garde-manger.....	3
HMGT	223 Fundamentals of Baking.....	3
HMGT	277 Seminar in Hospitality Management: Menu Planning .....	3
HMGT	286 Culinary Practicum IV .....	2
	<b>TOTAL CREDIT HOURS .....</b>	<b>11</b>

##### *Fifth Semester*

HMGT	231 Advanced Food Preparation .....	4
HMGT	279 Beverage Control.....	3
PSYC	121 Applied Psychology .....	3
	or	

PSYC	130	Introduction to Psychology .....	3
HMG	287	Culinary Practicum V.....	2
		TOTAL CREDIT HOURS .....	12

**Sixth Semester**

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

**Civil Engineering Technology**

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

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

**Associate of Science Degree**

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

**Second Semester**

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

**Third Semester**

DRAF	225	Civil Drafting .....	3
PHYS	130	General Physics I.....	5
		or	
PHYS	220	Engineering Physics I .....	5

CET	211	Technical Statics and Mechanics.....	3
CET	140	Civil Engineering Materials .....	3
ENGR	171	Programming for Engineering and Science ..	3
		TOTAL CREDIT HOURS .....	17

**Fourth Semester**

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

**Approved Technical Electives**

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

**Construction Management Vocational Certificate**

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

**First Semester**

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

**Second Semester**

CET	127	Construction Estimating .....	3
CET	129	Construction Management .....	3
		Management Electives .....	6

Computer Electives .....	3
TOTAL CREDIT HOURS .....	15
<b>TOTAL PROGRAM</b>	
<b>CREDIT HOURS.....</b>	<b>29</b>

**Approved Management Electives**

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

**Approved Computer Electives**

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

**Communication Design**

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

Demonstrated abilities are most often the key to obtaining a position in the communication design field. JCCC has structured its communication design program to help the student develop a comprehensive portfolio. The student's work will be critiqued by a team of professionals every semester. These professionals working in the field, along with the faculty, will help develop the student's skills in creative problem solving and in the use of materials, processes, tools and equipment. Outstanding studio and computer facilities are available for working on class projects. The two-year curriculum consisting of 69 credit hours leads to an associate of applied science degree.

**Associate of Applied Science Degree**

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

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

*First Semester (fall)*

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

CD 132 Typography .....	3
PHOT 121 Fundamentals of Photography.....	3
ENGL 121 Composition I.....	3
TOTAL CREDIT HOURS .....	15

*Second Semester (spring)*

ART 127 Design 3-D.....	3
CD 131 Representational Drawing II.....	3
CD 134 Layout Design.....	3
CD 140 Technical Processes .....	3
Humanities Elective.....	3
TOTAL CREDIT HOURS .....	15

*Third Semester (fall)*

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

*Fourth Semester (spring)*

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

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

**Technical/Studio Electives**

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

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

**Part-time Students**

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

CD	120	Introduction to Communication Design ..3
ART	124	Design 2-D..... 3
CDTP	131	Desktop Publishing I: QuarkXPress.....1
ENGL	121	Composition I.....3
ART	129	Design Color.....3
ART	127	Design 3-D.....3
CD	132	Typography .....3
CD	130	Representational Drawing I .....3
PHOT	121	Fundamentals of Photography.....3
CD	131	Representational Drawing II .....3
CD	134	Layout Design.....3
CD	140	Technical Processes .....3
CD	230	Illustration Techniques .....3
CD	231	Advanced Typography.....3
PHOT	123	Commercial Photography .....3
CD	235	Production Methods.....3
CD	236	Electronic Production .....3
CD	244	Communication Systems.....3
CD	245	Advanced Design Practice .....3
CD	272	Professional Preparation ** .....3
		Technical/Studio Elective .....1
		Humanities Elective .....3
		Economics and/or Social Science Elective .....3
		Science or Math Elective .....3
		Health and/or Physical Education Elective .....1
		<b>TOTAL PROGRAM</b>
		<b>CREDIT HOURS.....69</b>

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

**Computer Interactive Media Vocational Certificate**

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

in a variety of positions within the interactive media field (writer/editor/researcher, graphics professional, music/sound professional, video professional, animator, programmer, information designer and/or interface designer).

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

**Authoring Elective**

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

**Asset Electives**

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

**Computer Information Systems**

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

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

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

**Associate of Applied Science Degree**

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

		<b>CR</b>
DP	134	Programming Fundamentals.....4

**Required Courses**

**First Semester**

CS	200	Concepts of Programming Algorithms (C++) .....	4
DP	148	Cobol I.....	4
DP	140	Editor .....	1
ACCT	121	Accounting I .....	3
ENGL	121	Composition I.....	3
MATH	116	Intermediate Algebra .....	3
		or	
MATH	171	College Algebra.....	3
		or.....	
		Any Calculus Course.....	3
		<b>TOTAL CREDIT HOURS .....</b>	<b>18</b>

**Second Semester**

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

**Third Semester**

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

**Fourth Semester**

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

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

**Intermediate Programming Language**

Select from one of the following option areas

**Microcomputer<sup>1</sup>**

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

**Mainframe**

DP	248	Cobol II
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**Client/Server**

DP	172	Introduction to PowerBuilder Enterprise
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**Application Integration**

DP	138	Visual Basic for Windows
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**Advanced Programming Language**

Select from one of the option areas listed below:

**Microcomputer**

DP	269	GUI Programming
		or
DP	240	JAVA I

**Mainframe**

DP	253	CICS
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**Client/Server**

DP	272	Intermediate PowerBuilder Enterprise
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**Application Integration**

DP	238	Visual Basic Intermediate Topics
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<sup>1</sup>Students electing the Microcomputer option area must complete both CS 250 and DP 235. One of these courses will count as an IS elective.

**Technical Electives**

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

CS	250	Basic Programming Structures* .....	4
CS	211	Discrete Structures II.....	3
DP	138	Visual Basic for Windows.....	4
DP	145	Assembler Language for Microcomputers* .....	4
DP	150	Assembler Language I*.....	4
DP	157	RPG III Beginning .....	4
DP	172	Introduction to PowerBuilder Enterprise .....	4
DP	178	AS/400 CL Programming.....	4
DP	180	AS/400 Utilities .....	4
DP	195	Introduction to PERL.....	4
DP	204	Unix Operating System.....	4
DP	215	OS/VS Job Control Language .....	3
DP	235	Object-Oriented Programming Using C++* .....	4
DP	238	Visual Basic Intermediate Topics .....	4
DP	240	JAVA I .....	4
DP	248	Cobol II .....	4
DP	253	Customer Information Control System Command Level Cobol.....	4

DP	254	Unix System Administration	4
DP	257	RPG III Advanced	4
DP	258	Operating Systems	3
DP	269	GUI Programming	4
DP	270	Information Systems Internship	3
DP	272	Intermediate PowerBuilder Enterprise	4
DP	280	JAVA II	4
IT	200	Introduction to Information Technology	3
IT	210	Local Area Networking Systems	4

\*Suggested Information Systems electives

### Mainframe Programmer/Analyst Vocational Certificate

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

DP	134	Programming Fundamentals	4
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#### Required Courses

<i>First Semester</i>			<b>CR</b>
DP	140	Editor	1
DP	148	COBOL I	4
TOTAL CREDIT HOURS			5

#### *Second Semester*

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

#### *Third Semester*

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

### AS/400 Operations Vocational Certificate

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

DP	134	Programming Fundamentals	4
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#### Required Courses

<i>First Semester</i>			<b>CR</b>
DP	140	Editor for RPG	1
DP	157	RPG III Beginning	4
IT	200	Introduction to Information Technology	3
TOTAL CREDIT HOURS			8

#### *Second Semester*

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

#### *Third Semester*

DP	180	AS/400 Utilities	4
CPCA	121	Introduction to Project Management	1
TOTAL CREDIT HOURS			5
<b>TOTAL PROGRAM</b>			
CREDIT HOURS			24

### Microcomputer Programmer/Analyst Vocational Certificate

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

DP	134	Programming Fundamentals	4
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#### Required Courses

<i>First Semester</i>			<b>CR</b>
CS	200	Concepts of Programming Algorithms (C++)	4
CS	210	Discrete Structures	3
DP	162	Database Programming	4
TOTAL CREDIT HOURS			11

#### *Second Semester*

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

#### *Third Semester*

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

### Desktop Publishing Applications Specialist Vocational Certificate

Individuals with or without a college degree whose goal is to acquire or improve their personal desktop computer application skills will accomplish that goal in this program. Emphasis is on acquiring results-oriented career business and industry skills. The program is intended for those seeking entry-level positions as well as those currently

employed who desire to enhance their job skills. It provides current employers or prospective employers with tangible evidence of computer competency. Application courses for the certificate are based on a combination of the Windows or Macintosh operating environments. Students will be encouraged to develop a "cross-platform" mastery.

**Required Courses**

CPCA	105	Introduction to Personal Computing: IBM..1
CPCA	106	Introduction to Personal Computing: Mac....1
CPCA	108	Word Processing on Microcomputers I...1
CPCA	134	Managing Your Macintosh.....1
		or
CPCA	138	Windows for Microcomputers .....1
CPCA	123	Presentation Graphics: PowerPoint.....1
CDTP	135	Desktop Photo Manipulations: Photoshop..1
CDTP	145	Desktop Illustration I: Illustrator .....1

**Select four courses of the following six:**

CDTP	130	Desktop Publishing I: PageMaker .....1
CDTP	131	Desktop Publishing I: QuarkXPress .....1
CDTP	150	Desktop Publishing II: PageMaker .....1
CDTP	151	Desktop Publishing II: QuarkXPress .....1
CDTP	170	Desktop Publishing III: PageMaker.....1
CDTP	171	Desktop Publishing III: QuarkXPress.....1

**Select one course of the following 12:**

CPCA	125	Word Processing on Microcomputers II..1
CPCA	134	Managing Your Macintosh.....1
CPCA	138	Windows for Microcomputers .....1
CDTP	150	Desktop Publishing II: PageMaker .....1
CDTP	151	Desktop Publishing II: QuarkXPress .....1
CDTP	170	Desktop Publishing III: PageMaker.....1
CDTP	171	Desktop Publishing III: QuarkXPress.....1
CDTP	165	Desktop Illustration II: Illustrator .....1
CPCA	118	Electronic Mail/Calendar Systems.....1
CPCA	121	Introduction to Project Management ....1
CPCA	141	Internet I .....1
CPCA	151	Internet II .....1
CPCA	161	Introduction to Web Pages.....1

**TOTAL PROGRAM**  
**CREDIT HOURS.....12**

**Advanced Data Processing Vocational Certificate**

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

**Prerequisite**

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

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

**Required Courses**

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

DP	174	Teleprocessing.....3
DP	235	Object-Oriented Programming Using C++ .4
DP	238	Visual Basic Intermediate Topics .....4
DP	242	Introduction to System Design and Analysis .....3
DP	250	Assembly Language II.....4
DP	253	Customer Information Control System Command Level COBOL.....4
DP	258	Operating Systems.....3
DP	260	Database Management .....4
DP	272	Intermediate PowerBuilder Enterprise ....4

**TOTAL PROGRAM**  
**CREDIT HOURS .....17-21**

**Personal Computer Support Vocational Certificate**

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

**Required Courses**

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

**Personal Computer Applications Specialist Vocational Certificate**

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

Application courses for the certificate are based on either the Windows or Macintosh operating environments.

### Required Courses

#### First Semester

CPCA	128	Personal Computer Applications.....	3
or the following four courses:			
CPCA	105	Introduction to Personal Computing: IBM.1	
or			
CPCA	106	Introduction to Personal Computing: Mac .1	
CPCA	108	Word Processing on Microcomputers I ....	1
CPCA	110	Spreadsheets on Microcomputers I .....	1
CPCA	114	Databases on Microcomputers I .....	1

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

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

## Construction Management

(See Civil Engineering Technology, page 77.)

## Cosmetology

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

Employment opportunities are available in beauty salons, department stores, health care and hotel facilities.

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

Three options are available in the cosmetology program: nail technologist, cosmetologist and esthetician.

Enrollment is limited in these programs. Admission requires an interview, testing and a physical examination. Contact the AVS office at 469-8500, ext. 4139, for additional information.

### Nail Technology Vocational Certificate

350 contact hours

AVCO 102 Nail Technology

### Cosmetology Vocational Certificate

1,500 contact hours

AVCO 110 Introduction to Cosmetology

AVCO 112 Clinical Cosmetology

AVCO 114 Advanced Cosmetology

### Esthetics Vocational Certificate

650 contact hours

AVCO 118 Esthetics

## Data Processing

(See Computer Information Systems, page 79.)

## Dental Hygiene

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

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

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

As a JCCC dental hygiene student, you gain valuable practical experience in the college's dental hygiene clinic located on campus. You work under the supervision of a licensed dentist and registered dental hygienists, developing efficiency in preventive dental hygiene techniques.

This challenging program is demanding and rewarding and requires full-time involvement. Enrollment in this program is limited; the deadline for fall semester applications is Feb. 1. If you are interested, contact the Admissions and Records Office for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

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

## Associate of Science Degree

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

\* Prerequisite: CHEM 122

### First Semester

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

### Second Semester

DHYG 140 Clinical Dental Hygiene II.....	4
DHYG 142 Dental Radiology.....	2
BIOL 225 Human Physiology**.....	4
DHYG 136 Dental Materials Lab.....	1
DHYG 146 Periodontics.....	3
DHYG 148 Dental Health Education .....	2
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 250 Clinical Dental Hygiene IV .....	6
DHYG 245 Nitrous Oxide Analgesia.....	1
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
<b>TOTAL PROGRAM CREDIT HOURS.....</b>	<b>80</b>

## Drafting Technology

Drafting technicians are engineering communication specialists who apply mathematics, computer applications and manual skills to develop specifications and drawings for the manufacture and construction of virtually everything made in industry.

JCCC's two-year curriculum enables students to use the latest computer-aided design (CAD) equipment.

Students choose one of two options: the civil option or the machine option.

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

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

### Prerequisites

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

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

## Associate of Science Degree – Civil Option

### First Semester

DRAF 124 Technical Drafting.....	4
DRAF 130 Introduction to CAD Concepts.....	3
CPCA 105 Introduction to Personal Computing: IBM..	1
CPCA 138 Windows for Microcomputers .....	1
ENGL 121 Composition I.....	3
MATH 133 Technical Mathematics I.....	4
CPCA Elective.....	1
TOTAL CREDIT HOURS .....	17

### Second Semester

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

### Third Semester

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

**Fourth Semester**

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

**Associate of Science Degree – Machine Option****First Semester****CR**

DRAF	124	Technical Drafting	4
DRAF	130	Introduction to CAD Concepts	3
CPCA	105	Introduction to Personal Computing: IBM	1
CPCA	138	Windows for Microcomputers	1
ENGL	121	Composition I	3
MATH	133	Technical Mathematics I	4
		CPCA Elective	1
		TOTAL CREDIT HOURS	17

**Second Semester**

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

**Third Semester**

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

**Fourth Semester**

DRAF	150	Electrical Drafting	3
DRAF	180	Structural Drafting	3
DRAF	228	Industrial Design Applications	3
		Humanities Elective	3
		Health and/or Physical Education	
		Elective	1
		Technical Elective	2
		TOTAL CREDIT HOURS	15
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS</b>	65

**CPCA Electives**

CPCA	108	Word Processing on Microcomputers I	1
CPCA	110	Spreadsheet on Microcomputers I	1
CPCA	114	Database on Microcomputers I	1

CDTP	130	Desktop Publishing I: PageMaker	1
		or	
CDTP	131	Desktop Publishing I: QuarkXPress	1

**Technical Electives (Civil Option)**

CET	127	Construction Estimating	3
CET	129	Construction Management	3
CET	258	Structural Design	3
CET	270	Fluid Mechanics	3
DRAF	140	Topics in CAD I	2
DRAF	232	CAD Applications	3
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	3
DRAF	242	Topics in CAD II	2
DRAF	271	Drafting Internship I	3
DRAF	272	Drafting Internship II	3
ELEC	120	Introduction to Electronics	3
MFAB	121	Introduction to Welding	3
MFAB	240	Metallurgy	1

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

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

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

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

**Prerequisites**

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

**Sequence of Required Courses**

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

## Early Childhood Education

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

### Associate of Science Degree

#### Prerequisite

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

#### First Semester

EDUC	130	Foundations of Early Childhood Education.....	3	<b>CR</b>
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 and/or Arts 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
		Science or Math .....	3-5
		TOTAL CREDIT HOURS.....	15-17

#### Fourth Semester

EDUC	235	Parenting .....	2
EDUC	285	Internship .....	6
		Humanities and/or Arts elective .....	3
		Specialization courses.....	6
		TOTAL CREDIT HOURS .....	17
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS .....</b>	<b>69-70</b>

#### 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

## Electrical Technology

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

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

The associate of applied science degree program prepares students to enter the electrical trade in four types of elec-

trical occupations: residential, commercial, industrial and maintenance. The program also prepares students for continued education in electrical contracting/management, electrical design and industrial/electronic controls.

### Associate of Applied Science Degree

#### First Semester

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

#### Second Semester

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

#### Third Semester

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

#### Fourth Semester

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

#### Related Electives

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

BUS	140	Principles of Supervision	3
BUS	145	Small Business Management	3
BUSE	138	Fast Trac Business Plan	3
BUSE	140	Fast Trac Feasibility Plan	2
PHYS	125	Technical Physics	4
RRT	165	Railroad Safety, Quality and Environment	3

### Electrical Technology Vocational Certificate

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

#### First Semester

ELTE	122	National Electrical Code I	4	<b>CR</b>
ELTE	125	Residential Wiring Methods	4	
HVAC	123	Electromechanical Systems	4	
INDT	125	Industrial Safety	1	
			<b>TOTAL CREDIT HOURS</b>	

#### Second Semester

ELTE	200	Commercial Wiring Methods	4	
ELTE	210	Code Certification Review	3	
ELTE	271	Electrical Internship I	3	
		Technical Electives	3	
			<b>TOTAL CREDIT HOURS</b>	<b>13</b>
			<b>TOTAL PROGRAM</b>	
			<b>CREDIT HOURS</b>	<b>26</b>

#### Technical Electives

ELTE	205	Industrial Electrical Wiring	4
ELTE	272	Electrical Internship II	3
ELTE	291	Independent Study	1-4
CET	105	Construction Methods	3
DRAF	120	Introduction to Drafting	2
DRAF	129	Interpreting Architectural Drawings	2
ELEC	120	Introduction to Electronics	3
ELEC	124	Microcomputer Hardware	3
ELEC	125	Digital Electronics I	3
ELEC	131	Introduction to Sensors and Actuators	3
ELEC	133	Programmable Controllers	3
ELEC	165	Advanced Programmable Controllers	3
HVAC	121	Basic Principles of HVAC	4
MFAB	121	Introduction to Welding	4

### Industrial Maintenance Vocational Certificate

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

#### Required Courses

DRAF	123	Interpreting Machine Drawings	2
ELEC	147	Fluid Power Systems	2
HVAC	123	Electromechanical Systems	4
INDT	125	Industrial Safety	1
MFAB	121	Introduction to Welding	4

Technical Electives.....	11
<b>TOTAL PROGRAM</b>	
<b>CREDIT HOURS.....</b>	<b>24</b>

**Technical Electives**

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

**Electronics Technology**

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

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

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

MATH 171 and 172 or MATH 173 instead of MATH 133 and 134; PHYS 130 instead of PHYS 125.

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

**Associate of Science Degree**

<b>Summer</b>		<b>CR</b>
MATH 133	Technical Mathematics I.....	4

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

<b>Second Semester</b>		
ELEC 140	Circuit Analysis II.....	3
ELEC 225	Digital Electronics II.....	3
ENGL 121	Composition I.....	3
ELEC 130	Electronic Devices I.....	4
	Programming Elective.....	3
<b>TOTAL CREDIT HOURS.....</b>		<b>16</b>

<b>Third Semester</b>		
ELEC 230	Electronic Devices II.....	3
ELEC 245	Microprocessors.....	3
PHYS 125	Technical Physics I.....	4
	(medical electronics students will take BIOL 144 instead of PHYS 125)	
SPD 125	Personal Communication.....	3
	Technical Electives.....	3
<b>TOTAL CREDIT HOURS.....</b>		<b>16</b>

<b>Fourth Semester</b>		
ENGL 123	Technical Writing I.....	3
	Social Science and/or Economics Elective .	3
	Technical Electives.....	6
	Humanities Elective.....	3
	Health and/or Physical Education Elective .	1
<b>TOTAL CREDIT HOURS.....</b>		<b>16</b>
<b>TOTAL PROGRAM</b>		
<b>CREDIT HOURS.....</b>		<b>67</b>

**General Electronics Option**

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

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

### Microcomputer Maintenance Option

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

ELEC	250	Microcomputer Maintenance .....	3
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And a minimum of 6 hours from the following:

ELEC	271	Electronics Internship I.....	1-3
ELEC	272	Electronics Internship II .....	1-3
CPCA	135	M/S DOS.....	1
CPCA	137	M/S DOS Intermediate .....	1
IT	160	Local Area Network Fundamentals .....	1
IT	210	Local Area Networking Systems.....	4

### Communications Option

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

ELEC	175	Telecommunications .....	3
ELEC	240	Electronic Communications Systems.....	3

And a minimum of 3 hours from the following:

ELEC	200	Introduction to GPS .....	3
ELEC	250	Microcomputer Maintenance .....	3
ELEC	271	Electronics Internship I.....	1-3
ELEC	272	Electronics Internship II .....	1-3

### Industrial Controls Option

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

ELEC	133	Programmable Controllers .....	3
ELEC	165	Advanced Programmable Controllers.....	3

And a minimum of 3 hours from the following:

ELEC	131	Introduction to Sensors and Actuators...	3
ELEC	250	Microcomputer Maintenance .....	3
ELEC	271	Electronics Internship I.....	1-3
ELEC	272	Electronics Internship II .....	1-3

### Medical Electronics Option

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

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

And a minimum of 2 hours from the following:

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

### Approved Programming Electives

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

### Industrial Controls Vocational Certificate

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

#### Required Courses

ELEC	131	Introduction to Sensors and Actuators...	3
ELEC	133	Programmable Controllers .....	3
ELEC	165	Advanced Programmable Controllers.....	3

#### TOTAL PROGRAM

CREDIT HOURS .....

### Medical Electronics Vocational Certificate

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

#### Required Courses

BIOL	144	Human Anatomy and Physiology .....	5
LC	130	Medical Terminology.....	3
ELEC	210	Medical Electronics Principles.....	3
ELEC	211	Medical Electronics Applications.....	3

#### TOTAL PROGRAM

CREDIT HOURS .....

## Communications Electronics Vocational Certificate

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

### Prerequisites

ELEC	125	Digital Electronics I or equivalent electronics background.....	3
ELEC	230	Electronic Devices II or equivalent electronics background.....	3
Mathematics equivalent of:			
MATH	133	Technical Mathematics I.....	4
		and	
MATH	134	Technical Mathematics II .....	5
		or	
MATH	171	College Algebra.....	3
		and	
MATH	172	Trigonometry .....	3

### Required Courses

ELEC	150	Introduction to Telecommunications .....	3
ELEC	175	Telecommunications .....	3
ELEC	200	Introduction to Global Positioning Systems .....	3
ELEC	240	Electronics Communications Systems .....	3
<b>TOTAL PROGRAM CREDIT HOURS.....</b>			<b>12</b>

## Emergency Medical Science

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

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

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

### EMS First Responder Course

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

- people without a medical background who wish to enter the EMT program;

- anyone who wishes to learn basics of emergency medical care;
- firefighters, police officers, lifeguards and others from agencies involved in public safety;
- employees involved in company safety programs.

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

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

EMS	128	EMS First Responder.....	5
<b>TOTAL CREDIT HOURS.....</b>			<b>5</b>

### Emergency Medical Technician Course

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

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

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

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

### Prerequisites

EMS 128 or equivalent, or be an active member in a health-related occupation (firefighter, rescue, ambulance, law enforcement, industrial first aid personnel or

other health-related field), or attained the minimum of an associate's degree

EMS	130	Emergency Medical Technician Course.....	9
<b>TOTAL PROGRAM</b>			
<b>CREDIT HOURS.....</b>			<b>9</b>

### Mobile Intensive Care Technician Program

This advanced emergency medical care program consists of four courses, including a clinical rotation in a hospital setting and a field internship with an ambulance service. You learn emergency procedures such as cardiac monitoring and the administration of medications, IV fluids and defibrillation. By the end of the program, you become a skilled paramedic, able to provide sophisticated life support and advanced prehospital care.

JCCC's MICT program is fully accredited by the Joint Review Committee on Educational Programs for the EMT-Paramedic. Our graduates score exceptionally high in certification examinations, and most have been professionally employed shortly after graduation.

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

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

### MICT Vocational Certificate

#### Prerequisites

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

<b>Spring Semester</b>			<b>CR</b>
EMS	220	MICT I .....	10
EMS	225	MICT II.....	10
<b>TOTAL CREDIT HOURS .....</b>			<b>20</b>

#### Summer Session

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

EMS	271	MICT IV (field internship) .....	15
<b>TOTAL PROGRAM</b>			
<b>CREDIT HOURS.....</b>			<b>47</b>

### Associate of Science Degree

#### Prior to beginning professional courses

Certification as an emergency medical technician is required as a prerequisite to the MICT courses, or you may enter in special cases with the approval of the division administrator.

BIOL	140	Human Anatomy.....	4
BIOL	225	Human Physiology.....	4
CHEM	122	Principles of Chemistry.....	5
<b>TOTAL CREDIT HOURS .....</b>			<b>13</b>

#### First Semester (Spring)

**CR**

EMS	220	MICT I .....	10
EMS	225	MICT II.....	10
<b>TOTAL CREDIT HOURS .....</b>			<b>20</b>

#### Summer

EMS	230	MICT III (Clinical).....	12
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#### Second Semester (Fall)

EMS	271	MICT IV (Field Internship) .....	15
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#### Third Semester

ENGL	121	Composition I.....	3
SPD	121	Public Speaking.....	3
SOC	125	Social Problems .....	3
PHIL	143	Ethics .....	3
<b>TOTAL CREDIT HOURS .....</b>			<b>12</b>

#### Fourth Semester

Mathematics Elective (MATH 116 or higher) .....				3
HPER	134	Weight Training and Physical Fitness.....	1	or
Health and/or Physical Education Elective .				1
<b>TOTAL CREDIT HOURS.....</b>			<b>4</b>	

#### TOTAL PROGRAM

**CREDIT HOURS.....76**

### Associate of Applied Science Degree

#### Prior to beginning professional courses

Certification as an emergency medical technician is required as a prerequisite to the MICT courses, or you may enter in special cases with the approval of the division administrator.

BIOL	144	Human Anatomy and Physiology .....	5
or			
BIOL	140	Human Anatomy.....	4
or			
BIOL	225	Human Physiology.....	4

#### First Semester (Spring)

**CR**

EMS	220	MICT I .....	10
EMS	225	MICT II.....	10
<b>TOTAL CREDIT HOURS .....</b>			<b>20</b>

#### Second Semester (Summer)

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

EMS 271 MICT IV (field internship) .....15

**Fourth Semester**

ENGL 121 Composition I.....3

SOC 125 Social Problems .....3

or  
Social Science and/or Economics

Elective .....3

PHIL 143 Ethics .....3

or  
Humanities Elective .....3

HPER 134 Weight Training and Physical Fitness.....1

or  
Health and/or Physical Education

Elective .....1

Elective .....2

TOTAL CREDIT HOURS .....12

**TOTAL PROGRAM**

**CREDIT HOURS.....64**

**Fashion Merchandising**

Rome, Paris, New York and Hong Kong are centers of the fashion world. But in today's fast-paced fashion market, these cities aren't that far ahead of your local shopping mall. As never before, fashion merchandising is on the move – in New York, Paris and Johnson County.

JCCC's Fashion Merchandising program can open a wide range of challenging and rewarding career opportunities. Fashion merchandising graduates enter exciting fields such as retail management, retail sales, promotion, display, illustration, apparel and textile design, or as a manufacturer's representative.

You are offered a solid grounding in important basic subjects such as business math, English, economics and marketing. The program also includes professional courses in merchandising, management, visual merchandising, creative selling and merchandise evaluation.

And it requires a series of thought-provoking seminars in human relations, supervisory development, career options and industry topics. These seminars include on-the-job training in the fashion business of your choice.

**Associate of Applied Science Degree**

**First Semester**

**CR**

FASH 277 Seminar: Career Options.....2

FASH 283 Fashion Internship I .....1

FASH 121 Fashion Fundamentals.....3

FASH 220 CAD Apparel Design.....3

MKT 134 Creative Retail Selling.....3

ENGL 121 Composition I.....3

FASH 135 Image Management .....1

TOTAL CREDIT HOURS .....16

**Second Semester**

FASH 284 Fashion Internship II .....1

FASH 132 Marketing Communications .....3

Health and/or Physical Education  
Elective .....1

MATH 120 Business Math or higher .....3

FASH 150 Textiles .....3

FASH 125 Visual Merchandising.....3

BUS 140 Principles of Supervision .....3

TOTAL CREDIT HOURS .....17

**Third Semester**

BUS 225 Human Relations.....3

FASH 285 Fashion Internship III.....1

FASH 231 Merchandising Planning and Control ....3

MKT 121 Retail Management .....3

ECON 130 Basic Economic Issues .....3

or  
ECON 230 Economics I .....3

Electives.....3

TOTAL CREDIT HOURS .....16

**Fourth Semester**

FASH 286 Fashion Internship IV .....1

FASH 242 Consumer Product Evaluation .....3

BUS 230 Marketing.....3

FASH 280 Capstone: Industry Topics.....3

Humanities Elective .....3

Electives.....2

TOTAL CREDIT HOURS .....15

**TOTAL PROGRAM**

**CREDIT HOURS.....64**

**Recommended Electives**

BUS 235 Introduction to International Business...3

FASH 123 Apparel Construction I.....4

FASH 124 Apparel Construction II.....4

FASH 127 CAD: Pattern Design I.....4

FASH 128 CAD: Pattern Design II .....4

FASH 130 Fashion Illustration I.....3

FASH 140 Garment Design .....3

FASH 143 Apparel Construction III .....4

FASH 224 History of Costume.....3

FASH 230 Fashion Illustration II.....3

FASH 268 Field Study: The Market Center .....3

**Suggested Sequence of Required Courses**

FASH 121 Fashion Fundamentals.....3

FASH 277 Seminar: Career Options.....2

FASH 283 Fashion Internship I .....1

ENGL 121 Composition I.....3

FASH 220 CAD Apparel Design .....3

MKT 134 Creative Retail Selling.....3

FASH 135 Image Management .....1

FASH 284 Fashion Internship II.....1

FASH 125 Visual Merchandising.....3

BUS	140	Principles of Supervision.....	3
MATH	120	Business Math or higher*.....	3
FASH	132	Marketing Communications.....	3
FASH	150	Textiles.....	3
FASH	285	Fashion Internship III.....	1
BUS	225	Human Relations.....	3
FASH	231	Merchandising Planning and Control....	3
FASH	242	Consumer Product Evaluation.....	3
MKT	121	Retail Management.....	3
ECON	130	Basic Economic Issues.....	3
		or	
ECON	230	Economics I*.....	3
FASH	286	Fashion Internship IV.....	1
BUS	230	Marketing.....	3
FASH	280	Capstone: Industry Topics.....	3
		Health and/or Physical Education Elective..	1
		Humanities Elective.....	3
		Fashion Electives.....	6

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

## Fire Services Administration

The Fire Science program at JCCC, in close cooperation with the Johnson County Fire Chiefs Association and the University of Kansas Fire Service Training program, has developed a degree program leading to the Associate of Arts in Fire Services Administration. This degree prepares you for advancement in the fire service, and for further study toward the baccalaureate degree at a four-year institution should you elect to pursue your educational goals beyond the associate level.

The program emphasizes general education in addition to technical instruction, and is built around a core of fire science courses carefully selected by the chiefs and the training officers to prepare you for career growth. Technical electives may also be pursued through courses available under a continuing cooperative agreement between area fire science programs, subject to the policies of the participating colleges and programs governing the application of transfer credit.

Self-directed study mechanisms have been developed to complement core courses in the fire science curriculum to compensate for the impact of shift assignments for working fire and rescue personnel, and generally include weekly self-study modules and expanded office availability of instructors for review and guidance. A maximum of one-third of the scheduled meetings for these selected sections (the greatest number of which could be affected by work schedule conflicts) may be engaged in this fashion, subject to documentation of work schedule. Many of the general education courses required by the revised curriculum are also available in formats such as self-paced study and telecourses to further ease progress through the program.

## Associate of Arts Degree

<b>First Semester</b>		<b>CR</b>	
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
		<b>TOTAL CREDIT HOURS.....</b>	<b>16</b>

### 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 (see page 60, section IV B).....	4
		<b>TOTAL CREDIT HOURS.....</b>	<b>16</b>

### Third Semester

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

### Fourth Semester

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

\* If you complete the JCCC pre-employment certificate program (XNF 700 Essentials of Firefighting; XNF 701, XNF 702; XNF 703 Hazardous Material First Responder Operations; and EMS 128 EMS First Responder), you may fulfill technical elective requirements through the advanced standing credit process. (See page 33.)

### Technical Electives

FIRE	121	Fundamentals of Fire Prevention.....	3
FIRE	125	Building Construction for Fire Service...3	
FIRE	130	Fire Investigation.....	3
FIRE	132	Arson Investigation.....	3
FIRE	137	Extinguishing, Detection and Alarm Systems.....	3
FIRE	150	Introduction to Fire Science.....	3
FIRE	159	Fire Service Hydraulics.....	4
FIRE	160	Fire Apparatus and Equipment.....	3
FIRE	169	Rescue Techniques.....	4
FIRE	170	Sprinkler and Standpipe Systems.....	3

FIRE	175	Essentials of Firefighting.....	9
FIRE	190	Hazardous Material Chemical Behavior .3	

**Note:** Significant expansion of this list has been recommended by the advisory committee and will include courses in emergency medical science and information systems. See the career program facilitator for details.

## Food and Beverage Management

(See Hospitality Management, page 97.)

## 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*

<b>First Semester</b>			<b>CR</b>
AGRI	107	Turfgrass Management I .....	3
AGRI	120	Introduction to Urban Agribusiness .....	3
ECON	130	Basic Economic Issues .....	3
TOTAL CREDIT HOURS.....			<b>9</b>

### Second Semester

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

### Summer

KAGB	200	Occupational Internship.....	3
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### Third Semester

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

### Fourth Semester

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

### Fifth Semester

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

### Sixth Semester

KAGB	115	Soil Fertility and Fertilizers .....	3
BIOL	250	Ecology .....	5
KAGB	206	Advanced Landscape Design .....	2
TOTAL CREDIT HOURS .....			<b>10</b>
<b>TOTAL PROGRAM</b>			
<b>CREDIT HOURS.....</b>			<b>62</b>

## 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*

<b>First Semester</b>			<b>CR</b>
BIOL	144	Human Anatomy/Physiology .....	5
DP	124	Introduction to Computing Concepts and Applications .....	3

KMRT	160	Introduction to Medical Records Profession	.2
KMRT	161	Health Record Systems Analysis and Controls	3.5
KMRT	151	Medical Terminology for Medical Records	.3
		<b>TOTAL CREDIT HOURS</b>	<b>16.5</b>

**Second Semester**

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

**Summer**

SPD	121	Public Speaking	3
KMRT	200	Introduction to Classification Systems	1
		American Institutions Requirements *	3
		<b>TOTAL CREDIT HOURS</b>	<b>7</b>

**Third Semester**

KMRT	164	Quality Management	3
KMRT	163	Classification, Nom., Ind. and Reg. I	4
KMRT	167	Directed Practice II	2
KMRT	210	Classification Systems and Nomenclatures for Ambulatory Care	3
OST	155	Word Processing Applications I	3
		<b>TOTAL CREDIT HOURS</b>	<b>15</b>

**Fourth Semester**

BUS	243	Human Resource Management	3
KMRT	175	Specialized Health Record Systems	2
KMRT	180	Classification, Nom., Ind. and Reg. II	3
KMRT	168	Directed Practice III	2
PSYC	130	Introduction to Psychology	3
		<b>TOTAL CREDIT HOURS</b>	<b>13</b>
		<b>TOTAL PROGRAM CREDIT HOURS</b>	<b>69</b>

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

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

**Health Occupations**

The field of health care continues to grow as the average age of the population increases. According to the Department of Labor, employment opportunities in health are among the fastest-growing occupations in the nation.

The Health Occupations programs include training for employment as a certified nurse aide, certified medication aide or home health aide. All programs satisfy requirements for training and certification in Kansas.

These courses, taken in sequence, provide a career ladder for experience and training in health occupations.

Most health occupations require continuing education following completion of basic programs. Advancement opportunities and certification in many careers depend on additional training. The certified medication aide update and an intravenous therapy training course at JCCC/AVS provide support for competence and safety through continuing education.

**Certified Nurse Aide**

96 contact hours

AVHO 102 Certified Nurse Aide

**Certified Medication Aide**

80 hours of instruction

AVHO 104 Certified Medication Aide

**Home Health Aide**

21.5 contact hours

AVHO 106 Home Health Aide

**Certified Medication Aide Update**

10 contact hours

AVHO 108 Certified Medication Aide Update

**I.V. Therapy for Licensed Practical Nurses**

48 contact hours

AVHO 115 I.V. Therapy

**Heating, Ventilation and Air Conditioning Technology**

Modern residential, commercial, institutional and manufacturing operations depend on carefully monitored temperature conditions and well-trained installation and service technicians. Government researchers say graduates of training programs that emphasize hands-on experience will have a definite advantage when seeking employment in heating, ventilation and air conditioning technology. JCCC provides you the opportunity to work on actual equipment while pursuing a degree or certificate program. The 64-credit-hour, associate of applied science degree program focuses on developing an awareness of basic mathematical and scientific principles. The curriculum is concerned with the manner by which these principles affect the control of temperature and the quality of air, design, testing, installation and development of heating and cooling systems. Special emphasis is on energy conservation through computer management. The theory of operation as well as installation, service and repair of gas and electric furnaces, heat pumps, rooftop air conditioners, cooling towers and steam boilers are part of the curriculum.

## Associate of Applied Science Degree

### First Semester

		CR
HVAC	121 Basic Principles of HVAC	4
HVAC	123 Electromechanical Systems	4
HVAC	125 Energy Alternatives	2
HVAC	143 Reading Blueprint and Ladder Diagrams	2
MATH	133 Technical Math I	4
	<b>TOTAL CREDIT HOURS</b>	<b>16</b>

### Second Semester

HVAC	126 Residential HVAC Systems	4
HVAC	150 Refrigerant Management and Certification	1
INDT	125 Industrial Safety	1
ENGL	121 Composition I	3
PHYS	125 Technical Physics I	4
	Social Science and/or Economics Elective	.3
	<b>TOTAL CREDIT HOURS</b>	<b>16</b>

### Third Semester

HVAC	124 Equipment Selection and Duct Design	4
HVAC	205 Pneumatic Control Systems	2
HVAC	218 Electronic Control Systems	2
HVAC	223 Commercial Systems: Heating	4
CPCA	105 Introduction to Personal Computing: IBM	1
	Health and/or Physical Education Elective	.1
	Technical Electives	3
	<b>TOTAL CREDIT HOURS</b>	<b>17</b>

### Fourth Semester

HVAC	167 Sheet Metal Layout and Fabrication	3
HVAC	221 Commercial Systems: Air Conditioning	4
HVAC	224 Diagnosis and Service Procedures	3
HVAC	228 DDC and Microprocessor-based Controls	2
	Humanities Elective	3
	<b>TOTAL CREDIT HOURS</b>	<b>15</b>
	<b>TOTAL PROGRAM CREDIT HOURS</b>	<b>64</b>

### Technical Electives

AUTO	125 Introduction to Automotive Shop Practices	3
AUTO	230 Automotive Heating and Air Conditioning	3
BUS	121 Introduction to Business	3
BUS	145 Small Business Management	3
BUSE	138 Fast Trac Business Plan	3
BUSE	140 Fast Trac Feasibility Plan	2
DRAF	120 Introduction to Drafting	2
DRAF	129 Interpreting Architectural Drawings	2
DRAF	130 Introduction to CAD Concepts	3
ELEC	120 Introduction to Electronics	3
ELEC	131 Introduction to Sensors and Actuators	3
ELEC	133 Programmable Controllers	3
ELTE	122 National Electrical Code I	4
ELTE	125 Residential Wiring Methods	4
ENGR	131 Engineering Graphics I	4
HVAC	271 HVAC Internship	3

HVAC	291 Independent Study	1-4
MFAB	121 Introduction to Welding	4
RRT	165 Railroad Safety, Quality and Environment	3

## Postsecondary Certificate Program

The postsecondary certificate program is designed to prepare you for the basic job skills needed to service residential and commercial heating and air conditioning equipment. Students who elect the certificate option learn the theory of operation and how to install, service and repair gas furnaces, heat pumps, rooftop air conditioners, chilled water systems and steam boilers. This knowledge is reinforced by working on actual equipment in the laboratory. Completion of this program will allow the student to seek employment as a maintenance and service technician in the heating/air conditioning trade.

### Required Courses

		CR
ENGL	121 Composition I	3
HVAC	121 Basic Principles of HVAC	4
HVAC	123 Electromechanical Systems	4
HVAC	124 Equipment Selection and Duct Design	4
HVAC	126 Residential HVAC Systems	4
INDT	125 Industrial Safety	1
MATH	115 Introduction to Algebra	3
	Technical Elective	3
	<b>TOTAL CREDIT HOURS</b>	<b>26</b>

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

HVAC	167 Sheet Metal Layout and Fabrication	3
HVAC	205 Pneumatic Control Systems	2
HVAC	218 Electronic Control Systems	2
HVAC	221 Commercial Systems: Air Conditioning	4
HVAC	223 Commercial Systems: Heating	4
HVAC	224 Diagnosis and Service Procedures	3
HVAC	228 DDC and Microprocessor-based Controls	2
	<b>TOTAL CREDIT HOURS</b>	<b>8</b>
	<b>TOTAL PROGRAM CREDIT HOURS</b>	<b>34</b>

### Technical Electives

AUTO	125 Introduction to Automotive Shop Practices	3
AUTO	230 Automotive Heating and Air Conditioning	3
BUS	121 Introduction to Business	3
BUS	145 Small Business Management	3
DRAF	120 Introduction to Drafting	2
DRAF	129 Interpreting Architectural Drawings	2
DRAF	130 Introduction to CAD Concepts	3
ELEC	120 Introduction to Electronics	3
ELEC	131 Introduction to Sensors and Actuators	3
ELEC	133 Programmable Controllers	3
ELTE	122 National Electrical Code I	4

ELTE	125	Residential Wiring Methods .....	4
ENGR	131	Engineering Graphics I.....	4
HVAC	125	Energy Alternatives.....	2
HVAC	143	Reading Blueprints and Ladder Diagrams..	2
HVAC	150	Refrigerant Management and Certification .	1
HVAC	271	HVAC Internship .....	3
HVAC	291	Independent Study.....	1-4
MFAB	121	Introduction to Welding .....	4
RRT	165	Railroad Safety, Quality and Environment.....	3

### Vocational Certificate Program

The Heating, Ventilation and Air Conditioning Vocational Certificate program is a one-year program that you can complete in two semesters. The program is designed as a fast track to employment for both new entrants into the job market and those who have been displaced from their jobs due to changes in the employment market. Through a large variety of course offerings, the program can be tailored to meet the requirements of a diverse number of HVAC occupations. Upon successful completion of the program, you will be equipped with the technical skills necessary to enter the job market as a service or maintenance technician in the heating and air conditioning trade.

<b>Required Courses</b>		<b>CR</b>	
HVAC	121	Basic Principles of HVAC .....	4
HVAC	123	Electromechanical Systems.....	4
INDT	125	Industrial Safety.....	1
		Technical Elective .....	4
		<b>TOTAL CREDIT HOURS .....</b>	<b>13</b>

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

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

### Technical Electives

AUTO	125	Introduction to Auto Shop Practices.....	3
AUTO	230	Automotive Heating and Air Conditioning.....	3
BUS	121	Introduction to Business .....	3
BUS	145	Small Business Management.....	3
DRAF	120	Introduction to Drafting .....	2
DRAF	129	Interpreting Architectural Drawings .....	2

DRAF	130	Introduction to CAD Concepts.....	3
ELEC	120	Introduction to Electronics .....	3
ELEC	131	Introduction to Sensors and Actuators...3	
ELEC	133	Programmable Controllers .....	3
ELTE	122	National Electrical Code I .....	4
ELTE	125	Residential Wiring Methods .....	4
ENGR	131	Engineering Graphics I.....	4
HVAC	125	Energy Alternatives.....	2
HVAC	143	Reading Blueprint and Ladder Diagrams ..	2
HVAC	150	Refrigerant Management and Certification .	1
HVAC	271	HVAC Internship .....	3
HVAC	291	Independent Study.....	1-4
MFAB	121	Introduction to Welding .....	4
RRT	165	Railroad Safety, Quality and Environment.....	3

## 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.

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

#### Second Semester

HMGT	230	Intermediate Food Preparation .....	3
HMGT	128	Supervisory Management.....	3
HMGT	273	Seminar: Accounting .....	3
PSYC	121	Applied Psychology.....	3
		or	

PSYC	130	Introduction to Psychology.....	3
HMEC	151	Nutrition and Meal Planning.....	3
		TOTAL CREDIT HOURS .....	15

**Summer**

HMGT	275	Hospitality Management Internship.....	3
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**Third Semester**

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

**Fourth Semester**

HMGT	126	Food Management.....	4
HMGT	228	Advanced Hospitality Management .....	3
HMGT	250	Introduction to Catering.....	3
SPD	125	Oral Communications.....	3
		Humanities Requirement.....	3
		TOTAL CREDIT HOURS .....	16
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS.....</b>	<b>65</b>

**Postsecondary Certificate Program**

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

**Associate of Applied Science Degree**

**Hotel/Motel Management**

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

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

**First Semester**

HMGT	121	Hospitality Management Fundamentals..	3
HMGT	123	Basic Food Preparation.....	3
HMEC	151	Nutrition and Meal Planning.....	3

**CR**

CPCA	105	Introduction to Personal Computing: IBM..	1
		or	
CPCA	106	Introduction to Personal Computing: Mac....	1
ENGL	121	Composition I.....	3
HMGT	132	Seminar in Housekeeping .....	3
		TOTAL CREDIT HOURS .....	16

**Second Semester**

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

**Summer**

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

**Third Semester**

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

**Fourth Semester**

HMGT	126	Food Management.....	4
HMGT	228	Advanced Hospitality Management . . .	3
HMGT	130	Hospitality Law .....	3
		Humanities Requirement .....	3
HMGT	268	Hotel Accounting .....	3
		TOTAL CREDIT HOURS .....	16
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS .....</b>	<b>68</b>

**Information Systems**

(See Computer Information Systems, page 79.)

**Information Technology**

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

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

### Associate of Applied Science Degree

#### Prerequisites

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

<b>First Semester</b>		<b>CR</b>	
IT	200	Introduction to Information Technology	3
CPCA	137	MS/DOS Intermediate	1
CPCA	138	Windows for Micros	1
ELEC	124	Microcomputer Hardware	3
ENGL	121	Composition I	3
		Technical Electives	5
		<b>TOTAL CREDIT HOURS</b>	<b>16</b>

#### Second Semester

IT	210	Local Area Networking Systems	4
ELEC	120	Introduction to Electronics	3
MATH	171	College Algebra	3
ENGL	122	Composition II	3
		or	
ENGL	123	Technical Writing	3
		Health and/or Physical Education	
		Elective	1
		Technical Electives	2
		<b>TOTAL CREDIT HOURS</b>	<b>16</b>

#### Third Semester

IT	211	Advanced Local Area Networking Systems	3
IT	217	Local Area Networking Components	2
DP	134	Programming Fundamentals	4
SPD		Any 100 level Speech course	3
		Technical Electives	3
		<b>TOTAL CREDIT HOURS</b>	<b>15</b>

#### Fourth Semester

IT	248	Network Specifications and Contracting	2
IT	250	Network Design and Implementation	3
		Social Science and/or	
		Economics Elective	3
		Humanities Elective	3
		Technical Electives	6
		<b>TOTAL CREDIT HOURS</b>	<b>17</b>
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS</b>	<b>64</b>

#### Technical Electives

IT	213	Local Area Network Supervisor	1
IT	212	Local Area Network Applications	1
IT	219	Network Connectivity	3
CPCA	108	Word Processing on Microcomputers I	1
CPCA	110	Spreadsheets on Microcomputers I	1
CPCA	111	Spreadsheets on Microcomputers II	1
CPCA	112	PC Communications	1
CPCA	114	Databases on Microcomputers I	1
CPCA	115	Databases on Microcomputers II	1
CPCA	118	Electronic Mail/Calendar Systems	1
CPCA	121	Introduction to Project Management	1
CPCA	123	Presentation Graphics	1
CPCA	128	Personal Computer Applications	3
		(Student may not get credit for CPCA 128 and CPCA 108, 110 and 114)	
CPCA	139	UNIX	1
CPCA	141	Internet I	1
CPCA	148	Financial Applications – Business	1
CPCA	180	OS/2	1
CDTP	130	Desktop Publishing I: PageMaker	1
		or	
CDTP	131	Desktop Publishing I: QuarkXPress	1
CS	200	Concepts in Programming Algorithms	4
DP	138	Visual Basic for Windows	4
DP	162	Database Programming	4
DP	204	UNIX Operating System	3
DRAF	115	Computer Graphics	3
DRAF	130	Introduction to CAD Concepts	3
ELEC	120	Introduction to Electronics	2
ELEC	150	Introduction to Telecommunications	3
ENGR	131	Engineering Graphics I	4
ENGR	171	Programming for Engineering and Science	3
ACCT	121	Accounting I	3
		or	
ACCT	111	Small Business Accounting	3
ACCT	122	Accounting II	3
ACCT	135	Computer Accounting Applications	3

#### Local Area Network Administrator

##### Vocational Certificate

This certificate is designed to cover the duties of a local area network administrator in a business environment. It is directed toward the nontechnical individual who has other primary job responsibilities but also must support the network. It provides instruction in specific products such as NetWare and Windows NT, as well as hands-on investigation of utilities and tools not permissible in a production environment.

##### Prerequisites

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

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

### Required Courses

IT	200	Introduction to Information Technology	3
CPCA	137	MS/DOS Intermediate	1
CPCA	138	Windows for Micros	1
ELEC	124	Microcomputer Hardware	3
IT	210	Local Area Networking Systems (using NetWare 3.12, 4.0, WinNT)	4
CPCA		Technical Electives	3
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS</b>	<b>15</b>

### Technical Electives

CPCA	108	Word Processing on Microcomputers	1
CPCA	110	Spreadsheets on Microcomputers	1
CPCA	111	Spreadsheets on Microcomputers II	1
CPCA	112	PC Communications	1
CPCA	114	Databases on Microcomputers I	1
CPCA	115	Databases on Microcomputers II	2
CPCA	118	Electronic Mail/Calendar Systems	1
CPCA	121	Introduction to Project Management	1
CPCA	123	Presentation Graphics	1
CPCA	128	Personal Computer Applications (student may not get credit for CPCA 128 and CPCA 108, CPCA 110 and CPCA 114)	3
CPCA	141	Introduction to Internet	1
CPCA	148	Financial Applications – Business	1
CDTP	130	Desktop Publishing: PageMaker	1
CPCA	180	OS/2	1
CPCA	139	UNIX Operating System	1

### Local Area Network Technology Specialist Vocational Certificate

This certificate is designed to provide a group of courses that focus on the technical support needs of a user or contractor involved in designing, installing and implementing a local area network. Training in requirement planning, standards for commercial building cabling systems and testing and certification of systems will be covered.

### Prerequisites

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

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

### Required Courses

IT	200	Introduction to Information Technology	3
CPCA	137	MS/DOS Intermediate	1
CPCA	138	Windows for Micros	1
ELEC	124	Microcomputer Hardware	3
IT	210	Local Area Networking Systems (using NetWare 3.12, 4.0, WinNT)	4
IT	211	Advanced Local Area Networking Systems	3
IT	217	Local Area Network Components	2
IT	248	Local Area Network Specifications and Contracting	2

IT	250	Network Design and Implementation	3
		Technical Electives	6
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS</b>	<b>28</b>

### Technical Electives

IT	205	Local Area Network Supervisor	1
IT	207	Local Area Network Applications	1
IT	219	Network Connectivity	1
CPCA	108	Word Processing on Microcomputers I	1
CPCA	110	Spreadsheets on Microcomputers I	1
CPCA	111	Spreadsheets on Microcomputers II	1
CPCA	112	PC Communications	1
CPCA	114	Databases on Microcomputers I	1
CPCA	115	Databases on Microcomputers II	2
CPCA	118	Electronic Mail/Calendar Systems	1
CPCA	121	Introduction to Project Management	1
CPCA	123	Presentation Graphics	1
CPCA	128	Personal Computer Applications (student may not get credit for CPCA 128 and CPCA 108, CPCA 110 and CPCA 114)	3
CPCA	141	Introduction to Internet	1
CPCA	148	Financial Applications – Business	1
CDTP	130	Desktop Publishing I: PageMaker	1
CPCA	180	OS/2	1
CPCA	139	UNIX Operating System	1
CS	200	Concepts in Programming Algorithms	4
DP	138	Visual Basics for Windows	4
DP	162	dBase Programming	4
DRAF	115	Computer Graphics	3
DRAF	130	Introduction to CAD Concepts	3
ELEC	120	Introduction to Electronics	3
ELEC	150	Introduction to Telecommunications	3
ENGR	131	Engineering Graphics I	4
ENGR	171	Programming for Engineering and Science	3
ACCT	121	Accounting I or	3
ACCT	111	Small Business Accounting	3

## Information/Word Processing

(See Office Systems Technology, page 107.)

## Interior Merchandising

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

Courses in interior products, creative retail selling, business management, drafting and product presentation are solidly meshed with a basic curriculum of business math, marketing, English and history.

Seminars in business practices and procedures, budgeting and estimating, as well as two required work-study

practicums, help develop technical, creative and merchandising skills needed to be competitive in the interior products industry.

An associate of applied science degree is awarded after successful completion of the two-year, 67-credit-hour curriculum.

### Associate of Applied Science Degree

#### First Semester CR

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

#### Second Semester

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

#### Third Semester

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

#### Fourth Semester

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

### Suggested Sequence of Required Courses

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

### Interpreter Training

The employment outlook for sign language interpreters is promising. As the population grows, so will the number of deaf and hard-of-hearing people who need interpreters. Another factor in the predicted increase in employment opportunities is the effort many social service agencies, school systems, medical services and industries are making to provide interpreter services.

JCCC's program concentrates on developing skills in American Sign Language, deaf culture and fingerspelling, leading to interpretation and transliteration. During the last semester of the program, you participate in a practicum class in which you interpret under supervision in a variety of situations at JCCC and in the community. Successful completion of this 64-credit-hour program leads to an associate of applied science degree.

This is a selective admission program with limited enrollment. The deadline for fall semester applications is Feb. 15. If you are interested, contact the Admissions office for an application packet, which includes prerequisites, deadlines, admission requirements and academic criteria.

### Associate of Applied Science Degree

<i>First Semester</i>		<b>CR</b>
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
	<b>TOTAL CREDIT HOURS .....</b>	<b>15</b>

<i>Second Semester</i>		
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
	<b>TOTAL CREDIT HOURS .....</b>	<b>17</b>

<i>Third Semester</i>		
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
	<b>TOTAL CREDIT HOURS .....</b>	<b>16</b>

<i>Fourth Semester</i>		
INTR	230 American Sign Language IV .....	4
INTR	255 Interpreting II.....	6
INTR	281 Interpreter Practicum II .....	3
	Humanities Elective .....	3
	<b>TOTAL CREDIT HOURS .....</b>	<b>16</b>
	<b>TOTAL PROGRAM</b>	
	<b>CREDIT HOURS.....</b>	<b>64</b>

## Marketing and Management

Merchandising, marketing and management-related fields have recently experienced tremendous growth and expansion in Johnson County. Surveys indicate that few other areas offer greater opportunity to qualified people. In fact, employment of people in this field is expected to increase faster than the average for all occupations nationwide.

JCCC's Marketing and Management program prepares you for jobs in this field. Graduates of JCCC's program are ready for entry-level management or sales positions in retail, wholesale or manufacturing and in marketing services.

Through marketing and management courses and in the case studies capstone course, you learn the latest in business trends. You also learn the importance of good

customer service and the skills needed to deliver that service. The curriculum reflects current industry standards, including an emphasis on personal computer use, interpersonal communications and human relations.

Because all marketing and management students work at least 15 hours a week each semester in a store or business, you can apply what you learn in the classroom to your job. You also can take your work experiences back to the classroom for analysis and a greater understanding of the problems businesses face. You acquire basic merchandising information and learn how to work with people. By integrating course work and on-the-job experience, you are given the knowledge, skills and attitudes necessary to reach your career objectives.

### Associate of Applied Science Degree

<i>First Semester</i>		<b>CR</b>
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
	<b>TOTAL CREDIT HOURS .....</b>	<b>16</b>

<i>Second Semester</i>		
BUS	150 Business Communications.....	3
BUS	230 Marketing.....	3
MKT	121 Retail Management.....	3
ACCT	121 Accounting I .....	3
	or	
ACCT	111 Small Business Accounting.....	3
DP	124 Introduction to Computing Concepts and Applications .....	3
	and	

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

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

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

<i>Third Semester</i>		
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
		<b>TOTAL CREDIT HOURS .....</b>	<b>17</b>

**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
		<b>TOTAL CREDIT HOURS .....</b>	<b>14</b>
		<b>TOTAL PROGRAM CREDIT HOURS.....</b>	<b>65</b>

**Sales and Customer Relations  
Vocational Certificate Program**

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

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

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

<b>First Semester</b>			<b>CR</b>
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	
		<b>TOTAL CREDIT HOURS .....</b>	<b>16</b>

**Second Semester**

BUS	225	Human Relations.....	3
MKT	202	Consumer Behavior.....	3
MKT	221	Sales Management.....	3
DP	124	Introduction to Computing Concepts and Applications .....	3

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	234	Services Marketing.....	3
LC	150	Job Search Skills.....	1
FASH	135	Image Management .....	1
MKT	286	Marketing and Management Internship II.1	
		<b>TOTAL CREDIT HOURS .....</b>	<b>19</b>
		<b>TOTAL PROGRAM CREDIT HOURS.....</b>	<b>35</b>

**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

**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.

<b>First Semester</b>			
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	
		<b>TOTAL CREDIT HOURS.....</b>	<b>16</b>

**Second Semester**

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

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 certificate program includes one internship during which students will learn through hands-on industry experience. All 14 credit hours in this certificate can be applied toward the 33-credit-hour teleservice representative certificate program.

BUS	121	Introduction to Business	.....3
MKT	140	Teleservice Communication Skills	.....3
MKT	202	Consumer Behavior	.....3
MATH	120	Business Math	.....3
OST	101	Computerized Keyboarding	.....1
MKT	284	Marketing and Mgmt. Internship I (in teleservice industry)	.....1
<b>TOTAL PROGRAM</b>			
<b>CREDIT HOURS</b>			<b>.....14</b>

### Metal Fabrication

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

JCCC provides well-equipped laboratories that enable students to receive instruction in oxyacetylene welding and cutting, shielded metal arc welding (SMAW), gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), basic machining, metallurgy and allied processes. The program is accredited as an American Welding Society Participating Organization in the

Training and Testing of Entry Level Welders. Eligible students may elect to test under AWS QC10 certification guidelines and, if successful, be listed in the AWS National Registry of Entry Level Welders.

### Associate of Applied Science Degree

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

### Second Semester

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

### 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
<b>TOTAL CREDIT HOURS</b>		<b>.....17</b>

### Fourth Semester

MFAB	160	Gas Tungsten Arc Welding .....4
MFAB	240	Metallurgy.....2
HPER	200	First Aid/CPR.....2
		Humanities Elective .....3
		Related Electives.....5-7
<b>TOTAL CREDIT HOURS</b>		<b>.....16-18</b>
<b>TOTAL PROGRAM</b>		
<b>CREDIT HOURS</b>		<b>.....64</b>

### Related Electives

AUTO	121	Small Engine Service .....3
BUS	120	Management Attitudes and Motivation.3
BUS	145	Small Business Management.....3
BUSE	138	FastTrac Business Plan.....4
BUSE	140	FastTrac Feasibility Plan.....2
CET	105	Construction Methods .....2
DRAF	115	Introduction to Computer Graphics Systems.....3
DP	124	Introduction to Computing Concepts and Applications.....3
ELEC	131	Introduction to Sensors and Actuators...3

ELEC	133	Programmable Controllers .....	3
ENGL	210	Technical Writing II.....	3
HVAC	167	Sheet Metal Layout and Fabrication.....	3
INDT	140	Quality Control Using SPC .....	2
MATH	134	Technical Math II.....	5
RRIT	137	Structural Welding.....	3
RRIT	138	Structural Welding FCAW.....	3
RRIT	139	Structural Welding Pipe.....	3
MFAB	230	Gas Metal Arc Welding II.....	4
MFAB	271	Metal Fabrication Internship .....	3
MFAB	291	Independent Study.....	1-4
PHYS	126	Technical Physics II.....	3
RRT	165	Railroad Safety, Quality and Environment...	3

### Vocational Certificate Program

The Metal Fabrication vocational certificate program teaches welding skills in the areas of shielded metal arc welding, gas metal arc welding, flux cored arc welding, gas tungsten arc welding, plasma arc cutting and oxy-acetylene cutting and welding. In addition, the student will receive training in safety and basic blueprint reading. This should give the student the skills needed to successfully enter the field of welding.

Prior to admission to the Metal Fabrication vocational certificate program, the student must have had MATH 111 Fundamentals of Math or an appropriate score on the math assessment test.

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

## Nursing

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

accredited by the National League for Nursing.

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

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

### Nursing – Practical Nursing Vocational Certificate Program

#### Prerequisites

BIOL 140, PSYC 130, CPCA 105, MATH 111

#### Fall

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

#### Spring

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

#### Summer

AVPN	106	Medical Surgical Nursing	
<b>TOTAL PROGRAM</b>			
<b>CONTACT HOURS .....</b>			<b>1,100</b>

### Nursing – Registered Nurse Associate of Science Degree

#### Prior to enrolling in NURS 121

CHEM	122	Principles of Chemistry .....	5
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#### Prerequisite

Mathematics Elective (MATH 116 or higher) .....			3
<b>TOTAL CREDIT HOURS.....</b>			<b>8</b>

**First Semester**

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

**Second Semester**

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

**Summer**

ENGL	121	Composition I.....	3
TOTAL CREDIT HOURS.....			<b>3</b>

**Third Semester**

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

**Fourth Semester**

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

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

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

**Summer**

NURS	123	PN-RN Transition course.....	6
TOTAL CREDIT HOURS.....			<b>6</b>

**Third Semester**

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

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

**Occupational Therapy Assistant**

The occupational therapy assistant assists the registered occupational therapist, helping people with emotional and developmental limitations achieve more functional lives. The two-year Occupational Therapy Assistant program is offered in cooperation with Penn Valley Community College. The support courses are held at JCCC and the clinical courses at Penn Valley and affiliated clinical agencies. You must be formally accepted by both JCCC and Penn Valley. Course registration is at JCCC. Upon graduation, you are eligible to sit for the American Occupational Therapy Certification Board's national certification examination. Consult a JCCC counselor for additional information.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact Penn Valley Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

The Occupational Therapy Assistant program is accredited by the Accreditation Council for Occupational Therapy Education of the American Occupational Therapy Association, located at 4720 Montgomery Lane, P. O. Box 31220, Bethesda, MD 20824-1220. AOTA's phone number is (301) 652-AOTA.

**Associate of Applied Science Degree**

*Degree granted by Penn Valley Community College*

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

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

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

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

**Fall I Semester**

KOT	102	Basic Emergency Patient Care.....	1
BIOL	140	Human Anatomy (option 1, course 2).....	4
or			

BIOL	144	Anatomy and Physiology (option 2, course 2) .....	5
KOT	100	Introduction to Occupational Therapy.....	5
KOT	103	Clinical Conditions .....	2
KOT	106	General Treatment Procedures.....	3
KOT	116	Level I Fieldwork: Introduction to Clinical Experience.....	5
		TOTAL CREDIT HOURS .....	25.5

#### Spring I Semester

PSYC	130	Introduction to Psychology .....	3
KOT	101	Pediatrics .....	3
KOT	111	Level I Fieldwork: Pediatrics.....	5
KOT	154	Applied Neurology .....	2
KOT	109	Kinesiology .....	3
SPD	121	Public Speaking .....	3
		TOTAL CREDIT HOURS .....	14.5

#### Summer

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

#### Fall II Semester

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

#### Spring II Semester

KOT	222	Level II Fieldwork.....	8
		TOTAL CREDIT HOURS.....	8
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS.....</b>	<b>70.5</b>

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

## Office Systems Technology

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

Essential skills and knowledge include computer literacy, word processing, desktop publishing, databases, spreadsheets, electronic mail, networking, teleconferencing, information systems, organizing and training.

Our program prepares students for both entry-level and advanced positions, future learning and productive employment in this rapidly changing environment. The number of jobs easily exceeds the number of qualified applicants. The best jobs will continue to go to the well-trained specialist with a solid business and general education background.

The Office Systems Technology program offers options in Administrative Office Management, Legal Office Specialist, Medical Office Specialist, Administrative Support Services Certificate, Office Careers Certificate, Office Automation Certificate and Medical Office Assistant Certificate.

#### Prerequisite

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

#### Associate of Applied Science Degree

##### Administrative Office Management

This program prepares students for positions as supervisors and managers in automated office environments. Emphasis is on the development of communications, decision-making, organizational and management skills; and knowledge of software options, hardware components, applications and concepts. This program is designed to prepare you to function in the electronic office by using a mix of vocational, technical and academic training.

#### First Semester

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

#### Second Semester

ACCT	121	Accounting I .....	3
CPCA	110	Spreadsheets on Microcomputers I .....	1
ELEC	124	Microcomputer Hardware* .....	3
BUS	121	Introduction to Business .....	3
OST	155	Word Processing Applications I* .....	2
OST	150	Records Management.....	3
CPCA	138	Windows for Micros* .....	1
		TOTAL CREDIT HOURS .....	16

#### Third Semester

BUS	122	Introduction to Law .....	3
CPCA	118	Electronic Mail/Calendar Systems* .....	1
CPCA	112	PC Communications* .....	1

BUS	140	Principles of Supervision.....	3
		or	
BUS	141	Principles of Management.....	3
OST	255	Word Processing Applications II*.....	2
BUS	150	Business Communications*.....	3
		Humanities Elective.....	3
		OST Elective.....	1
		TOTAL CREDIT HOURS.....	17

**Fourth Semester**

ECON	130	Basic Economic Issues.....	3
		or	
ECON	230	Economics I.....	3
OST	275	Office Internship I*.....	1
BUS	243	Human Resource Management.....	3
OST	265	Computerized Office Applications*.....	3
OST	270	Office Automation Implementation*.....	3
OST	260	Desktop Publishing for the Office*.....	3
		TOTAL CREDIT HOURS.....	16
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS.....</b>	<b>65</b>

**Associate of Applied Science Degree**

**Medical Office Specialist**

The Medical Office Specialist prepares students to pursue an administrative career in the medical profession. The program combines training in the latest technical and computer skills with specialized coursework unique to the medical profession. Beginning students and employed medical personnel will find this program invaluable for career advancement.

**First Semester**

**CR**

LC	130	Medical Terminology.....	3
ENGL	121	Composition I.....	3
OST	110	Skillbuilding I*.....	1
OST	125	Document Formatting*.....	1
OST	130	Office Systems Concepts.....	3
CPCA	138	Windows for Micros*.....	1
CPCA	118	Electronic Mail/Calendar Systems*.....	1
CPCA	114	Databases on Microcomputers I*.....	1
		Health and/or Physical Education Elective ..	1
		OST Elective.....	1
		TOTAL CREDIT HOURS.....	16

**Second Semester**

OST	170	Medical Coding and Billing*.....	3
OST	150	Records Management.....	3
OST	155	Word Processing Applications I*.....	2
MATH	120	Business Math.....	3
BUS	225	Human Relations.....	3
OST	115	Electronic Calculators.....	1
		OST Elective.....	1
		TOTAL CREDIT HOURS.....	16

**Third Semester**

ACCT	111	Small Business Accounting*.....	3
		or	
ACCT	121	Accounting I.....	3
BUS	122	Introduction to Law.....	3
BUS	150	Business Communications*.....	3
OST	255	Word Processing Applications II*.....	2
CPCA	110	Spreadsheets on Microcomputers I*.....	1
CPCA	112	PC Communications.....	1
		Humanities Elective.....	3
		TOTAL CREDIT HOURS.....	16

**Fourth Semester**

ECON	130	Basic Economic Issues.....	3
		or	
ECON	230	Economics I.....	3
OST	165	Medical Transcription*.....	3
OST	265	Computerized Office Applications*.....	3
OST	275	Office Internship I*.....	1
BUS	140	Principles of Supervision.....	3
		or	
BUS	141	Principles of Management.....	3
		OST Elective.....	3
		TOTAL CREDIT HOURS.....	16
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS.....</b>	<b>64</b>

\* Courses with prerequisites/corequisites

**Associate of Applied Science Degree**

**Legal Office Specialist**

The Legal Office Specialist program prepares students for administrative duties in the law office and other legal settings. The program combines training in the latest technical and computer skills with specialized coursework unique to the legal profession, including exposure to legal practices, preparation and practical application of documents and terminology used in the legal office.

**First Semester**

**CR**

BUS	122	Introduction to Law.....	3
OST	110	Skillbuilding I*.....	1
OST	130	Office Systems Concepts.....	3
OST	125	Document Formatting*.....	1
ENGL	121	Composition I.....	3
CPCA	138	Windows for Micros.....	1
OST	115	Electronic Calculators.....	1
CPCA	114	Databases on Microcomputers I*.....	1
		Health and/or Physical Education Elective.1	1
		OST Elective.....	1
		TOTAL CREDIT HOURS.....	16

**Second Semester**

OST	150	Records Management.....	3
MATH	120	Business Math.....	3
ACCT	111	Small Business Accounting.....	3
		or	

ACCT	121	Accounting I	3
OST	155	Word Processing Applications I*	2
OST	160	Legal Transcription	3
CPCA	118	Electronic Mail/Calendar Systems	1
		OST Elective	1
		<b>TOTAL CREDIT HOURS</b>	<b>16</b>

**Third Semester**

PL	223	Computer Applications in the Law Office	3
BUS	150	Business Communications	3
BUS	225	Human Relations	3
OST	255	Word Processing Applications II*	2
CPCA	112	PC Communications*	1
CPCA	110	Spreadsheets on Microcomputers I*	1
		OST Electives	3
		<b>TOTAL CREDIT HOURS</b>	<b>16</b>

**Fourth Semester**

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

**Office Careers Vocational Certificate**

At the completion of this 13-credit-hour certificate, students demonstrate proficiency in office skills, including computer and word processing knowledge. This certificate program prepares students to enter an office career in a minimal time period.

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

**Administrative Support Specialist Vocational Certificate Program**

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

OST	110	Skillbuilding I*	1
OST	130	Office Systems Concepts	3
OST	125	Document Formatting*	1
CPCA	110	Spreadsheets on Microcomputers I*	1
CPCA	114	Databases on Microcomputers I*	1
CPCA	138	Windows for Micros	1
BUS	225	Human Relations	3
OST	155	Word Processing Applications I*	2
OST	115	Electronic Calculators	1
OST	120	Machine Transcription*	1
OST	150	Records Management	3
CPCA	118	Electronic Mail/Calendar Systems*	1
CPCA	112	PC Communications*	1
OST	255	Word Processing Applications II*	2
OST	265	Computerized Office Applications*	3
OST	260	Desktop Publishing for the Office*	3
OST	275	Office Internship I*	1
		OST Electives	2
		<b>TOTAL PROGRAM CREDIT HOURS</b>	<b>31</b>

\* Courses with prerequisites/corequisites

**Office Automation Skills Vocational Certificate**

The 12-hour certificate is designed to quickly teach the basic and intermediate concepts of word processing and desktop publishing. In addition, students are given an overview of the field of office automation and how it will affect their future.

**Prerequisite**

Prior to admission to the Office Automation Skills Vocational Certificate program, you must be able to type at least 35 words a minute.

OST	155	Word Processing Applications I*	2
OST	130	Office Systems Concepts	3
OST	255	Word Processing Applications II*	2
OST	260	Desktop Publishing for the Office*	3
		OST Electives	2
		<b>TOTAL PROGRAM CREDIT HOURS</b>	<b>12</b>

**Office Automation Technology Vocational Certificate**

The Office Automation Technology Certificate program was developed in response to the demand in the workplace for people skilled in office automation. This program offers college graduates or others with appropriate educational or work experience the opportunity to acquire state-of-the-art knowledge and skills in this rapidly changing field.

**Prerequisite**

Prior to admission to the Office Automation Technology Vocational Certificate program, students must be able to type at least 35 words a minute.

<i>First Semester</i>		<b>CR</b>
CPCA	106 Introduction to Personal Computing: Mac .1	
OST	155 Word Processing Applications I* .....2	
OST	130 Office Systems Concepts.....3	
CPCA	105 Introduction to Personal Computing: IBM.1	
ELEC	124 Microcomputer Hardware* .....3	
CPCA	118 Electronic Mail/Calendar Systems* .....1	
DRAF	115 Introduction to Computer Graphics Systems* .....3	
<b>TOTAL CREDIT HOURS</b> .....		<b>14</b>

<i>Second Semester</i>		
OST	255 Word Processing Applications II* .....2	
CPCA	110 Spreadsheets on Microcomputers I* .....1	
CPCA	114 Databases on Microcomputers* .....1	
CPCA	138 Windows for Micros* .....1	
CPCA	112 PC Communications* .....1	
OST	260 Desktop Publishing for the Office I* .....3	
OST	270 Office Automation Implementation* .....3	
	OST Electives.....2	
<b>TOTAL CREDIT HOURS</b> .....		<b>14</b>
<b>TOTAL PROGRAM</b>		
<b>CREDIT HOURS</b> .....		<b>28</b>

### Medical Office Assistant Vocational Certificate

This certificate program is designed for students desiring to work in doctors' offices and hospital offices. This program will provide training for students going into entry-level positions or those upgrading existing skills.

#### Required Courses

LC	130 Medical Terminology.....3
OST	102 Business English.....1
OST	110 Skillbuilding I.....1
OST	125 Document Formatting.....1
OST	155 Word Processing Application I .....2
OST	165 Medical Transcription .....3
OST	170 Medical Billing and Coding.....3
<b>TOTAL PROGRAM</b>	
<b>CREDIT HOURS</b> .....	

#### OST Electives

OST	102 Business English.....1
OST	118 Skillbuilding II*.....1
OST	175 Conflict in the Workplace .....1
OST	180 Business Spreadsheet Applications* .....1
OST	185 Business Database Applications* .....1
OST	205 Professional Image Development.....1
OST	210 Working in Teams .....1

\* Courses with prerequisites/corequisites

## Paralegal

The expanding role of the legal assistant in the delivery of legal services has created increased opportunities for paralegals. The private law firm continues to be the largest employer of legal assistants, but opportunities also are available in other organizations and institutions such as corporate legal departments, insurance companies, real estate and title firms, banks and government agencies.

If you are interested in entering this career field, you should be aware that while the number of jobs for trained paralegals is steadily rising, competition for these positions also is rapidly increasing. Moreover, the paralegal curriculum is a challenging one. The law is a complex subject, and comprehension of legal theories and concepts demands a high degree of analytical reasoning ability. You must possess excellent communication skills, analytical ability and a high level of motivation in order to successfully complete the program.

The Paralegal program at JCCC is approved by the American Bar Association. Selective admission to the program is based on various academic and testing criteria.

This is a selective admission program with limited enrollment. If you are interested, contact the Admissions Office for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

### Paralegal Postsecondary Certificate

You must have completed a two-year degree or a four-year degree and have satisfied JCCC general education requirements prior to admission.

The following courses must be completed with a minimum G.P.A. of 2.0 prior to application for admission to the Paralegal program.

		<b>CR</b>
PL	121 Introduction to Law .....	3
PL	123 Paralegal Studies.....	1

#### *First Semester*

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

#### *Second Semester*

Following admission to the Paralegal program

PL	131 Legal Research.....	3
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PL	132	Civil Litigation.....	3
		Paralegal Electives.....	7
		<b>TOTAL CREDIT HOURS .....</b>	<b>13</b>

**Third Semester**

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

**Paralegal Electives**

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

**Associate of Arts Degree**

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

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

**First Semester**

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

**Second Semester**

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

**Third Semester**

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

**Fourth Semester**

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

**Paralegal Electives**

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

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

### Legal Nurse Consultant Vocational Certificate

A legal nurse consultant (LNC) is a registered nurse who possesses both medical and legal knowledge. The LNC assists members of the legal profession with medical malpractice, personal injury and workers' compensation cases. The LNC functions in two roles: a consulting expert and a testifying expert.

Prior to admission, an applicant must possess a registered nurse degree; possess a current state license to practice nursing; and have completed 2,500 hours of clinical work as a registered nurse.

LNC	220	Legal Nurse Consultant .....	3
LNC	230	Foundations of Law .....	3
LNC	240	Legal/Medical Research.....	3
LNC	250	Legal/Medical Writing .....	3
LNC	260	Personal Injury Law.....	3
LNC	270	Administrative Law.....	3
<b>TOTAL PROGRAM CREDIT HOURS.....</b>			<b>18</b>

### Physical Therapist Assistant

The physical therapist assistant, under the supervision of a licensed physical therapist, performs direct patient care. The therapist uses physical agents such as heat, light, sound, water, cold, massage, exercise and rehabilitation techniques as prescribed by a physician. JCCC offers a cooperative program with Penn Valley Community College. The Physical Therapy Assistant program at Penn Valley is accredited by the Commission on Accreditation in Physical Therapy Education. The support courses are held at JCCC and the clinical courses at Penn Valley and affiliated clinical agencies. You must be accepted into the program and must complete registration at both JCCC and Penn Valley. Contact Penn Valley Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

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

### Associate of Applied Science Degree

*Degree granted by Penn Valley Community College*

#### Prerequisites

CHEM	122	Principles of Chemistry .....	5
BIOL	140	Human Anatomy.....	4
LC	130	Medical Terminology.....	3

KPT	151	Introduction to Physical Therapy .....	2
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<b>Fall Semester</b>			<b>CR</b>
KPT	152	Fundamentals of Modalities I.....	3
PSYC	130	Introduction to Psychology .....	3
ENGL	121	Composition 1 .....	3
BIOL	225	Human Physiology.....	4
		American Institutions * .....	3
<b>TOTAL CREDIT HOURS .....</b>			<b>16</b>

<b>Spring Semester</b>			
KPT	153	Kinesiology .....	4
KPT	102	Basic Emergency Patient Care .....	1
KPT	161	Fundamentals of Modalities II .....	4
SPD	121	Public Speaking .....	3
KPT	159	Orthopedic Pathology .....	2
KPT	154	Applied Neurology .....	2
<b>TOTAL CREDIT HOURS .....</b>			<b>16</b>

<b>Summer</b>			
KPT	160	Medical Diseases.....	2
KPT	162	Clinical Experience I.....	2
<b>TOTAL CREDIT HOURS.....</b>			<b>4</b>

<b>Fall Semester</b>			
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
<b>TOTAL CREDIT HOURS .....</b>			<b>14</b>

<b>Spring Semester</b>			
KPT	172	Clinical Experience III.....	8
<b>TOTAL CREDIT HOURS.....</b>			<b>8</b>
<b>TOTAL PROGRAM CREDIT HOURS.....</b>			<b>71</b>

\* All graduates from Penn Valley must meet the American Institutions requirement. The course must be taken at Penn Valley. See a JCCC counselor about courses.

### Radiologic Technology

The Radiologic Technology curriculum (X-ray technology) is a cooperative program between JCCC and Penn Valley Community College and consists of a continuous 24-month period of study. You must be formally accepted into the program by Penn Valley and must complete registration at both Penn Valley and JCCC. Areas of study are radiographic exposure, positioning and anatomy, and the use of imaging equipment.

Related courses are taken at JCCC with lab and clinical courses held at Penn Valley or at a cooperating health facility. The Radiologic Technology program at PVCC is accredited by the Joint Review Committee on Education in Radiologic Technology.

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

**Admission requirement:** College general biology/human anatomy with laboratory (4-5 credit hours) or one year of high school biology with a minimum grade of "C" in the last five years and MATH 115 or higher level college math course or two semesters of high school algebra with a minimum grade of "C" within the last five years.

**Associate of Applied Science Degree**

*Degree granted by Penn Valley Community College*

**Summer Semester**

**CR**

KRAD 160	Introduction to Radiologic Technology..4	
	(beginning the second Monday in July)	
	TOTAL CREDIT HOURS.....4	

**Fall Semester**

BIOL 144	Human Anatomy and Physiology.....5	
KRAD 165	Patient Care.....3	
KRAD 170	Radiation Biology and Protection.....3	
KRAD 172	Radiographic Positioning I.....3	
KRAD 173	Clinical Training I.....3	
	TOTAL CREDIT HOURS.....17	

**Spring Semester**

LC 130	Medical Terminology.....3	
ENGL 121	Composition 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	
	<b>TOTAL PROGRAM</b>	
	<b>CREDIT HOURS.....75</b>	

**Electives**

KRAD 201	Mammography.....3	
KRAD 288	Specialty Training.....9	

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

**Railroad Electronics**

**Vocational Certificate**

This certificate is a comprehensive program of study that covers the fundamental electronic principles used by railroad signal control systems technicians. Upon successful completion of this program, the student should be able to apply basic digital and analog theory required in the maintenance of right-of-way crossing and train control systems.

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

ELEC 180	Introduction to Railroad Electronics . . . 1	
ELEC 181	Circuit Analysis DC/AC . . . . . 6	
ELEC 182	Semiconductor Devices and Circuits . . . 6	
ELEC 183	Digital Techniques . . . . . 6	
ELEC 284	Electronic Communications . . . . . 6	
ELEC 285	Microprocessor Techniques . . . . . 6	
	<b>TOTAL PROGRAM</b>	
	<b>CREDIT HOURS . . . . . 31</b>	

**Railroad Industrial Technology**

JCCC's Railroad Industrial Technology certificate program prepares workers to use the latest equipment and technology to keep the nation's rail system in top condition. Railroad companies are facing increased pressure to improve efficiency and on-time performance; employers must recruit and rely upon employees who possess the knowledge and skills necessary to maintain the system with a minimum of service interruption.

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

**Maintenance of Way Welding  
Postsecondary Certificate Program**

This certificate is a comprehensive course of study addressing those skills associated with maintenance and repair of railway fixed facilities. Upon successful completion of this program, the student should be able to perform basic and

advanced welding operations, complete specialized welding procedures involving maintenance and repair of railway track, perform structural welding applications involving code-quality work according to AWS D1.5 and perform tasks associated with most aspects of welding in maintenance of way applications.

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

#### Technical Electives

MFAB	130	Gas Metal Arc Welding I	4
RRIT	150	Switch Point Repair	2
RRIT	155	Railroad Welding Review	2
RRT	120	History of Railroad	3
RRT	121	Railroad Technical Careers	3
RRT	150	Railroad Operations	3
RRT	165	Railroad Safety, Quality and Environment	3
MFAB	160	Gas Tungsten Arc Welding	4
MFAB	240	Metallurgy	2
DRAF	120	Introduction to Drafting	2
HVAC	145	Servicing HVAC Equipment	2

#### Track Welding Vocational Certificate Program

This certificate is designed to provide a concentrated program for industry-specific training in track maintenance and repairs. Upon successful completion of the program, you should have the ability to safely operate track welding equipment, perform basic and advanced welding operations and complete specialized procedures as needed to perform the job of railway track welder.

RRIT	122	Elements of Welding	3
RRIT	123	Basic Welding	3
RRIT	132	Thermite Welding	3
RRIT	135	Component Welding	3
RRIT	145	Frog Welding	3
		<b>TOTAL CREDIT HOURS</b>	<b>15</b>

#### 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
		<b>TOTAL CREDIT HOURS</b>	<b>15</b>

#### 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
		<b>TOTAL CREDIT HOURS</b>	<b>6</b>

#### 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
RRIT	141	Structural Quality GMAW	3
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS</b>	<b>8</b>

#### 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
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS</b>	<b>5</b>

## Railroad Operations

JCCC's associate degree program in railroad operations can prepare you for an exciting and well-paying career. The more than 500 companies that make up the United States railroad industry provide the country's freight and passenger transportation service on a network of some 300,000 route-miles of track. Railroads employ a substantial work force to service, maintain and manage this extensive transportation network. JCCC's program offers five options. The general option requires 65 credit hours, the conductor option 69 credit hours, the dispatcher option 70 credit hours, the mechanical option 64 credit hours and the maintenance of way welding option 64 credit hours.

### Associate of Science Degree

#### General Option

This option is designed to provide the student with general knowledge and skills for entry-level employment in the railroad industry. The student is introduced to the history of railroading and the various railroad crafts. Railroad operations, safety, environment and quality also are covered. The student will choose from a list of business and technical electives in order to provide a basis for possible employment and further post-employment training.

#### First Semester

**CR**

CPCA	105	Introduction to Personal Computing: IBM.1	
CPCA	108	Word Processing on Microcomputers I...1	
CPCA	110	Spreadsheets on Microcomputers I.....1	
ENGL	121	Composition I.....3	
MATH	133	Technical Mathematics I.....4	
PHIL	124	Logic and Critical Thinking.....3	
RRT	120	History of Railroading.....3	
		<b>TOTAL CREDIT HOURS.....16</b>	

#### 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	
		<b>TOTAL CREDIT HOURS.....16</b>	

#### 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	
		<b>TOTAL CREDIT HOURS.....16</b>	

#### Fourth Semester

INDT	140	Quality Control Using SPC.....2	
		Business/Related Electives.....6	

Technical/Related Electives.....9

**TOTAL CREDIT HOURS.....17**

### TOTAL PROGRAM

**CREDIT HOURS.....65**

#### Business/Related Electives

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

#### Technical/Related Electives

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

### Associate of Science Degree

#### Conductor Option

Conductors are responsible for supervising over-the-road operation of freight trains and are in demand throughout the railroad industry. Conductors may choose career paths leading to locomotive engineer service or railroad management. The final phase of this program consists of

six weeks of full-time training provided in cooperation with the National Academy of Railroad Sciences on the campus of JCCC, plus 18 weeks of on-the-job training after securing employment with a railroad. Selective admission to the program is based on various criteria. Interested students should meet with a JCCC counselor as early as possible.

**First Semester**

CPCA	105	Introduction to Personal Computing: IBM	.1
CPCA	108	Word Processing on Microcomputers I	...1
CPCA	110	Spreadsheets on Microcomputers I	.....1
ENGL	121	Composition I	.....3
MATH	133	Technical Mathematics I	.....4
PHIL	124	Logic and Critical Thinking	.....3
RRT	120	History of Railroad	.....3
		<b>TOTAL CREDIT HOURS</b>	<b>.....16</b>

**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
		<b>TOTAL CREDIT HOURS</b>	<b>.....16</b>

**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
		<b>TOTAL CREDIT HOURS</b>	<b>.....16</b>

**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
		<b>TOTAL CREDIT HOURS</b>	<b>.....21</b>
		<b>TOTAL PROGRAM CREDIT HOURS</b>	<b>.....69</b>

**Associate of Science Degree**

**Dispatcher Option**

Railroad dispatchers control and ensure the safe and efficient movement of trains, on-track equipment and employees. The final phase of this program consists of 14 weeks of hands-on training provided in cooperation with the National Academy of Railroad Sciences. Ten weeks of on-the-job training begin after securing employment with a railroad. Selective admission to the program is based on various criteria. Interested students should meet with a JCCC counselor as early as possible.

**First Semester**

CPCA	105	Introduction to Personal Computing: IBM	.1
CPCA	108	Word Processing on Microcomputers I	...1
CPCA	110	Spreadsheets on Microcomputers I	.....1
ENGL	121	Composition I	.....3
MATH	133	Technical Mathematics I	.....4
PHIL	124	Logic and Critical Thinking	.....3
RRT	120	History of Railroad	.....3
		<b>TOTAL CREDIT HOURS</b>	<b>.....16</b>

**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
		<b>TOTAL CREDIT HOURS</b>	<b>.....16</b>

**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
		<b>TOTAL CREDIT HOURS</b>	<b>.....16</b>

**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
		<b>TOTAL CREDIT HOURS</b>	<b>.....22</b>
		<b>TOTAL PROGRAM CREDIT HOURS</b>	<b>.....70</b>

**Associate of Science Degree**

**Maintenance of Way Welding Option**

Maintenance of way welding involves the maintenance and repair of rail and track components. The final phase of the program consists of course work provided in cooperation with the National Academy of Railroad Sciences. Selective admission to the program is based upon various criteria. Interested students should meet with a JCCC counselor as early as possible.

**First Semester**

CPCA	105	Introduction to Personal Computing: IBM	.1
CPCA	108	Word Processing on Microcomputers I	. 1
CPCA	110	Spreadsheets on Microcomputers I	. . . . 1
ENGL	121	Composition I	..... 3
MATH	133	Technical Mathematics I	..... 4
PHIL	124	Logic and Critical Thinking	..... 3

RRT	120	History of Railroading	3
TOTAL CREDIT HOURS			16

**Second Semester**

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

**Third Semester**

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

**Fourth Semester**

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

**Associate of Science Degree**

**Mechanical Option**

Mechanical services include a variety of responsibilities for the maintenance, service and repair of locomotives, freight cars and other rolling stock. Skills include diesel engine repair, electrical and electronic system repair, freight car repair and inspection and welding processes. The final phase of the program consists of training provided in cooperation with the National Academy of Railroad Sciences. Selective admission to the program is based upon various criteria. Interested students should meet with a JCCC counselor as early as possible.

**First Semester**

CPCA	105	Introduction to Personal Computing: IBM	1
CPCA	108	Word Processing on Microcomputers I	1
CPCA	110	Spreadsheets on Microcomputers I	1
ENGL	121	Composition I	3
MATH	133	Technical Mathematics I	4
PHIL	124	Logic and Critical Thinking	3
RRT	120	History of Railroading	3
TOTAL CREDIT HOURS			16

**Second Semester**

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

**Third Semester**

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

**Fourth Semester**

RRIT	122	Elements of Welding	3
		or	
MFAB	121	Introduction to Welding	4
RRIT	123	Basic Welding	3
RRTM	124	Orientation to the Railroad Mechanical Craft	2
RRTM	170	Railroad Mechanical Safety and Health	2
RRTM	251	Locomotive Diesel Engine Fundamentals	2
RRTM	253	Freight Car Fundamentals	2
RRTM	254	Basic Locomotive Electricity and Electronics	2
TOTAL CREDIT HOURS			16-17
TOTAL PROGRAM CREDIT HOURS			64-65

**Respiratory Care**

The respiratory care practitioner is involved in a variety of life-saving and life-supporting situations. As a member of the health care team, he or she treats patients ranging in age from newborns to senior citizens. Respiratory care offers unique challenges in prevention, treatment, management and rehabilitation of patients with lung problems. The employment outlook is expected to be good because of new developments in diagnostic and treatment procedures. The health care needs of an aging population also will play a role in the future of the respiratory therapist.

JCCC's program is designed to meet the requirements specified by the Joint Review Committee for Respiratory Care Education. Following completion of at least the prerequisite courses, you spend a 12-month clinic year attending didactic course activities at JCCC and direct clinic activities at several Kansas City area hospitals for eight hours a day, five days a week.

You must apply for admission to the Respiratory Care program by Oct. 15 before the clinic year you plan to enter. Successful completion of the program, which

includes satisfactory completion of a comprehensive program final examination, can lead to an associate of science degree or a certificate of completion, depending on the general education requirements completed. You will be eligible for the National Board for Respiratory Care examinations after graduation. You will first earn the Certified Respiratory Therapy Technician (CRTT) credential and ultimately the Registered Respiratory Therapist (RRT) credential.

This is a selective admission program with limited enrollment. If you are interested, contact the Admissions Office for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

### Associate of Science Degree

		<b>CR</b>
<b>Summer</b>		
CHEM	122 Principles of Chemistry *	5
ENGL	121 Composition I *	3
	<b>TOTAL CREDIT HOURS</b>	<b>8</b>

#### First Semester

BIOL	140 Human Anatomy *	4
MATH	116 Intermediate Algebra (or Math Elective 171 or higher) *	3
PSCI	120 Physical Science (or a Physics course with lab) *	4
	Social Science and/or Economics Elective	3
	<b>TOTAL CREDIT HOURS</b>	<b>14</b>

#### Second Semester

BIOL	225 Human Physiology *	4
BIOL	230 Microbiology *	3
BIOL	231 Microbiology Lab *	2
	Communications Elective	3
	Humanities Elective	3
	<b>TOTAL CREDIT HOURS</b>	<b>15</b>

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

#### Summer (clinic year)

RC	125 Beginning Principles of Respiratory Care	4
RC	130 Respiratory Care Equipment	4
RC	135 Cardiopulmonary Medicine I	1
EMS	121 CPR I Basic Rescuer	1
	<b>TOTAL CREDIT HOURS</b>	<b>10</b>

#### Third Semester

RC	220 Clinical Cardiopulmonary Physiology	2
RC	271 Clinical Practice I	4
RC	230 Clinical Topics and Procedures I	4
RC	235 Cardiopulmonary Medicine II	2
RC	240 Respiratory Pharmacology	2
	<b>TOTAL CREDIT HOURS</b>	<b>14</b>

#### Fourth Semester

RC	272 Clinical Practice II	4
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RC	231 Clinical Topics and Procedures II	4
RC	233 Respiratory Care of Children	2
RC	236 Cardiopulmonary Medicine III	2
	<b>TOTAL CREDIT HOURS</b>	<b>12</b>
	<b>TOTAL PROGRAM</b>	
	<b>CREDIT HOURS</b>	<b>73</b>

### Respiratory Care Postsecondary Certificate Program

If you successfully complete the required prerequisites, the clinic core and the comprehensive program final examination, you may receive a certificate of completion in lieu of the associate of science degree. You will technically meet the requirements of the respiratory therapy registry examination process, which will allow you to become a registered respiratory therapist. You are encouraged, however, to pursue the associate of science degree, especially if you plan to continue your education. The difference between the postsecondary certificate curriculum and the associate of science degree is the nine hours of electives required for the associate of science degree.

#### First Semester

		<b>CR</b>
CHEM	122 Principles of Chemistry *	5
ENGL	121 Composition I *	3
BIOL	140 Human Anatomy *	4
MATH	116 Intermediate Algebra (or Math Elective 171 or higher) *	3
	<b>TOTAL CREDIT HOURS</b>	<b>15</b>

#### Second Semester

BIOL	225 Human Physiology *	4
BIOL	230 Microbiology *	3
BIOL	231 Microbiology Lab *	2
PSCI	120 Physical Science (or a Physics course with lab) *	4
	<b>TOTAL CREDIT HOURS</b>	<b>13</b>

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

#### Summer (clinic year)

RC	125 Beginning Principles of Respiratory Care	4
RC	130 Respiratory Care Equipment	4
RC	135 Cardiopulmonary Medicine I	1
EMS	121 CPR I Basic Rescuer	1
	<b>TOTAL CREDIT HOURS</b>	<b>10</b>

#### Third Semester

RC	220 Clinical Cardiopulmonary Physiology	2
RC	271 Clinical Practice I	4
RC	230 Clinical Topics and Procedures I	4
RC	235 Cardiopulmonary Medicine II	2
RC	240 Cardiopulmonary Pharmacology	2
	<b>TOTAL CREDIT HOURS</b>	<b>14</b>

#### Fourth Semester

RC	272 Clinical Practice II	4
RC	231 Clinical Topics and Procedures II	4

RC	233	Respiratory Care of Children .....	2
RC	236	Cardiopulmonary Medicine III .....	2
		TOTAL CREDIT HOURS .....	12
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS.....</b>	<b>64</b>

**Certified Respiratory Therapy Technician (CRTT)  
Transition**

This curriculum is designed to meet the educational needs of respiratory care practitioners who seek to become registry eligible, but are unable to enter a traditional respiratory therapy program. If you are a candidate for this curriculum, you should have a minimum of one year full-time clinical experience post-NBRC certification as a certified respiratory therapy technician (CRTT). If you do not meet this requirement, you should consider the traditional respiratory therapy program curriculum.

You must apply and be accepted into the transition curriculum through a selective admission process. This includes putting together a mini-portfolio with the assistance of the JCCC Testing/Assessment Center to gain credit for prior learning and experience.

Successful completion of the transition curriculum, including satisfactory completion of a comprehensive program final, will lead to an associate of science degree. Graduates will be eligible for the National Board for Respiratory Care registry examination. Contact a JCCC counselor or program personnel for additional information.

**Associate of Science Degree**

**Advanced Standing Credit**

The following advanced standing credit may be granted if you are accepted into the CRTT-RRT transition process based on your previous training and clinical experience. You will need to work with the JCCC Testing/Assessment Center to develop a mini-portfolio for evaluation of this previous learning. You should note that if you wish to transfer these credits at a future time, you should check with that college for transferability of advanced standing credits. The process for seeking these credits is described in the admission packet for this program.

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

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

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

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

**Additional Associate of Science Degree Requirements**

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

**Note:** These additional degree requirements are not necessary to sit for the Registry Examinations of the National Board for Respiratory Care, but are required for the associate of science degree from JCCC and most advanced degrees at other colleges. A postsecondary certificate is granted at completion in lieu of the associate of science degree if these nine hours have not been completed.

**Respiratory Care Course Requirements**

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

**Note:** If you are a transition student, you will have a maximum of four consecutive regular semesters to complete the respiratory care (RESP) course requirements. If you fail a respiratory course or are unable to complete it in the established time, you may still be considered for entry into the traditional respiratory therapy program curriculum.

**Postsecondary Certificate**

With receipt of the advanced standing credit and completion of the required prerequisites, the respiratory therapy requirements and the comprehensive program final examination, you may receive a certificate of completion in lieu of the associate of science degree. The difference between the postsecondary certificate for the CRTT transition curriculum and the associate of science degree for the CRTT transition curriculum is the nine hours of electives required for the associate of science degree.

## Science Technology

Greater Kansas City and specifically Johnson County have numerous biological-, pharmaceutical- and chemical-related formulating, manufacturing, research and testing companies. Many of these facilities employ scientific technicians to support the endeavors of their professional scientists and engineers.

JCCC's Science Technology program is designed to develop scientific support personnel for the metropolitan area. This program offers specific knowledge and training designed to provide you with entry-level skills for employment as a technician. It also provides the breadth of background sufficient to encourage change and flexibility. If you complete the 65-credit-hour curriculum, you are awarded an associate of science degree.

### Associate of Science Degree

#### Chemical Specialty

<i>First Semester</i>		<b>CR</b>
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 .....		<b>15</b>

#### *Second Semester*

CHEM	143 Principles of Technical Organic Chemistry ..6	
PHYS	125 Technical Physics I .....	4
PHYS	135 Special Topic Technical Physics I .....	1
MATH	172 Trigonometry .....	3
DP	132 BASIC for Engineering Technology .....	3
TOTAL CREDIT HOURS .....		<b>17</b>

#### *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 .....		<b>16</b>

#### *Fourth Semester*

CHEM	243 Technical Instrumental Analysis .....	5
SPD	125 Personal Communications .....	3
	(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 .....	<b>17</b>
<b>TOTAL PROGRAM</b>	
<b>CREDIT HOURS .....</b>	<b>65</b>

### Associate of Applied Science Degree

#### Chemical Specialty

<i>First Semester</i>		<b>CR</b>
CHEM	123 Principles of Technical Chemistry .....	6
BIOL	122 Principles of Biology .....	3
MATH	133 Technical Math I * .....	4
ENGL	121 Composition I .....	3
CPCA	105 Introduction to Personal Computing: IBM ..1	
TOTAL CREDIT HOURS .....		<b>17</b>

#### *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 .....		<b>17</b>

#### *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 .....		<b>15</b>

#### *Fourth Semester*

CHEM	243 Technical Instrumental Chemistry .....	5
SPD	125 Personal Communications .....	3
	(recommended) .....	3
	or	
SPD	128 Business and Professional Speech .....	3
	(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 .....		<b>15</b>
<b>TOTAL PROGRAM</b>		
<b>CREDIT HOURS .....</b>	<b>64</b>	

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

## Surgical Technology

This certificate program is designed to produce competent operating room technicians for immediate entry-level employment. Students are required to meet minimum entrance requirements on academic assessment and HOBET examinations.

### Surgical Technology Vocational Certificate

*Certificate granted by Penn Valley Community College*

<i>First Semester</i>		<b>CR</b>
KSUR	100 Introduction to Surgical Technology	2
KSUR	102 Fundamentals of Operating Room Techniques	11
KSUR	104 Body Structure and Function	2
KSUR	106 Aseptic Technique for the Surgical Technologist	2
<b>TOTAL CREDIT HOURS</b>		<b>17</b>

<i>Second Semester</i>		
KSUR	105 Pharmacology for the Surgical Technologist	2
KSUR	109 Principles of Surgical Procedures I	8
KSUR	110 Principles of Surgical Procedures II	7
<b>TOTAL CREDIT HOURS</b>		<b>17</b>

<i>Third Semester</i>		
KSUR	111 Career Development for the Surgical Technologist	2
KSUR	114 Principles of Surgical Procedures III	7
<b>TOTAL CREDIT HOURS</b>		<b>9</b>
<b>TOTAL PROGRAM CREDIT HOURS</b>		<b>43</b>

## Travel and Tourism Management

This program is designed to provide the knowledge and skills you need to obtain an entry-level position in the travel industry. The focus is on quality and professionalism. You will be trained in subjects from ticketing and tariffs to planning and costing trips for group travel. Practical application and current procedures are emphasized and are integrated into each subject.

JCCC's Travel and Tourism Management program is offered in cooperation with Maple Woods Community College. You must apply and be accepted by both JCCC and Maple Woods. The support courses are held at JCCC and the travel courses at Maple Woods. Program requirements and credit hours are subject to change because of requirements changes at the degree-granting institution. Contact Maple Woods Community College for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

## Associate of Applied Science Degree

*Degree granted by Maple Woods Community College*

<i>First Semester</i>		<b>CR</b>
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
<b>TOTAL CREDIT HOURS</b>		<b>15</b>

<i>Second Semester</i>		
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
<b>TOTAL CREDIT HOURS</b>		<b>15</b>

<i>Summer Semester</i>		
ACCT	121 Accounting I	3

<i>Third Semester</i>		
DP	124 Introduction to Computing Concepts and Applications	3
MKT	133 Salesmanship	3
ENGL	123 Technical Writing	3
KTT	104 Travel Agency Operations	3
KTT	128 Management Internship II	3
<b>TOTAL CREDIT HOURS</b>		<b>15</b>

<i>Fourth Semester</i>		
BUS	261 Business Law I	3
	General Education Electives	6
KTT	105 Computer Reservations Systems	4
KTT	129 Management Internship III	3
<b>TOTAL CREDIT HOURS</b>		<b>16</b>
<b>TOTAL PROGRAM CREDIT HOURS</b>		<b>64</b>

## Veterinary Technology

A person with a background in veterinary technology can expect to find employment opportunities with veterinarians, assisting them in providing professional services and performing veterinary-related tasks. Opportunities are also available with pharmaceutical companies in technical services or laboratory animal care. JCCC's Veterinary Technology program is offered in cooperation with the Veterinary Technology program at Maple Woods Community College. Students study sanitation and animal care, the preparation of animals for surgery and anesthetic management, as well as laboratory techniques and radiology. The program features supervised intensive clinical study under the direction of a licensed veterinarian and is fully accredited by the American Veterinary Medical Association. You must be

accepted into the program by both JCCC and Maple Woods Community College.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact Maple Woods Community College for an application packet, which includes deadlines, program prerequisites and admission requirements.

**Associate of Applied Science Degree**

*Degree granted by Maple Woods Community College*

Prior to the beginning of the fall semester, the student must have successfully completed:

BIOL	127	General Zoology .....	5
		or	
BIOL	122/123	Biology with lab .....	3/1

**First Semester** **CR**

KSAH	100	Introduction to Veterinary Technology ....	2
KSAH	101	Principles of Animal Science I.....	3
KSAH	182	Veterinary Office and Computer Skills...	3
ENGL	121	Composition I.....	3
KSAH	108	Clinical Mathematics.....	1
SPD	121	Public Speaking.....	3
		<b>TOTAL CREDIT HOURS .....</b>	<b>15</b>

**Second Semester**

KSAH	110	Principles of Animal Science II.....	3
KSAH	111	Sanitation and Animal Care.....	2
KSAH	120	Clinical Pathology Technology I.....	4
CHEM	122	Principles of Chemistry .....	5
		American Institutions * .....	3
		<b>TOTAL CREDIT HOURS .....</b>	<b>17</b>

**Summer**

KSAH	214	Veterinary Technician Internship.....	6
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**Third Semester**

KSAH	200	Veterinary Hospital Technology I.....	3
KSAH	202	Veterinary Technology Anatomy.....	5
KSAH	212	Large Animal Technology.....	4
BIOL	230	Microbiology.....	3
BIOL	231	Microbiology Lab.....	2
		<b>TOTAL CREDIT HOURS .....</b>	<b>17</b>

**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
		<b>TOTAL CREDIT HOURS .....</b>	<b>15</b>
		<b>TOTAL PROGRAM</b>	
		<b>CREDIT HOURS.....</b>	<b>75</b>

\* All graduates from Maple Woods must meet the American Institutions requirement. If you are a JCCC student, see a counselor about courses.

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## **Nontraditional Programs of Study**



### **Honors Program**

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

### **Distance Learning**

### **International Education**

#### **Study Abroad**

Semester Programs  
Travel Courses

#### **Television Courses**

## Honors Program

The Honors Program curriculum is designed to stimulate and challenge academically talented students. If you have the talent and motivation, enrolling in the Honors Program will help you develop your intellectual potential as a college student and as a member of the academic community.

### Admission

Proof of academic excellence is the first step to acceptance in the Honors Program. You must submit an official transcript or have one on file showing proof of having a 3.5 high school G.P.A. or a 3.5 college G.P.A. for your most recent year of college. Other proofs of academic excellence may be a 25 composite on the ACT test, a 1110 composite on the SAT or an equivalent score on other standardized tests taken within the last three years. You may also provide evidence that indicates the ability to do honors work. Such evidence, to be evaluated by the coordinator of the Honors Program and a faculty member, may include written, research or artistic work as shown in a portfolio.

You may enter the JCCC Honors Program at the beginning of any semester. You must maintain at least a 3.5 G.P.A. to remain in the program.

### Honors Forum

The Honors Forum focuses on a current issue that affects the local, national and global communities. It will complement other courses in the curriculum by combining an emphasis on both specific content and skill development in interaction, analysis, synthesis and conflict resolution. The process of reflecting, researching, analyzing and evaluating will be as important as the content. As you develop points of view concerning the issue, you must articulate and defend those points as they are challenged by others and make judgments among alternative options.

### Honors Contracts

Each academic division at JCCC offers Honors contracts developed by individual faculty members for selected courses. The contracts, offered for one hour of additional credit, are designed as extensions to the regularly scheduled courses. In order to complete the contract, you are required to meet on a regularly scheduled basis with the instructor offering the contract for mentor-student tutorial sessions. The work in the contract may include additional reading and writing assignments, expanded field or laboratory work and writing term papers and other suitable assignments.

### Interdisciplinary Courses

These courses cover a broad area of knowledge and emphasize inquiry, discovery, critical thinking and

discussion methods that stress student participation. You will be asked to read primary and secondary sources, take initiative in course-related activities, use analytical and evaluative skills and complete an Honors term project.

### Service Learning

If you plan to graduate from the Honors Program, you will be expected to perform some volunteer community service. This will be done as part of the Honors Forum course.

### Graduation from the Honors Program

You may elect to participate in any part of the Honors Program; however, if you plan to graduate from the program, you must:

- Meet all requirements for a two-year degree with a 3.5 G.P.A.
- Complete four Honors contracts.
- Complete one Honors Forum class.
- Complete one interdisciplinary class.
- Perform specified service learning.

If you plan to graduate from the program, you should complete an Honors graduation completion form.

### Scholarships

#### General guidelines

1. The purpose of the Honors Program scholarship is to encourage students to complete the requirements to graduate from the Honors Program. The intent of the scholarship is to help cover tuition, fees and books.
2. Scholarship amounts, with increments of \$60 a credit hour, are based on a minimum enrollment of six credit hours and a maximum enrollment of 15 credit hours. Scholarship recipients may enroll in more than 15 credit hours, but the maximum scholarship per semester will be \$900. The scholarship is awarded on a semester basis.
3. Scholarship recipients will be funded for succeeding semesters if they meet all of the requirements and have completed all of the course work attempted. The scholarship can cover a maximum of 52 attempted semester hours or until the requirements for the Honors Program are completed, whichever comes first. All scholarship recipients who drop a course are required to reapply for the scholarship for the following semester.
4. The number of new scholarships awarded each semester is determined by the funds available.

#### Requirements

To apply for an Honors Program scholarship, you must meet the following requirements:

1. Complete a minimum of 12 semester hours of course work at JCCC before applying.
2. Be working on the requirements to graduate from the Honors Program.
3. Have a minimum G.P.A. of 3.5 at JCCC.

Preference is given to students who have taken course work in the Honors Program, *i.e.*, Honors contracts, Honors Forum or one of the interdisciplinary courses.

#### **How to Apply**

If you meet the requirements, you may pick up application forms in the Honors Office, 237 GEB.

The application process includes these steps:

1. Complete an application form.
2. Submit at least two letters of recommendation from instructors of your JCCC classes.
3. Write an essay describing your educational and career goals.
4. If you are a finalist, interview with the Honors scholarship committee.

Application deadlines are Oct. 15 for the spring semester and March 15 for the fall semester.

## **Distance Learning**

JCCC offers distance learning courses that are conducted via personal computer and modem from your home or office through the Internet. No prior knowledge of data communications is necessary. The communication software is provided. You will need a PC or Mac, a modem and your own Internet provider. Successful distance learning students are highly motivated, goal-oriented and willing to study independently. Each distance learning class is equivalent to the on-campus sections of the same course in terms of objectives, content and transferability.

## **International Education**

International education at JCCC spans the entire range of college activities from credit and continuing education courses to student clubs and special events. The college curriculum includes seven foreign languages and such courses as Eastern Civilization, International Relations, Global Resources, Cultural Anthropology, Introduction to International Business, Intercultural Communications, World Cultures and Russian, European, Latin American and World History. In addition, international and intercultural approaches are evident in many courses in the humanities, social sciences and communications classes.

JCCC maintains strong relationships with universities

in China, Russia and the United Kingdom and has an active exchange program that brings faculty and students from other countries to the JCCC classrooms.

## **Study Abroad**

### **Semester Programs**

Through the College Consortium for International Studies, JCCC students have an opportunity to study in any one of 22 countries for a semester or a year. Programs exist in countries in Europe, Latin America, the Middle East and Asia that focus on liberal arts, language and culture, business, performing and visual arts. Through the Partnership for Service Learning, students can both study and perform community service in several nations. Eligibility and fees vary with the country. Many participants qualify for financial aid awards that allow them to participate. The application deadline for the spring semester is in October. For the fall semester, applications are due in April.

### **Travel Courses**

JCCC offers short-term travel courses to various countries around the world. These courses usually run from one to three weeks, and the travel is carefully planned and supervised by instructors. Opportunities are available for credit or through the community education program. For additional information about all study abroad, contact the International Education office.

## **Television Courses**

Each semester, JCCC offers telecourses that make it possible to earn college credit in the home. Noncredit telecourses also are offered. Each lesson is shown several times a week – you pick the most convenient time. If you miss a lesson, you can view it on a videotape in the JCCC library or check out videotape cassettes (VHS only) to view at home.

You need not come to campus except for a few scheduled class meetings and for exams administered in the Testing/Assessment Center.

You may apply college credits earned through telecourses to the associate degree program. In most cases, these credits will transfer to other colleges. You may be either full- or part-time. There is no limit to the number of telecourses that you may take.

It is only natural to be apprehensive about learning out of the classroom. But if you are self-disciplined and have the ability to learn without supervision, there should be no problems. If you have questions during the semester, a JCCC instructor is just a phone call away.

## Course Prefix

### Listing

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

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## Courses by Division

### Listing

#### **Business and Technology Division**

Accounting  
Automotive Technology  
Aviation Maintenance  
Business Administration  
Business Entrepreneurship  
Drafting Technology  
Economics  
Electrical Technology  
Electronics Technology  
Engineering  
Fashion Merchandising  
Heating, Ventilation and Air Conditioning  
Home Economics  
Hospitality Management  
Industrial Technology  
Information Technology  
Interior Merchandising  
Legal Nurse Consultant  
Marketing and Management  
Metal Fabrication  
Office Systems Technology  
Paralegal  
Railroad Operations  
Travel and Tourism Management

#### **Computer Instruction and Media Resources Division**

Communication Design  
Computer Information Systems  
Computer Interactive Media  
Computers: Personal Computer Applications  
Computer Science  
Library

#### **Liberal Arts Division**

Academic Achievement Center  
Administration of Justice  
Agribusiness  
Anthropology  
Architecture  
Art  
Correctional Services  
Early Childhood Education  
Education  
English  
Fire Services Administration  
Foreign Language  
Grounds and Turf Management

History  
Honors  
Humanities  
Interpreter Training  
Journalism  
Learning Strategies  
Music  
Philosophy  
Photography  
Political Science  
Religion  
Sociology  
Speech and Debate

#### **Physical Education Division**

Physical Education

#### **Science, Health Care and Math Division**

Astronomy  
Biology  
Chemistry  
Dental Hygiene  
Emergency Medical Science  
Geoscience  
Health Information Technology  
Health Occupations  
Horticulture  
Mathematics  
Nursing  
Occupational Therapy Assistant  
Physical Science  
Physical Therapist Assistant  
Physics  
Radiologic Technology  
Respiratory Care  
Surgical Technology  
Veterinary Technology

#### **Student Development Division**

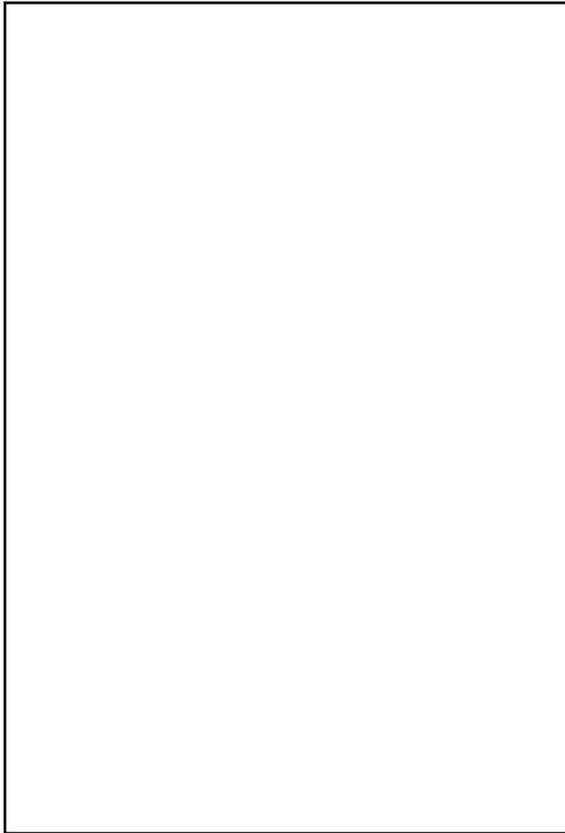
Hearing Impaired

#### **Continuing Education**

Cosmetology

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## **Academic Offerings**



**JCCC Course Listings**

## Academic Achievement Center

### DEVELOPMENTAL COURSES

The following courses are designed to help students develop and enhance the skills necessary for successful completion of college-level requirements. Study skills, reading comprehension and other basic needs will be addressed through individualized instruction, small classes or self-paced programs. These courses do not fulfill degree requirements. **Note:** Students enrolled in LC prefix classes that indicate the time is to be arranged (TBA) should report to the center during the first week of the semester or within one week of enrollment.

#### LC 100

##### STUDY SKILLS (1CR)

This course is designed for students who wish to improve their college study skills. Students will take a survey test to determine strengths and potential problem areas and will receive an individualized program of study that will utilize textbooks, computer software and videos. Previewing academic reading, note taking from text and lecture, time management and test preparation techniques, along with related concepts will be included. By arrangement.

#### LC 101

##### STUDY SKILLS MINI-COURSE (1CR)

This class will focus on test-taking skills, taking notes, using a textbook, critical reading and memory recall, effective listening and classroom strategies, and support services. The format will include reading, discussion and practice exercises. 3 hrs./wk. for 5 wks.

#### LC 104

##### READING COMPREHENSION (1CR)

This course is designed for students who wish to improve their understanding of written language. Students will take a survey test to establish a baseline reading comprehension level and will receive an individualized program of study that will utilize textbooks, computer software and videos. Students will learn techniques for increasing comprehension, such as previewing, questioning, careful reading with note taking, reciting and reviewing. By arrangement.

#### LC 105

##### READING RATE (1CR)

This course is designed for students who wish to improve the rate at which they process written language. Students will take a pretest to determine a baseline reading efficiency rate and will receive an individualized program of study that will utilize textbooks,

computer software and handouts. Students will learn techniques for increasing reading rate and improving skimming and scanning levels. By arrangement.

#### LC 106

##### VOCABULARY DEVELOPMENT (1CR)

This course is designed for students who wish to expand their vocabulary levels. Students will take a placement test to determine an appropriate instructional level and will receive an individualized program of study that will utilize textbooks, computer software and handouts. A variety of approaches will be used to acquire and utilize a powerful, up-to-date vocabulary. By arrangement.

#### LC 107

##### SPELLING IMPROVEMENT (1CR)

This course is designed for students who wish to improve their level of spelling mastery. Students will take a placement test to determine the appropriate instructional level and will receive an individualized program of study that will utilize textbooks and computer software. Students will master a variety of spelling concepts and will monitor and correct misspellings that occur in their own writings. By arrangement.

#### LC 110

##### POWER SPELLING (3CR)

*Prerequisite: Appropriate score on the placement test*

This course is designed for students who wish to improve their spelling but have not been successful in traditional spelling programs. This course provides a highly structured approach to spelling improvement through mastery of morphographs (units of meaning) and guidelines for combining morphographs in order to correctly spell hundreds of words. By arrangement.

#### LC 112

##### BASIC MATH REVIEW (1CR)

This course is designed for students who need to review or learn the basic mathematical concepts. Students will take a placement test to determine an appropriate instructional level and will receive an individualized program of study that will utilize textbooks, computer software and videos. Students will learn basic math concepts (whole numbers, fractions, decimals, etc.) and will learn to apply these concepts to solve problems. By arrangement.

#### LC 113

##### ALGEBRA PREPARATION (1CR)

This course is designed for students who wish to review or learn the basic concepts of algebra in order

to meet the requirements of the general algebra course. Students will take a placement test to determine an appropriate instructional level and will receive an individualized program of study that will utilize textbooks, computer software and handouts. Students will master a variety of concepts, including the terminology of mathematics and algebra, simplifying open expressions, solving linear equations, etc. By arrangement.

#### **LC 114**

##### **CHEMISTRY PREPARATION (1CR)**

This course is designed for students who wish to learn or review the basic chemistry concepts. Students will take a pretest to determine an appropriate instructional level and will receive an individualized program of study. Students will master a variety of concepts, including chemical symbols and formulas, valences, the metric system and scientific notation. By arrangement.

#### **LC 115**

##### **COLLEGE SKILLS DEVELOPMENT (1CR)**

Students will focus on becoming more aware of their personal values, their life plans and their career plans. Topics will include learning styles, techniques of time management, test taking, study skills and available college support services and resources. 3 hrs./wk. for 5 wks.

#### **LC 120**

##### **INDIVIDUALIZED STUDY (1CR)**

#### **LC 121**

##### **INDIVIDUALIZED STUDY (2CR)**

#### **LC 122**

##### **INDIVIDUALIZED STUDY (3CR)**

This course is designed for students who wish to improve in any of these areas: study skills, reading comprehension, reading rate, vocabulary, spelling, basic math, algebra or chemistry preparation. Students will take placement tests to determine appropriate levels of instruction and will receive an individualized program of study for specific areas that will utilize textbooks, computer software, handouts and videos. By arrangement.

#### **LC 124**

##### **BASIC VOCABULARY AND READING SKILLS (3CR)**

*Prerequisite: Appropriate assessment score*

This reading course is the first in a mandatory sequence of reading courses. It focuses on techniques for building a functional vocabulary and for increasing comprehension on the sentence, paragraph and multi-paragraph levels. The course is designed for those students who have difficulty understanding English in print. 3 hrs./wk.

#### **LC 125**

##### **FUNDAMENTALS OF READING (3CR)**

*Prerequisite: LC 124 or appropriate assessment score*

This course is the second in a mandatory sequence of reading courses. It is designed for students who need to improve their understanding of written expression. The focus of the course is on vocabulary, dictionary usage, literal comprehension and written communication. 3 hrs./wk.

#### **LC 126**

##### **READING SKILLS IMPROVEMENT (3CR)**

*Prerequisite: LC 125 or appropriate assessment score*

This intermediate reading course is the third in a mandatory sequence, designed for students who need to improve their understanding of written expression. The focus of the course is on higher-level comprehension and vocabulary skills. Students use Time magazine to apply and practice skills learned in the class and to provide a background for written assignments. 3 hrs./wk.

#### **LC 127**

##### **COLLEGE READING SKILLS (3CR)**

*Prerequisite: LC 126 or appropriate assessment score*

This advanced reading course is designed for students who wish to improve their ability to process written expression. The focus of the course is on critical and interpretive reading skills, developing reading techniques appropriate to material and purpose, increasing vocabulary level, improving written expression and increasing reading rate. Students use National Geographic and Atlantic Monthly to apply and practice skills learned in the class and to provide a background for written assignments. 3 hrs./wk.

#### **LC 130**

##### **MEDICAL TERMINOLOGY (3CR)**

This self-instructional course is designed for students who want to learn a systematic format for acquiring a medical vocabulary. The course begins with a study of prefixes, combining forms and suffixes, along with guidelines for building medical words. This is followed by a study of each of the body systems. Computer software is available to support the textbooks. Students planning a career in any facet of the health care industry will find this course beneficial. By arrangement.

**LC 135****CAREER/LIFE PLANNING (3CR)**

This is a systematic approach to career and life planning. Students will focus on a process for making occupational decisions at any point in their lives. 3 hrs./wk.

**LC 150****JOB SEARCH SKILLS (1CR)**

Job-hunting techniques will be explored in this class. The class will consist of lecture, assignments and role playing. In class, students will develop a résumé, complete job applications and practice interviewing. 1 hr./wk.

### **ABLE: Academic Bridges to Learning Effectiveness**

ABLE is an award-winning program that teaches students with learning disabilities or brain injury how to become independent learners. ABLE students take courses and attend study sessions and weekly support group meetings to build a firm foundation for college, vocational programs or the workplace. Students should contact Longview Community College at 672-2053 for information regarding enrollment and courses available.

## **Accounting**

**ACCT 111****SMALL BUSINESS ACCOUNTING (3CR)**

This course will introduce the basic accounting procedures needed to maintain daily records for a small business and the use of such records in the decision-making process. Upon successful completion of the course, the student will be able to maintain a set of financial records with the occasional help of an outside accountant. This course does not prepare the student for Accounting II. 3 hrs./wk.

**ACCT 115****ACCOUNTING FOR  
NONPROFIT ORGANIZATIONS (3CR)**

*Prerequisite: ACCT 121*

This course is a three-hour survey course of not-for-profit accounting and its primary users: federal, state and local governments, hospitals and schools. Upon successful completion of the course, the student should be able to effectively deal with the primary funds and accounting groups, assist in the budget process, and practice variances among the major nonprofit organizations accord-

ing to their authoritative pronouncements. 3 hrs./wk. This course will not be offered every semester. Spring

**ACCT 121****ACCOUNTING I (3CR)**

This course is an introduction to accounting fundamentals. Upon successful completion of this course, a student should be able to analyze transactions, use various journals and ledgers, prepare financial statements and summarize results at the close of the fiscal period for the sole proprietorship. 3 hrs./wk.

**ACCT 122****ACCOUNTING II (3CR)**

*Prerequisite: ACCT 121*

This course is a continuation of ACCT 121. Upon successful completion of this course, the student should be able to prepare and use financial statements with increased emphasis on interpretation and use of accounting data peculiar to partnerships, corporations and manufacturing firms. 3 hrs./wk.

**ACCT 131****FEDERAL INCOME TAXES I (3CR)**

This course teaches the student federal income tax rules and the procedures for reporting federal income tax. Upon completion of this course, the student should be able to do short- and long-range tax planning and keep records that will provide appropriate information for use in preparing federal income tax. The student should also be able to prepare the standard individual federal income tax return. 3 hrs./wk.

**ACCT 135****COMPUTERIZED  
ACCOUNTING APPLICATIONS (3CR)**

*Prerequisites: ACCT 121*

*Corequisite: CPCA 105*

This course will provide a hands-on approach to learning how computerized integrated accounting systems function. Upon successful completion of the course, students should be able to use a microcomputer to create charts of accounts, accounts receivable and payable subsidiary ledgers, transaction journals, general ledgers, financial statements, reports and forecasts. 3 hrs./wk.

**ACCT 221****COST ACCOUNTING (3CR)**

*Prerequisite: ACCT 122*

Upon completion of this course, the student should be able to use accounting information to plan and control operations, value inventory, determine income in a manufacturing environment and evaluate subsequent results. 3 hrs./wk.

**ACCT 222  
MANAGERIAL ACCOUNTING (3CR)**

*Prerequisite: ACCT 122*

Upon completion of this course, the student should be able to develop and use accounting information as an instrument of management control. Material covered includes financial statement analysis, cost application and budgeting reports to management. 3 hrs./wk.

**ACCT 231  
INTERMEDIATE ACCOUNTING I (3CR)**

*Prerequisite: ACCT 122*

The course will present the use of accounting theory in the preparation of financial reports. Upon successful completion of this course, the student should be able to solve problems that arise in the presentation of cash, receivables, inventories, tangible and intangible assets on the statement of financial position, and their related effect on the statement of income. 3 hrs./wk. This course will not be offered every semester. Fall.

**ACCT 232  
INTERMEDIATE ACCOUNTING II (3CR)**

*Prerequisite: ACCT 122*

Accounting theory learned through the study of accounting concepts and technical procedures will be presented in this course. Upon completion, the student should be able to solve problems in the presentation of capital structures, long-term investments, debts, leases, pensions, the analysis of financial statements, and price-level and fair value accounting and reporting. 3 hrs./wk. This course will not be offered every semester. Spring.

**ACCT 278  
ACCOUNTING INTERNSHIP I (1CR)**

*Prerequisite: ACCT 121*

This internship is designed to enable students to use skills learned in accounting courses. Students will work in an approved training situation under instructional supervision. There will be a minimum of 15 hours each week of on-the-job training.

**ACCT 285  
ACCOUNTING CAPSTONE I (3CR)**

*Prerequisites or corequisites: ACCT 122, 15 hours of accounting courses and permission of the division administrator*

This course is designed to serve as a capstone experience prior to entering the workplace. Students will maintain a complete set of books and related financial statements, both manually and electronically, through an accounting cycle. Students will use previously prepared financial statements to make informed judgments and solve prob-

lems, identify and apply ethical positions and effectively communicate this information to others, orally and in writing. 3 hrs. lecture/wk. This course will not be offered every semester. Spring

## Administration of Justice

**ADMJ 121  
INTRODUCTION TO  
ADMINISTRATION OF JUSTICE (3CR)**

Emphasis will be on the historical and philosophical development of the criminal justice system. This course includes participation in the field as well as classroom experience. 3 hrs./wk.

**ADMJ 124  
CRIMINAL JUSTICE SYSTEM (3CR)**

Subsystems of the criminal justice system will be analyzed and identified. 3 hrs./wk.

**ADMJ 127  
CRIMINOLOGY (3CR)**

This class will explore theories of criminal behavior, treatment, correction, crime prevention and control. Contemporary trends will be highlighted. 3 hrs./wk.

**ADMJ 130  
CRIME PREVENTION (3CR)**

Topics of special interest include the techniques public service agencies use to operate crime-prevention programs and to provide technically accurate, cost-effective security recommendations to the community. 3 hrs./wk.

**ADMJ 133  
JUVENILE DELINQUENCY (3CR)**

This class will provide an analysis of detention procedures, disposition, custody and treatment of juvenile offenders throughout the United States with a specific interest in area systems. The origin and development of juvenile agencies, as well as the organization, functions and jurisdiction of juvenile courts, will be studied. 3 hrs./wk.

**ADMJ 136  
POLICE AND THE PUBLIC (3CR)**

This course will identify and analyze conflict that arises between police and the communities they serve. 3 hrs./wk.

**ADMJ 140  
CONSTITUTIONAL CASE LAW (3CR)**

Students will study Supreme Court decisions that have had significant impact on law enforcement techniques and procedures. 3 hrs./wk.

**ADMJ 141****CRIMINAL LAW (3CR)**

*Prerequisite: ADMJ 124 or PL 121*

The Kansas Criminal Code will be the focus of this class, which emphasizes elements of crimes and criminal procedure. 3 hrs./wk.

**ADMJ 145****FUNDAMENTALS OF PRIVATE SECURITY (3CR)**

This overview of the private security field will include a look at how industry, business, government and institutions handle security. 3 hrs./wk.

**ADMJ 146****RETAIL SECURITY (3CR)**

This is a study of retail security supervision and management. Topics will include employment practices, employee dishonesty, controlling shoplifters and building and perimeter protection. 3 hrs./wk.

**ADMJ 148****FAMILY VIOLENCE AND SEXUAL ABUSE (3CR)**

A description and causal analysis of the different physical, psychological and sexual abuse acts that may occur within the primary family unit will be provided in this course. The study will include possible causative factors; psychological and social impact on the various family members; psychological, social and legal implications; treatments; and the relationship between abuse and crime. 3 hrs./wk.

**ADMJ 154****FUNDAMENTALS OF  
CRIMINAL INVESTIGATION (3CR)**

*Prerequisite: ADMJ 124*

Topics covered in this course will include crime-scene search techniques, collection and preservation of evidence, interviewing, and logical reconstruction of the crime. 3 hrs./wk.

**ADMJ 157****PATROL PROCEDURES (3CR)**

*Prerequisite: ADMJ 124*

This course will cover basic police patrol functions including report writing, traffic law enforcement, arrest, search and seizure, patrol and peacekeeping. 3 hrs./wk.

**ADMJ 164****SUPERVISORY TECHNIQUES FOR POLICE (3CR)**

*Prerequisite: ADMJ 124 or approval of the program director*

Current theory and practice of the supervisor's role in the police service will be discussed. 3 hrs./wk.

**ADMJ 166****POLICE ORGANIZATION AND MANAGEMENT (3CR)**

*Prerequisite: ADMJ 124 or approval of the program director*

The organization of a police department will be the focus of this class. Emphasis will be on achieving departmental objectives through the management of people, money and materials. 3 hrs./wk.

**ADMJ 221****INTRODUCTION TO CRIMINALISTICS (3CR)**

*Prerequisite: ADMJ 154 or approval of the program director*

This course will provide training in the techniques and methods used to establish the identity and individualization of persons and things in a criminalistic laboratory. 3 hrs./wk.

**ADMJ 225****DEFENSIVE TACTICS FOR POLICE (3CR)**

*Prerequisite: ADMJ 124 and ADMJ 136*

Subjects covered in this class will include the use of the baton and service revolver and constitutional limitations on the use of force. Students will be required to furnish ammunition for the service revolver. 3 hrs./wk.

**ADMJ 265****ADVANCED POLICE TRAINING (12CR)**

*Prerequisite: Open only to currently employed, full-time police officers attending the Police Academy under sponsorship of a law enforcement agency*

This course consists of 180 clock hours of law enforcement training provided in addition to the 320 hours required by the Kansas Minimum Standards Training Act for recruits attending the Police Academy. While the required 320-hour curriculum is provided without fee, enrollment in advanced training is required of all those attending the academy. The curriculum covers law, criminal investigations, patrol procedures, defensive tactics, report writing and specialized training required by local law enforcement agencies.

**ADMJ 271****EMERGENCY DISPATCHER FIELD STUDY (3CR)**

*Prerequisite: Only students in appropriate programs will be accepted. Approval of the program director is required.*

Students will gain on-the-job training under the supervision of a qualified dispatcher in law enforcement, fire protection or emergency medical services. The field study will be conducted at an approved dispatching station and arranged by the JCCC program coordinator. By arrangement.

**ADMJ 281****READINGS IN POLICE SCIENCE (3CR)**

*Prerequisite: 15 credit hours in ADMJ courses*

The class will consist of selected readings in police science on topics such as police administration, criminal investigation, criminology, corrections, juvenile problems and evidence. By arrangement.

## Agribusiness

(Also see *Grounds and Turf Management*, page 188.)

**AGRI 107****TURFGRASS MANAGEMENT I (3CR)**

This course is designed to familiarize students with all of the major cool- and warm-season turfgrasses and to familiarize students with the adaptation and tolerances, cultural management and major disease and insect pests of each major category of turfgrass. Upon successful completion of this course, students should be able to demonstrate the ability to properly identify the major categories of turfgrass and to establish a turfgrass based on their knowledge of seeding, sodding, sprigging, plugging and past establishment procedures. Students should also be able to develop a pest and disease control program for each major category of turfgrass. 3 hrs./wk.

**AGRI 109****TURFGRASS MANAGEMENT II (3CR)**

*Prerequisite: AGRI 107*

This course provides more specific information on turfgrass management. Topics include green construction, topdressing, sprayer calibration, management programs (setting up a lawn-care program) and the influence environment has on turfgrass growth. 3 hrs./wk.

**AGRI 115****TURF AND ORNAMENTAL PLANTS:  
PEST MANAGEMENT (3CR)**

This course will explore the concepts of turf and ornamental plant identification, description, establishment, growth, care, maintenance and pest control in the local area. The student will become familiar with federal and state regulations pertaining to horticulture chemical application. Upon successful completion of this course, the student will be prepared to take the Kansas or Missouri licensing examination to become a certified applicator of restricted horticulture pesticides and herbicides. 3 hrs./wk.

**AGRI 120****INTRODUCTION TO URBAN AGRIBUSINESS (3CR)**

This is a general survey course for students who wish to learn more about the broad field of agribusiness. Particular emphasis is on the many facets of landscape and grounds management. Career areas that will be covered are interior landscaping, greenhouse management, pesticide applicators' positions and golf course management. 3 hrs. lecture/wk.

## Anthropology

**ANTH 125****CULTURAL ANTHROPOLOGY (3CR)**

The political, economic, religious, family and social aspects of major groups of people around the world will be examined. Hunters, tribesmen, peasants and industrial populations also will be studied. 3 hrs./wk.

**ANTH 126****PHYSICAL ANTHROPOLOGY (3CR)**

This study of physical anthropology will include archaeology, human variation, physical evolution, primate societies and the emergence of human society. Cross-disciplinary topics of interest will be included. 3 hrs./wk.

**ANTH 130****WORLD CULTURES (3CR)**

This ethnographic course in anthropology will examine a representative group of societies from each major environmental region of the world. Hunters and gatherers such as the pygmy and the Eskimo, tribal farmers from the Pacific Islands and the Americas, chiefdoms such as the Swazi and the Tahitians, state structures from Africa and Southeast Asia, and folk societies such as the peasants of Ireland and China will be studied holistically. 3 hrs./wk.

**ANTH 134****NATIVE AMERICANS (3CR)**

This ethnographic course in cultural anthropology seeks understanding of the prehistory, history and contemporary setting of the first nations of North, Central and South America. It examines the ecological framework in which these diverse societies have developed and their relationships with each other. It then analyzes the past and present status, legal and social, of a representative group of North American cultures. Finally, it describes the significant role that Native Americans will play in the national life of the United States in the 21st century. 3 hrs. lecture/wk.

**ANTH 140**  
**ARCHAEOLOGY (3CR)**

This introductory course is designed to give students a systematic study of cultural humanity of the past. Ancient technologies and human behavior, social organization and religious beliefs will be examined from a sampling of a few well-known sites from New and Old World archaeology. 3 hrs./wk.

**ANTH 210**  
**PEOPLES OF THE WORLD (3CR)**

*Prerequisites: POLS 130 and SOC 160. Available to noncore students with the program director's permission.*

This interdisciplinary course will draw on economics, psychology, sociology and anthropology to help students better understand the increasing global connections between peoples and societies. Students will investigate the cultural basis of values, beliefs and behavior and learn how this affects their relationships both within their communities and across cultural boundaries. Specific topics will include the individual in North America today, the North American's relationship to the peoples of Earth, Earth as an economic system, views of work in the United States and other countries, comparative political participation, and cross-cultural value systems. 3 hrs./wk.

## Architecture

**ARCH 120**  
**INTRODUCTION TO ARCHITECTURE (3CR)**

This course is an introduction to the profession of architecture through a study of its history, vocabulary, theories and practices. The facets that make up the total architectural curriculum as well as the various professional roles that architects can be expected to perform will be covered. Architectural study is seen as both an art and a science. The interdisciplinary character of architectural practice is emphasized. 3 hrs. lecture/wk.

**ARCH 130**  
**ARCHITECTURAL GRAPHICS I (3CR)**

This course is designed to build a conceptual and manual foundation for further professional architectural education. Students will learn to apply a variety of media and drawing systems such as freehand drawing and architectural lettering; equipment usage; applied geometry; line, tone, texture and color studies; and multiview, paraline, axonometric and oblique drawings as they relate to architectural forms. Emphasis will be on learning to think in spatial terms as well as developing graphic presentation skills using standard graphic conventions. 6 hrs. integrated lecture, studio/wk.

**ARCH 131**  
**ARCHITECTURAL GRAPHICS II (3CR)**

*Prerequisite: ARCH 130*

This course builds upon the conceptual and manual skills acquired in Architectural Graphics I. Students will expand their ability by learning to apply a variety of media and advanced drawing systems such as design drawing techniques, model building, graphic diagramming, grid perspective drawing, projection perspective drawing and shade and shadow studies. Emphasis will continue to be on learning to think in spatial terms as well as developing a new repertoire of graphic presentation skills. 6 hrs. integrated lecture, studio/wk.

**ARCH 140**  
**ARCHITECTURAL DESIGN (3CR)**

*Prerequisite: ARCH 130*

This course introduces the student to the process and vocabulary of design. The purpose of the content is to develop the ability to solve two- and three-dimensional design problems with basic methods, vocabulary and media appropriate to the architectural profession. 6 hrs. integrated lecture, studio/wk.

## Art

**ART 123**  
**ELEMENTARY ART METHODS (3CR)**

This is an exploration of art activities for children from preschool through sixth grade. 6 hrs./wk.

**ART 124**  
**DESIGN 2-D (3CR)**

This is an introductory study of the principles of visual perception, two-dimensional space organization and the visual elements of line, shape, value and texture. Concepts, materials and processes necessary to an understanding of two-dimensional form are explored using traditional and digital tools and techniques. 6 hrs./wk.

**ART 127**  
**DESIGN 3-D (3CR)**

*Prerequisite: ART 124*

This is a study of the function of three-dimensional organization in the development of visual ideas. Concepts, materials and processes necessary to an understanding of the three-dimensional relationships of space, form, form evolution and the dynamics of structure are explored. 6 hrs./wk.

**ART 129****DESIGN, COLOR (3CR)**

This is a study of the nature of color, its physical properties and visual qualities. Basic theories, phenomena and their applications will be explored using pigment, colored paper and digital color systems. 6 hrs./wk.

**ART 130****DRAWING I (3CR)**

This is an introductory course with an emphasis on the development of fundamental drawing skills, increased power of observation and an awareness of the personally expressive and compositional aspects of drawing. 6 hrs./wk.

**ART 131****DRAWING II (3CR)**

*Prerequisite: ART 130*

Advanced problems with an emphasis on conceptual and mixed media drawing will be explored. 6 hrs./wk.

**ART 135****PAINTING I (3CR)**

This is an introductory course with emphasis on the development of visual perception and creative response through studies of still life, landscape and human form. 6 hrs./wk.

**ART 136****PAINTING II (3CR)**

*Prerequisite: ART 135*

This course will offer a stronger emphasis on the perceptual and conceptual problems in painting and the development of an individual direction. 6 hrs./wk.

**ART 138****DIGITAL IMAGING FOR ARTISTS (3CR)**

In this introductory course in the use of the computer as a medium for making fine art, emphasis will be on developing the student's skill in making expressive visual statements utilizing computer technology. 6 hrs. lecture, studio/wk.

**ART 142****CERAMICS I (3CR)**

This course is designed to build a conceptual and manual foundation for future ceramics education. Students will study the properties of clay, its preparation, hand and wheel techniques, surface design, firing methods, fundamental ceramic terms, principles of design, introductory ceramic history and orientation to safe practices for the ceramic artist. Emphasis will be on developing skills appropriate to the beginning student for the purpose of creative and technical expression. 6 hrs./wk.

**ART 143****CERAMICS II (3CR)**

*Prerequisite: ART 142*

This course will deal with more advanced methods and studio experiences in ceramic wheel techniques, creative expression and glaze formulation. Emphasis will be on development of a sense of thrown form and creative decoration. 6 hrs./wk.

**ART 145****SCULPTURE I (3CR)**

Students will explore and study natural and synthetic sculptural forms as they create work using traditional or contemporary media and techniques. 6 hrs./wk.

**ART 146****SCULPTURE II (3CR)**

*Prerequisite: ART 145*

This continuation of ART 145 will focus on advanced methods and techniques with emphasis on materials, forms and the student's selection of an individual direction. 6 hrs./wk.

**ART 148****METAL AND SILVERSMITHING I (3CR)**

The metalsmithing techniques of casting and constructing using brass, copper and silver will be studied along with buffing, sawing, filing and soldering processes. 6 hrs./wk.

**ART 149****METAL AND SILVERSMITHING II (3CR)**

*Prerequisite: ART 148*

Students will study advanced metalsmithing techniques of casting, constructing and etching using copper, brass, bronze, silver and other materials. 6 hrs./wk.

**ART 166****RAKU CERAMICS (3CR)**

This course will deal with the oriental process of making and firing Raku pottery – a spontaneous, low-fire approach to a finished product involving the rapid firing and cooling of the pottery. Hand-formed (pinched and slab) as well as wheel-thrown forms will be researched. Emphasis will be on nonwheel manipulations of form. Students will be encouraged to develop a personal philosophical basis for their creative process and product. 6 hrs./wk.

**ART 172****WATERCOLOR PAINTING (3CR)**

This is an introductory course in transparent water media with emphasis on fundamental painting skills; color, value and composition; increased visual perception; and an awareness of personal expression. 6 hrs./wk.

**ART 180****ART HISTORY: ANCIENT/RENAISSANCE (3CR)**

This course will acquaint students with the arts and ideas of world civilizations from the prehistoric period to the beginning of the Italian Renaissance. The course will examine the aesthetic elements that mark the styles of major periods in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs./wk.

**ART 182****ART HISTORY: RENAISSANCE/MODERN (3CR)**

This course will acquaint students with the arts and ideas of western cultures from the beginning of the Italian Renaissance to the present. The course will examine the aesthetic elements that mark the styles of major periods in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs./wk.

**ART 184****ART HISTORY: TWENTIETH CENTURY (3CR)**

This course introduces the student to the arts and ideas of western Europe and the United States from the late 19th century to the present. The course will examine the aesthetic elements which mark the styles of major movements in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs. lecture/wk.

**ART 186****ART HISTORY: INTRODUCTION TO ASIAN ART (3CR)**

This course introduces students to the architecture, sculpture and painting of India, China and Japan. The course will examine those elements that mark the styles of major regions and time periods within the cultures to be studied. The course will focus on the interrelationships between artistic forms and their various cultural, social and historical contexts. Special attention will be given to the role of religion, especially Buddhism, in that it is the primary thread that interconnects the cultures of India, China and Japan. 3 hrs. lecture/wk.

**ART 231****LIFE DRAWING I (3CR)**

*Prerequisite: ART 130*

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

**ART 232****LIFE DRAWING II (3CR)**

*Prerequisite: ART 231*

This course will offer advanced figure drawing with emphasis on varying figure form interpretations. 6 hrs./wk.

**ART 235****STUDIO WORKSHOP I (3CR)**

*Prerequisite: ART 131 or ART 136*

Emphasis will be on individual studio activity in painting or drawing. The student will decide the course content under a faculty member's supervision. 6 hrs./wk.

**ART 236****STUDIO WORKSHOP II (3CR)**

*Prerequisite: ART 235*

Emphasis will be on individual studio activity. The student will decide the course content under the supervision of a faculty member. 6 hrs./wk.

**ART 244****CERAMICS WORKSHOP I (3CR)**

*Prerequisites: ART 143 and permission of the program director*

Students will have the opportunity to pursue advanced individual research under the direction of the instructor. Emphasis will be on creative expression as well as on the development of technical skills. 6 hrs./wk.

## Astronomy

**ASTR 122****ASTRONOMY (4CR)**

This is a study of the universe, from the moon, planets and stars as seen in the night sky to the most distant galaxies. Topics will include quasars, black holes, the origin of the universe and the possibility of life on other planets. 3 hrs. lecture, 2 hrs. lab/wk., 5 night-time telescope sessions are required.

## Automotive Technology

**AUTO 121****SMALL ENGINE SERVICE (3CR)**

Upon successful completion of this course, the student should be able to examine areas in class on two- and four-stroke cycle engines. The student should be able to understand lubricating, cooling, fuel and governor systems; troubleshooting engine problems; inspection of engine

components; and servicing the fuel, cooling and exhaust systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

#### **AUTO 122**

##### **INTRODUCTION TO AUTO GLASS (3CR)**

Upon successful completion of this course, the student should be able to diagnose, service and repair various automotive glass problems, provide professional service to customers, manage and supervise jobs and employees. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 1½ hrs. lab/wk.

#### **AUTO 123**

##### **MOTORCYCLE MAINTENANCE AND REPAIR (2CR)**

Upon successful completion of this course, the student should be able to demonstrate the proper use of tools and equipment used in servicing motorcycles. Two- and four-stroke cycle designs will be studied. Overhaul procedures will be demonstrated. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

#### **AUTO 125**

##### **INTRODUCTION TO AUTOMOTIVE SHOP PRACTICES (3CR)**

Upon successful completion of this course, the student should be able to develop shop safety habits and become proficient in tire, battery, cooling system, lubrication service and minor electrical diagnosis. This course is an introductory course required for all students in the Automotive Technology program. Emphasis will be placed on learning basic skills needed to enter advanced automotive classes. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

#### **AUTO 128**

##### **AUTOMOTIVE PARTS SPECIALIST (2CR)**

Upon successful completion of this course, the student should be able to demonstrate good communication and basic math skills. Ordering and maintaining correct inventory, as well as displaying and selling automotive parts for a fair profit, will be studied. 2 hrs. lecture/wk.

#### **AUTO 130**

##### **DIESEL FUNDAMENTALS (2CR)**

*Corequisite: AUTO 125*

Upon successful completion of this course, the student should be able to identify diesel component design

differences from gasoline engines. The student will also be required to troubleshoot and service all external components with emphasis on glow plugs, injectors and injector pumps. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

#### **AUTO 163**

##### **AUTOMOTIVE STEERING AND SUSPENSION (3CR)**

*Corequisite: AUTO 125*

Upon successful completion of this course, the student should be able to describe manual and power steering component operation, summarize construction and operation of front and rear suspension systems, perform four-wheel alignment on current vehicles and service steering and suspension components. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk. Spring.

#### **AUTO 165**

##### **AUTOMOTIVE ENGINE REPAIR (4CR)**

*Corequisite: AUTO 125*

Upon successful completion of this course, the student should be able to demonstrate an understanding of the four-stroke-cycle internal combustion engine, calculating compression ratio, piston displacement, horsepower and torque, and correcting internal engine malfunctions. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 6 hrs. lab/wk.

#### **AUTO 167**

##### **AUTOMOTIVE BRAKE SYSTEMS (2CR)**

*Corequisite: AUTO 125*

Upon successful completion of this course, the student should be able to summarize disc and drum brake construction and operation, service all brake system components and describe anti-lock brake system services. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

#### **AUTO 168**

##### **AUTOMOTIVE MANUAL DRIVETRAIN AND AXLES (3CR)**

*Corequisite: AUTO 125*

Upon successful completion of this course, the student should be able to work safely in the shop, service the typical manual transmission/transaxle, service typical transfer cases, inspect, adjust and replace all clutch components, disassemble, reassemble and set up a differential

and service all front- and rear-wheel drive shaft components. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk.

#### **AUTO 201**

##### **ASE CERTIFICATION SEMINAR (1CR)**

This course should prepare an experienced automotive technician to take four of the eight basic National Institute for Automotive Service Excellence (ASE) automotive certification tests, or the Advanced Engine Performance Specialist (L1) test, or the three ASE Engine Machinist tests. 1 hr. lecture/wk.

#### **AUTO 210**

##### **ADVANCED ENGINE REPAIR (3CR)**

*Prerequisite: AUTO 165*

Upon successful completion of this course, the student should be able to plan, design, and build a performance engine. The student will also demonstrate knowledge of the relationships between displacement, horsepower and torque; regulations governing performance engines; and current trends in engine modification. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

#### **AUTO 230**

##### **AUTOMOTIVE HEATING AND AIR CONDITIONING (3CR)**

*Corequisite: AUTO 125*

Upon successful completion of this course, the student should be able to operate, service and diagnose automotive heating, ventilation and air conditioning systems. The course will cover the theory and operation of these systems, major components, testing, recycling and other service procedures. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

#### **AUTO 234**

##### **AUTOMOTIVE ELECTRICAL SYSTEMS (4CR)**

*Corequisite: AUTO 125*

Upon successful completion of this course, the student should be able to service starting and charging system components; describe the operation and construction of starters, alternators and controlling devices; describe various lighting systems used in current automotive vehicles; and repair electrical lighting and accessory systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

#### **AUTO 250**

##### **AUTOMATIC TRANSMISSIONS AND TRANSAXLES (4CR)**

*Corequisite: AUTO 125*

Upon completion of this course, the student should be able to diagnose, service and repair various automatic transmissions and progress to automatic transaxles, including computer-controlled systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture-demonstration, 3 hrs. lab/wk.

#### **AUTO 254**

##### **AUTOMOTIVE ENGINE PERFORMANCE (5CR)**

*Prerequisite: AUTO 165 and AUTO 234*

Upon successful completion of this course, the student should be able to describe the operation and construction of automotive fuel system components such as carburetors, pumps, injectors and controlling devices. The student should also be able to describe the operation and construction of ignition circuits to include computer-controlled systems. Finally, students should be able to service all performance systems on the automobile. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 6 hrs. lab/wk.

#### **AUTO 260**

##### **AUTOMOTIVE SERVICE MANAGEMENT (3CR)**

*Corequisite: AUTO 254*

Upon successful completion of this course, the student should understand the automotive service manager's job. The manager's job includes: planning for inevitable change, maintaining flexibility, site planning, customer satisfaction, employee practices, meeting financial goals and managing time, conflict and stress. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

#### **AUTO 261**

##### **AUTOMOTIVE SERVICE TECHNIQUES (3CR)**

*Corequisite: AUTO 254*

Upon successful completion of this course, the student should become proficient in ordering of parts, writing repair orders, presenting work orders to customers, questioning customers about automobile service problems, answering the telephone and supervising work loads. Students will also diagnose and perform service work on student and staff vehicles. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

**AUTO 271****AUTOMOTIVE TECHNOLOGY INTERNSHIP (3CR)**

*Prerequisite: Division administrator approval*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 1 hr. lecture, 15 hrs. work min./wk.

## Aviation

**KAV 100****INTRODUCTION TO AVIATION MAINTENANCE I (14CR)**

General aviation practices will be introduced. Also addressed will be theory and practical application in basic electricity, drafting, fluid lines and fittings, materials and processes, ground operation and servicing, publications, and the mechanic's privileges and limitations. 19.7 hrs. lecture, 11.9 hrs. lab/wk.

**KAV 101****CARBURETION AND LUBRICATION (7CR)**

*Prerequisites: KAV 100 and KAV 111*

This class will present the theory and practical application of engine lubricating systems, engine fuel systems, fuel metering systems and induction systems. 9.6 hrs. lecture, 4.8 hrs. lab/wk.

**KAV 102****WOOD AND FABRIC (3CR)**

*Prerequisites: KAV 100 and KAV 111*

The fundamentals of wood structures, aircraft covering and aircraft finishes will be introduced. 4.5 hrs. lecture, 2.7 hrs. lab/wk.

**KAV 103****AIRCRAFT RECIPROCATING POWERPLANT (6CR)**

*Prerequisites: KAV 100 and KAV 111*

Aircraft reciprocating powerplants will be introduced along with the theory and practical application of reciprocating engines and engine exhaust systems. 8.4 hrs. lecture, 4.8 hrs. lab/wk.

**KAV 104****ASSEMBLY AND RIGGING (5CR)**

*Prerequisites: KAV 100 and KAV 111*

Students will focus on the theory and practical application of aircraft assembly and rigging and airframe assembly inspection. 8.4 hrs. lecture, 4.8 hrs. lab/wk.

**KAV 105****PROPELLERS (5CR)**

*Prerequisites: KAV 100 and KAV 111*

The theory and practical application of a wide range of propeller types will be introduced as will engine cooling systems. 6 hrs. lecture, 3.6 hrs. lab/wk.

**KAV 106****HYDRAULIC AND PNEUMATIC SYSTEMS (7CR)**

*Prerequisites: KAV 100 and KAV 111*

Areas covered will include inspection, checking, servicing and troubleshooting hydraulic and pneumatic power systems and air conditioning, pressurization and oxygen systems. 9.6 hrs. lecture, 4.8 hrs. lab/wk.

**KAV 107****JET PROPULSION POWERPLANT (5CR)**

*Prerequisites: KAV 100 and KAV 111*

This course will present operating principles of gas turbine engines, their application to present-day aircraft, and theory and practical application in inspection, servicing and troubleshooting. 6 hrs. lecture, 2.4 hrs. lab/wk.

**KAV 108****AIRCRAFT ELECTRICAL AND RELATED SYSTEMS (5.5CR)**

*Prerequisites: KAV 100 and KAV 111*

This course will examine theory and practical application in aircraft electrical, position and warning, and ice and rain control systems. 7.2 hrs. lecture, 3.6 hrs. lab/wk.

**KAV 109****AIRCRAFT IGNITION AND STARTING SYSTEMS (6CR)**

*Prerequisites: KAV 100 and KAV 111*

The principles of aircraft ignition and starting systems will be introduced with emphasis on the practical application of ignition timing and magneto disassembly and repair. 5.4 hrs. lecture, 3 hrs. lab/wk.

**KAV 110****TECHNICAL MATH (4CR)**

Students will learn algebraic functions, factoring, linear equations, quadratic equations, systems of equations, exponents and radicals. Also covered will be trigonometric functions, solutions of right triangles, functions of the general angle, and graphs of trigonometric functions. Laboratory emphasis will be on elementary physics related to aircraft. 4 hrs./wk.

**KAV 111****INTRODUCTION TO AVIATION MAINTENANCE II (4.5CR)**

This course will present general aviation practices and theory and practical applications in basic electricity. 6.2 hrs. lecture, 3.2 hrs. lab/wk.

**KAV 115**  
**ENGLISH (3CR)**

This is an English course for aviation majors only. Methods of rhetorical organization, sentence and paragraph development, and diction will be stressed. Students will write and read essays of various types. 3 hrs./wk.

**KAV 200**  
**SHEET METAL STRUCTURES (4CR)**

*Prerequisites: KAV 100 and KAV 111*

Gas welding, sheet metal fabrication, and methods and application of aircraft structural repair will be presented. 10.2 hrs. lecture, 7.8 hrs. lab/wk.

**KAV 201**  
**POWERPLANT TESTING (2.5CR)**

*Prerequisites: KAV 100 and KAV 111*

This course will address reciprocating engine and engine system theory and inspection and theory and practical application in the removal, installation, run-up and troubleshooting of aircraft reciprocating engines. 2.4 hrs. lecture, 4.8 hrs. lab/wk.

**KAV 202**  
**AIRCRAFT FUEL AND  
FIRE PROTECTION SYSTEMS (4CR)**

*Prerequisites: KAV 100 and KAV 111*

Aircraft fuel systems and fire protection systems will be addressed. Topics will include inspection, checking, servicing and troubleshooting. 3 hrs. lecture, 1.4 hrs. lab/wk.

**KAV 203**  
**ELECTRICITY, GENERATOR – ALTERNATOR (5.5CR)**

*Prerequisites: KAV 100 and KAV 111*

This course will present the theory of aircraft engine electrical systems, practical applications of generating power, and electrical control systems. 7.2 hrs. lecture, 3.6 hrs. lab/wk.

**KAV 204**  
**AIRCRAFT COMMUNICATIONS/NAVIGATION  
SYSTEMS (6CR)**

*Prerequisites: KAV 100 and KAV 111*

This course will focus on the theory and practical application of auto pilot and approach systems and inspection and repair of antenna and equipment installations. 6.9 hrs. lecture, 3.3 hrs. lab/wk.

**KAV 205**  
**FIRE PROTECTION SYSTEMS (5.5CR)**

*Prerequisites: KAV 100 and KAV 111*

This course will review engine systems through analysis of related instruments and control systems. Engine fire protection also will be covered. 7.2 hrs. lecture, 3.6 hrs. lab/wk.

**KAV 206**  
**AIRFRAME INSPECTION AND WELDING (5.5CR)**

*Prerequisites: KAV 100 and KAV 111*

In this review of airframe theory courses, the emphasis will be on areas of difficulty. 7.2 hrs. lecture, 3.6 hrs. lab/wk.

## **Banking and Finance**

**AIB 101**  
**PRINCIPLES OF BANKING (3CR)**

Upon successful completion of this course, the student should be able to identify aspects of banking from the fundamentals of negotiable instruments to contemporary issues and developments within the industry. In addition, the student should be able to demonstrate an understanding of the competitive and regulatory environments; bank regulations and examination; bank loans and investments; and the importance of full-service commercial banking. 3 hrs./wk.

**AIB 104**  
**TRUST OPERATIONS (3CR)**

Upon successful completion of this course, the student should be able to define and explain basic trust terminology, the nature and complexities of the investment process and the purpose of investments. In addition, the student should be able to list the trust services available; explain economic forecasting principles and illustrate their applications; describe the techniques of valuing stocks and other securities; and explain the concepts of portfolio management. This course is comprehensive and focuses on the theory and practice of trust department investment services. 3 hrs./wk.

**AIB 107**  
**LAW AND BANKING: PRINCIPLES (3CR)**

Upon successful completion of this course, the student should be able to identify the laws, regulations and legal processes directly related to banking. In addition, the student should be able to outline the serious legal problems that occur in routine banking operations if the principles and concepts are not followed. This course places emphasis on the Uniform Commercial Code and legal terminology related to banking and commercial transactions. 3 hrs./wk.

**AIB 109**  
**MARKETING FOR BANKERS (3CR)**

Upon successful completion of this course, the student should be able to define marketing and explain why the marketing concept is essential for banks in today's competitive economic environment. In addition, the stu-

dent should be able to describe the factors that motivate customers to purchase financial services and be able to prepare a marketing plan. The course also requires the student to outline and explain how a bank should integrate its public relations, advertising, sales promotion, selling and service distribution functions. 3 hrs./wk.

**AIB 124  
COMMERCIAL LENDING (3CR)**

*Prerequisite: ACCT 121 or ACCT 122*

Upon successful completion of this course, the student should be able to define, analyze and evaluate how the commercial lending business is organized, how it contributes to bank profitability and the total commercial lending process. This comprehensive treatment of commercial lending is designed for entry-level commercial loan officers and anyone who wants to know more about the role of commercial lending in the banking industry and collective economy. This course will give the student a conceptual framework for the study of commercial lending. 3 hrs./wk.

## Biology

**BIOL 110  
NUTRITION FOR LIFE (2CR)**

Designed for students who wish to apply nutrition information to their lives, this course explores how food selection affects body size, body composition, performance, disease resistance and longevity. Students will analyze the composition of their diets and develop a plan of action to improve their eating behaviors. 2 hrs. lecture/wk.

**BIOL 115  
NATURAL HISTORY OF KANSAS (3CR)**

This course describes the physical and biological processes that have led to the present Kansas landscape. Physical science topics include geology, climate patterns and soil formation; biological science topics include ecology and a survey of plants and animals of Kansas. The relationship of the physical and biological environment to past and present land and resource use will be explored. 3 hrs. lecture/wk. 2 Saturday 7-hr. labs required.

**BIOL 122  
PRINCIPLES OF BIOLOGY (3CR)**

Students will explore selected concepts and principles important to an understanding of how biological systems operate. They also will examine the world of both plants and animals. This course is not open to students who have taken BIOL 120 Life Science. 3 hrs./wk.

**BIOL 123  
PRINCIPLES OF BIOLOGY LAB (1CR)**

*Prerequisite or corequisite: BIOL 122 or the equivalent*

This introductory lab will focus on the structures and functions of plants and animals. 2 hrs./wk.

**BIOL 124  
OCEANUS: THE MARINE ENVIRONMENT (3CR)**

This course will focus on the marine environment as a unique feature of the planet Earth and investigate areas of intense scientific and public concern: the physical size and diversity of contained life forms; the marine environment's contribution to the physical and historical development of man; its impact on geopolitical and economic matters; the impact of oceanic pollutants; and the potential exploitation of marine resources. 3 hrs. lecture/wk.

**BIOL 125  
GENERAL BOTANY (5CR)**

This is a survey of the life, structure and growth of plants. Divisions of the plant kingdom will be presented with emphasis on the life cycles, anatomy, physiology and ecology of major groups. 3 hrs. lecture, 4 hrs. lab/wk.

**BIOL 127  
GENERAL ZOOLOGY (5CR)**

This is a survey of the life, structure and growth of animals. Students will concentrate on identifying animals by their structural characteristics and will look at the role adaptation plays in anatomical and physiological features. 3 hrs. lecture, 4 hrs. lab/wk.

**BIOL 130  
ENVIRONMENTAL SCIENCE (3CR)**

Students will study the human population's impact on the environment. Topics will include population, air and water pollution, hazardous wastes, land use and energy. 3 hrs./wk.

**BIOL 131  
ENVIRONMENTAL SCIENCE LAB (1CR)**

*Prerequisite or corequisite: BIOL 130*

Students will sample the local environment for air, water and noise pollution. Field trips will include visits to a local industry to observe pollution control and to a sewage treatment plant. 2 hrs. lab/wk. plus up to three field trips.

**BIOL 135  
PRINCIPLES OF CELL AND MOLECULAR BIOLOGY (4CR)**

This course is an integrated lecture and laboratory course for biology majors and students planning to take additional courses in biology. Basic biochemistry, cell structure and function, molecular biology, genetics,

physiology, and development of plants and animals will be studied. 3 hrs. lecture, 2 hrs. lab/wk.

#### **BIOL 140**

##### **HUMAN ANATOMY (4CR)**

Students will study gross and microscopic aspects of cells, tissues and organ systems of the human body. They will concentrate on a detailed analysis of the structure of each body system. 3 hrs. lecture, 3 hrs. lab/wk.

#### **BIOL 144**

##### **HUMAN ANATOMY AND PHYSIOLOGY (5CR)**

Students will study the relationship of structure to function in the organ systems of the human body. Emphasis will be on the location of anatomical features and their functions. 3 hrs. lecture, 4 hrs. lab/wk.

#### **BIOL 145**

##### **HUMAN ANATOMY/PHYSIOLOGY DISSECTION (1CR)**

*Prerequisites: BIOL 144 and approval of the division administrator*

Students will dissect the fetal pig and study the organ systems and their functions. The bovine uterus, heart and brain and the porcine testis and kidney will also be dissected. Students will compare and contrast these structures and functions with the human body. 2 hrs. lab/wk.

#### **BIOL 146**

##### **GENERAL/HEAD AND NECK ANATOMY (4CR)**

*Prerequisites: Admission to the Dental Hygiene Program and CHEM 122, ENGL 121 and SOC 122 (with a minimum 2.0 G.P.A.)*

The cells, tissues and organ systems of the body will be examined with emphasis on the head and neck. Students will discuss and analyze each system of the body and the embryology of the head and neck. 3 hrs. lecture, 3 hrs. lab/wk.

#### **BIOL 150**

##### **BIOLOGY OF ORGANISMS (5CR)**

*Prerequisites: BIOL 122 and BIOL 123*

Phyla of protista, plant and animal kingdoms will be presented with emphasis on the life cycles, anatomy, physiology and ecology of the major groups. 4 hrs. lecture, 3 hrs. lab/wk.

#### **BIOL 205**

##### **GENERAL GENETICS (3CR)**

*Prerequisite: BIOL 122 or the equivalent*

Heredity and variation of plants and animals will be studied, including classical and molecular genetics. 3 hrs./wk.

#### **BIOL 210**

##### **PATHOPHYSIOLOGY (4CR)**

*Prerequisites: BIOL 144 or BIOL 140 and BIOL 225*

This introduction to the physiology of disease will cover common disorders of the body from the cellular level to the systemic level. Topics will include causes, symptoms, diagnostic tests and treatment of disease. 4 hrs./wk. Spring.

#### **BIOL 225**

##### **HUMAN PHYSIOLOGY (4CR)**

*Prerequisites: BIOL 140 or BIOL 146 and CHEM 122*

The physical and chemical processes of human cells, tissues, organs and systems will be studied. Living organisms and physiological tools will be used to demonstrate the principles of general physiology. 3 hrs. lecture, 3 hrs. lab/wk.

#### **BIOL 230**

##### **MICROBIOLOGY (3CR)**

*Prerequisite: CHEM 122 or one year of high school chemistry*

The cell structure, physiology, antimicrobial agents, immunology and host-parasite relationships of microorganisms will be studied. 3 hrs./wk.

#### **BIOL 231**

##### **MICROBIOLOGY LAB (2CR)**

*Prerequisite or corequisite: BIOL 230*

Students will grow and identify microorganisms and perform experiments to test the organisms' response to various environmental conditions. 4 hrs./wk.

#### **BIOL 235**

##### **GENERAL NUTRITION (3CR)**

*Corequisite: BIOL 225 or the equivalent*

Students will study the source and purpose of essential nutrients, evaluate various diets and explore the role diet plays in preventing disease. 3 hrs./wk.

#### **BIOL 240**

##### **GENERAL PHARMACOLOGY (3CR)**

*Prerequisite: BIOL 225*

This is a study of drugs – how they work, what they do, what effects they cause. 3 hrs./wk. Spring.

#### **BIOL 250**

##### **ECOLOGY (4CR)**

*Prerequisites: BIOL 122, BIOL 123, or BIOL 130 and BIOL 131 or approval of the division administrator*

This course will will teach continuing science students basic ecological theories that are accepted and used by the professional ecological community. Laboratory exercises will test ecological theories by having students

develop hypotheses, design experiments, collect and analyze data by using statistics that include T-tests and Kruskal-Wallis tests, and write scientifically formatted reports. 3 hrs. lecture, 3 hrs. lab/wk.

#### **BIOL 298**

##### **SPECIAL TOPICS IN BIOLOGY: SOUTHWESTERN FIELD COURSE (4CR)**

Students will travel through the varied environments of the Southwestern United States to observe and study the field biology of each area. The course will include pretrip lectures in addition to the two-week field trip.

#### **BIOL 299**

##### **YUCATAN FIELD COURSE: NATURAL HISTORY (3CR)**

This travel-for-credit course consists of on-campus seminars followed by two weeks in Mexico. The class is an introduction to the natural history, flora and fauna of selected geographical locations of the Yucatan Peninsula. The course will include pretrip lectures in addition to the two-week trip.

## **Business Administration**

#### **BUS 120**

##### **MANAGEMENT ATTITUDES AND MOTIVATION (3CR)**

Upon successful completion of this course, the student should be able to assess personal strengths and weaknesses and set goals for personal and professional life; define communication and listening skills; analyze human relations problems; apply problem-solving strategies to human relations issues in the workplace; and define and compare management styles. Class meets for 48 hrs.

#### **BUS 121**

##### **INTRODUCTION TO BUSINESS (3CR)**

Upon successful completion of this course, the student should be able to explain the basic principles of the American free enterprise economic system. In addition, the student should be able to explain the fundamentals of starting a business and the interrelationship among the four functional areas: accounting, finance, management and marketing. 3 hrs./wk.

#### **BUS 123**

##### **PERSONAL FINANCE (3CR)**

Upon successful completion of this course, the student should be able to define the role of a consumer in the economy; develop a basic financial plan; apply budgeting procedures in a daily and monthly spending plan; calculate principal and interest; define the types of consumer credit; identify the types of housing mortgages; and

explain the important considerations in buying, selling and renting. In addition, the student should be able to calculate individual insurance needs in the areas of life insurance, health insurance, property and liability insurance, automobile insurance and other types of special insurance, and be able to explain employee and retirement benefits, including tax-sheltered plans. 3 hrs./wk.

#### **BUS 122**

##### **INTRODUCTION TO LAW (3CR)**

Upon successful completion of this course, the student should be able to explain the major substantive and procedural aspects of law. This course is available to students with a general interest in the law, and is required for students seeking admission to the Paralegal Program. 3 hrs./wk.

#### **BUS 126**

##### **TRANSPORTATION RATES I (3CR)**

*Prerequisite: Permission of the division administrator*

Upon successful completion of this course, the student should be able to identify and explain motor carrier rates. 3 hrs./wk.

#### **BUS 127**

##### **TRANSPORTATION RATES II (3CR)**

*Prerequisite: Permission of the division administrator*

Upon successful completion of this course, the student should be able to identify and explain Middlewest Freight Bureau Tariff 125 and MWB 226 (commodities). 3 hrs./wk.

#### **BUS 128**

##### **TRANSPORTATION RATES III (3CR)**

*Prerequisite: Permission of the division administrator*

Upon successful completion of this course, the student should be able to identify and explain Middlewest Motor Freight Bureau Tariff 129 (rule for discounts and allowances), MWB 600 local distribution and Rocky Mountain Motor 303 (class and commodity rates). 3 hrs./wk.

#### **BUS 140**

##### **PRINCIPLES OF SUPERVISION (3CR)**

Upon successful completion of this course, the student should be able to define the supervisor's role within a company and identify the skills necessary to successfully fulfill that role. In addition, the student should be able to determine the supervisor's role in supervising employees on an individual basis and as a group. The student should also be able to apply the principles of supervision in simulated work situations. 3 hrs./wk.

**BUS 141****PRINCIPLES OF MANAGEMENT (3CR)**

Upon successful completion of this course, the student should be able to state the basic functions of management, explain the nature of organizations and organizational theories and types, explain the importance of effective communication within the organizational structure, develop and define the techniques for directing and motivating employees, explain the effects of change on an organization and develop techniques for coping with those effects. In addition, the student should be able to explain and discuss the application of business ethics in managerial decision making. 3 hrs./wk.

**BUS 145****SMALL BUSINESS MANAGEMENT (3CR)**

Upon successful completion of this course, the student should be able to demonstrate an understanding of management techniques vital to small business. In addition, the student should be able to apply decision-making skills in the areas of business start-up – choosing the form of ownership, marketing, financial planning and managing the small business. 3 hrs./wk.

**BUS 147****INTRODUCTION TO CREDIT MANAGEMENT (3CR)**

*Prerequisite: ACCT 121*

Upon successful completion of this course, the student should be able to explain the role and types of commercial credit in a business environment and the determination and development of a credit policy. In addition, the student should be able to analyze a company's financial statements to determine credit worthiness and use applicable law and credit regulations governing commercial credit policies. The student should also be able to describe and use basic collection principles. 3 hrs. lecture/wk.

**BUS 148****INTERMEDIATE CREDIT MANAGEMENT (3CR)**

*Prerequisite: BUS 147*

Upon successful completion of this course, the student should be able to apply credit management procedures to the diagnosis and solution of credit problems. In addition, the student should be able to explain risk analysis, credit management controls and procedures, the role of the credit auditor, the role of credit insurance and calculate ratios and a trend analysis based on data in financial statements. 3 hrs. lecture/wk.

**BUS 150****BUSINESS COMMUNICATIONS (3CR)**

*Prerequisite: ENGL 121*

Upon successful completion of this course, the student

should be able to demonstrate efficient summarizing and outlining, demonstrate listening skills that help improve retention rate, write correspondence and memos using the principles of correct writing style and format, explain the basic rules of report writing and apply those principles to a short report, and prepare an effective oral business presentation. 3 hrs./wk.

**BUS 215****SAVINGS AND INVESTMENTS (3CR)**

Upon successful completion of this course, the student should be able to define, analyze and evaluate types of savings instruments and other investments. In addition, the student should be able to determine which instruments are desirable for a personal financial plan. The student should also be able to demonstrate an understanding of basic financial-planning concepts and tax-planning procedures. 3 hrs./wk.

**BUS 221****PRINCIPLES OF INSURANCE (3CR)**

Upon successful completion of this course, the student should be able to state the objectives of and the steps involved in the risk management process; explain the life, health, property and liability exposures for a family; determine the property and liability needs and expenses for a business; explain the needs for both private and social insurance; state the factors included in insurance costs; and analyze current issues in insurance. 3 hrs./wk.

**BUS 225****HUMAN RELATIONS (3CR)**

Upon successful completion of this course, the student should be able to evaluate the impact of human relations as it relates to the social system, technical system and administrative system of a work environment. In addition, the student should be able to analyze these systems and their effects on individual, group and organizational performance. 3 hrs./wk.

**BUS 230****MARKETING (3CR)**

Upon successful completion of this course, the student should be able to explain the concepts of production, consumption and distribution in relation to a free-enterprise economy; list the basic channels of distribution available to the manufacturer of consumer and industrial products; explain and compare the distribution functions of the manufacturer, wholesaler and retailer; and state the procedures necessary to develop a total marketing plan for a given product, service or product line. In addition, the student should be able to discuss the fundamental principles of consumer behavior in the buying process and apply those principles to target market strategies. 3 hrs./wk.

**BUS 235****INTRODUCTION TO INTERNATIONAL BUSINESS (3CR)**

Upon successful completion of this course, the student should be able to explain the foreign economic, political and socio-cultural environments relevant to international trade and finance. In addition, the student should be able to explain the basic functions of a firm engaged in international trade (management, marketing and finance) and the international monetary system and foreign exchange. 3 hrs./wk.

**BUS 243****HUMAN RESOURCE MANAGEMENT (3CR)**

Upon successful completion of this course, the student should be able to state the principles of human resource management; describe the human resource function as an integral part of management; differentiate between roles of the personnel and line manager in the management of personnel; define and evaluate strategic planning, recruitment, selection and training; define the primary methods of human resource development; employ methods of employer appraisal; and state the major components and coverages of the Equal Employment Opportunity Act and other personnel/human resources-related laws. 3 hrs./wk.

**BUS 250****INTRODUCTION TO CORPORATE FINANCE (3CR)**

Upon successful completion of this course, the student should be able to explain the nature and role of finance in the United States economy; describe the processes of business financing and management; identify sources of government financing, consumer financing, agricultural financing and financing for international trade and foreign investment; and discuss the application of monetary, fiscal and debt management policies. 3 hrs. lecture/wk.

**BUS 261****BUSINESS LAW I (3CR)**

Upon successful completion of this course, the student should be able to describe the American legal system and identify and describe the basic principles of law as applied to business crimes, torts, contracts, sales and negotiable instruments. In addition, the student should be able to apply basic principles of law to cases involving daily business operations. 3 hrs./wk.

**BUS 263****BUSINESS LAW II (3CR)**

*Prerequisite: BUS 261*

Upon successful completion of this course, the student should be able to describe the basic principles of law as applied to real and personal property, bailments, estates and trusts, secured transactions, bankruptcy, and agency and business organizations. In addition, the student

should be able to apply basic principles of law to cases involving daily business operations. 3 hrs./wk.

**BUS 271****MANAGEMENT SEMINAR (3CR)**

*Prerequisite: BUS 141*

Upon successful completion of this course, the student should be able to apply management decision-making principles to simulated management problems. In addition, the student should be able to explain the theory and practice of the management process. 3 hrs./wk.

**BUS 298****BUSINESS IN JAPAN (3CR)**

In this travel-for-credit course, students will take part in seminars on campus before traveling to Japan where they will visit Japanese factories and other business-related agencies. 52 lecture hours.

## Business Entrepreneurship

**BUSE 131****FINANCIAL MANAGEMENT FOR SMALL BUSINESS (2CR)**

*Prerequisite: ACCT 111 or ACCT 121*

Upon successful completion of this course, the student should be able to identify and evaluate the various sources available for funding a small business; demonstrate an understanding of financial terminology; read, prepare and analyze a financial statement; prepare a cash-flow statement; and write a loan proposal. In addition, the student should be able to explain the importance of working capital and cash management. The student should also be able to identify financing needs, establish credit policies, prepare sales forecasts and determine borrowing needs for a small business. 2 hrs./wk.

**BUSE 138****FASTTRAC BUSINESS PLAN (3CR)**

Upon successful completion of this course, the student should be able to write a sound business plan. Students should be able to assess strengths and weaknesses of their businesses; collect, analyze and organize market research data into a marketing plan; and prepare the financial projections for their business ideas. In addition, students should be able to identify and evaluate various resources available for funding small businesses. 3 hrs. lecture/wk.

**BUSE 140****FASTTRAC FEASIBILITY PLAN (2CR)**

Upon successful completion of this course, the student should be able to prepare a feasibility plan for a business.

In addition, the student will conduct market research on the business and prepare a financial feasibility analysis. This course is designed for participants who are in the concept or very early start-up stage of business development. 2 hrs. lecture/wk.

**BUSE 160**  
**LEGAL ISSUES FOR SMALL BUSINESS (2CR)**

Upon successful completion of this course, the student should be able to identify the forms of business ownership and the legal and tax implications for each. In addition, the student should be able to explain laws concerning legal issues such as personnel, contracts and protection of intellectual property. The student should also be able to explain the reporting requirements for local, state and federal agencies. 2 hrs./wk.

**BUSE 180**  
**ENTREPRENEURSHIP SEMINAR:  
THE SMALL BUSINESS ENVIRONMENT (2CR)**

*Prerequisites: ECON 130 or ECON 230, BUS 230*

Upon successful completion of this course, the student should be able to assess the current economic, social and political climate for small business. In addition, the student should be able to explain how demographic, technological and social changes create opportunities for small business ventures. 2 hrs./wk.

**BUSE 190**  
**ENTREPRENEURSHIP SEMINAR:  
SMALL BUSINESS ANALYSIS (2CR)**

*Prerequisite: BUSE 131, BUSE 138, BUSE 160, BUS 145, BUS 230 or permission of division administrator*

Upon successful completion of this course, the student should be able to identify problems that frequently arise in small business and utilize problem-solving skills to formulate solutions. In addition, the student should be able to apply the knowledge of business concepts and techniques in the analysis of cases and actual business situations. 2 hrs./wk.

**BUSE 210**  
**ENTREPRENEURSHIP INTERNSHIP I (1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. A minimum of 15 hours each week on-the-job training is required.

**BUSE 215**  
**ENTREPRENEURSHIP INTERNSHIP II (1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. A minimum of 15 hours each week on-the-job training is required.

## Chemistry

**CHEM 120**  
**THE WORLD OF CHEMISTRY (3CR)**

This course is for students who will benefit from an understanding of the concepts of chemistry without emphasis on mathematical problem solving. Historical foundations of chemistry, application to industrial processes and current research topics will be covered. Demonstrations and computer graphics will illustrate and model accepted theories. 3 hrs. lecture/wk. Fall

**CHEM 121**  
**THE WORLD OF CHEMISTRY LAB (1CR)**

*Corequisite: CHEM 120*

This optional laboratory course is designed to accompany CHEM 120. The course includes the careful observation and recording of data, both qualitatively and quantitatively. Results are interpreted in terms of current models for chemical systems. The experiments are selected to illustrate chemical principles. 3 hrs. lab/wk. Fall

**CHEM 122**  
**PRINCIPLES OF CHEMISTRY (5CR)**

This is an introduction to the fundamentals of chemistry. It will cover the general concepts of inorganic chemistry with some organic chemistry and biochemistry. 4 hrs. lecture, 3 hrs. lab/wk.

**CHEM 123**  
**PRINCIPLES OF TECHNICAL CHEMISTRY (6CR)**

*Corequisite: MATH 133*

This introduction to the fundamental concepts of chemistry will emphasize the general concepts of inorganic chemistry with sufficient study of organic chemistry to introduce the student to biochemistry. Labs will introduce students to the processes and expectations of an industrial laboratory. 4 hrs. lecture, 6 hrs. lab/wk.

**CHEM 124**  
**GENERAL CHEMISTRY I LECTURE (4CR)**

*Corequisites: CHEM 125 and MATH 171*

Students will relate atomic structure to chemical systems, calculate the amount of material used in chemical reactions, use the periodic table as an aid to understanding chemical systems and interpret chemical reactions. 5 hrs./wk.

**CHEM 125**  
**GENERAL CHEMISTRY I LAB (1CR)**

*Corequisite: CHEM 124*

Experiments of a qualitative and quantitative nature that support topics from General Chemistry I Lecture will be carried out. 3 hrs./wk.

**CHEM 131**  
**GENERAL CHEMISTRY II LECTURE (4CR)**

*Prerequisites: CHEM 124 and CHEM 125*  
*Corequisite: CHEM 132*

In this continuation of CHEM 124, topics will include kinetics, acid-base chemistry, equilibrium, chemical thermodynamics and electro-chemistry. 4 hrs./wk.

**CHEM 132**  
**GENERAL CHEMISTRY II LAB (1CR)**

*Prerequisite: CHEM 124 and CHEM 125*  
*Corequisite: CHEM 131*

The laboratory consists of qualitative and quantitative experiments designed to parallel and support General Chemistry II Lecture. 3 hrs./wk.

**CHEM 140**  
**PRINCIPLES OF ORGANIC CHEMISTRY (5CR)**

*Prerequisite: CHEM 122 or CHEM 131 and CHEM 132*

Nomenclature, theory and applications of basic organic chemistry will be covered. Functional group reactions will lead into a study of carbohydrates, proteins, lipids and other biochemical topics. 4 hrs. lecture, 3 hrs. lab/wk.

**CHEM 143**  
**PRINCIPLES OF**  
**TECHNICAL ORGANIC CHEMISTRY (6CR)**

*Prerequisite: CHEM 123*

This course is a continuation of the study of organic and biochemistry initiated in CHEM 123. Biologically important concepts will be introduced in the study of basic functional group chemistry and extended into traditional biochemical topics such as carbohydrates, enzymes, lipids and proteins. The labs will emphasize the synthesis, separation, identification and characterization techniques common to the technician's role. 4 hrs. lecture, 6 hrs. lab/wk.

**CHEM 220**  
**ORGANIC CHEMISTRY I (5CR)**

*Prerequisites: CHEM 131 and CHEM 132*

Electronic theories and reaction mechanisms of organic compounds will be the major focus of this course. Students will work on techniques in the lab and will prepare representative compounds. 3 hrs. lecture, 6 hrs. lab/wk.

**CHEM 221**  
**ORGANIC CHEMISTRY II (5CR)**

*Prerequisite: CHEM 220*

In this continuation of Organic Chemistry I, organic qualitative analysis will be introduced. 3 hrs. lecture, 6 hrs. lab/wk.

**CHEM 223**  
**TECHNICAL ANALYTICAL CHEMISTRY (4 CR)**

*Prerequisites: CHEM 143, PHYS 135 and MATH 134 or MATH 171*

This course will introduce students to the fundamentals of modern wet quantitative chemical analysis. The topics of data analysis, quality control, gravimetric, titrimetric and potentiometric analysis will be related to the industrial environment through extensive supportive labs. 3 hrs. lecture, 5 hrs. lab/wk.

**CHEM 227**  
**INTRODUCTION TO QUANTITATIVE ANALYSIS (5CR)**

*Prerequisites: CHEM 131 and CHEM 132*

This is an introduction to the concepts of acid-base, chromatography, coulometry, equilibrium, oxidation-reduction and spectrophotometry as they apply to quantitative chemical analysis. The lab will introduce modern quantitative experimental techniques. 3 hrs. lecture, 6 hrs. lab/wk.

**CHEM 243**  
**TECHNICAL INSTRUMENTAL CHEMISTRY (5CR)**

*Prerequisites: CHEM 223, PHYS 136 and MATH 134 or MATH 172*

This course will introduce students to the fundamentals of modern instrumental quantitative analysis. The topics of spectrophotometry, fluorometry, chromatography and polarography will be related to the technician's role in the industrial environment through intensive supportive labs. 3 hrs. lecture, 6 hrs. lab/wk. Spring.

**CHEM 250**  
**BIOCHEMISTRY (4CR)**

*Prerequisites: CHEM 131, CHEM 132, CHEM 140 or CHEM 220*

This course is an introduction to the major topics in biochemistry. Topics include the major classes of biological molecules, such as proteins, lipids and nucleic acid; an overview of the major metabolic pathways; and developments and topics relating to molecular biology. 4 hrs. lecture/wk.

**CHEM 251**  
**BIOCHEMISTRY LABORATORY (2CR)**

*Prerequisites: CHEM 131, CHEM 132, CHEM 140 or CHEM 220*

*Corequisite: CHEM 250*

The laboratory will consist of qualitative and quantitative experiments using biological molecules. Particular emphasis is on biochemistry laboratory techniques including chromatography and spectroscopy will be used. 3 hrs. lab, 1 hr. recitation/wk.

## Civil Engineering Technology

### CET 105

#### CONSTRUCTION METHODS (3CR)

Upon successful completion of this course, the student should be able to understand terminologies, methods, procedures, sequences of operation and types of construction and planning in civil and building construction. 3 hrs./wk.

### CET 125

#### CONSTRUCTION SPECIFICATIONS (2CR)

*Prerequisite: CET 105 or equivalent*

Upon successful completion of this course, the student will be able to describe the phases of a project, identify the bidding requirements, explain contractual relationships between parties, categorize the drawings, write specifications, list warranties and explain contract modifications. 2 hrs. lecture/wk.

### CET 127

#### CONSTRUCTION ESTIMATING (3CR)

*Prerequisite: DRAF 129 or competence in reading building drawings*

Upon successful completion of this course, the student should be able to take off quantities of materials from drawings and use reference books, tables and the C.S.I. procedures in performing estimates. Students will use industry standard software for construction estimating. 2 hrs.lecture, 2 hrs. lab/wk.

### CET 129

#### CONSTRUCTION MANAGEMENT (3CR)

Upon successful completion of this course, the student should be able to perform many processes associated with construction projects and complete forms typically used in project management. Topics will include contract documents, shop drawings, scheduling, job costs and management issues. Project management software will be used to schedule and track project resources and progress. 3 hrs. lecture/wk.

### CET 132

#### RAILROAD STRUCTURES LAYOUT (3CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC division administrator*

This is a beginning course for railroad maintenance-of-way personnel working with bridge and building construction. Students will learn to read construction blueprints used in railroad projects and to perform layout work for railroad construction. Also, students will learn how to use basic surveying principles and equipment typically used at railroad construction sites. 2 hrs. lecture, 3 hrs. lab/wk.

### CET 135

#### CONCRETE TECHNOLOGY (3CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC division administrator*

This course contains information that will help experienced and inexperienced students understand the principles of quality concrete. The emphasis will be on allowing concrete to reach its highest level of durability through proper mix design, placing and finishing techniques and curing methods. 2 hrs. lecture, 3 hrs. lab/wk.

### CET 140

#### CIVIL ENGINEERING MATERIALS (3CR)

*Corequisite: MATH 133*

Upon successful completion of this course, the student will be able to analyze materials commonly used in civil engineering construction projects. Common properties of soil, concrete and asphalt will be studied for classification as engineering materials. Students will learn to perform typical materials tests in accordance with ASTM guidelines. 2 hrs. lecture, 3 hrs. lab/wk.

### CET 211

#### TECHNICAL STATICS AND MECHANICS (3CR)

*Prerequisite: MATH 134 or MATH 172*

Upon successful completion of this course, the student should be able to evaluate force systems in equilibrium, centroids, moment of inertia, trusses, frames and friction. The topics of elastic stress and strain, torsion, and beam and column behavior also will be covered. Computer applications will be included. 3 hrs. lecture/wk.

### CET 258

#### STRUCTURAL DESIGN (3CR)

*Prerequisite: CET 211 or ENGR 252*

Upon successful completion of this course, the student should be able to analyze and design simple structural systems. Structural members and systems composed of steel and wood will be investigated with regard to strength and structural behavior. AISC design standards will be used. Computer analysis of structures will be introduced. 3 hrs. lecture/wk.

### CET 270

#### FLUID MECHANICS (3CR)

*Prerequisites: MATH 172 or MATH 134*

Upon successful completion of this course, the student should be able to analyze fluid systems using the fundamental properties of pressure, hydrostatic force, buoyancy, flow in pipes, open channel flow and flow measuring devices. The student should also be able to solve practical problems related to engineering technology. Computer applications will be included. 3 hrs. lecture/wk.

## Communication Design

(Also see Computer Interactive Media, page 159.)

### CD 120

#### INTRODUCTION TO COMMUNICATION DESIGN (3CR)

This course is designed to acquaint the student with the various aspects of the communication design field. Topics include the ways in which visual messages are used in society, the skills needed by a communication designer and the potential areas of specialization and employment. Emphasis will be on assisting the student to make an informed decision about communication design as a career. 3 hrs. lecture/wk.

### CD 130

#### REPRESENTATIONAL DRAWING I (3CR)

*Prerequisites: ART 124, CD 120*

This course will provide instruction in both theoretical and perceptual techniques and processes relating to the visual analysis of three-dimensional form and its accurate interpretation on a two-dimensional surface. Focus will be on the application of principles of linear perspective. The use of light, shade and cast shadows will emphasize the attainment of accurate linear and solid structures and accurate rendering of form. 6 hrs./wk.

### CD 131

#### REPRESENTATIONAL DRAWING II (3CR)

*Prerequisite: CD 130*

This course is a continuation of Representational Drawing I with emphasis on the creative application of acquired theory, perceptual skills and techniques. Compositional problems as well as techniques used to convey emotional content will be explored. 6 hrs./wk.

### CD 132

#### TYPOGRAPHY (3CR)

*Prerequisites: ART 124, CD 120, CDTP 131*

This course will provide instruction in the basic principles of contemporary typographic design. Information concerning typography, from traditional letterpress through digital type design and typesetting, will be included. The course content will emphasize effective methods of communicating to a mass audience through the printed letter, word, line and page. 6 hrs./wk.

### CD 134

#### LAYOUT DESIGN (3CR)

*Prerequisite: CD 132*

This course will provide a basic study of layout elements. Students will acquire the skills necessary to produce layouts. These skills include photographic indication

techniques, comp lettering, advertising and editorial grid systems and electronic page design. 6 hrs./wk.

### CD 140

#### TECHNICAL PROCESSES (3CR)

*Prerequisite: PHOT 121*

This technical process course will cover basic process camera work using a variety of professional materials, including photo mechanical transfer materials and orthochromatic films. This course also will include various proofing and comping techniques, including color key and emphasis on chromatec. Digital prepress applications, scanning and color output devices will be explored. 6 hrs./wk.

### CD 230

#### ILLUSTRATION TECHNIQUES (3CR)

*Prerequisite: CA 131*

This course will provide an understanding of the work of the professional illustrator. Processes involved in effective research, creative visual problem solving and image production utilizing both digital and traditional applications will be explored. 6 hrs./wk.

### CD 231

#### ADVANCED TYPOGRAPHY (3CR)

*Prerequisite: CD 134*

This course is a continuation of Layout Design. Emphasis will be on typographic solutions that explore verbal/visual messages. Projects include designs for publication such as posters, brochures, packaging and graphic campaigns. Typography as a functional and experimental medium will be stressed. Design problem solving for a diverse range of specifications including audience, client needs and budget constraints are included. Traditional and digital tools will be incorporated to produce comprehensives. 6 hrs./wk.

### CD 235

#### PRODUCTION METHODS (3CR)

*Prerequisites: CD 134 and CD 140*

This course will provide the fundamentals of preparing art for reproduction. Traditional camera-ready art techniques and digital prepress production methods will be emphasized. 6 hrs./wk.

### CD 236

#### ELECTRONIC PRODUCTION (3CR)

*Prerequisites: CD 230, CD 231, CD 235 and PHOT 123*

This course is a continuation of the Production Methods course. It will provide experience in digital prepress and other electronic production techniques. The student will apply production skills to problems of professional scope and complexity. 6 hrs./wk.

**CD 244****COMMUNICATION SYSTEMS (3CR)**

*Prerequisites: CD 230, CD 231, CD 235 and PHOT 123*

This course will explore the scope and potential of graphic design as a vehicle for visual communication in contemporary society. Signs and symbols, as well as the communicative power of typographic, hand graphic and photographic modes, will be studied. Traditional and electronic methods will be used to develop projects. 6 hrs./wk.

**CD 245****ADVANCED DESIGN PRACTICE (3CR)**

*Prerequisites: CD 230, CD 231, CD 235 and PHOT 123*

This course will focus on the utilization of the student's total design capability and technical knowledge in solving graphic design problems of professional scope and complexity. Students will have the opportunity to work with three art directors and produce three professional projects for potential inclusion in his/her portfolio. 6 hrs./wk.

**CD 272****PROFESSIONAL PREPARATION (3CR)**

*Prerequisites: The student must have completed all required studio courses in the Communication Design program prior to the semester for which he/she is enrolling in this course, or be co-enrolled in all fourth-semester studio courses.*

This course will provide Communication Design majors instruction in the organization and presentation of his/her work in a portfolio format of professional quality. A slide portfolio and résumé will be produced. Instruction in interviewing techniques and employment searches will also be provided. 6 hrs./wk.

**CD 275****COMMUNICATION DESIGN INTERNSHIP (1CR)**

*Prerequisites: Approval by the Communication Design faculty review committee*

Students will work in an approved training situation under instructional supervision. The internship is designed to give the student the opportunity to use the skills learned in the Communication Design program. Student interns will complete a minimum of 180 hours on the job and will be compensated with at least the minimum hourly wage.

**Computers:****Personal Computer Applications****CDTP 130****DESKTOP PUBLISHING I: PAGEMAKER (1CR)**

*Prerequisite: CPCA 105 or CPCA 106 or equivalent experience*

This course covers the basic features and techniques of the PageMaker desktop publishing program. Emphasis will be on the production of text material with complex tab and indentation specifications, style attributes and the grouping and distributing of multiple text blocks. Additional topics will include the use of drawing tools, working with multiple documents, drop caps, graphics and text rotation, locking items and threaded text blocks. 1 hr. lecture/wk.

**CDTP 131****DESKTOP PUBLISHING I: QUARKXPRESS(1CR)**

*Prerequisite: CPCA 105 or CPCA 106 or equivalent experience*

This course covers the basic features and techniques of the QuarkXPress desktop publishing program. Emphasis will be on the production of text materials with complex tab and indent specifications, style attributes and the grouping and distributing of multiple text blocks. Additional topics include the use of the drawing tools, working with multiple documents, drop caps, graphics and text rotation, locking items and threaded text blocks. 1 hr. lecture/wk.

**CDTP 135****DESKTOP PHOTO MANIPULATIONS: PHOTOSHOP (1CR)**

*Prerequisite: CPCA 105 or CPCA 106 or equivalent experience*

This course is designed to explore the manipulation of digital photographs using a variety of techniques and tools. The application of painting and editing tools to digital images; the manipulation of selections, layers and resolution; and analyzing scanned images will be covered. 1 hr. lecture/wk.

**CDTP 145****DESKTOP ILLUSTRATION I: ILLUSTRATOR (1CR)**

*Prerequisite: CPCA 105 or CPCA 106 or equivalent experience*

This course covers the creation of computer-generated illustrations using a variety of techniques. Topics include managing multiple items, creating line drawings, creating blends with objects and typography, working with layers and creating layouts using type. 1 hr. lecture/wk.

**CDTP 150****DESKTOP PUBLISHING II: PAGEMAKER (1CR)**

*Prerequisite: CDTP 130 or equivalent experience*

This course covers the intermediate-level features and techniques of the PageMaker desktop publishing program. Topics include producing documents using typographic techniques such as style linking, creating custom leaders, distributing graphic elements, working with graphics in layers, EPS manipulation and production techniques. The creation of multiple design applications with final art markup and spot color separations will be covered. 1 hr. lecture/wk.

**CDTP 151****DESKTOP PUBLISHING II: QUARKXPRESS (1CR)**

*Prerequisites: CDTP 131 or equivalent experience*

This course covers the intermediate-level features and techniques of the QuarkXPress desktop publishing program. Topics include producing documents using typographic techniques such as layering, skewing, blending, distributing, multiple rotations, embossing, EPS manipulation and scanning. The creation of multiple design applications with final art markup and spot color separations will be covered. 1 hr. lecture/wk.

**CDTP 165****DESKTOP ILLUSTRATION II: ILLUSTRATOR (1CR)**

*Prerequisite: CDTP 145*

This course covers the creation of advanced computer-generated illustrations using a variety of techniques. Topics to be covered include using plug-in filters, creating graphs, formulating custom colors and preparing spot color separations. 1 hr. lecture/wk.

**CDTP 170****DESKTOP PUBLISHING III: PAGEMAKER (1CR)**

*Prerequisites: CDTP 150 or equivalent experience*

This course covers the advanced features and techniques of the PageMaker desktop publishing program. The production of complex documents using sophisticated typographic techniques that include wrapping text within a graphic element, distributing text, multiple rotations, embossing and EPS manipulation will be emphasized. The creation of multiple design applications with final art markup and spot color separations will be covered in greater detail. 1 hr. lecture/wk.

**CDTP 171****DESKTOP PUBLISHING III: QUARKXPRESS (1CR)**

*Prerequisite: CDTP 151 or equivalent experience*

This course covers the advanced features and techniques of the QuarkXPress desktop publishing program. The production of complex documents that include sophisti-

cated graphic techniques such as layering, skewing, blending, distributing, multiple rotations, embossing, EPS manipulation and scanning will be emphasized. The creation of multiple design applications with final art markup and spot color separations will be covered in greater detail. 1 hr. lecture/wk.

**CPCA 105****INTRODUCTION TO PERSONAL COMPUTING: IBM (1CR)**

This introductory course is designed to give the beginning computer user an overview of the personal computer. The student will gain confidence in basic computer skills and concepts through a hands-on approach while becoming familiar with an IBM or compatible microcomputer system and its primary uses. Topics include computer software, hardware and terminology; introduction to microcomputer operating systems; introduction to word processing; introduction to spreadsheets; and introduction to database management. 1 hr. lecture/wk.

**CPCA 106****INTRODUCTION TO PERSONAL COMPUTING: MACINTOSH (1CR)**

This introductory course is designed to give the beginning computer user an overview of the Macintosh personal computer. The student should gain confidence in basic computer skills and concepts through a hands-on approach while becoming familiar with a Macintosh computer and its primary uses. Topics include computer software, hardware and terminology; introduction to the Macintosh operating system; introduction to word processing; introduction to paint; introduction to drawing; introduction to spreadsheets; and introduction to database management. 1 hr. lecture/wk.

**CPCA 108****WORD PROCESSING ON MICROCOMPUTERS I (1CR)**

*Prerequisites: CPCA 105 or CPCA 106, using the same hardware or equivalent experience and OST 101 if typing speed is less than 35 w.p.m.*

This course covers the concepts and use of word processing software. Functions such as editing, printing, merging, pagination, spelling check and centering will be included. 1 hr. lecture/wk.

**CPCA 110****SPREADSHEETS ON MICROCOMPUTERS I (1CR)**

*Prerequisite: CPCA 105 or CPCA 106, using the same hardware; or equivalent experience*

This course covers the concepts and uses of spreadsheet software on the personal computer. Business decision-making worksheet models will be created and modified

by entering labels, functions and formulas. Various formatting techniques will be applied to enhance the appearance of printed worksheets. The graphic display of worksheet data using the charting capabilities of the software will also be covered. 1 hr. lecture/wk.

**CPCA 111**  
**SPREADSHEETS ON MICROCOMPUTERS II (1CR)**

*Prerequisite: CPCA 110 using the same hardware and application software or equivalent experience*

This course is a continuation of CPCA 110 and will provide the student with an intermediate level of spreadsheet concepts. Using typical business scenarios, the student will perform manual and automated what-if analyses, manage data in worksheets with tables and database functions and use multiple worksheets to build consolidated statements. Basic macros will be introduced. 1 hr. lecture/wk.

**CPCA 112**  
**PC COMMUNICATIONS (1CR)**

*Prerequisite: CPCA 105 or equivalent experience*

This course covers the description, definition and use of the terminology of PC communications. Accessing on-line systems to perform such operations as uploading and downloading files and sending and receiving electronic mail will also be covered. 1 hr. lecture/wk.

**CPCA 114**  
**DATABASES ON MICROCOMPUTERS I (1CR)**

*Prerequisite: CPCA 105 or CPCA 106 or equivalent experience*

This course is an introduction to the concepts and uses of database software. Functions such as building, loading, entering, changing, deleting, sorting, calculating and reporting will be used. The use of a database to solve typical business applications will be covered. 1 hr. lecture/wk.

**CPCA 115**  
**DATABASES ON MICROCOMPUTERS II (2CR)**

*Prerequisite: CPCA 114 using the same software*

This course covers how to design and define a relational database, create custom screens for data entry and updating, transfer files to and from the database and manipulate data with a relational database language. An introduction to object-oriented programming will be included. 2 hrs. lecture/wk.

**CPCA 116**  
**DATABASE: FILEMAKER PRO (1CR)**

This course provides relatively easy access to the essential concepts of data management. It enables students to

store, organize and synthesize information for effective use in the day-to-day business needs of a medium size organization. The information can also be arranged in a variety of visual formats for even more effective communication. Students will complete a series of practical projects, using either the Macintosh or Windows 95 operating system in the Mac-Win dual-platform computing laboratory. 1 hr. lecture/wk.

**CPCA 118**  
**ELECTRONIC MAIL/CALENDAR SYSTEMS (1CR)**

This course is an introduction to many of the features of electronic mail/calendar systems. Topics to be covered include how to send and receive messages, reply and resend messages, store and retrieve mail and send objects using e-mail. 1 hr. lecture/wk.

**CPCA 121**  
**INTRODUCTION TO PROJECTMANAGEMENT (1CR)**

*Prerequisite: CPCA 105 or equivalent experience*

This course covers how to effectively manage projects based on proven project management techniques and methodologies. The development and management of projects using the critical path method, program evaluation review technique charts, resource loading and leveling, sub-projects, Gantt charts and allowances for planned, changed and actual activities will be covered. 1 hr. lecture/wk.

**CPCA 123**  
**PRESENTATION GRAPHICS (1CR)**

*Prerequisite: CPCA 105 or CPCA 106 or equivalent experience*

This course covers how to organize and produce an effective on-computer or slide-generated presentation, complete with printed speaker notes, handouts and overhead transparencies, using the basic features of a presentation graphics program. The use of master pages, template files, text formatting, color schemes, various drawing tools, the automated outline feature, animation dissolve sequences and the integration of scanned photographs will be covered. 1 hr. lecture/wk.

**CPCA 125**  
**WORD PROCESSING ON MICROCOMPUTERS II (1CR)**

*Prerequisite: CPCA 108 using the same application software or equivalent experience*

This is an intermediate-level course covering the concepts and applications of word processing software. Topics include the use of data files, spell checking, print controls, footnotes, headers, footers, styles, table of contents, lists, indexes and graphics. 1 hr. lecture/wk.

**CPCA 128****PERSONAL COMPUTER APPLICATIONS (3CR)**

This course will introduce the student to the use of word processing, spreadsheet and database applications. The methods of transferring and integrating data written through these application programs will also be presented. The emphasis will be hands-on with practice projects presented. 3 hrs./wk.

**CPCA 134****MANAGING YOUR MACINTOSH (1CR)**

*Prerequisite: CPCA 106 or equivalent practical experience*

This course is designed for the student using the Macintosh. The course will focus on system management, font installation, virus protection, commercial utilities, peripherals and ShareWare/FreeWare utilities. 1 hr. lecture/wk.

**CPCA 135****M/S DOS (1CR)**

*Prerequisite: CPCA 105 or equivalent experience*

This course includes the operating system rules, functions and commands that will enable the student to manage the basic operation of a DOS-based personal computer. Emphasis is on using the DOS directory system to organize data files on storage devices and developing a strategy for preservation of that data. The course is beneficial to students taking any applications course on an IBM/compatible PC. 1 hr. lecture/wk.

**CPCA 137****M/S DOS INTERMEDIATE (1CR)**

*Prerequisite: CPCA 135*

This course is a continuation of CPCA 135 M/S DOS. System considerations, configuration files, decision-making batch files, memory management and setting the DOS environment will be among the more advanced features covered. The M/S DOS utilities for diagnosing the PC, defragmenting disks and antivirus protection will also be presented. 1 hr. lecture/wk.

**CPCA 138****WINDOWS FOR MICROS (1CR)**

*Prerequisite: CPCA 105 or equivalent experience*

This course includes the functions and procedures that should enable the student to manage the operation of a Windows-based personal computer. Students will start and run multiple software applications, transfer information between applications, create folder systems and manage files. Efficient use of the Windows environment will be emphasized through construction of desktop objects and customized menus. 1 hr. lecture/wk.

**CPCA 139****UNIX (1CR)**

*Prerequisite: CPCA 105 or equivalent experience*

This course covers the major commands of the UNIX operating system. Basic file and disk management projects will be completed in this course. 1 hr. lecture/wk.

**CPCA 141****INTERNET I (1CR)**

*Prerequisite: CPCA 105 or CPCA 106 or equivalent experience*

This course will introduce the student to the commands and techniques required to effectively access the resources of the Internet. Windows applications to browse the Internet, locate and retrieve information and send and receive electronic mail will be covered. 1 hr. lecture/wk.

**CPCA 148****FINANCIAL APPLICATIONS – BUSINESS (1CR)**

*Prerequisites: CPCA 105 and CPCA 138; or CPCA 106 and CPCA 134; or equivalent experience*

This course introduces software that will perform basic financial processing using a microcomputer. Financial microcomputer applications are used to manage the financial transactions of a small business or corporate department. 1 hr. lecture/wk.

**CPCA 151****INTERNET II (1CR)**

*Prerequisite: CPCA 141*

This course will cover the commands and techniques required to effectively use various Internet application tools. The student will also use Windows and non-Windows applications to locate information, download and upload files, chat, read news and create a Web page. 1 hr. lecture/wk.

**CPCA 161****INTRODUCTION TO WEB PAGES (1CR)**

*Prerequisite: CPCA 151*

This course will cover the commands and techniques required to create and publish World Wide Web pages using HyperText Markup Language (HTML). Topics to be covered include basic text layout, background colors, formatting, ordered and unordered lists, tables, frames that include graphic images in a page and linking to other Web pages. 1 hr./wk.

## Computer Information Systems

### DP 110

#### INTRODUCTION TO COMPUTERS (2CR)

This television course features a survey of electronic data processing and computer hardware and software systems and developments that will provide the student with a background in information processing. 2 hrs. lecture/wk.

### DP 124

#### INTRODUCTION TO COMPUTING CONCEPTS AND APPLICATIONS (3CR)

In this introductory, nontechnical computer course, students will study computer concepts, terminology, issues and uses. Extensive hands-on experience with the microcomputer is provided in word processing, spreadsheets, database and the operating system to reinforce the concepts. 3 hrs. lecture/wk.

### DP 134

#### PROGRAMMING FUNDAMENTALS (4CR)

This course covers the elementary concepts of computers, including several number systems. The design, development and writing of modular programs on a microcomputer in a structured programming language using standard structured concepts will be covered. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### DP 138

#### VISUAL BASIC FOR WINDOWS (4CR)

*Prerequisite: DP 134 or the equivalent*

This course introduces the Visual Basic programming environment, with an emphasis on identifying the controls and objects available for creating Windows applications. Creating forms, drawing controls for each form, designing menu bars, setting form and control properties, writing event and general procedures and testing and debugging applications will be emphasized. Projects using multiple forms, file manipulation and the data control will be covered. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### DP 140

#### EDITOR (1CR)

This course covers the use of an editor to create and manipulate files on a computer. Submitting a computer program for execution will also be covered. 1 hr. lecture, lab/wk.

### DP 145

#### ASSEMBLER LANGUAGE FOR MICROCOMPUTERS (4CR)

*Prerequisite: DP 134 or ENGR 171 or the equivalent. It is recommended that this course be taken after completion of CS 200 or an equivalent programming course beyond DP 134 or ENGR 171.*

Students will study the use of assembler language for a microcomputer in order to understand the basic concepts of the personal computer and its use in problem solving. Topics include the CPU, registers and memory segmentation. Practical applications will include DOS and BIOS systems services, array and bit processing and library calls. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### DP 148

#### COBOL I (4CR)

*Prerequisite: DP 134*

*Corequisite: DP 140 for COBOL*

Students will study the use of the COBOL programming language to solve business-related problems. Emphasis will be on the function and use of statements in the four divisions of ANSI COBOL. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### DP 150

#### ASSEMBLER LANGUAGE I (4CR)

*Prerequisite: DP 134*

*Corequisite: DP 140 for COBOL*

*It is recommended that this class be taken after DP 148.*

Students will use assembler language in order to understand the basic concepts of the IBM mainframe. Topics include the CPU, registers and memory fetching. Practical applications include I/O, array processing and bit manipulation. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### DP 157

#### RPG III BEGINNING (4CR)

*Prerequisite: DP 134 or the equivalent*

*Corequisite: DP 140 for RPG III*

Students will study the RPG III programming language. Emphasis will be on coding, testing, debugging and documenting programs with math calculations, subroutines and/or level breaks on an IBM AS/400 computer. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### DP 162

#### DATABASE PROGRAMMING (4CR)

*Prerequisite: DP 134 or the equivalent*

This course covers the use of a database language to create, maintain and manipulate databases. The use of a command level database programming language to

custom design business systems and selectively retrieve information using single or multiple databases also will be studied. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 172**  
**INTRODUCTION TO POWERBUILDER ENTERPRISE (4CR)**

*Prerequisite: DP 134 or the equivalent*

This course includes information and materials that will enable the student to understand the client-server paradigm, distributed data, process modeling, basic data modeling and the basic PowerBuilder tool set. Concepts involving effective GUI and object-oriented design will be discussed. The creation of basic PowerBuilder objects such as windows, data windows, controls, menus and databases and the combination of these elements into a complete and functional application that can be tested and debugged using PowerBuilder debugging tools will be covered. A distributable executable file will then be generated from the completed application. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 174**  
**TELEPROCESSING (3CR)**

*Prerequisite: DP 134 or the equivalent*

Teleprocessing is a form of information handling in which a data processing system utilizes communications equipment. This class will be concerned with that part of the system external to the central computer. 3 hrs. lecture/wk.

**DP 178**  
**AS/400 CL PROGRAMMING (4CR)**

*Prerequisite: DP 134 or the equivalent*

*Corequisite: DP 140 for RPG III*

This course will cover the use of control language commands in programs at the command line. The course will also cover the use of variables, expressions, CL as input and output, logic control, passing control, data areas and built-in functions. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 180**  
**AS/400 UTILITIES (4CR)**

*Prerequisite: DP 134 or the equivalent*

*Corequisite: DP 140 for RPG III*

This course teaches AS/400 concepts and how to use some of the programming facilities of the system, including Program Development Manager, Source Entry Utility, Screen Design Aid, Data File Utility and Query/400. Lab exercises give the student the opportunity to use these facilities. 3 hrs. lecture, 3 hrs. lab/wk.

**DP 195**  
**INTRODUCTION TO PERL (4CR)**

*Prerequisites: DP 134 and CPCA 139*

This course is an in-depth introduction to the Perl scripting language. Upon successful completion of this course, students should be familiar with the most common operations and language idioms used in Perl programs and should be able to produce useful basic Perl scripts. In addition, students will have been introduced to the more powerful and rich elements of the language. The lectures and laboratory projects will cover the many features of the Perl language. 3 hrs. lecture, 2 hrs. lab/wk.

**DP 204**  
**UNIX OPERATING SYSTEM (3CR)**

*Prerequisite: CS 200 using C++*

This course will cover beginning concepts and principles of the multi-user, multi-tasking UNIX operating system. Students will complete projects in UNIX ranging in level of difficulty from simple commands to simple script files and awk. Other topics presented will be system administration and security. 3 hrs. lecture/wk.

**DP 215**  
**OS/VIS JOB CONTROL LANGUAGE (3CR)**

*Prerequisite: DP 148 or DP 150*

Students will study the use of OS/VIS JCL and typical applications. Emphasis will be on rules of coding JCL, optimizing resources, use of symbolic parameters and overriding statements. An IBM mainframe will be used in the application of JCL and utilities. 3 hrs. lecture/wk.

**DP 235**  
**OBJECT-ORIENTED PROGRAMMING USING C++ (4CR)**

*Prerequisite: CS 200 using C++*

This course will cover advanced programming topics using the C++ language. Emphasis will be on input/output facilities, data structures, bit-oriented instructions and construction of general purpose functions. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 238**  
**VISUAL BASIC INTERMEDIATE TOPICS (4CR)**

*Prerequisite: DP 138*

This intermediate-level course is designed to teach the creation and debugging of Windows applications using the professional edition of Visual Basic and will include instruction in the use of object variables to define and manipulate a database. Programs that respond to mouse events, use a multiple document interface, edit data entry, update and maintain a database and connect to other elements of the Windows environment will be emphasized. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 240****JAVA I (4CR)**

*Prerequisites: CS 250 or DP 235*

Upon successful completion of this course, the student should be able to create Java applications and applets appropriate for implementation on the Internet and World Wide Web. The student will complete projects using Java's built-in features. The course will include graphics, graphical user interfaces, exception handling, multithreading and interactive media. 3 hrs. lecture, 2 hrs. lab/wk.

**DP 242****INTRODUCTION TO SYSTEM DESIGN AND ANALYSIS (3CR)**

*Prerequisite: One semester of a computer language beyond DP 134 or ENGR 171*

Students will study the basic philosophy and techniques of developing and using business information systems. The emphasis will be on the human involvement necessary in systems design and implementation. The course will address the use of specific technical approaches available in information processing. 3 hrs. lecture/wk.

**DP 243****OBJECT-ORIENTED ANALYSIS AND DESIGN (4CR)**

*Prerequisites and/or corequisites: One programming course using an object-oriented programming language, or equivalent experience*

This course includes information and materials that will introduce the student to an object-oriented analysis and design methodology suitable for designing systems that can be implemented in any object-oriented programming language. Experience in using specific techniques and tools will be gained through the completion of real-world projects. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 248****COBOL II (4CR)**

*Prerequisite: DP 148*

In this advanced COBOL programming class, students will use ANSI COBOL to solve problems with data on a direct access device. The sort feature of COBOL and methods for building, maintaining and using files in a sequential, random and indexed manner will be covered. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 250****ASSEMBLER LANGUAGE II (4CR)**

*Prerequisite: DP 150*

Advanced features of assembler language for the IBM 370 will be covered. Topics will include macros, subprograms, table handling, file access and a complete set of ALC instructions. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 253****CUSTOMER INFORMATION CONTROL SYSTEM COMMAND LEVEL COBOL (4CR)**

*Prerequisite: DP 248*

This is an introduction to command level CICS using the COBOL language. The class will cover the basic CICS commands and their uses as well as CICS management modules and their functions, including program control, terminal control, basic mapping support, file control and temporary storage. Debugging on the transaction level will be discussed. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 254****UNIX SYSTEM ADMINISTRATION (4CR)**

*Prerequisite: DP 204*

This course is designed to present the skills and provide the hands-on experience required to be a UNIX system administrator. Typical system administration duties to be covered include: installation, backup, restoration and routine maintenance, including adding/removing users, managing system resources, monitoring and optimizing system activity and automating activities. 3 hrs. lecture, 2 hrs. lab/wk.

**DP 257****RPG III ADVANCED (4CR)**

*Prerequisite: DP 157*

The advanced features of the RPG III language will be explored. Topics will include creating physical and logical files using the DDS utility, table and array methodology, subfiles, and programming an interactive computer system. An IBM AS/400 minicomputer will be used in compiling and executing programs. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 258****OPERATING SYSTEMS (3CR)**

*Prerequisite: DP 145 or DP 148 or DP 150 or DP 157 or CS 200*

The basic concepts and principles of digital computer operating systems will be explained. Also explored through a study of typical digital computer operating systems such as MVS, OS/2, UNIX and DOS will be the relationships between hardware and software. 3 hrs. lecture/wk.

**DP 260****DATABASE MANAGEMENT (4CR)**

*Prerequisite: DP 235 or DP 248 or CS 250 or DP 172 or DP 238*

Characteristics and objectives of database management systems versus traditional file management systems are discussed. Relational, hierarchical and network models; data modeling using entity-relational model; normalization to avoid modification anomalies; and operational considerations are covered. Students will create and use

a relational DBMS (currently Oracle) and a standard structured query language (SQL). Embedded SQL will be used in programs. 3 hrs. lecture, 2 hrs. lab/wk.

**DP 264**  
**APPLICATION DEVELOPMENT**  
**AND PROGRAMMING (4CR)**

*Prerequisites: DP 242; and DP 260 or DP 162*  
*Corequisite: DP 238 or DP 253 or DP 269 or DP 272; and CPCA 121*

This capstone course is designed to allow students to apply the foundation of systems analysis and design, database design and programming to a significant data processing system. A team approach to problem analysis, the development and presentation of a proposed data processing solution, the building of a demonstrable prototype of the system and the development of a significant portion of the system will be emphasized. Periodic and timely progress reports to the class, the development of job search, written and oral communication skills will be expected. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 269**  
**GUI PROGRAMMING (4CR)**

*Prerequisites: DP 235 using C++ or CS 250 using C++*  
Upon completion of this course, students should be able to demonstrate applications in the Graphical User Interface programming language and use the appropriate GUI library. Techniques of object-oriented programming developed in DP 235 will be applied to problems involving user interaction. The common user access standards of GUI programming will be used throughout the course. The message queue and ordered linked lists objects used in DP 235 will be applied to problems involving user selection and updating information in a database. Students will make extensive use of the application framework for the GUI environment provided by the GUI language compiler. It is strongly recommended that students be familiar with common user programs that run under the chosen operating system (Windows, OS/2, X-Windows, Windows 95) before taking the course. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 270**  
**INFORMATION SYSTEMS INTERNSHIP (3CR)**

*Prerequisite: DP 148 or CS 200*  
Students will work in an approved training situation under instructional supervision. The internship is designed to give the student the opportunity to use the skills learned in information systems courses, use different information systems skills applications and an opportunity to gain experience in the field. 15 hrs. on-the-job training/wk.

**DP 272**  
**INTERMEDIATE POWERBUILDER ENTERPRISE (4CR)**

*Prerequisites: DP 172*

This course includes information and materials that should enable the student to incorporate into projects the more advanced features of PowerBuilder, including embedded SQL, advanced DataWindow techniques, user objects, external and user-defined functions, the Data Pipeline, managing multiple simultaneous database connections and drag and drop functionality. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

**DP 280**  
**JAVA II (4 CR)**

*Prerequisite: DP 240*

Upon successful completion of this course, the student should be able to create Java applications and applets that link to databases, and provide the security and advanced GUI features appropriate for implementation on the Internet and World Wide Web. The student will complete projects using Java's built-in features. The course will include techniques for graphics optimization, building components for graphical user interfaces, client-server database connections in Java, handling security managers, building JAR files, using Java's remote objects and linking to other applications. 3 hrs. lecture, 2 hrs. lab/wk.

## Computer Interactive Media

**CIM 130**  
**INTERACTIVE MEDIA CONCEPTS (4CR)**

*Prerequisites: CPCA 138 or CPCA 134*

This course provides an introduction to the interactive media field. Topics to be covered include the definition of interactive media, the basic stages of interactive media creation, project management fundamentals, plus current and future trends in interactive media. 3 hrs. lecture, 2 hrs. lab/wk.

**CIM 135**  
**ELECTRONICPHOTOGRAPHY/DIGITAL VIDEO (3CR)**

*Prerequisite: CPCA 105 or CPCA 106*

This course provides an introduction to electronically mediated photography, including digital video. The course covers basic concepts of photographic communication and design; basic techniques of electronic photography, including operation of input devices, two-dimensional and time-based computer imaging and digital video production software programs and output devices. Recommended prior courses are Fundamentals of Photography and Introduction to Photoshop. 6 hrs. integrated lecture, lab/wk.

**CIM 140****INTERACTIVE MEDIA ASSETS (4CR)**

*Corequisite: CIM 130*

This course explores the creation, acquisition and management of assets for use in the development of interactive media. Assets to be covered include digital graphics, digital sound, digital video and computer-based animation. 3 hrs. lecture, 2 hrs. lab/wk.

**CIM 152****INTERACTIVE AUTHORING I: AUTHORWARE (4CR)**

*Prerequisites: CPCA 105 or CPCA 106*

This course will provide a hands-on approach to authoring/programming using icon-based scripting. Upon successful completion of this course, the student should be able to produce interactive media pieces which include text, graphics, sound, movies and animation. Creating buttons, menus, hypertext and navigational strategies will be covered. 3 hrs. lecture, 2 hrs. lab/wk.

**CIM 154****INTERACTIVE AUTHORING: DIRECTOR I (4CR)**

*Prerequisites or Corequisites: CIM 130 and CIM 140*

This course will provide a hands-on approach to authoring/programming. Upon completion of this course, the student should be able to produce a Director interactive media or Internet presentation, which includes text, graphics, sound, movies and animation. The student will have the skills needed to create both a linear presentation and an interactive presentation. Navigational strategies for CD-ROM and Internet will be discussed. 3 hrs. lecture, 2 hrs. lab/wk.

**CIM 200****INTERACTIVE COMMUNICATION FORMS (3CR)**

*Corequisites: CIM 130 and CIM 140*

This course presents and explores the concepts and forms of human communication historically, in our current society and in our future culture. Immediate and mediated forms of communication such as lecture, telephony, television, print and computer interaction will be explored. Particular attention will be given to how communication form affects content. Emphasis will be on the integration of communication forms as demonstrated by interactive media applications. 3 hrs. lecture/wk.

**CIM 230****INTERACTIVE MEDIA DEVELOPMENT (4CR)**

*Prerequisites: CIM 200 and approval by the CIM review committee*

The course will provide a conceptual, as well as, a hands-on exploration of the development process for interactive media. Information design, interaction design and presentation design will be equally emphasized. Students will produce a series of projects starting with the use of text and graphics and building toward more complex projects employing animation and video. 3 hrs. lecture, 2 hrs. lab/wk.

**CIM 250****INTERFACE DESIGN (4CR)**

*Prerequisites: CIM 200 and approval by the CIM review committee*

*Corequisite: CIM 230*

This course will specifically focus on the issues and complexity of interface design for interactive media applications. Students will be provided an in-depth study in the use of the building blocks of interface design: backgrounds, windows and panels, buttons and controls, text, images, sound, video and animation. Through readings, critiques, exercises and discussions, students will explore what makes the interface of an interactive media application successful. 3 hrs. lecture, 2 hrs. lab/wk.

**CIM 270****INTERACTIVE MEDIA PROJECT (4CR)**

*Prerequisites: CIM 200 and approval by the CIM review committee*

*Corequisites: CIM 230 and CIM 250*

This project course will require students to actively participate in a group interactive media project that will require each student to analyze the problem, write a project proposal, design, produce and gather assets for the project, prototype, create a project, and test and evaluate the final product. 3 hrs. lecture, 2 hrs. lab/wk.

## Computer Science

### CS 180

#### INTRODUCTION TO ARTIFICIAL INTELLIGENCE (4CR)

*Prerequisites: CS 200, DP 138, DP 145, DP 148, DP 150, DP 157, DP 162, DP 172*

Upon successful completion of this course, students will be able to use a computer to program introductory exercises and build a small expert system in an artificial intelligence language, define terms and application areas of the field, and describe knowledge representation and problem-resolution techniques used in artificial intelligence. 4 hrs. lecture, 2 hrs. lab/wk.

### CS 200

#### CONCEPTS OF PROGRAMMING ALGORITHMS (4CR)

*Prerequisite: DP 134 or ENGR 171 or equivalent experience*

This course emphasizes programming methodology and problem solving. Algorithm design and development, data abstraction, good programming style, testing and debugging will be presented. An appropriate block-structured high-level programming language will be studied and used to implement algorithms. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### CS 210

#### DISCRETE STRUCTURES I (3CR)

*Prerequisite: MATH 171; or both MATH 116 and DP 134*

This course offers an introduction to the topics of discrete structures, including switching circuits, Boolean algebra, logic, set theory and mathematical induction. 3 hrs. lecture/wk.

### CS 211

#### DISCRETE STRUCTURES II (3CR)

*Prerequisite: CS 210*

This course will provide continued study of topics in discrete structures, including relations, functions, partitions, orderings, graphs and techniques of proving theorems. 3 hrs. lecture/wk.

### CS 250

#### BASIC PROGRAMMING STRUCTURES (4CR)

*Prerequisite: CS 200 using C++*

*Corequisite: CS 210 for students transferring to most four-year computer science programs*

This course will cover advanced programming topics using C++. Files, recursion, data structures and large program organization will be used in projects. Students will write programs using the concepts covered in the lecture.

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

## Computer Systems Technology

(See Electronics Technology, page 172.)

## Construction Management

(See Civil Engineering Technology, page 150.)

## Correctional Services

### KADJ 185

#### PRINCIPLES OF CORRECTIONS (3CR)

*Prerequisite: Approval of the program director*

Topics will include the development and philosophy of corrections; ancient codes; medieval justice; and development of parole, probation and community treatment. 3 hrs./wk.

### KADJ 186

#### CORRECTIONAL PSYCHOLOGY (3CR)

*Prerequisite: Approval of the program director*

In this class, students will study psychological theories of crime and delinquency, diagnostic approaches used in correctional settings, psychopathology, classification procedures, and individual and group counseling. 3 hrs./wk.

### KADJ 188

#### PRINCIPLES OF RESIDENTIAL YOUTH CARE (3CR)

*Prerequisites: KADJ 185 and approval of program director*

The role of the youth case worker will be explored in this course along with the basic theory of treatment, organizational structure and problem-solving skills. 3 hrs./wk.

### KADJ 191

#### CORRECTIONS IN THE COMMUNITY (3CR)

*Prerequisites: KADJ 185 and approval of program director*

This course will cover community correctional programs, diversion, half-way programs, prerelease centers, group homes, probation and parole. The community support for these programs also will be discussed. 3 hrs./wk.

### KADJ 192

#### CORRECTIONAL ADMINISTRATION (3CR)

*Prerequisites: KADJ 185 and approval of program director*

This survey of management patterns in correctional agencies will cover management by objectives and accountability, public relations, training, budgeting, record keeping, and custody and treatment classifications. 3 hrs./wk.

**KADJ 193**  
**COMMUNICATION AND MANAGEMENT**  
**TECHNIQUES WITH CHILDREN AND YOUTH (3CR)**

*Prerequisite: KADJ 188*

Methods of teaching and guiding children and youth in residential care centers or community programs will be explored. The theory and application of techniques for dealing with problem behavior will be covered, and listening and communication skills will be developed. 3 hrs./wk.

**KADJ 194**  
**HUMAN SERVICES PRACTICUM I (3CR)**

*Prerequisites: KADJ 185 and approval of the program director*

This course will offer initial field experience in social services, corrections, juvenile treatment, mental health or other community services. It will require a minimum of 10 hours a week or 160 hours during the semester in placement.

**KADJ 261**  
**HUMAN SERVICES PRACTICUM II (3CR)**

*Prerequisites: KADJ 194 and approval of the program director*

This course will provide continued field placement or second placement in social services, corrections, juvenile treatment, mental health or other community services. A minimum of 160 hours during the semester in placement plus an evaluation of agency effectiveness will be required.

## Cosmetology

**AVCO 102**  
**NAIL TECHNOLOGY (350 CONTACT HOURS)**

This course provides skill instruction in determining nail disorders and care as well as the artistic application of tips, overlays and sculptured nails. Upon successful completion, students are prepared to take the Kansas State Board of Cosmetology onychology examination.

**AVCO 110**  
**INTRODUCTION TO COSMETOLOGY**  
**(500 CONTACT HOURS)**

This course provides skill instruction in shampooing, cutting, shaping, curling and coloring. Also included is curriculum from Nail Technology and Cosmetology Technician I and II. The first 320 contact hours are in the basic lab and the classroom without client contact.

**AVCO 112**  
**CLINICAL COSMETOLOGY (500 CONTACT HOURS)**

*Prerequisite: AVCO 110*

This course provides continuing skill instruction in shampooing, cutting, shaping, curling and coloring. Included is an introduction to client relations skills and sales promotion techniques. Instruction includes classroom and salon.

**AVCO 114**  
**ADVANCED COSMETOLOGY (500 CONTACT HOURS)**

*Prerequisite: AVCO 112*

This course provides advanced instruction in shampooing, cutting, shaping, curling and coloring. This course prepares the student for the Kansas State Board of Cosmetology examination.

**AVCO 118**  
**ESTHETICS (650 CONTACT HOURS)**

This course provides skill instruction in skin care. Topics include sanitation, skin sciences, skin treatments, make-up and business practices. This course prepares the student for the Kansas State Board of Cosmetology esthetician examination.

## Data Processing

(See Computer Information Systems, page 156.)

## Dental Hygiene

**DHYG 121**  
**CLINICAL DENTAL HYGIENE I (5CR)**

*Prerequisites: Admission to the Dental Hygiene Program and CHEM 122, ENGL 121, SOC 122, PSYC 130 and BIOL 230 (minimum 2.0 G.P.A.)*  
*Corequisites: BIOL 146, DHYG 125 and DHYG 135*

This course will include an introduction to the dental hygiene profession, dental hygiene techniques, the principles of instrumentation, patient evaluation, patient education and primary preventive treatment, auxiliary procedures and aseptic techniques. 2 hrs. lecture, 13 hrs. lab/wk.

**DHYG 125**  
**DEVELOPMENTAL DENTISTRY (2CR)**

*Corequisites: BIOL 146, DHYG 121 and DHYG 135*

This course will include a study of embryology; oral histology; developmental disturbances of the face, oral cavity and related structures; and dental morphology and occlusion. 1 hr. lecture, 3 hrs. lab/wk.

**DHYG 135**  
**DENTAL MATERIALS (2CR)**

*Corequisites: DHYG 121, DHYG 125 and BIOL 146*

This course is designed to provide students with a knowledge base of the science and physical properties of dental materials. The students will be able to apply their knowledge base in future dental sessions and laboratory experiences. 2 hr. lecture/wk.

**DHYG 136**  
**DENTAL MATERIALS LABORATORY (1CR)**

*Prerequisites: CHEM 122, ENGL 121, SOC 122, DHYG 121, BIOL 146, DHYG 125, PSYC 130, BIOL 230, DHYG 135*

*Corequisites: DHYG 140, DHYG 142, DHYG 146, DHYG 148, BIOL 225*

This course is designed to provide the student with hands-on experience of dental materials used in dentistry while applying their knowledge of dental material sciences. Through laboratory exercises, students will manipulate materials discussed in DHYG 135. 3 hrs. lab/wk.

**DHYG 140**  
**CLINICAL DENTAL HYGIENE II (4CR)**

*Prerequisite: DHYG 121*

*Corequisites: DHYG 142, DHYG 146, DHYG 148, BIOL 225, and no grade below a "C" in DHYG courses*

The focus of this course will be on the clinical application of dental hygiene techniques, instrumentation skills, oral health products, patient motivation and educational techniques. Procedures for medical and dental emergencies in the dental office also will be covered as well as an introduction to selected dental specialties. 2 hrs. lecture, 8 hrs. clinic/wk.

**DHYG 142**  
**DENTAL RADIOLOGY (2CR)**

*Prerequisites: DHYG 121 and no grade below a "C" in DHYG courses*

*Corequisites: DHYG 136, DHYG 140, BIOL 225, DHYG 146 and DHYG 148*

This class will concentrate on the theory and clinical practice of exposing, processing, mounting and evaluating oral radiographs with emphasis on radiation protection and infection control for the patient and operator. 1 hr. lecture, 3 hrs. lab/wk.

**DHYG 146**  
**PERIODONTICS (3CR)**

*Prerequisites: DHYG 121 and no grade below a "C" in DHYG courses*

*Corequisites: DHYG 136, DHYG 140, BIOL 225, BIOL 230, DHYG 142 and DHYG 148*

This course will include recognition of the etiology, clinical signs and symptoms of periodontal diseases. The inflammatory process, treatment planning and nonsurgical therapy are discussed. 3 hrs. lecture/wk.

**DHYG 148**  
**DENTAL HEALTH EDUCATION (2CR)**

*Prerequisites: DHYG 121 and no grade below a "C" in DHYG courses*

*Corequisites: BIOL 225, DHYG 136, DHYG 140, DHYG 142 and DHYG 146*

Students will study health and apply educational methods for individuals and groups with special emphasis on behavior modification. Exercises in the research process and evaluating research articles are included. 2 hrs. lecture, 1 hr. lab/wk.

**DHYG 221**  
**CLINICAL DENTAL HYGIENE III (6CR)**

*Prerequisites: DHYG 140, BIOL 235, DHYG 142 and no grade below a "C" in DHYG courses*

*Corequisites: DHYG 225, DHYG 230 and DHYG 240*

Students will continue development in the areas of patient management, preventive dental hygiene treatment and proficiency in clinical techniques through practical application. Current advances in dental hygiene services also will be introduced. 2 hrs. lecture, 16 hrs. clinic/wk.

**DHYG 225**  
**PATHOLOGY (3CR)**

*Prerequisites: DHYG 140, BIOL 235 and no grade below a "C" in DHYG courses*

*Corequisites: DHYG 221, DHYG 230 and DHYG 240*

This course will introduce the students to concepts related to general systemic and oral pathology. General principles of pathology include inflammation, immunity, neoplasia and wound healing. Specific systems will be explained, including cardiovascular, hematopoietic and skeletal systems. Basic pathological processes of oral conditions, their etiologies and treatments, will be discussed. 3 hrs. lecture/wk.

**DHYG 230****DENTAL THERAPEUTICS (3CR)**

*Prerequisites: DHYG 140, BIOL 235 and no grade below a "C" in DHYG courses*

*Corequisites: DHYG 221, DHYG 225 and DHYG 240*

This course will introduce the basic principles of drug actions, emphasizing dental-related therapeutics and drugs associated with common systemic disorders; information on the selection of professional products; and principles necessary in administering local anesthesia. 2 hrs. lecture, 2 hrs. lab/wk.

**DHYG 240****COMMUNITY DENTAL HEALTH (2CR)**

*Prerequisites: DHYG 140, BIOL 235 and no grade below a "C" in DHYG courses*

*Corequisites: DHYG 221, DHYG 225 and DHYG 230*

Topics will include public health agencies, statistical procedures for critiquing scientific literature, identifying dental needs of different groups and planning dental health education programs. Preventive techniques, health promotion, consumer advocacy and the role of the dental hygienist in public health will be emphasized. Field experience will be included. 1 hr. lecture, 3 hrs. lab/wk.

**DHYG 245****NITROUS OXIDE ANALGESIA (1CR)**

*Prerequisite: DHYG 230*

*Corequisite: DHYG 250*

This course will concentrate on the principles of administering and monitoring nitrous oxide analgesia. Upon completion of the course, didactic and clinical proficiency in nitrous oxide analgesia will meet certification standards set by state dental boards. 1 hr. lecture, lab/wk.

**DHYG 250****CLINICAL DENTAL HYGIENE IV (6CR)**

*Prerequisites: DHYG 221 and no grade below a "C" in DHYG courses*

This course will offer continued development of proficiency in clinical techniques and current procedural practices of the dental hygienist with emphasis on self-evaluation. Topics will include ethics, jurisprudence, office management, current dental hygiene issues and preparation for board exams. 2 hrs. lecture, 16 hrs. clinic/wk., 1 hr. board review for first 8 wks.

## Drafting Technology

**DRAF 115****INTRODUCTION TO  
COMPUTER GRAPHICS SYSTEMS (3CR)**

*Prerequisite: MATH 111 or an appropriate score on the math assessment test*

This course is an introduction to computer graphics systems. Upon successful completion of this course, the student should be able to identify the components of a computer graphics system. Each student will have an opportunity to get hands-on exposure to several computer graphics software packages. Emphasis will be on the development of an understanding of the various types of applications for which each package is best-suited. Students will also be exposed to the various hardware peripherals necessary for the support of computer graphics. Software will range from defining line vectors to the use of menu-controlled color packages. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 116****ENGINEERING GRAPHICS/CAD-2D DRAFTING I (5CR)**

*Prerequisite: MATH 111 or an appropriate score on the JCCC math assessment test. Basic high school drafting or trigonometry*

This course is an introduction to computer-aided drafting as a tool in the study of graphical communications. Emphasis will be on familiarization with CAD hardware, proficiency in the application of 2-D CAD software to various types of engineering drawings, understanding of descriptive geometry fundamentals, geometric construction, technical vocabulary and engineering/drafting design standards (ANSI) and procedures. Comparisons between traditional drafting methods and CAD's approach to generating engineering drawings will be presented. CAD will be used throughout the semester. 4 hrs. lecture, 6 hrs. lab/wk.

**DRAF 118****ENGINEERING GRAPHICS/CAD-2D DRAFTING II (5CR)**

*Prerequisite: DRAF 116*

This course is a continuation of Engineering Graphics/CAD-2D. Upon successful completion of this course, the student should be able to use 2-D and 3-D CAD commands in the engineering design process. The following CAD topics will be included: isometric drawing, basic 3-D, paper space and model space; slides and shows; XREF, digitizer scaling, file management and interface. Application problems will be selected from architectural, civil, electromechanical and technical illustration fields. 4 hrs. lecture, 6 hrs. lab/wk.

**DRAF 120****INTRODUCTION TO DRAFTING (2CR)**

This course should be taken by students without prior drafting experience. Upon successful completion of this course, the student should be able to identify and apply the essential, basic skills necessary to proceed through the drafting program, including lettering, measuring, geometric construction, sketching, isometrics, orthographic views, dimensioning and auxiliary view.

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

**DRAF 123****INTERPRETING MACHINE DRAWINGS (2CR)**

This course will provide students with general knowledge in reading machine-type engineering drawings. Upon successful completion of this course, the student should be able to interpret orthographic multiview drawings, symbols, abbreviations, surface finishes, dimensioning and geometric form and position tolerancing. 2 hrs./wk.

**DRAF 124****TECHNICAL DRAFTING (4CR)**

*Prerequisites: DRAF 120 or equivalent and OST 101 or approval of the division administrator*

This first-semester course covers the basic manual drafting fundamentals required to begin the Drafting Technology program. Upon successful completion of this course, the student should be able to solve descriptive geometry problems; draw multiview, orthographic views with dimensions and pictorial and three-dimensional views using isometric and perspective methods. Mechanical and civil disciplines are addressed. In addition to workbook-style assignments on bond paper, students will draft on vellum and drafting film. 2 hrs. lecture, 6 hrs. lab/wk.

**DRAF 129****INTERPRETING ARCHITECTURAL DRAWINGS (2CR)**

This beginning course will explain the fundamentals of interpreting (reading) architectural drawings. Upon successful completion of this course, students should be able to understand plan and elevation views, sections, details, schedules, specifications, symbols and abbreviations found on most residential and commercial construction drawings. 2 hrs./wk.

**DRAF 130****INTRODUCTION TO CAD CONCEPTS (3CR)**

*Prerequisites: DRAF 120 or approval of division administrator*

This course provides a basic knowledge of computer-aided drafting. Students will learn to use CAD equipment, including input/output devices and microcomputers as drafting tools. Emphasis will be on a basic understanding of CAD terms and concepts as they are applied in industry. Students will be provided an overview of many of the key features of a major microcomputer CAD package with hands-on experience at a workstation. Basic instruction will be provided on drawing setup, drawing commands, editing commands and screen control. The important concepts of layering, standard symbols and dimensioning will be introduced. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 138****ARCHITECTURAL DRAFTING (3CR)**

This course is an introduction to the production of architectural drawings for residential and commercial construction. Upon successful completion of this course, the student should be able to identify and produce the various drawings that compose a complete set of architectural working drawings. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 140****TOPICS IN CAD I (2CR)**

This course provides training for a specific design application software. In-depth coverage of the selected software and hands-on experience will be provided to the students. Emphasis will be placed on the application of software to industry projects. 2 hrs. lecture, lab/wk.

**DRAF 150****ELECTRICAL DRAFTING (3CR)**

*Prerequisites: MATH 133 and DRAF 230 or ENGR 131*

Upon successful completion of this course, the student should be able to identify drafting techniques applicable to industrial lighting, motor controls, power distribution and generation. Emphasis will be on the use of tables, catalogs and applications software as aids to decision making required on electrical drawings. Project assignments will be completed primarily using CAD. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 160**  
**PROCESS PIPING (3CR)**

*Prerequisite or corequisite: DRAF 124 or approval of the division administrator*

This course is an introduction to process piping drafting. Upon successful completion of this course, the student should be able to identify techniques applicable to, and definitions related to, industrial process piping. Symbols for fittings and valves will be drawn in plan view, elevation view and in isometric, relative to piping standards and specifications. Calculations relative to pipe lengths and fitting locations will be made. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 180**  
**STRUCTURAL DRAFTING (3CR)**

*Prerequisites: DRAF 230 or ENGR 131*  
*Corequisite: MATH 134*

Upon successful completion of this course, the student should be able to produce structural drawings and details of steel, concrete and wood structures for manufacturing, construction, engineering and architectural firms. Project work will be done using CAD. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 222**  
**MECHANICAL DRAFTING (3CR)**

*Prerequisite: DRAF 230 or ENGR 131*  
*Corequisite: MATH 134*

Students successfully completing this course should be able to draw details and assembly views of mechanical parts. The types of parts drawn in this class include castings, sheet metal pieces, piping, jigs and fixtures, pressure vessels and gauges. Important concepts include dimensioning, form and position tolerancing, coordinate tolerancing and calculations related to material allowances. Project assignments will be completed using computer-aided drafting software. This course is part of the Drafting Technology – Machine Option. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 225**  
**CIVIL DRAFTING (3CR)**

*Prerequisite: DRAF 230 or ENGR 131*  
*Corequisite: MATH 134*

Upon successful completion of this course, the student will be able to apply drafting techniques used in civil engineering offices. The student will learn to draw civil engineering plans from surveying and engineering data. The student will be able to produce plan and profile drawings, roadway cross sections, earthwork calculations, subdivision plats, topographic maps and property maps. The student will use CAD in drawing projects. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 228**  
**INDUSTRIAL DESIGN APPLICATIONS (3CR)**

*Prerequisites: DRAF 222 and CET 211*  
*Corequisites: DRAF 180 and DRAF 150*

This advanced fourth-semester course applies concepts and fundamentals of previously required classes in the machine option of the Drafting Technology program. Assignments address industrial systems and include interdisciplinary considerations of manufacturing processes, electrical controls, structural drafting, form and positional tolerance control and machine elements. Systems options include pumping systems and material handling systems. Student teams will select their specific system project for the semester. Team project/protocol will be used to develop graphic, ISO and ANSI-approved solutions. Job/task responsibilities will be assigned by student-team leadership. Two industrial field trips with subsequent journals are required. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 230**  
**INTERMEDIATE COMPUTER-AIDED DRAFTING (3CR)**

*Prerequisites: DRAF 130 and DRAF 124 or approval of the division administrator*

This course provides an increased knowledge of computer-aided drafting as it is used in today's industries. Students will build on their CAD experience by learning new commands and techniques that increase system productivity. Special emphasis will be on developing construction techniques and command usage to increase CAD proficiency. Additional study of standard symbols, layers and editing functions will occur. Concepts covered will include dimensioning variables and styles, attributes and external referencing as well as paper space and model space as used in multiple-view drawings. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 231**  
**COMPUTER-AIDED DRAFTING 3-D (3CR)**

*Prerequisite: DRAF 230*

In this course, students will explore the use of computer-aided drafting and design software for the construction of 3-dimensional computer models. Emphasis will be on using 3-D software to produce multiple-view drawings. Visualization commands and techniques will be discussed and developed. Topics will include viewing commands, wireframe and surface construction and solid modeling. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 232**  
**COMPUTER-AIDED DRAFTING APPLICATIONS (3CR)**

*Prerequisite: DRAF 230*

This course is the fourth in a series of computer-aided drafting courses. Upon successful completion of this course, the student should be able to use a CAD system for advanced drafting applications. The student will select a specific area of interest within a CAD system for further study. Details of system components will be discussed as will CAD management styles and techniques. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 233**  
**ADVANCED CAD APPLICATIONS (3CR)**

*Prerequisite: DRAF 232*

Upon successful completion of this course, the student should be able to describe advanced aspects of computer-aided design-based systems (CAD). Through lectures, lab exercises and discussions, the student will gain insight into the workings of graphic control routines, custom menus and database translators. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 240**  
**INTRODUCTION TO AUTOLISP (2CR)**

*Prerequisites: CPCA 135 and DRAF 230*

This course covers basic techniques and concepts needed to begin using AutoLISP effectively. Techniques for automation of AutoCAD drafting procedures through the use of the AutoLISP programming language will be covered. Also included are basic AutoLISP functions, creation of AutoLISP expressions and program files. 1½ hrs. lecture, 1 hr. lab/wk.

**DRAF 242**  
**TOPICS IN CAD II (2CR)**

*Prerequisite: DRAF 230 or approval of division administrator*

This course provides training for a specific design application software. In-depth coverage of the selected software and hands-on experience will be provided to the students. Emphasis will be placed on the application of software to industry projects. 2 hrs. lecture, lab/wk.

**DRAF 261**  
**GRAPHIC COMMUNICATIONS I**  
**FOR INTERIOR DESIGN (3CR)**

Students enrolled in this course are JCCC interior merchandising students and professionals in the interior design field. Upon successful completion of this course, the student should be able to interpret residential and commercial drawings and draft floor plans, interior elevations and full sections of architectural interiors. The student should be able to read and produce two-dimensional architectural drawings. 6 hrs. lecture, lab/wk.

**DRAF 264**  
**CAD: INTERIOR DESIGN (3CR)**

*Corequisite: ITMD 122 or approval of the division administrator*

This course is an introduction to the use of computer-aided drafting (CAD) as used in the interior design field. Upon successful completion of this course, the student should be able to draw floor plans and elevations of interiors using a computer-aided drafting system. Autocad software will be used. No previous computer experience is required. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 266**  
**GRAPHIC COMMUNICATIONS II**  
**FOR INTERIOR DESIGN (3CR)**

*Prerequisite: DRAF 261*

Upon successful completion of this course, the student should be able to describe the fundamentals of pictorial representation and demonstrate the ability to draw perspectives, section evaluations and isometric illustrations. The student will be expected to produce drawings with realistic appearance of building interiors, cabinets, furniture and decor. 2 hrs. lecture, 3 hrs. lab/wk.

**DRAF 271**  
**DRAFTING INTERNSHIP I (3CR)**

*Prerequisite: Approval of the division administrator*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students the opportunity to develop job and career-related skills while in a work setting. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 2 hrs. lecture, 15 hrs. min./wk.

**DRAF 272**  
**DRAFTING INTERNSHIP II (3CR)**

*Prerequisites: DRAF 271 and approval of the division administrator*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students the opportunity to develop job- and career-related skills while in a work setting. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 2 hrs. lecture, 15 hrs. min./wk.

## Early Childhood Education

### EDUC 130

#### FOUNDATIONS OF EARLY CHILDHOOD EDUCATION (3CR)

This introductory survey course is designed to provide students with current information on topics relevant to employment in early childhood programs. The course will explore the historical and philosophical roots of early childhood education, general principles in child development, the teacher's role, values and ethics in early childhood education, curriculum design and classroom management. Twenty hours of observation in a group child care setting are required. 3 hrs. lecture/wk.

### EDUC 131

#### EARLY CHILDHOOD CURRICULUM I (3CR)

*Corequisite: EDUC 130*

This methods course is designed for students who are, or will be, working in an early childhood education setting and parents/others who desire to develop an intellectually challenging environment for young children. The focus of the course is curriculum areas that deal with language and physical development. 3 hrs. lecture/wk.

### EDUC 210

#### CREATIVE EXPERIENCES FOR YOUNG CHILDREN (3CR)

This course is a study of constructing and maintaining an environment for young children that fosters aesthetic sensitivity and creativity. The course includes the young child's developmental stages in art, music, movement, language and creative and dramatic play; methods and materials that nourish developmentally appropriate creative experiences and support an inclusive, anti-bias curriculum; integration of creative experiences in the whole curriculum; the use of technology; and helping families understand the creative experience. 3 hrs. lecture/wk.

### EDUC 215

#### YOUNG CHILDREN WITH SPECIAL NEEDS (3CR)

This course is a study of creating and maintaining a developmentally appropriate inclusive environment for young children with special needs. The course includes the history of education and care for young children with special needs, federal and state legislation, types of differing abilities, developmental stages and capabilities of all young children, an inclusive approach to early education, and curriculum development for young children with special needs. Health, safety and nutrition; screening and assessment; interaction techniques; the role of the educator specific to the child's special needs; partnering with the family, other disciplines and com-

munity; and advocating for children are presented. The laboratory will include demonstration of the subject matter. 2 hrs. lecture, 1½ hrs. lab/wk.

### EDUC 220

#### SURVEY OF THE EXCEPTIONAL CHILD (3CR)

This is a survey of the exceptional children now being served in public schools and their characteristics. Included will be mental retardation; learning disabilities; behavior and communication disorders; hearing, visual, physical and health impairments; and giftedness. 3 hrs./wk.

### EDUC 225

#### INFANT AND TODDLER EDUCATION AND CARE (3CR)

This course is a study of creating and maintaining a developmentally appropriate environment for infants and toddlers, with the course including the history of education and care, theories of child development, developmental stages and capabilities of the very young child and curriculum development for infants and toddlers. Health, safety and nutrition; assessment; interaction techniques; the role of the educator specific to the needs of the infant and toddler; partnering with family and community; and advocating for the very young are presented. The laboratory will include demonstration of the subject matter. 2 hrs. lecture, 1½ hrs. lab/wk.

### EDUC 231

#### EARLY CHILDHOOD CURRICULUM II (3CR)

*Prerequisite: EDUC 131*

This methods course is designed for students who are, or will be, working in an early childhood education setting and parents/others who desire to develop an intellectually challenging environment for young children. The focus of the course is on curriculum areas that deal with the physical and social aspects of the world. Included in this inquiry curriculum are mathematics, science, social studies and nutrition. 3 hrs./wk.

### EDUC 235

#### PARENTING (2CR)

*Prerequisite or corequisite: PSYC 215 or PSYC 218 or EDUC 270*

This course is a study of effective parenting and is designed for teachers of young children and parents/guardians who desire to provide an environment that reflects sensitivity to the unique needs of the individual child and family. History of child-rearing methods, an overview of child development, types of families, parents'/guardians' fears and concerns, purposes of child behavior, effective communication techniques, nurturing self-esteem, problem prevention and resolution, and building effective teacher and family relations are presented. 2 hrs. lecture/wk.

**EDUC 250****CHILD HEALTH, SAFETY AND NUTRITION (3CR)**

This course is a study of the basic health, nutrition and safety management practices for young children. Information on establishing and maintaining a physically and psychologically safe and healthy learning environment appropriate for the needs of young children will be included. The interrelation of health, safety and nutrition is stressed, with emphasis on appraisal procedures, prevention and protection, services and educational experiences for young children and their families. 3 hrs. lecture/wk.

**EDUC 260****OBSERVING AND INTERACTING WITH YOUNG CHILDREN (3CR)**

*Prerequisite or corequisite: PSYC 215 or PSYC 218 or EDUC 270*

This course is a study of the role of observation to assess and monitor the development and learning of children, birth through age 8, and the appropriate techniques for interacting with young children considering their individual differences. Included will be the purposes and types of observation procedures, interpretation and use of findings, reporting techniques and legal and ethical responsibilities. Expected age-related child behavior, fundamental principles of and theoretical approaches to child guidance, guidance techniques, working with families and issues of diversity are presented. The laboratory will include demonstration of the subject matter. 2 hrs. lecture 1½ hrs. lab/wk.

**EDUC 270****EARLY CHILDHOOD DEVELOPMENT (3CR)**

This course is a comprehensive account of human development from conception through age 8 years. The course integrates genetic, biological, physical and social influences with psychological processes affecting the development of young children. 3 hrs. lecture/wk.

**EDUC 280****ADMINISTRATION OF EARLY CHILDHOOD PROGRAMS (3CR)**

This course is a study of the organization and administration of early childhood programs. The topics included will be the skills and characteristics of effective administrators; types of programs; planning, implementing and evaluating programs; policy development; staff supervision and development; finances and budget; record keeping; relevant state regulations and laws; developing, equipping and maintaining a facility; organizing a developmentally appropriate environment; collaboration with family and community; public relations; and contributing to the profession. The lab will include

demonstration of the subject matter. 2 hrs. lecture, 1½ hrs. lab/wk.

**EDUC 285****INTERNSHIP: EARLY CHILDHOOD (6CR)**

*Prerequisite: Program facilitator recommendation*

This supervised field experience in early childhood education is designed for students to apply their knowledge of teaching young children. The student will participate in curriculum design and presentation, observing and interacting with young children, providing for the health, safety and nutrition of young children, the general management of a program setting, and working with families and the community. A self-assessment and a professional development plan are completed. The student will spend 20 hours a week (300 clock hours total) in at least two different early childhood settings, serving children of two different ages. 6 hrs. lecture-field-lab/wk.

## Economics

**ECON 130****BASIC ECONOMIC ISSUES (3CR)**

Upon successful completion of this course, the student should be able to use basic economic theory, concepts and nomenclature to analyze current economic issues at the local, national and international levels. This course is primarily for students to take only one economics course and for those who want a nontechnical introduction to economics. 3 hrs. lecture/wk.

**ECON 132****SURVEY OF ECONOMICS (3CR)**

Upon successful completion of this course, the student should be able to explain basic macroeconomic and microeconomic theory, fiscal and monetary policies, the role and significance of international economics and government trade and regulatory policies. In addition, the student should be able to describe the characteristics and the consequences of the differing business units in the economy, as well as the functioning of the labor market and how national income is distributed. The course is primarily for students who desire a one-semester, nontechnical overview of the basic components of macro-economic and microeconomic theory and the functioning of the United States economy. 3 hrs. lecture/wk.

**ECON 230**  
**ECONOMICS I (3CR)**

Upon successful completion of this course, the student should be able to use economic terminology and principles to explain and discuss basic macroeconomic concepts, including supply of and demand for products, national income determination, money and banking, and monetary and fiscal policy. The student enrolling in this course should have successfully completed one year of high school algebra or the equivalent. (Macro) 3 hrs./wk.

**ECON 231**  
**ECONOMICS II (3CR)**

Upon successful completion of this course, the student should be able to use economic terminology and principles to explain and discuss basic microeconomic concepts, including extended analysis of product supply and demand and theory of the firm and product and resource market structures. Students enrolling in this course should have successfully completed one year of high school algebra or the equivalent. (Micro) 3 hrs./wk.

## Education

(Also see *Early Childhood Education*, page 168.)

**EDUC 121**  
**INTRODUCTION TO TEACHING (3CR)**

Teaching concepts and practices as they apply to today's elementary and secondary schools will be introduced. Topics will include the roles and responsibilities of the teacher, various modes of instruction, specialized areas in teaching, and professional requirements and concerns. Twenty hours of observation in a school setting are required. 3 hrs./wk.

**EDUC 222**  
**BASIC STRATEGIES FOR SPECIAL  
EDUCATION PARAPROFESSIONALS I (1CR)**

The education of disabled people – from kindergarten through adulthood – will be surveyed. The role of the paraprofessional in various helping situations will be emphasized. Outside readings and a 12-hour practicum will be required. One six-hour session.

**EDUC 223**  
**BASIC STRATEGIES FOR SPECIAL  
EDUCATION PARAPROFESSIONALS II (1CR)**

*Prerequisite: EDUC 222*

Emphasis will be on defining the responsibilities and role of the paraprofessional in special education programs. Outside readings and a 12-hour practicum are required. One six-hour session.

## Electrical Technology

**ELTE 122**  
**NATIONAL ELECTRICAL CODE I (4CR)**

This is an introductory course on the use and interpretation of the National Electrical Code. Students should develop a working knowledge of the code that will permit them to apply it to everyday applications. Upon successful completion of this course, the student should be able to use the code to design service entrances, feeders, branch circuits and discern between wiring methods used in difference occupancies. 4 hrs. lecture/wk.

**ELTE 125**  
**RESIDENTIAL WIRING METHODS (4CR)**

*Corequisite: HVAC 123*

This is an introductory course on residential wiring methods that includes practical application and hands-on experience in implementing the code requirements. Upon successful completion of this course, the student should acquire the necessary skills to wire a residence to meet the minimum requirements as set forth in the National Electrical Code for residential occupancies. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

**ELTE 200**  
**COMMERCIAL WIRING METHODS (4CR)**

*Prerequisite: HVAC 123*

This advanced course covers commercial wiring methods. Upon successful completion of this course, the student should be able to read commercial blueprints and apply the National Electrical Code to commercial wiring systems. The student will gain working knowledge and hands-on experience with commercial wiring techniques. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

**ELTE 205**  
**INDUSTRIAL ELECTRICAL WIRING (4CR)**

*Prerequisite: HVAC 123*

This advanced course covers industrial wiring methods. Upon successful completion of this course, the student should be able to read industrial blueprints and apply the National Electrical Code to industrial wiring systems. The student will gain working knowledge and hands-on experience with industrial wiring techniques. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

**ELTE 210****CODE CERTIFICATION REVIEW (3CR)**

*Prerequisite: ELTE 122*

Upon successful completion of this course, the student should be able to use the current National Electrical Code to do calculations involving loads, lighting and circuit sizing. The course will cover typical load calculations used in both residential and commercial settings. 3 hrs. lecture/wk.

**ELTE 271****ELECTRICAL INTERNSHIP I (3CR)**

*Prerequisite: Approval of the division administrator*

The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of job experiences directly related to the student's career goals. Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

**ELTE 272****ELECTRICAL INTERNSHIP II (3CR)**

*Prerequisite: ELTE 271 and approval of the division administrator*

The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of job experiences directly related to the student's career goals. Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

## Electronics Technology

**ELEC 120****INTRODUCTION TO ELECTRONICS (3CR)**

This is a beginning course in electronics technology that is appropriate for both the electronics major and other interested students. An overview of basic electronic theory, principles and components is presented. In addition, the laboratory exercises will emphasize the operation and use of the primary pieces of electronic test equipment and the fabrication of selected circuits. 2 hrs. lecture, 2 hrs. lab-lecture, 2 hrs. lab/wk.

**ELEC 122****CIRCUIT ANALYSIS I (3CR)**

*Prerequisite: MATH 133*

*Corequisite: ELEC 120*

This course covers resistive circuits having DC sources. Analysis topics include Ohm's law, Kirchoff's law, superposition theorem, Thevenin's theorem and Norton's theorem. The current, voltage and resistance relationships in series, parallel and combination circuits will be studied. 3 hrs. lecture/wk.

**ELEC 124****MICROCOMPUTER HARDWARE (3CR)**

This is an introductory course on personal computer hardware. It is designed to prepare students to buy, optimize, upgrade and maintain IBM and other compatible personal computers. The course will also include a brief introduction to computer architecture. Lecture topics will be supported by hands-on lab projects. 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 125****DIGITAL ELECTRONICS I (3CR)**

This is a beginning course in which students will study and practice the basic concepts of digital electronics. Topics will include digital number systems, logic gates, logic circuits, flip-flops, digital arithmetic, counters and registers. 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 128****COMPUTER APPLICATIONS IN ELECTRONICS (1CR)**

This course introduces students to computer software applications that are unique and specific to electronics, e.g., electronic workbench. In addition, other resources available on the JCCC network are presented. 1 hr. lecture/wk.

**ELEC 130****ELECTRONIC DEVICES I (4CR)**

*Corequisite: ELEC 140*

This is the first course in electronic devices. Principal topics include diodes, transistors, special-purpose diodes and diode application circuits. Both bipolar junction transistors (BJTs) and field effect transistors (FETs) are examined, and application circuits for both transistor types are constructed. 3 hrs. lecture, 3 hrs. lab/wk.

**ELEC 131****INTRODUCTION TO SENSORS AND ACTUATORS (3CR)**

This course examines types and uses of industrial sensors and actuators. Topics include temperature, pressure, optical, position, and flow sensors. Operation of AC and DC motor drives will also be covered. The course will also include wiring and troubleshooting of sensors and actuators. Lecture topics will be supported by hands-on lab projects. 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 133**  
**PROGRAMMABLE CONTROLLERS (3CR)**

This course defines programmable logic controllers (PLCs) and examines their role in industrial control. It identifies the hardware components of a PLC including processor, chassis, and input/output modules. Memory organization, mapping and addressing of I/O devices will be covered. The course will also include writing and executing of basic ladder logic programs using bit level, timers and counters instructions. Lecture topics will be supported by laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 136**  
**BASIC ELECTRONICS (2CR)**

*Prerequisites: Approval of the Burlington Northern training director and the JCCC division administrator*

This course is an introduction to electronics with a review of basic electrical concepts. Instruction is provided on the operation and use of an oscilloscope, function generator, DC power supply, digital multi-meter and watt-meter. The course also includes an introduction to electronics devices, schematics, basic electronic formulas and programmable logic controllers. 1 hr. lecture, 2 hrs. lab/wk.

**ELEC 140**  
**CIRCUIT ANALYSIS II (3CR)**

*Prerequisites: ELEC 122 and MATH 134*

The analysis techniques presented in Circuit Analysis I will be applied to complex circuits driven by AC and pulsed sources. The responses of circuits having resistance, inductance and capacitance will be analyzed. Other topics include transformers and electrical filters. 3 hrs. lecture/wk.

**ELEC 142**  
**INTRODUCTION TO ELECTRICAL CODE (2CR)**

*Prerequisites: Approval of the Burlington Northern training director and the JCCC division administrator*

This course is designed for students with experience in electrical wiring and use of the National Electrical Code (NEC). Upon successful completion of this course, the student should be able to apply NEC articles to determine ampacity, size of conductors, grounding and bonding and overcurrent protection. In addition, the student should be able to understand motors and transformer ratings and their installation. 1.5 hrs. lecture, 1 hr. lab/wk.

**ELEC 144**  
**INTRODUCTION TO PLCs (2CR)**

*Prerequisites: Approval of the Burlington Northern training director and the JCCC division administrator*

This course is an introduction to programmable logic controllers using Allen Bradley PLC-5 processors and is designed for electricians and maintenance personnel. Upon successful completion of this course, the student

will be able to identify the components of programmable controllers, configure and set up the controllers for specific operations, write and test basic programs and apply troubleshooting procedures to locate problems. 1.5 hrs. lecture, 1 hr. lab/wk.

**ELEC 146**  
**HYDRAULIC PRINCIPLES (2CR)**

*Prerequisite: Approval of the railroad training administrator and the JCCC division administrator*

This course is designed for operators and maintenance personnel who use hydraulic systems in their work. Upon successful completion of this course, the student should be able to apply hydraulic principles to improve operational availability of equipment. Students will learn to read hydraulic diagrams and perform preventive maintenance and troubleshooting. In order to explain component operation, there will be extensive use of cut-away components. 1 hr. lecture, 1.5 hrs. lab/wk.

**ELEC 148**  
**ELECTRONICS PRINCIPLES (2CR)**

*Prerequisites: Approval of the railroad training administrator and the JCCC division administrator*

This introductory course is designed to familiarize the student with the basic principles of electricity/electronics, the proper usage of a VOM or DMM, the reading of electrical prints in performing basic troubleshooting and the ability to identify basic hardware found in electrical circuits on maintenance of way equipment. 1 hr. lecture, 1.5 hrs. lab/wk.

**ELEC 150**  
**INTRODUCTION TO TELECOMMUNICATIONS (3CR)**

This is an introductory-level course in telecommunications principles that includes a review of both voice and data communications. Topics include voiceband communications, digital transmission, switching and signaling and future technologies. 3 hrs. lecture/wk.

**ELEC 157**  
**FLUID POWER SYSTEMS (2CR)**

*Prerequisite: Approval of the railroad training administrator and the JCCC division administrator*

This course is designed to introduce the field of fluid power. Major topics that will be discussed include: the two types of fluid power systems, major parts in a fluid power system and their purpose, the calculations needed to size motors and cylinders, the proper preventive maintenance procedures needed to keep the system operating at peak efficiency and the troubleshooting methods used to isolate the problem in a system that is not working properly. 2 hrs. lecture/wk.

**ELEC 165****ADVANCED PROGRAMMABLE CONTROLLERS (3CR)**

*Prerequisite: ELEC 133*

This course is a continuation of ELEC 133. Principle topics include sequences, file and block transfers, analog control and PID functions. In addition, methods of networking of PLCs and advanced user interface will be covered. Lecture topics will be supported by laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 172****PLC APPLICATIONS (2CR)**

*Prerequisites: Approval of the Burlington Northern training director and the JCCC division administrator*

This course is designed for electricians and maintenance personnel. It is intended as an advanced course for people with basic knowledge in programmable logic controllers operation. Allen Bradley PLC-5 family of processors is used for hands-on training. Upon successful completion of this course, the student should be able to use advanced PLC instructions such as file, block transfer, stack concepts/operations and sequences, and configure and operate a network of processors. 1 hr. lecture, 1.5 hrs. lab/wk.

**ELEC 175****TELECOMMUNICATIONS (3CR)**

*Corequisite: ELEC 230*

This course provides an introduction to the hardware functions of a telecommunications system. Topics include both voice and data aspects of telecommunications terminology, telephone sets, interfaces, protocols, fiber optics, PBXs, switching, SS7, ISDN and other related and timely items (ATM, SONNET). 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 180****INTRODUCTION TO RAILROADELECTRONICS (1CR)**

*Prerequisites: Approval of the railroad training administrator and the JCCC division administrator*

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to state basic safety procedures in electronics, explain basic principles of electronics, perform basic electronic calculations and use basic electronic tools. 2.5 hrs. lecture, lab/wk.

**ELEC 181****CIRCUIT ANALYSIS DC/AC (6CR)**

*Prerequisites: ELEC 180 and the approval of the railroad training administrator and the JCCC division administrator*

This course is designed to meet the needs of the railroad electronic maintainers. Upon successful completion of this

course, the student should be able to identify and use fundamental DC circuit concepts such as Kirchhoff's laws, power and energy formulas, Ohm's Law, Thevenin's Theorem and Norton's Theorem as they apply to resistive circuits. Also upon successful completion of this course, the student should be able to analyze circuits involving resistors, capacitors and inductors driven by time-variant sources. This analysis will involve both time and frequency responses. 3 hrs. lecture, 2 hrs. lab, 3 hrs. alternate deliver/wk.

**ELEC 182****SEMICONDUCTOR DEVICES AND CIRCUITS (6CR)**

*Prerequisites: ELEC 181 and the approval of the railroad training administrator and the JCCC division administrator*

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to describe the characteristics of basic semiconductor devices, explain practical circuits using semiconductor devices and analyze these circuits for DC and AC quantities. 3 hrs. lecture, 2 hrs. lab., 3 hrs. alternate delivery/wk.

**ELEC 183****DIGITAL TECHNIQUES (6CR)**

*Prerequisites: ELEC 182 and the approval of the railroad training administrator and the JCCC division administrator*

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to analyze basic digital circuitry consisting of arrangements of gates and flip-flops using TTL and CMOS integrated circuits, as well as relay logic. This analysis will include the application of elementary Boolean algebra, truth tables and timing diagrams. 3 hrs. lecture, 2 hrs. lab., 3 hrs. alternate delivery/wk.

**ELEC 190****ADVANCED HYDRAULIC PRINCIPLES (2CR)**

*Prerequisites: ELEC 146 and the approval of the railroad training administrator and the JCCC division administrator*

This advanced course contains information on hydraulic components found on the more complex maintenance of way equipment. Upon successful completion of the course, the student should be able to understand symbols, describe the theory of operation and perform basic troubleshooting tasks on these components. 1 hr. lecture, 1.5 hrs. lab/wk.

**ELEC 192****ADVANCED ELECTRONIC PRINCIPLES (2CR)**

*Prerequisites: ELEC 146 and the approval of the railroad training administrator and the JCCC division administrator*

This advanced course contains information on electronic components and circuits found on the more complex maintenance of way equipment. Upon successful completion of this course, the student should be able to understand symbols, describe the theory of operation and perform basic troubleshooting tasks on these components. 1 hr. lecture, 1.5 hrs. lab/wk.

**ELEC 200****INTRODUCTION TO GLOBAL POSITIONING SYSTEMS (3CR)**

*Prerequisite: MATH 134*

This is a survey course on the Global Positioning Satellite (GPS) system. Topics will include navigational history and current GPS configuration in terms of space, control, user segments, signals, receivers, position determination, selective availability, corrections and applications. 3 hrs. lecture/wk.

**ELEC 210****MEDICAL ELECTRONICS PRINCIPLES (3CR)**

*Prerequisite: ELEC 225*

*Corequisite: ELEC 230*

This course examines the fundamental principles of modern medical instruments. Students will study the human physiological variables most commonly measured, together with the sensors, transducers and electronic circuits needed to measure these variables. 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 211****MEDICAL ELECTRONICS APPLICATIONS (3CR)**

*Prerequisite: ELEC 210*

This course continues the topics covered in ELEC 210 by examining the system operation of many commonly used medical electronics instruments. Emphasis is on repair, service and preventive maintenance of medical equipment hardware. Students will be assigned laboratory projects using actual hospital equipment. 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 225****DIGITAL ELECTRONICS II (3CR)**

*Prerequisite: ELEC 125*

This course completes the study of basic digital electronics and will begin a study of digital computer hardware and organization. Building, testing and troubleshooting of digital circuitry will be emphasized. The fabrication of a simple computer will be the principle laboratory project. 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 230****ELECTRONIC DEVICES II (3CR)**

*Prerequisites: ELEC 130 and ELEC 140*

This is a continuation of the electronic devices sequence. Principal topics include operational amplifiers, thyristors and voltage regulators. Operational amplifier applications include comparators, summing amplifiers, integrators, differentiators and active filters. Additional topics include frequency response of operational amplifiers. 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 240****ELECTRONIC COMMUNICATION SYSTEMS (3CR)**

*Prerequisite: ELEC 230*

This course provides an introduction to electronic communication systems. Topics include the electromagnetic spectrum, decibels, noise, amplitude modulation, frequency modulation, wire and cable media, transmission lines, antennas and the basic principles of television and facsimile. 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 245****MICROPROCESSORS (3CR)**

*Prerequisite: ELEC 225*

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

**ELEC 250****MICROCOMPUTER MAINTENANCE (3CR)**

*Prerequisite: ELEC 225*

This course examines the hardware aspects of personal computers and peripheral equipment. Students will configure, build, add cards, test, troubleshoot and repair IBM clone computers. Topics will include diagnostic software, DOS, memory, bus types, video, parallel and serial ports, printers, modems, floppy drives, hard drives and virus prevention. 2 hrs. lecture, 3 hrs. lab/wk.

**ELEC 271****ELECTRONICS INTERNSHIP I (1-3CR)**

*Prerequisite: Approval of the division administrator*

This course affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide selected advanced electronics technology students with appropriate on-the-job experience with area employers, under instructional oversight, that will promote the student's career goals. 6-20 hrs. of approved and appropriate work activity/wk.

**ELEC 272****ELECTRONICS INTERNSHIP II (1-3CR)**

*Prerequisites: ELEC 271 and approval of the division administrator*

This course is a continuation of ELEC 271. It affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide selected advanced electronics technology students with appropriate on-the-job experience with area employers, under instructional oversight, that will promote the student's career goals. 6-20 hrs. of approved and appropriate work activity/wk.

**ELEC 284****ELECTRONIC COMMUNICATIONS (6CR)**

*Prerequisites: ELEC 183 and approval of the Burlington Northern training director and the JCCC division administrator*

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to state the principles of amplitude, frequency, phase and pulse modulation and describe the technologies of transmitters, receivers, antennas, local area networks, wide area networks and telephone systems. 3 hrs. lecture, 2 hrs. lab, 3 hrs. activity/wk.

**ELEC 285****MICROPROCESSOR TECHNIQUES (6CR)**

*Prerequisites: ELEC 183 and approval of the Burlington Northern training director and the JCCC division administrator*

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to analyze and troubleshoot 6800 family microprocessor circuitry as well as microprocessor interface circuitry. 3 hrs. lecture, 2 hrs. lab, 3 hrs. activity/wk.

**ELEC 286****APPLIED MICROPROCESSORS (2CR)**

*Prerequisite: ELEC 285 and approval of the Burlington Northern training director and the JCCC division administrator*

This course is designed to provide an introduction to advanced microcomputer concepts and applications. This course is a continuation of topics introduced in the microprocessor course, with specific applications in general-purpose microcomputers (PCs) and dedicated microprocessor-based control systems. Included are hardware and software training in operating systems, peripherals, monitors, processors, storage media, maintenance, diagnostics and troubleshooting. Analog and digital data acquisition and processing, as well as voice digitization and playback will be demonstrated. Presentations and labs will include incorporation of these functions into a PC and the Servo 9000 hot box detector. 1 hr. lecture, 2 hrs. lab/wk.

## Emergency Medical Science

**EMS 121****CPR I – BASIC RESCUER (1CR)**

This class is a study of the techniques, rationale and background of basic life support procedures. Successful completion of both the classroom and lab portions of this class will lead to American Heart Association certification in basic life support at the Basic Rescuer level. A certification fee is required. This class is offered through the Emergency Medical Science Program. Students will be trained by instructors who are educated and experienced in prehospital care procedures. This course will meet the general education health and/or physical education requirement needed for graduation. 2.5 hrs. lecture, lab/wk. for 8 wks.

**EMS 125****CPR II – BASIC CPR INSTRUCTOR (1CR)**

*Prerequisite: Successful completion of EMS 121 and/or current certification by AHA as Basic Rescuer*

This class will include a review of EMS 121 (Basic Rescuer) techniques, designing and implementing CPR courses, demonstration of mastery performances and mini-lectures. Upon successful completion of this class, students will be certified by the American Heart Association as a BCLS instructor. A certification fee is required. This class is offered through the Emergency Medical Technology Program. 2.5 hrs. lecture, lab/wk. for 8 wks.

**EMS 128****EMS FIRST RESPONDER (5CR)**

This course is designed to provide training in emergency medical care for those who are apt to be the first persons responding to a medical incident. For example, a first responder might be an individual in a public service agency (fire, police, civil defense); a school bus driver; a teacher or a day care provider; a postal carrier; a worker from a utility company; or a worker in an industrial setting. The student will receive both didactic and psychomotor skills training in CPR, patient assessment, fracture management, airway management and trauma management. Successful completion of this course will enable the student to sit for the First Responder certification examinations administered by the Kansas Board of Emergency Medical Services. 6 hrs. lecture, 6.5 hrs. lab/wk. for 8 wks.

**EMS 130****EMERGENCY MEDICAL TECHNICIAN (9CR)**

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

Classroom instruction includes anatomy, physiology, recognition and care of actual medical emergencies and trauma-related injuries. Skills in performing CPR, bandaging, splinting, childbirth techniques and many other emergency care procedures are taught. An extrication session will give students hands-on experience with auto accident situations and provide the opportunity to observe an air evacuation of a patient. Upon instructor recommendation, students will participate in a 10-hour clinical observation in a hospital setting. Additionally, students will arrange to participate as an observer with a local EMS service. Students successfully completing this course will be allowed to sit for certification examinations administered by the Kansas Board of Emergency Medical Services. 7 hrs. lecture, 5 hrs. lab/wk. Students are also required to attend approximately four Saturday classes lasting between 4 and 8 hours each. Saturday dates and times will be announced during the first class session.

**EMS 140****BASIC CARDIOLOGY AND EKG RECOGNITION (2CR)**

*Prerequisite: Permission of the program director*

Topics will include basic anatomy, physiology, electrophysiology of the cardiac system, recognition of EKG tracings and an overview of coronary artery disease. 2 hrs./wk. Class limited to 30.

**Mobile Intensive Care Technician****EMS 220****MICT I (10CR)**

*Prerequisite: Admission to the MICT Program*

This fundamental course will cover roles and responsibilities, medical terminology, anatomy and physiology as they apply to the MICT. Other topics will include diagnostic signs and assessment of patients, biomedical communication, venipuncture, medication administration techniques, advanced airway management, managing the cardiac patient and ECG interpretation. 17 hrs. lecture, 4.5 hrs. lab/wk.

**EMS 225****MICT II (10CR)**

*Prerequisite: EMS 220 with a minimum grade of "C"*

This fundamental course will cover diagnosis, etiology and field treatment of victims of respiratory emergencies and hypertensive, vascular, diabetic, OB, endocrine and environmental emergencies. Also covered will be treatment of victims experiencing overdoses or poisoning; chest, neurological and abdominal trauma; fracture; and shock. 14.5 hrs. lecture/wk., 7 hrs. lab avg./wk., 13 hrs. field observation avg./wk.

**EMS 230****MICT III CLINICALS (12CR)**

*Prerequisite: EMS 225 with the minimum grade of "C"*

The student will practice diagnostic and treatment skills under supervision in an emergency department, critical care unit, surgery/recovery room, labor/delivery room and a pediatrics unit. Some field experience will be included. 5 hrs. lecture avg./wk., 2.5 hrs. lab avg./wk., 22.5 hrs. clinical lab/wk., 9 hrs. field lab avg./wk.

**EMS 271****MICT IV FIELD INTERNSHIP (15CR)**

*Prerequisite: EMS 230 with a minimum grade of "C"*

The student will act as an MICT, under supervision, with an existing advanced life-support ambulance service. The student also will present case histories, analyze systematic medical care and evaluate medical care using prehospital protocols. 6.5 hrs. lecture avg./wk., 3 hrs. lab avg./wk., 52.5 hrs. field lab avg./wk.

## Engineering

### ENGR 121

#### ENGINEERING ORIENTATION (2CR)

Upon successful completion of this course, the student should be able to describe careers in engineering and use fundamental concepts in engineering problem solving. Topics include engineering disciplines, aptitude and academic requirements, professional responsibilities, problem definition and solution, engineering design and terminology. Students take field trips to engineering companies and work sites. 2 hrs. lecture/wk.

### ENGR 131

#### ENGINEERING GRAPHICS I (4CR)

*Prerequisite: DRAF 120 or permission from the division administrator*

Upon successful completion of this course, the student will be able to apply graphic principles used in the engineering design process. The course will cover graphics concepts using computer-aided drafting software. Topics include 2-D and 3-D CAD commands, geometric construction, multiview orthographic projection, auxiliary views, sectional views, isometrics and descriptive geometry. 3 hrs. lecture, 4 hrs. lab/wk.

### ENGR 171

#### PROGRAMMING FOR ENGINEERING AND SCIENCE (3CR)

*Prerequisite: MATH 171*

Upon successful completion of this course, the student should be able to use a high-level programming language for solving scientific and engineering problems on digital computers. This course will prepare the student for advanced studies in numerical methods and other computer applications. 2 hrs. lecture, 3 hrs. lab/wk.

### ENGR 180

#### ENGINEERING LAND SURVEYING (3CR)

*Corequisite: MATH 134 or MATH 172*

Upon successful completion of this course, the student should be able to identify the basic applications of plane surveying procedures; measurement of horizontal distances, directions, angles, leveling, traversing, curves and stadia coordinates; computations with the aid of a computer; and topographical property and construction surveying. Students will take part in field operations using equipment such as auto levels, theodolites, EDM and total station. 2 hrs. lecture, 3 hrs. lab/wk.

### ENGR 222

#### CIRCUIT THEORY I (3CR)

*Prerequisites: MATH 243 and PHYS 220*

*Corequisites: MATH 244 and PHYS 221*

This course is the first of a two-semester sequence dealing with electrical circuit theory. Upon successful completion of this course, the student should be able to analyze linear passive electrical circuits. Computer applications will be included. 3 hrs. lecture/wk.

### ENGR 231

#### THERMODYNAMICS (3CR)

*Prerequisites: MATH 242, PHYS 220 and CHEM 124*

Upon successful completion of this course, the student should be able to describe thermodynamic principles. Students will apply these principles to the analysis of energy systems, including various power and refrigeration cycles. Topics include work and energy, first and second laws of thermodynamics, entropy and enthalpy. 3 hrs./wk.

### ENGR 251

#### STATICS (3CR)

*Prerequisite: MATH 242*

*Corequisite: PHYS 220*

Upon successful completion of this course, the student should be able to describe and predict the conditions of rest and motion of bodies under the action of forces. The principles used will include vectors, force systems, equilibrium, free body diagram, centroids, moments of inertia, trusses, frames and shear and moment diagrams. Computer applications will be included. 3 hrs. lecture/wk.

### ENGR 254

#### DYNAMICS (3CR)

*Prerequisites: ENGR 251*

Upon successful completion of this course, the student should be able to apply the principles of dynamics, the branch of engineering mechanics that studies objects in motion. Topics covered include unbalanced force systems (Newton's second law), displacement, velocity and acceleration, work and energy, and impulse and momentum. Computer applications will be included. 3 hrs. lecture/wk.

## English

### DEVELOPMENTAL COURSES

ENGL 100 through ENGL 120 are designed to help students develop basic skills in writing, grammar and sentence patterns. Most courses also will work in composing, proofreading, gathering and documenting information. Emphasis will be on developing a plan to meet individual student needs. These courses do not fulfill degree requirements.

#### ENGL 100 ENGLISH AS A SECOND LANGUAGE I (3CR)

*Prerequisite: Appropriate assessment score*

This course is designed for students who are familiar with English but who have limited language skills. The class will focus on pronunciation and listening comprehension as well as basic grammar and sentence structure. 3 hrs./wk.

#### ENGL 101 ENGLISH AS A SECOND LANGUAGE II (3CR)

*Prerequisite: ENGL 100 or appropriate assessment score*

This course will include continued work in pronunciation, grammar and sentence structure and will emphasize improvement of reading, writing and speaking skills. 3 hrs./wk.

#### ENGL 102 WRITING STRATEGIES (3CR)

*Prerequisite: Appropriate placement test score*

This course is designed to develop confidence and competence in writing. The focus will be on developing sentence-level skills that will be applied to paragraph development. Students who are non-native speakers should enroll in ENGL 100 or ENGL 101. 3 hrs./wk.

#### ENGL 103 PRACTICAL WRITING SKILLS (1CR)

A practical writing course in English for nonnative speaking students and the hearing impaired, this course will focus on basic sentence patterns, techniques to expand and modify sentences, and practical methods for developing writing. Individualized instruction and practice in reading, writing and speaking will be included. By arrangement.

#### ENGL 105 BASIC ENGLISH GRAMMAR (3CR)

This course will focus on grammar, usage and mechanics of edited English, emphasizing clear, correct communication in varied sentence patterns. 3 hrs./wk.

#### ENGL 106 INTRODUCTION TO WRITING (3CR)

*Prerequisite: ENGL 102 or appropriate placement test score*

In this introductory writing course, students will review sentence skills, and then move into writing paragraphs, emphasizing topic selection, organization, development and editing. The course will conclude with an essay. 3 hrs./wk.

#### ENGL 107 SENTENCE PATTERN SKILLS (1CR)

Students will work at their own pace in reviewing the parts of speech, elements of the sentence and basic sentence patterns. Emphasis will be on diagramming and combining sentences. The class will include individualized tutoring and practice in writing. By arrangement.

#### ENGL 108 COMPOSING SKILLS (1CR)

In this review of the various aspects of composition, students will examine creating, outlining and developing a variety of paragraph and essay forms. The class will include individualized tutoring and practice in writing. By arrangement.

#### ENGL 109 PROOFREADING SKILLS (1CR)

Students will learn to recognize and correct errors on exercise sheets and in their own writing. The class will include individualized tutoring and practice in writing. By arrangement.

#### ENGL 110 ENGLISH GRAMMAR REVIEW (1CR)

Students will take diagnostic tests to determine the level at which they should begin work. They will use programmed materials dealing with parts of speech, punctuation, capitalization, sentence structure, verb forms, modifiers, pronoun choices, sentence fragments and run-ons. By arrangement.

**ENGL 112**  
**RESEARCH SKILLS (1CR)**

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

**ENGL 115**  
**REVISION SKILLS (1CR)**

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

**ENGL 120**  
**WRITING IN THE DISCIPLINES (1CR)**

This course is designed to provide the student with a process for complementing the variety of written assignments typically assigned in classes other than composition. The student will practice writing a variety of short papers using a prescribed process for each assignment. The course is individualized and will include instructor feedback and models for each assignment. By arrangement.

**ENGL 121**  
**COMPOSITION I (3CR)**

*Prerequisite: ENGL 106 or appropriate placement test score*

This standard freshman English I course will concentrate on invention, paragraph development, essay format and an introduction to the research paper. Students will practice developing the form and content of clear, interesting compositions. 3 hrs./wk.

**ENGL 122**  
**COMPOSITION II (3CR)**

*Prerequisite: ENGL 121*

This standard freshman English II course will emphasize analysis, synthesis and evaluation through essays written in response to assigned readings. Related research projects will be assigned. 3 hrs./wk.

**ENGL 123**  
**TECHNICAL WRITING I (3CR)**

*Prerequisite: ENGL 121*

Students will write memos, letters, short reports, long reports, instructions and technical descriptions related to business and industry. 3 hrs./wk.

**ENGL 130**  
**INTRODUCTION TO LITERATURE (3CR)**

*Prerequisite: ENGL 121*

In this course, students will increase their understanding and appreciation of the literary genres of fiction, poetry and drama. Students will be introduced to representative works from various literary traditions and cultures, including numerous works from contemporary writers. 3 hrs. /wk.

**ENGL 210**  
**TECHNICAL WRITING II (3CR)**

*Prerequisite: ENGL 123*

Upon successful completion of this course, the student will be familiar with writing techniques appropriate for technology, industry and business. The student also will learn to create forms, plans, summaries, newsletter articles, press releases, memorandums, letters, and short and long reports. 3 hrs./wk.

**ENGL 222**  
**ADVANCED COMPOSITION (3CR)**

*Prerequisite: ENGL 122*

Students will write a broad range of expository pieces, including interview, informative and descriptive writing and analysis and critical writing. 3 hrs./wk.

**ENGL 223**  
**CREATIVE WRITING (3CR)**

*Prerequisite: ENGL 122*

Students will study and practice poetry and fiction with possibly some drama writing. Topics will include the process of writing poems, short stories and short plays or scripts. Marketing creative work will also be covered. 3 hrs./wk.

**ENGL 224**  
**CREATIVE WRITING WORKSHOP (3CR)**

*Prerequisite: ENGL 223*

Students with serious writing aspirations will get advanced practice in writing creatively. Advanced strategies for marketing will be covered, and students will regularly critique each other's work. 3 hrs./wk.

**ENGL 230**  
**INTRODUCTION TO FICTION (3CR)**

*Prerequisite: ENGL 122*

This introduction to fiction from different countries and eras will emphasize fictional techniques and themes in selected novels and short stories. Students will read, discuss and write about the assigned fiction. 3 hrs./wk.

**ENGL 231**  
**AMERICAN PROSE (3CR)**

*Prerequisite: ENGL 122*

Students will read complete works of selected American writers and be assigned related writing projects. The course will focus on important works of various writers and the relationship between their lives and times and their art. 3 hrs./wk.

**ENGL 232**  
**CHILDREN'S LITERATURE (3CR)**

*Prerequisite: ENGL 122*

Students will look at children's literature, both past and present. Topics will include children's needs, criteria for selecting books, types of children's literature, and the best authors and illustrators. 3 hrs./wk.

**ENGL 233**  
**THE DEAF IN LITERATURE (2CR)**

The portrayal and function of deaf characters in selected works will be examined. Students will read, discuss and write about the assigned selections. 2 hrs./wk.

**ENGL 235**  
**DRAMA AS LITERATURE (3CR)**

*Prerequisite: ENGL 122*

Beginning with the Greek dramatists and ending with the contemporary scene, students will read and analyze full-length plays and the comments of playwrights, directors, actors and critics. They will analyze drama from psychological, historical, philosophical and dramatic perspectives and write essays demonstrating their understanding of the works studied. Students will be required to attend selected area productions. 3 hrs./wk.

**ENGL 241**  
**BRITISH WRITERS (3CR)**

*Prerequisite: ENGL 122*

Students will read a variety of famous British writers and learn about their lives, times and works. Topics from selected writers will promote group discussion, and students will be assigned related writing projects. 3 hrs./wk.

**ENGL 243**  
**THE LITERATURE OF SCIENCE FICTION (3CR)**

*Prerequisite: ENGL 122*

The themes and myths of major science fiction writers will be presented, and major science fiction movies and short subjects will be reviewed. The class will include group presentations, simulations, guest speakers and related reading and writing assignments. 3 hrs./wk.

**ENGL 245**  
**WRITING LITERATURE FOR CHILDREN (3CR)**

*Prerequisite: ENGL 232*

This course is a continuation of Children's Literature, focusing primarily on writing and marketing literature for children. The course will cover proper research, technique and form, emphasizing the best methods to produce quality prose, poetry and drama for young readers. 3 hrs./wk. Spring.

**ENGL 250**  
**WORLD MASTERPIECES (3CR)**

*Prerequisite: ENGL 122*

Students will read works from selected influential Western writers. The course will focus on important works of various writers and trace their influence on later writers. Writing projects will be assigned. 3 hrs./wk.

**ENGL 254**  
**MASTERPIECES OF THE CINEMA (3CR)**

*Prerequisite: ENGL 122*

Major American and foreign films will be shown and discussed with video and film shorts added for variety and interest. The class will feature group presentations, written film critiques and related reading assignments. 3 hrs./wk.

**ENGL 256**  
**AMERICAN POETRY (3CR)**

*Prerequisite: ENGL 122*

This course is a study of the poetry written in America from colonial times until the present, with emphasis on the relationship between the poetry and the lives and cultural milieu of the poets. Students will participate in class discussions, and writing projects will be assigned. 3 hrs./wk.

## Fashion Merchandising

### FASH 121

#### FASHION FUNDAMENTALS (3CR)

Upon successful completion of this course, the student should be able to define appropriate fashion terminology and explain the structure of the industry, including the design process, production and marketing of the fashion product. 3 hrs./wk.

### FASH 123

#### APPAREL CONSTRUCTION I (4CR)

Upon successful completion of this course, the student should be able to apply clothing construction principles, techniques and skills in apparel construction. The class will use lecture, demonstration and hands-on experience to teach the skills needed to plan and construct four garments during this class. 2 hrs. lecture, 4 hrs. lab/wk.

### FASH 124

#### APPAREL CONSTRUCTION II (4CR)

*Prerequisite: FASH 123 or two years of high school apparel construction training or division administrator approval*

Upon successful completion of this course, the student should be able to apply intermediate apparel construction principles, techniques and skills in the production of various garments. This continuation of FASH 123 will focus on the planning and construction of an ensemble of intermediate complexity made from muslin fitting samples with emphasis on precise fitting alteration. 2 hrs. lecture, 4 hrs. lab/wk.

### FASH 125

#### VISUAL MERCHANDISING (3CR)

Upon successful completion of this course, the student should be able to explain and apply the principles of design in visual merchandising. In addition, the student should be able to identify and explain the use of mannequins and other forms, display fixtures and lighting systems; apply color theory; and present merchandise effectively in visual displays. The student should also be able to demonstrate the use of appropriate types of displays for in-store promotions. 3 hrs./wk.

### FASH 127

#### CAD: PATTERN DESIGN (4CR)

Upon successful completion of this course, the student should be able to apply the use of flat pattern methods in developing patterns for original apparel designs. Basic slopers and the CAD (computer-assisted design) Pattern Design System will be used to develop and manipulate patterns. The class will use lecture, demonstration and hands-on experience to teach skills needed in manual and com-

puter-assisted pattern design. The student will plan and create patterns in this class. 2 hrs. lecture, 4 hrs. lab/wk.

### FASH 128

#### CAD: PATTERN DESIGN II (4CR)

*Prerequisite: FASH 127*

Upon successful completion of this course, the student should be able to apply advanced methods of flat pattern design in developing patterns. This class is a continuation of FASH 127 CAD: Pattern Design. Lecture, demonstration and hands-on experience will be used to teach techniques needed in computer-assisted and manual advanced pattern design. Industry standards will be used for sloper manipulation. Each student will create advanced flat patterns in this class. 2 hrs. lecture, 4 hrs. lab/wk.

### FASH 130

#### FASHION ILLUSTRATION I (3CR)

Upon completion of this course, students should be able to create fashion illustrations for their portfolios. In addition, the student should be able to apply color, mood, detail and form using various media. 3 hrs./wk.

### FASH 132

#### MARKETING COMMUNICATIONS (3CR)

Upon successful completion of this course, the student should be able to explain advertising and promotion from an integrated marketing communications perspective that combines theory with planning, management and strategy. In addition, the student will be able to explain advertising, sales promotion, direct marketing and publicity/public relations and the need for integration of these promotional mix elements in an overall marketing communications program. 3 hrs./wk.

### FASH 135

#### IMAGE MANAGEMENT (1CR)

Upon successful completion of this course, the student should be able to conduct an extensive wardrobe inventory. In addition, the student should be able to apply principles of personal grooming, elements of design and fabric and accessory knowledge to the development of an individual professional wardrobe plan based on individual budget constraints. 1 hr./wk.

### FASH 140

#### GARMENT DESIGN I (3CR)

*Prerequisite: FASH 130*

Upon successful completion of this course, students should be able to translate garment ideas from color sketches (croquis); continue the design process through fabric selection and pattern drafting; figure yardage, notions and wholesale cost; and construct a finished garment. 6 hrs. lecture, lab/wk.

**FASH 143****APPAREL CONSTRUCTION III (4CR)**

*Prerequisite: FASH 124*

Upon successful completion of this course, the student should be able to apply advanced apparel construction principles, techniques and skills in the production of garments. This course is a continuation of FASH 124 Apparel Construction II. The class will use lecture, demonstration and hands-on experience as the students completes a minimum of two fitting muslins and a three-piece ensemble of advanced complexity during this class. 2 hrs. lecture, 4 hrs. lab/wk.

**FASH 150****TEXTILES (3CR)**

Upon successful completion of this course, the student should be able to differentiate fibers and textiles according to their characteristics and select fibers and textiles for specific applications. In addition, the student should be able to identify the properties and characteristics of natural and man-made fibers, construction methods and various finishing processes, including weaving, knitting, felting, printing and dyeing. 3 hrs./wk.

**FASH 220****CAD APPAREL DESIGN (3CR)**

Upon successful completion of this course, the student should be able to apply the concepts of relating clothing to the cultural, social, psychological, physiological and economic aspects and practices of chosen individuals and cultural groups. In addition, the student should be able to apply computer-aided design to create fashion silhouettes. 3 hrs./wk.

**FASH 224****HISTORY OF COSTUME (3CR)**

Upon successful completion of this course, the student should be able to identify the political, economic, technological and sociological factors that have influenced Western costume worn by women, men and children from ancient Egyptian times to the present. 3 hrs./wk.

**FASH 230****FASHION ILLUSTRATION II (3CR)**

*Prerequisite: FASH 130*

Upon successful completion of this course, the student should be able to produce refined fashion illustrations to enhance the portfolio. Fashion Illustration II is a continuation of Fashion Illustration I. Greater emphasis is placed on development of a personal illustration style and presentation of a professionally executed portfolio. 3 hrs./wk.

**FASH 231****MERCHANDISING PLANNING AND CONTROL (3CR)**

*Prerequisite: MATH 120*

Upon completion of the course, the student should be able to describe the management structure of retail merchandising operations, contrast merchandising functions among the various types of retail operations and explain the buying process and the financial operations of retail merchandising and the application of these principles in simulated case situations. 3 hrs./wk.

**FASH 242****CONSUMER PRODUCT EVALUATION (3CR)**

Upon successful completion of this course, the student should be able to evaluate a wide range of textile and nontextile products ranging from lingerie to china on the basis of specialized product knowledge. In addition, the student should be able to prepare research projects on selected products. 3 hrs./wk.

**FASH 268****FIELD STUDY: THE MARKET CENTER (3CR)**

*Prerequisite: FASH 121*

Upon successful completion of this course, the student should be able to identify and distinguish between national, regional and local retail market centers. In addition, the student should be able to explain the importance of market centers, analyze the marketing mix of selected retailers and describe uses of fashion auxiliary services. 3 hrs./wk.

**FASH 277****FASHION SEMINAR: CAREER OPTIONS (2CR)**

Upon successful completion of this course, the student should be able to define individual career goals after a thorough examination of five career areas within the fashion industry. In addition, the student should be able to explain strategies for success in the workplace. 2 hrs./wk.

**FASH 280****CAPSTONE: INDUSTRY TOPICS (3CR)**

*Prerequisites: FASH 283 and FASH 284*

*Corequisite: FASH 231*

Upon successful completion of this course, the student should be able to exhibit knowledge and work-based skill inherent to fashion retailing, wholesaling and manufacturing. The student will have opportunities to apply knowledge gained in prior courses in analyzing industry topics. This capstone course will review and evaluate competencies that are essential for employment in the fashion industry. 3 hrs. lecture/wk.

**FASH 283****FASHION INTERNSHIP I (1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

**FASH 284****FASHION INTERNSHIP II (1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

**FASH 285****FASHION INTERNSHIP III (1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

**FASH 286****FASHION INTERNSHIP IV (1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in the fashion industry. A minimum of 15 hours on-the-job training/wk.

**FASH 298****EUROPEAN FASHION EMPHASIS (3CR)**

Upon successful completion of this course, the student will be able to compare American and European retail merchandising, advertising and visual presentation. This travel-for-credit course includes visits to selected European cities.

**Fire Services Administration****FIRE 121****FUNDAMENTALS OF FIRE PREVENTION (3CR)**

This class covers organization and function of fire prevention, inspections, surveying and mapping, recognition of life and fire hazards, elimination of fire hazards and public relations. 3 hrs./wk.

**FIRE 125****BUILDING CONSTRUCTION FOR FIRE SERVICE (3CR)**

Classification of buildings by occupancy and type of construction is covered. Emphasis is on fire protection features, including building equipment, facilities, fire-resistant materials and high-rise considerations. 3 hrs./wk.

**FIRE 130****FIRE INVESTIGATION (3CR)**

This introductory course covers fire cause determination, excluding arson investigation (except as it relates to determining the cause of a fire). 3 hrs./wk.

**FIRE 132****ARSON INVESTIGATION (3CR)**

*Prerequisite: FIRE 130*

Arson investigation techniques and procedures are covered in this advanced class. Topics include evidence preservation, interviewing and courtroom procedures. 3 hrs./wk.

**FIRE 135****BUILDING AND FIRE CODES (3CR)**

This course entails application and interpretation of codes and ordinances, especially the Life Safety Codes used extensively in fire prevention. 3 hrs./wk.

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

This course covers extinguishing, detection and alarm systems and their operation. (Fire sprinkler and stand-pipe systems are covered in detail in a separate course.) 3 hrs./wk.

**FIRE 150****INTRODUCTION TO FIRE SCIENCE (3CR)**

This survey course covers career opportunities; history of fire protection; fire loss analysis; public, quasi-public and fire protection services; specific fire protection functions; and fire chemistry and physics. 3 hrs./wk.

**FIRE 159****FIRE SERVICE HYDRAULICS (4CR)**

Hydraulic principles and formulas are studied, including hydraulic experiments that emphasize fire service applications. 4 hrs./wk.

**FIRE 160****FIRE APPARATUS AND EQUIPMENT (3CR)**

Fire apparatus design, specifications, capabilities and use in emergencies are explored. 3 hrs./wk.

**FIRE 162****FIRE TACTICS AND STRATEGY (3CR)**

Fire control through manpower, equipment and extinguishing agents will be explored, including theoretical models and practical applications. 3 hrs./wk.

**FIRE 169****RESCUE TECHNIQUES (4CR)**

Advanced rescue techniques (rope, high angle, confined space, extrication) are covered, including practical simulations. 5 hrs./wk.

**FIRE 170****SPRINKLER AND STANDPIPE SYSTEMS (3CR)**

Types of sprinkler and standpipe systems used in fire protection and their operation will be demonstrated and discussed. 3 hrs./wk.

**FIRE 175****ESSENTIALS OF FIREFIGHTING (9CR)**

This course provides cognitive, psychomotor and affective instruction for those students seeking certification as a fire fighter in the state of Kansas. The class covers hazardous materials, fire department communications, fire ground operations (First Responder: operations level), rescue operations and prevention, preparedness and maintenance. Upon successful completion of the cognitive examinations and all psychomotor skills evaluations, students will be allowed to sit for the Kansas Fire Fighter II state certification examination, which is administered by the University of Kansas, Fire Service Training. 5 hrs. lecture, 7 hrs. lab/wk.

**FIRE 190****HAZARDOUS MATERIALS CHEMICAL BEHAVIOR (3CR)**

*Prerequisite: FIRE 145 or H.M. First Responder Certificate*

This course introduces properties and behavior of hazardous materials according to their chemical structures and constituents. Both inorganic and organic compounds will be studied, with specific attention to the hazards associated with particular functional groups and chemical classes. Principles of atomic and molecular structure, bonding, ionization and chemical nomenclature will be presented as they relate to the identification, containment and neutralization of hazardous chemicals in field settings. 3 hrs./wk.

**FIRE 220****FIRE ADMINISTRATION (3CR)**

Techniques and methods used in managing fire departments are explored, including budgeting processes, administrative functions and types of political systems that affect a fire department. 3 hrs./wk.

**FIRE 222****FIRE SCIENCE LAW (3CR)**

The law as it pertains to the fire service will be explained, along with tort law and business law. 3 hrs./wk.

**FIRE 224****INCIDENT COMMAND SYSTEMS (3CR)**

This is a course in basic incident command. Disaster control, disaster management, communications for disaster management and types of disasters are presented. 3 hrs./wk.

**FIRE 250****FIRE SERVICE****INSTRUCTIONAL METHODS (3CR)**

This course is designed to provide the instructional skills and knowledge necessary to develop, conduct and evaluate formal training programs in in-service and classroom formats. This course meets NFPA 1041 standards for Fire Service Instructor.

**FIRE 281****DIRECTED STUDIES FOR THE FIRE SERVICE (2CR)**

*Prerequisite: Program director approval*

Students will conduct research and study in any individual area of interest. The instructor and student will decide on a topic to be researched. The student will give the results of the research in a written report, reflecting the recognized form and style of writing. By arrangement.

## Foreign Language

### FL 116

#### ELEMENTARY LATIN I (3CR)

Students will have the opportunity to learn the basic vocabulary and structural patterns, or grammar, of Latin. Emphasis will be on fundamental grammar concepts, extensive word study for English vocabulary growth, and the lasting contributions Roman society made to Western civilization. 3 hrs./wk. Fall.

### FL 117

#### ELEMENTARY LATIN II (3CR)

*Prerequisite: FL 116 or one year of high school Latin*

This course will complete the presentation of basic Latin vocabulary and grammar. Fundamental grammar concepts, extensive word study for English vocabulary growth, and the lasting contributions of Roman society to Western civilization will be emphasized. 3 hrs./wk. Spring.

### FL 120

#### ELEMENTARY GERMAN I (5CR)

This course will present the sounds, vocabulary and basic structural patterns of German, focusing on the development of listening comprehension, speaking, reading and writing skills. Cultural material will be integrated into the course. 5 hrs./wk.

### FL 121

#### ELEMENTARY GERMAN II (5CR)

*Prerequisite: FL 120 or one year of high school German*

This course will continue the presentation of the vocabulary and basic structural patterns begun in Elementary German I with continued emphasis on the development of listening comprehension, speaking, reading and writing skills. 5 hrs./wk.

### FL 130

#### ELEMENTARY SPANISH I (5CR)

In this basic course, students will study Spanish grammar, conversation, composition and the culture of Spanish-speaking countries. 5 hrs./wk.

### FL 131

#### ELEMENTARY SPANISH II (5CR)

*Prerequisite: FL 130 or one year of high school Spanish*

This course will continue the presentation of the material introduced in Elementary Spanish I. Graded reading selections will be added as a basis for conversation and composition in discussion periods. 5 hrs./wk.

### FL 140

#### ELEMENTARY FRENCH I (5CR)

Areas covered in this basic course will include vocabulary building, grammar study, conversation and an introduction to French culture and civilization. The emphasis is on conversation. 5 hrs./wk.

### FL 141

#### ELEMENTARY FRENCH II (5CR)

*Prerequisite: FL 140 or one year of high school French*

This course continues the presentation of the material introduced in Elementary French I. Graded reading selections will be used as the basis for conversation. 5 hrs./wk.

### FL 150

#### ELEMENTARY RUSSIAN I (5CR)

In this course, students will study the sounds, vocabulary and basic structural patterns of Russian. The focus will be on listening comprehension, speaking, reading and writing skills. Cultural material will be included. 5 hrs./wk.

### FL 151

#### ELEMENTARY RUSSIAN II (5CR)

*Prerequisite: FL 150 or one year of high school Russian*

This course will complete the presentation begun in Elementary Russian I with further practice and development of listening comprehension, speaking, reading and writing skills. 5 hrs./wk.

### FL 160

#### ELEMENTARY ITALIAN I (5CR)

Students will be introduced to the sounds, vocabulary and basic structural patterns of Italian, with a primary focus on the development of listening comprehension and speaking, reading and writing skills. Integrated throughout the course will be an introduction to the culture of Italy. 5 hrs./wk.

### FL 161

#### ELEMENTARY ITALIAN II (5CR)

*Prerequisite: FL 160 or one year of high school Italian*

A continuation of the presentation of the vocabulary and basic structural patterns of Italian, this course will emphasize the development of listening comprehension, speaking, reading and writing skills. Cultural material also will be integrated into the course. 7 hrs./wk.

### FL 165

#### ELEMENTARY CHINESE I (5CR)

This course is an introduction to the sounds, vocabulary, grammar, usage, characters and reading of the Chinese language. The emphasis will be on developing basic conversational skills. Cultural materials will be included. 7 hrs./wk.

**FL 166****ELEMENTARY CHINESE II (5CR)**

*Prerequisite: FL 165 or one year of high school Chinese*

This course offers a continuation of Elementary Chinese I, emphasizing the sounds, vocabulary, grammar, usage, characters and reading of the Chinese language. The emphasis will be on developing more advanced conversational skills and cultural understanding. 7 hrs./wk.

**FL 170****ELEMENTARY JAPANESE I (5CR)**

This course is an introduction to the sounds, vocabulary, grammar, usage and reading of the Japanese language. The emphasis will be on developing basic conversational skills. Cultural materials will be included. 7 hrs./wk.

**FL 171****ELEMENTARY JAPANESE II (5CR)**

*Prerequisite: FL 170 or one year of high school Japanese*

A continuation of Elementary Japanese I, this course will emphasize the sounds, vocabulary, grammar, usage and reading of the Japanese language. The emphasis is on developing more advanced conversational skills and cultural understanding. 7 hrs./wk.

**FL 178****INTERMEDIATE RUSSIAN I (3CR)**

*Prerequisite: FL 151 or two years of high school Russian*

This course will emphasize vocabulary development and more advanced study of Russian grammar. It gives students practice in reading, listening comprehension, speaking and writing. 3 hrs./wk.

**FL 179****INTERMEDIATE RUSSIAN II (3CR)**

*Prerequisite: FL 178 or three years of high school Russian*

The emphasis will be on a study of the Russian language and culture that would prepare students to travel in a Russian-speaking country and engage in simple conversation with the citizens. 3 hrs./wk.

**FL 190****INTERMEDIATE JAPANESE I (3CR)**

*Prerequisite: FL 171 or two years of high school Japanese*

This course is a continuation of the study of Japanese language and culture, emphasizing the sounds, vocabulary, grammar, usage and reading of the Japanese language. The emphasis will be on developing further advanced conversational skills by increasing vocabulary and variety of sentence patterns. Cultural understanding will also be stressed. 3 hrs./wk.

**FL 191****INTERMEDIATE JAPANESE II (3CR)**

*Prerequisite: FL 190 or three years of high school Japanese*

This course is a continuation of the study of Japanese language and culture, emphasizing the sounds, vocabulary, grammar, usage and reading of the Japanese language. The emphasis will be on developing further advanced conversational skills by increasing vocabulary and variety of sentence patterns. Cultural understanding will also be stressed. 3 hrs./wk.

**FL 205****CONVERSATIONAL JAPANESE (2CR)**

*Prerequisite: FL 171 or two years of high school Japanese*

This course is designed to enhance the ability of students to express themselves orally in Japanese through vocabulary building and reiteration of essential grammatical structures. The vocabulary will stress everyday situations and current events. 2 hrs. lecture/wk.

**FL 220****INTERMEDIATE GERMAN I (3CR)**

*Prerequisite: FL 121 or two years of high school German*

This class will emphasize vocabulary building and grammar review primarily through extensive reading of German texts. There will be additional practice in listening comprehension, speaking and writing. 3 hrs./wk.

**FL 221****INTERMEDIATE GERMAN II (3CR)**

*Prerequisite: FL 220 or three years of high school German*

This class will further expand the mastery of German vocabulary and structure through extensive reading of more advanced texts with additional practice in listening comprehension, speaking and writing. 3 hrs./wk.

**FL 223****CONVERSATIONAL GERMAN (2CR)**

*Prerequisite: FL 121 or two years of high school German*

This course is a continuation of the presentation of German vocabulary and structural patterns, with an emphasis on speaking and writing skills to build a spontaneous speaking ability and writing fluency. Topics concerning everyday life situations and current events will be discussed. 2 hrs./wk.

**FL 230****INTERMEDIATE SPANISH I (3CR)**

*Prerequisite: FL 131 or two years of high school Spanish*

This is a reading course designed to build vocabulary, increase understanding of Hispanic culture and increase speaking fluency. The course will include composition and conversation. 3 hrs./wk.

**FL 231****INTERMEDIATE SPANISH II (3CR)**

*Prerequisite: FL 230 or three years of high school Spanish*

Extensive study of Hispanic literature will be included in this class along with advanced reading and grammar review. 3 hrs./wk.

**FL 234****CONVERSATIONAL SPANISH (2CR)**

*Prerequisite: FL 131*

This course is designed to enhance the students' ability to express themselves orally in Spanish through vocabulary building and reiteration of essential grammatical structures. The vocabulary will stress everyday life situations and current events. 2 hrs./wk.

**FL 240****INTERMEDIATE FRENCH I (3CR)**

*Prerequisite: FL 141 or two years of high school French*

Students will work on building vocabulary and comprehension and increasing speaking ability. The emphasis will be on conversation and composition. A grammar review of Elementary French I and II also will be included. 3 hrs./wk.

**FL 241****INTERMEDIATE FRENCH II (3CR)**

*Prerequisite: FL 240 or three years of high school French*

Students will study newspaper articles from Match, Elle, and L'Express in this advanced reading course. A complete review of grammar, conversation and composition will be included. 3 hrs./wk.

**FL 243****CONVERSATIONAL FRENCH (2CR)**

*Prerequisite: FL 141 or two years of high school French*

This course is designed to build spontaneous speaking ability. Everyday situations and current events will be discussed in class. 2 hrs./wk.

**FL 246****CONVERSATIONAL RUSSIAN (2CR)**

*Prerequisite: FL 151*

This course is designed to enhance students' ability to express themselves orally in Russian through vocabulary building and reiteration of essential grammatical structures. The vocabulary will stress everyday situations and current events. 2 hrs./wk.

**FL 298****FRENCH CULTURE AND CIVILIZATION (3CR)**

This travel-for-credit course will take students to France, where they will experience French culture as they visit Paris and most of the sites and places of historical significance in France. Summer.

**Geoscience**

(Also see Physical Science, page 233.)

**GEOS 130****GENERAL GEOLOGY (5CR)**

This course will provide a survey of the earth and the processes that have shaped it. Lecture units will cover the solid earth, the atmosphere, the hydrosphere, resources and environmental geology. Laboratory units will include identification of rocks and minerals and reading and interpretation of topographic maps.

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

**GEOS 132****HISTORICAL GEOLOGY (5CR)**

*Prerequisite: GEOS 130*

This class will provide a survey of the geological development of North America and the processes, environments and tectonics that occurred during its formation. Topics will include the interrelationships of various rock strata, stratigraphic-geologic time, correlation and interpretation of geologic maps, and identification of fossils. 4 hrs. lecture, 3 hrs. lab/wk.

**GEOS 140****PHYSICAL GEOGRAPHY (3CR)**

This course is a survey of the physical and environmental topics of geography including the methods used to study them. The Earth, its atmosphere, hydrosphere and surface features will constitute the major units of study. Some additional topics will include mapping, weather, climate, weathering, soils, rivers, deserts, mountains, topography and landforms. 3 hrs./wk.

**GEOS 141****PHYSICAL GEOGRAPHY LAB (2CR)**

*Corequisite: GEOS 140 or the equivalent*

Students in this course will broaden their knowledge of geography through identification of earth materials and the reading and interpretation of various maps and remote sensing photographs. 4 hrs. lab/wk.

**GEOS 150****INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (3CR)**

Geographic information systems (GIS) can be divided into four major areas: data collection, database structure and management, data analysis and data display. Students will explore the basic principles associated with these four areas and will examine how these principles can be used for problem solving. 2 hrs. lecture, 3 hrs. lab/wk.

**GEOS 250**  
**APPLICATIONS OF GEOGRAPHIC INFORMATION SYSTEMS (3CR)**

*Prerequisite: GEOS 150*

*Corequisite: MATH 171 or MATH 173*

This course will introduce spatial analysis using vector GIS to explore the technical aspects in the planning, implementation, operation and management of a GIS. The focus will be on using a GIS to prepare case study analysis and experimental projects including such topics as resource management, urban planning and demographic applications. The student will use GIS techniques to design, resolve, complete and present the application issues involving geographic information with diverse disciplines. 2 hrs. lecture, 3 hrs. lab/wk.

**GEOS 295**  
**OZARK GEOLOGY (3CR)**

This course will survey the geology of the Ozark Mountain region through field and classroom study. Field observations will be made at numerous locations during two six-day field trips to study the stratigraphy, structure, hydrology, mineralogy, landforms and economic geology of the region. Five three-hour pretrip meetings will provide students with the geologic knowledge necessary to make field observations.

**GEOS 297**  
**GEOLOGY OF THE HAWAIIAN ISLANDS (3CR)**

This course will survey the geology and natural history of the Hawaiian Islands through field and classroom study. Field observations of concepts presented in five three-hour pretrip seminars will be made during a two-week trip to the Hawaiian Islands. Topics to be studied and observed will include volcanism, oceanography, meteorology, sedimentology, hydrology and the structure of the Hawaiian Islands as well as important natural history sites.

## Grounds and Turf Management

**KAGB 101**  
**GENERAL BIOLOGY (5CR)**

In this course, students will apply biological principles to selected groups of plants and animals. 7 hrs. lecture, 4 hrs. lab/wk.

**KAGB 106**  
**LANDSCAPE DESIGN AND MAINTENANCE (2CR)**

This course examines the principles of planning, producing, setting out and maintaining trees, vines, groundcovers, perennials, turf and annuals. 3 hrs. lecture, 2 hrs. lab/wk.

**KAGB 115**  
**SOIL FERTILITY AND FERTILIZERS (3CR)**

In this course, students will study different types of fertilizers for soils and crops. The components, formulation and application of fertilizers will be examined. 3 hrs./wk.

**KAGB 129**  
**DECIDUOUS TREES AND SHRUBS (3CR)**

In this course, students will learn to identify trees and shrubs. They will also explore methods of growing trees and shrubs and their uses as ornamental plants. 4 hrs. lecture, 2 hrs. lab/wk.

**KAGB 145**  
**IRRIGATION AND INSTALLATION (3CR)**

In this course, students will study the design, operations and maintenance of modern golf courses and landscape facilities, including water requirements, supply and distribution. 3 hrs./wk.

**KAGB 200**  
**OCCUPATIONAL INTERNSHIP (3CR)**

In this course, student will get on-the-job training in grounds and turf management. 15 hrs./wk.

**KAGB 202**  
**ECOLOGY (5CR)**

*Prerequisite: KAGB 101, BIOL 125 or BIOL 127 with a minimum grade of "C"*

This course will provide a study of forest, aquatic and grassland ecological systems. Various specimens from each of the three habitats will be collected and classified and their ecological relationships discussed. 7 hrs. lecture, 4 hours lab/wk.

**KAGB 206**  
**ADVANCED LANDSCAPE DESIGN AND MAINTENANCE (2CR)**

*Prerequisite: KAGB 106*

In this course, students will explore planning and landscape design and the installation and maintenance of various plants. The commercial process of bidding and contracting will also be examined. 3 hrs. lecture, 2 hrs. lab/wk.

## Health Information Technology

### **KMRT 151 MEDICAL TERMINOLOGY FOR MEDICAL RECORDS (3CR)**

This course is a study of the professional language of medicine. Medical terms will be analyzed by learning word roots and combining forms. Disease processes and diagnostic and operative procedures will be studied as they apply to each system of the body. Selected medical specialties also will be presented. 3 hrs./wk.

### **KMRT 160 INTRODUCTION TO THE MEDICAL RECORD PROFESSION (2CR)**

*Prerequisite: Admission to the Health Information Technology program*

This course will offer an orientation to the medical record profession and the supporting professional organization. The history and evolution of health care delivery, health care facilities and practitioners will be examined. Supervisory functions of the medical record department also will be presented. 2 hrs./wk.

### **KMRT 161 HEALTH RECORD SYSTEMS, ANALYSIS AND CONTROL (3.5CR)**

This course will be an in-depth study of the content, storage, retrieval, control and retention of medical records with special emphasis on hospital records. Forms design and control, microfilming and computer applications for medical record departments also will be included. 3 hrs./wk.

### **KMRT 162 HEALTH CARE STATISTICS (3CR)**

*Prerequisite: KMRT 161 or approval of PVCC*

This course will cover vital and health statistics, their uses and values. Abstraction and analysis of data from medical records and collection from other sources will be studied as will the methods of presenting the data. 3 hrs./wk.

### **KMRT 163 CLASSIFICATION SYSTEMS, NOMENCLATURES, INDEXES AND REGISTERS I (3CR)**

*Prerequisites: KMRT 200*

This course is a study of nomenclatures and classification systems used for coding and indexing diagnoses and procedures. 3 hrs./wk.

### **KMRT 164 QUALITY MANAGEMENT (3CR)**

*Prerequisite: KMRT 169 or approval of the program coordinator*

Quality assurance requirements of regulatory agencies will be emphasized as will methodology in assessing quality of care. 3 hrs./wk.

### **KMRT 166 DIRECTED PRACTICE I (2.5CR)**

*Prerequisites: KMRT 161 and BIOL 144*

This course will offer a supervised learning experience in a medical record department. A one-hour seminar will be included for the supervised discussion of directed practices experiences. 5 hrs./wk.

### **KMRT 167 DIRECTED PRACTICE II (2CR)**

*Prerequisite: KMRT 166*

This course will offer a supervised learning experience in a medical record department. Students will gain experience in a variety of procedures including coding and abstracting health information, medical transcription and release of information. A one-hour seminar will be included for the supervised discussion of directed practices experiences. 5 hrs. lab/wk.

### **KMRT 168 DIRECTED PRACTICE III (2CR)**

*Prerequisite: KMRT 167*

This course will provide supervised learning experiences in the medical record department of a specialized health care facility. A one-hour seminar will be included for the supervised discussion of directed practices experiences. 4 hrs./wk.

### **KMRT 169 LEGAL ASPECTS OF MEDICAL RECORDS (2CR)**

*Prerequisite: KMRT 161 or approval of the program coordinator*

This course is a study of the principles of the legal system applied to the field of health care. Confidentiality of the medical record, informed consent, the medical record as a legal document, release of clinical information, response to subpoena and testimony will be studied. 2 hrs./wk.

### **KMRT 175 SPECIALIZED HEALTH RECORD SYSTEMS (2CR)**

*Prerequisite: KMRT 164 or approval of the program coordinator*

This course will offer an overview of specialized health care systems with an emphasis on record maintenance, requirements of accrediting and regulating agencies and specialized health information registers. 2 hrs./wk.

**KMRT 180****CLASSIFICATION SYSTEMS, NOMENCLATURES, INDEXES AND REGISTERS II (3CR)**

*Prerequisite:* KMRT 163 or approval of the instructor

This course covers nomenclatures and classification systems for coding and indexing diagnoses and procedures. Coding systems for specialized health care facilities is also covered. 3 hrs./wk.

**KMRT 184****INTRODUCTION TO MEDICAL TRANSCRIPTION (3CR)**

*Prerequisite:* KMRT 151 or approval of the instructor

In this course, students will be introduced to the transcription of medical record reports using correct terminology, punctuation and format. 3 hrs. lab/wk.

**KMRT 200****INTRODUCTION TO CLASSIFICATION SYSTEMS (1CR)**

*Prerequisites:* BIOL 144 and KMRT 151

This course examines classification systems used to organize clinical data in health care. The ICD-9-CM classification system will be introduced. 1 hr./wk.

**KMRT 210****CLASSIFICATION SYSTEMS AND NOMENCLATURES FOR AMBULATORY CARE (3CR)**

*Prerequisites:* BIOL 137 and KMRT 200

This course examines outpatient coding, classification and payment systems and the assignment of CPT-4 codes to procedures and services. Also included is an examination of the role of the health information technologist in ambulatory coding and billing. 3 hrs./wk.

## Health Occupations

**AVHO 102****CERTIFIED NURSE AIDE (96 CONTACT HOURS)**

This course provides skill instruction for basic care of clients in long-term and acute-care facilities. Instruction includes daily hygiene, bedside care, vital sign measurement, positioning and safe transfer of clients. Upon successful completion, the student will be scheduled to take the Kansas CNA examination.

**AVHO 104****CERTIFIED MEDICATION AIDE (80 HOURS OF INSTRUCTION)**

*Prerequisite:* Proof of Kansas CNA certification

This course provides instruction in knowledge of commonly prescribed medications, classifications, side effects and techniques of administration. The Kansas CMA examination is administered to successful completers.

**AVHO 106****HOME HEALTH AIDE (21.5 CONTACT HOURS)**

*Prerequisite:* Proof of Kansas CNA certification

This course provides skill instruction in nutritional planning, task modification, emotional support and personal services to clients needing health care assistance at home. Successful completers will be scheduled to take the Kansas HHA certification examination.

**AVHO 108****CERTIFIED MEDICATION AIDE UPDATE (10 CONTACT HOURS)**

*Prerequisite:* Proof of Kansas CMA certification

This course meets the continuing education requirements for licensed Certified Medication Aides. The course includes review of commonly used drugs and their interactions with foods and other drugs. Also included are discussion of legal implications and regulations related to administration and record keeping, biological effects of medications on the elderly and a review of basic safety principles.

**AVHO 115****I.V. THERAPY (48 CONTACT HOURS)**

*Prerequisite:* One year of experience as a licensed practical nurse

This course provides review of basic physiology of the circulatory system and instruction in principles of site selection for veins appropriate for I.V. therapy. This course meets the Kansas requirements for LPNs seeking certification in I.V. therapy.

## Health, Physical Education and Recreation

**HPER 100****BASKETBALL (BEGINNING) (1CR)**

The fundamentals of basketball will be introduced as well as strategies necessary for team play. 2 hrs./wk.

**HPER 101****BASKETBALL (INTERMEDIATE) (1CR)**

*Prerequisite:* HPER 100

In this continuation of Basketball (Beginning), students will work on advanced skills and strategies. 2 hrs./wk.

**HPER 103****TOUCH/FLAG FOOTBALL (1CR)**

The fundamentals of recreational football will be introduced as well as strategies necessary for team play. 2 hrs./wk.

**HPER 105****BOWLING (BEGINNING) (1CR)**

The fundamentals of bowling will be introduced as well as the history of the sport and selection, care and proper use of equipment. 2 hrs./wk.

**HPER 107****BOWLING (INTERMEDIATE) (1CR)**

*Prerequisite: HPER 105*

In this continuation of Bowling (Beginning), students will work on advanced skills of league bowling. 2 hrs./wk.

**HPER 110****RACQUETBALL (BEGINNING) (1CR)**

The fundamentals of racquetball will be introduced as well as strategies necessary for individual participation. 2 hrs./wk.

**HPER 112****RACQUETBALL (INTERMEDIATE) (1CR)**

*Prerequisite: HPER 110*

In this continuation of Racquetball (Beginning), students will work on advanced skills and strategies. 2 hrs./wk.

**HPER 115****SOCCER (1CR)**

The fundamentals of soccer will be introduced as well as strategies necessary for team play. 2 hrs./wk.

**HPER 117****POWER VOLLEYBALL (BEGINNING) (1CR)**

The fundamentals of volleyball will be introduced as well as strategies necessary for team play. 2 hrs./wk.

**HPER 118****POWER VOLLEYBALL (INTERMEDIATE) (1CR)**

*Prerequisite: HPER 117*

In this continuation of Power Volleyball (Beginning), students will work on advanced skills and strategies. 2 hrs./wk.

**HPER 130****RUNNING AWARENESS AND EXERCISE (1CR)**

Cardiovascular fitness can be improved in this course. Topics will include the proper mechanics of running and training, exercise benefits, fitness programs, warm-ups and cool-downs. 2 hrs./wk.

**HPER 134****WEIGHT TRAINING (BEGINNING) (1CR)**

Muscular strength and endurance will be developed in this class. A directed workout program will be implemented, and the muscular system and basic terminology will be addressed. 2 hrs./wk.

**HPER 135****WEIGHT TRAINING (INTERMEDIATE) (1CR)**

*Prerequisite: HPER 134*

This is a continuation and expansion of HPER 134, Weight Training (Beginning). Individual workout programs will be designed, and basic physiology of muscular activity will be addressed. 2 hrs./wk.

**HPER 137****TENNIS (BEGINNING) (1CR)**

The fundamentals of tennis will be introduced as well as strategies necessary for individual participation. 2 hrs./wk.

**HPER 138****TENNIS (INTERMEDIATE) (1CR)**

*Prerequisite: HPER 137*

In this continuation of Tennis (Beginning), students will work on advanced skills and strategies. 2 hrs./wk.

**HPER 140****MODERN DANCE (BEGINNING) (1CR)**

This is a planned, progressive fitness program designed to improve muscle tone, body contour and flexibility through modern dance. 2 hrs./wk.

**HPER 142****MODERN DANCE (INTERMEDIATE) (1CR)**

*Prerequisite: HPER 140*

In this continuation of Modern Dance (Beginning), students will concentrate on longer and more difficult dance combinations as they work on muscular control and strength. 2 hrs./wk.

**HPER 150****AEROBICS (BEGINNING) (1CR)**

Motor skills, jogging and dance steps are combined in this exercise program designed to improve muscle tone and cardiovascular fitness. 2 hrs./wk.

**HPER 152****AEROBICS (INTERMEDIATE) (1CR)**

*Prerequisite: HPER 150*

In this continuation of Aerobics (Beginning), students will be performing at a faster pace for a longer period of time. 2 hrs./wk.

**HPER 155****BALLET (BEGINNING) (1CR)**

The fundamentals of ballet will be introduced as well as terminology and skills. 2 hrs./wk.

**HPER 157**  
**BALLET (INTERMEDIATE) (1CR)**

*Prerequisite: HPER 155*

In this continuation of Ballet (Beginning), students will work on advanced skills, terminology and participation. 2 hrs./wk.

**HPER 158**  
**JAZZ DANCE (1CR)**

This course is an introduction to the concepts and motor skills involved in jazz dancing. Basic body position will be introduced, as well as kinetic awareness, movement combinations, isolations, polycentrics, jazz elements, proper technique, rhythm, various styles, terminology, history of jazz, improvisation and choreography. 2 hrs./wk.

**HPER 159**  
**INTERMEDIATE JAZZ DANCE (1CR)**

*Prerequisite: HPER 158 or equivalent*

This course is a continuation of HPER 158 Jazz Dance. Students will be required to assimilate and execute more difficult isolated dance moves as well as utilize the basic skills acquired in the beginning course to perform complex dance sequences to a variety of music. 2 hrs./wk.

**HPER 162**  
**TEACHING ELEMENTARY DANCE (2CR)**

Upon completion of this course, students will be able to organize and develop a dance program within a primary level physical education curriculum. Class formation, body position, kinetic awareness, count sequences and movement combinations are some of the topics covered. 3 hrs./wk.

**HPER 163**  
**BALLROOM DANCE (BEGINNING) (1CR)**

This is an introduction to ballroom dance with emphasis on basic patterns and fundamental steps of the waltz, fox trot, swing, polka and cha-cha. Common rules of dance courtesy and a brief overview of ballroom dance history will be included. Music or dance background is not necessary. 2 hrs./wk.

**HPER 165**  
**KARATE I (1CR)**

The fundamentals of karate will be introduced as well as its history, basic punches, blocks, kicks and self-defense techniques. 2 hrs./wk.

**HPER 166**  
**KARATE II (1CR)**

*Prerequisite: HPER 165*

In this continuation of Karate I, students will perform advanced skills, combinations and defense techniques. 2 hrs./wk.

**HPER 167**  
**KARATE III (1CR)**

*Prerequisite: HPER 166*

In this continuation and expansion of Karate II, students will have the opportunity to achieve higher levels of proficiency. 2 hrs./wk.

**HPER 168**  
**KARATE IV (1CR)**

*Prerequisite: HPER 167 (Beginning Japanese is a suggested prerequisite)*

In this continuation and expansion of Karate III, students will have the opportunity to achieve the advanced level of self-defense application. 2 hrs./wk.

**HPER 172**  
**TRACK AND FIELD (BEGINNING) (1CR)**

The fundamentals of track and field activities will be introduced as well as techniques and strategies necessary for participation in each event. 2 hrs./wk.

**HPER 174**  
**COACHING AND OFFICIATING  
OF TRACK AND FIELD (2CR)**

Students will have the opportunity to learn the fundamentals of coaching and officiating track and field events. Upon successful completion of the course, students will be prepared for USATF Level 1 certification. 2 hrs./wk.

**HPER 175**  
**FENCING (1CR)**

The fundamentals of fencing will be introduced as well as strategies necessary for individual participation. 2 hrs./wk.

**HPER 182**  
**SWIMMING (BEGINNING) (1CR)**

The fundamentals of swimming will be introduced for students who have had little or no previous swimming experience. Students will practice beginning swimming strokes and learn basic safety skills. 1 hr./wk.

**HPER 183****SWIMMING (INTERMEDIATE) (1CR)**

*Prerequisite: HPER 182 or the equivalent*

In this continuation of Swimming (Beginning), students will work on advanced skills and improve endurance in swimming. Upon successful completion of this course, the student will be able to swim continuously using a variety of strokes. 1hr./wk.

**HPER 185****ARCHERY (1CR)**

The fundamentals of archery will be introduced as well as the history, selection and care of equipment necessary for this sport. 2 hrs./wk.

**HPER 190****GOLF (1CR)**

The fundamentals of golf will be introduced as well as the history, selection and care of equipment and courtesies of the game necessary for individual participation. 2 hrs./wk.

**HPER 192****WELLNESS FOR LIFE (1CR)**

This course introduces students to the theory and principles upon which the concepts of lifetime fitness and wellness are based. Students will examine the relationship that exists between wellness and lifestyle behaviors. Individual self-assessments will be used to establish current health and fitness levels and identify behaviors that are detrimental to health and well-being. Personal action plans will be developed and implemented to enhance existing levels of fitness, improve nutrition and eating patterns, manage stress, control body composition and reduce risks associated with the major lifetime-related diseases. 1 hr. lecture/wk.

**HPER 194****SPORTS CONDITIONING (BEGINNING) (1CR)**

This class will include general physical preparation, sport fitness plyometrics, agility drills and sports-related specific conditioning. The students will learn the principles of a year-round conditioning program through participation. 2 hrs./wk.

**HPER 197****SPORTS CONDITIONING (INTERMEDIATE) (1CR)**

*Prerequisite: HPER 194*

In this continuation of Sports Conditioning (Beginning), students will work on advancing their level of exercise performance. 2 hrs. lecture/wk.

**HPER 200****FIRST AID/CPR (2CR)**

This class will introduce the students to first aid care in emergencies. Upon successful completion of this course, certification in responding to emergencies and cardiopulmonary resuscitation may be earned. 2 hrs./wk.

**HPER 202****PERSONAL AND COMMUNITY HEALTH (3CR)**

Students will discuss the maintenance of good health and wellness. Discussion topics will include exercise and fitness, drug abuse, emotional health, proper nutrition, alcohol, tobacco, chronic and communicable disease, human sexuality and consumer health. The relationship between the individual and community health will be emphasized. 3 hrs./wk.

**HPER 204****CARE AND PREVENTION OF ATHLETIC INJURY (3CR)**

*Corequisite: HPER 200 or BIOL 140*

This introduction to athletic training techniques is for student athletic trainers and coaches and athletes at all levels. The course will cover prevention of sports injuries, rehabilitation and taping techniques. 3 hrs./wk.

**HPER 205****INDIVIDUAL LIFETIME SPORTS (2CR)**

The fundamentals of badminton, bowling, golf, racquetball and tennis will be introduced as well as the history and strategies necessary for individual participation in each of these lifetime sports. 3 hrs./wk. Fall.

**HPER 208****PHYSIOLOGY OF LIFETIME FITNESS (3CR)**

In this introduction to the physiological approach to fitness and health, the physiology of aerobic exercise, muscular exercise and exercise metabolism will be studied with an emphasis on preparing students to successfully prescribe individual exercise programs. 3 hrs./wk. Fall.

**HPER 217****COACHING AND OFFICIATING OF BASKETBALL (2CR)**

With an emphasis on the rules governing basketball and the mechanics of officiating, students will have the opportunity to learn how to organize and plan daily practice sessions. 2 hrs./wk. Fall.

**HPER 220****SPORTS OFFICIATING (3CR)**

The rules and practical applications of sports officiating for baseball, basketball, football, softball and volleyball will be covered. 3 hrs./wk.

**HPER 224**  
**OUTDOOR RECREATION (3CR)**

This course is for the outdoor enthusiasts, conservationists and those interested in the welfare and use of our outdoor environment. The history, development and activities of outdoor recreation will be explored. The course will include weekend outdoor field trips. 3 hrs./wk.

**HPER 240**  
**LIFETIME FITNESS I (1CR)**

This course is designed to provide an effective exercise circuit system to help the student develop overall muscle tone and cardiovascular conditioning. Handouts emphasizing the value of developing a total lifetime fitness attitude and optional lectures are available to enhance the student's knowledge of the benefits of a lifetime fitness program. This course requires an initial orientation/assessment. After the assessment, the class becomes an open lab format by arrangement. 2 hrs./wk.

**HPER 241**  
**LIFETIME FITNESS II (1CR)**

*Prerequisite: HPER 240*

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

**HPER 242**  
**LIFETIME FITNESS III (1CR)**

*Prerequisite: HPER 241*

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

**HPER 243**  
**LIFETIME FITNESS IV (1CR)**

*Prerequisite: HPER 242*

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

**HPER 245**  
**ELEMENTARY PHYSICAL EDUCATION (3CR)**

This course is designed to meet the needs of students who wish to become teachers of physical education at the elementary level. This course will provide both physical education majors and elementary education majors the knowledge and background to plan, organize, direct and instruct an elementary physical education class. The course will include observation and teaching. 3 hrs./wk. Spring.

**HPER 255**  
**INTRODUCTION TO PHYSICAL EDUCATION (3CR)**

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

## Hearing Impaired

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

Students will work on basic skills in written communication including sentence structure and the system of language, its characteristics and functions. Vocabulary and the effect of words will be emphasized. 5 hrs./wk.

**HRIM 101**  
**BASIC ENGLISH FOR HIP II (3CR)**

*Prerequisite: HRIM 100*

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

**HRIM 102**  
**BASIC ENGLISH FOR HIP III (3CR)**

*Prerequisite: HRIM 101*

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

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

This class teaches the daily living skills that students need to become part of the mainstream in college, including study habits, money management and employer-employee relationships. Also included is an introduction to college facilities and support services, career exploration and clarification of personal values. 3 hrs./wk.

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

The hearing-impaired student can work on reading skills in these small group sessions. The course will emphasize reading comprehension and vocabulary development through selected readings, current affairs readings, discussion and vocabulary building. 3 hrs./wk.

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

*Prerequisite: HRIM 110*

The hearing-impaired student can continue to develop reading skills in these group sessions. Emphasis will be on reading comprehension and vocabulary development through selected readings, Line 21 decoder, discussion and vocabulary building. 3 hrs./wk.

**HRIM 121****BASIC MANUAL COMMUNICATIONS (3CR)**

In this course on Basic American Sign Language and Pidgin Signed English, students will work on developing visual perception, body language skills and basic ASL/PSE communication skills. 3 hrs./wk.

**HRIM 123****INTERMEDIATE MANUAL COMMUNICATIONS (3CR)**

*Prerequisite: HRIM 121*

This continued study of American Sign Language and Pidgin Signed English will emphasize signed vocabulary in context, body and facial grammatical markers, and facial expressions. 3 hrs./wk.

## Heating, Ventilation and Air Conditioning Technology

**HVAC 108****HVAC TECHNICAL SERVICE I (2CR)**

Upon successful completion of this course, the student should be able to identify refrigeration and heating, electric diagram symbols, three-phase wye and Delta, transformer phasing, Ohms Law, series-parallel circuits, voltage imbalance, compressors and compressor failures. Also included will be gas furnace controls, capacity control condensers and evaporators, aluminum coil repair, properties of gas, metering devices, gas combustion, gas burners, ventilation and combustion air. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs./wk.

**HVAC 121****BASIC PRINCIPLES OF HVAC (4CR)**

Upon successful completion of this course, the student should be able to identify the function of the basic components of an air conditioning system. Topics will include heat laws, refrigerants, oils and refrigeration cycles of residential and light commercial systems. In the lab, students will design, assemble and operate a working refrigeration system. Competencies will include brazing, wiring, evacuating and charging a system. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

**HVAC 123****ELECTROMECHANICAL SYSTEMS (4CR)**

Upon successful completion of this course, the student should be able to identify electrical components and their relationships to the various repair and trouble-shooting techniques. The materials in this course will prove useful to service technicians whose background in electricity is limited. The course includes material from basic electrical theory to troubleshooting complex electrical circuits. This course will provide practice in application of electrical theory as well as the interconnection of components of air conditioning and refrigeration systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

**HVAC 124****EQUIPMENT SELECTION AND DUCT DESIGN (4CR)**

*Prerequisites: HVAC 121*

Upon successful completion of this course, the student should be able to identify techniques and procedures used in the residential construction industry to determine proper sizing of HVAC equipment and ducts to meet the requirements for a high-quality, comfortable climate in terms of heating, cooling, humidifying, dehumidifying, ventilation and air cleaning or filtering. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

**HVAC 125****ENERGY ALTERNATIVES (2CR)**

Upon successful completion of this course, the student should be able to identify diverse methods of alternate energy production. Some of the technologies that will be discussed are wind energy, photoelectric energy, nuclear energy, hydroelectric energy, biomass, alternate fuel vehicles and others. Students will understand the advantages of using various alternate energy technologies, the impact or byproducts of each and the problems that might be encountered. Some student research will be included in the context of the course. Emphasis will be on the most promising or effective alternate energy technologies available. 2 hrs. lecture/wk.

**HVAC 126****RESIDENTIAL HVAC SYSTEMS AND SERVICE (4CR)**

*Prerequisites: HVAC 121 and HVAC 123*

Upon successful completion of this course, the student should be able to identify the major components and accessories and their relation to the functions of the total heating and cooling systems. Topics covered will be electric, fossil fuel, heat pumps and central air condi-

tioning systems in the residential market. The emphasis of this course will be practical instruction in procedures and techniques for the installation, maintenance and repair of these systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

#### **HVAC 143**

##### **READING BLUEPRINTS AND LADDER DIAGRAMS (2CR)**

Upon successful completion of this course, the student should be able to identify all types of industrial plant blueprints. Included will be discussion of machine parts and drawings, as well as hydraulic, pneumatic, piping and plumbing, electrical, air conditioning and refrigeration drawings. Sketching used in industrial plants will be covered. A portion of the course will cover the types and uses of ladder logic and its various components such as input, output and diagrams. The structure, symbols and terminology of ladder logic diagrams will be introduced. Logic or decision-making functions will be presented along with practice in creating ladder logic diagrams. 2 hrs./wk.

#### **HVAC 145**

##### **SERVICING HVAC EQUIPMENT (2CR)**

*Prerequisites: Approval of the Burlington Northern Santa Fe training director and the JCCC division administrator*

Upon successful completion of this course, the student should be able to identify basic components and know the basic fundamentals of the refrigeration and heating cycle. The student should be able to recognize correct air conditioning service and maintenance procedures. 1.5 hrs. lecture, 1 hr. lab/wk.

#### **HVAC 150**

##### **REFRIGERANT MANAGEMENT AND CERTIFICATION (1CR)**

Upon successful completion of this course, the student should be able to properly, efficiently and responsibly handle refrigerants as set forth in the Clean Air Act of 1990 and pass the EPA examination. This course covers recovery, recycling and reclaiming of chlorofluorocarbons and is designed to provide the most current information on the Clean Air Act and amendments thereto. 1 hr. lecture/wk.

#### **HVAC 167**

##### **SHEET METAL LAYOUT AND FABRICATION (3CR)**

Upon successful completion of this course, the student should be able to identify the components, equipment and operation for sheet metal layout and fabrication. Practice problems are included at the end of each unit in order to provide the student with an opportunity to apply the methods attained by sheet metal layout. Shop facilities are available. The patterns will be fabricated

and joined into a line of fittings. This gives the most complete test of pattern accuracy and also provides the experience needed by a competent layout person. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

#### **HVAC 205**

##### **PNEUMATIC CONTROL SYSTEMS (2CR)**

*Prerequisites: HVAC 123*

Upon successful completion of this course, the student should be able to identify the components and theory of operation of pneumatic control systems as applied to HVAC equipment. The student will be able to identify components, wiring diagrams and sequence of operation. Laboratory competencies include using sequencing controls, PE switches, calibration, setup of pneumatic equipment and receiver controllers. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1.5 hrs. lecture, 1.5 hrs. lab/wk.

#### **HVAC 218**

##### **ELECTRONIC CONTROL SYSTEMS (2CR)**

*Prerequisites: HVAC 123*

Upon successful completion of this course, the student should be able to identify the components in an electronic control system applied to HVAC systems. Components, wiring diagrams and sequence of operations will be covered. Laboratory competencies include using modular control motors, sequencing controls, analog to digital converters and electronic controllers. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1.5 hrs. lecture, 1.5 hrs. lab/wk.

#### **HVAC 221**

##### **COMMERCIAL SYSTEMS: AIR CONDITIONING (4CR)**

*Prerequisites: HVAC 121 and HVAC 123*

Upon successful completion of this course, the student will be able to identify large cooling systems used in commercial, institutional and industrial applications. Types of equipment include reciprocating and centrifugal chillers, absorption systems, cooling towers, fans and air handlers. Topics also include psychrometrics, pressure-enthalpy diagrams and commercial load calculations. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

**HVAC 223****COMMERCIAL SYSTEMS: HEATING (4CR)**

*Prerequisite: HVAC 123*

Upon successful completion of this course, the student should be able to identify large heating systems used in commercial, institutional and industrial applications. Types of equipment include hot water, low-pressure and high-pressure steam boilers; auxiliary, safety and flame safeguard controls; steam traps; condensate return; and water treatment systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

**HVAC 224****DIAGNOSIS AND SERVICE PROCEDURES (3CR)**

*Prerequisites: HVAC 121 and HVAC 123*

Upon successful completion of this course, the student should be able to systematically maintain, diagnose and repair all types of heating, ventilation and air conditioning systems. Students will review basic servicing skills such as evacuating, charging and start-up procedures. Advanced electrical troubleshooting skills on control circuits, reading ladder schematics, diagnosing malfunctions with testing equipment and correcting the malfunctions on all types of HVAC equipment will be taught. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

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

*Prerequisite: HVAC 123*

Upon successful completion of this course, the student should be able to identify the components and theory of operation of DDC and microprocessor-based control systems as applied to HVAC systems. Components, blueprints and wiring diagrams will be covered. Laboratory competencies include programming three different energy management systems. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1.5 hrs. lecture, 1.5 hrs. lab/wk.

**HVAC 271****HVAC INTERNSHIP (3CR)**

*Prerequisite: Approval of the division administrator*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 1 hr. lecture, 15 hrs. min./wk.

**History****HIST 120****LOCAL AND KANSAS HISTORY (3CR)**

This course will trace the development of local community life from trailhead and frontier days in the 19th century to the formation of our current major regional metropolis. Suburbanization and the growth of Johnson County will be a major theme. Also examined will be how Kansas City area communities grew and how they reflected national trends. 3 hrs./wk.

**HIST 124****COMMUNITY LIFE AND VALUES (3CR)**

This class is a study of the cultural values that are associated with classical Rome, Renaissance Florence and baroque Rome. Architecture, literature, the visual arts and philosophy of the three periods will be examined. The values revealed will be compared to those of a modern community/city. 3 hrs./wk.

**HIST 125****WESTERN CIVILIZATION:  
READINGS AND DISCUSSION I (3CR)**

Students will study the ideas that shaped Western civilization from its inception in the ancient Greek and Judeo-Christian world to the 1600s. The course is discussion-centered, and students will be assigned major readings they will discuss in small groups.

**HIST 126****WESTERN CIVILIZATION:  
READINGS AND DISCUSSION II (3CR)**

Students will study selected works by significant writers from the 1600s to the modern period. The course is discussion-centered, and students will be assigned major readings they will discuss in small groups.

**HIST 130****EUROPEAN HISTORY FROM 1750 (3CR)**

Significant trends in Europe from the period of the Industrial Revolution through today will be examined. Topics will include industrialization, nationalism and World Wars I and II. 3 hrs./wk.

**HIST 135****EASTERN CIVILIZATION (3CR)**

This course is an introduction to the societies and cultures of Asia. Through lectures, readings and discussions, the course will focus on aspects of the history, politics, art, literature and economics of China, Japan and India. The major traditional themes and concepts of these civilizations will be stressed. 3 hrs./wk.

**HIST 140****U.S. HISTORY TO 1877 (3CR)**

This survey course in U.S. history will emphasize developments and trends in American society from the early period of discovery and settlement through Reconstruction. Topics will include the Colonial era, the Revolutionary period, the Federalist era, expansion of the Republic during the mid-19th century and Civil War and Reconstruction. The emphasis will be on analysis and interpretation of these developments. 3 hrs./wk.

**HIST 141****U.S. HISTORY SINCE 1877 (3CR)**

This survey course will emphasize developments and trends in American society from the 1870s to the late 20th century. Topics will include Reconstruction era, industrialization, immigration, reform movements, World Wars I and II, social and cultural trends, and foreign policy. Emphasis will be on analysis and interpretation of these developments. 3 hrs./wk.

**HIST 151****WORLD HISTORY I: THE TRADITIONAL WORLD (3CR)**

This course will provide students an introduction to the history of the major world civilizations to approximately the year 1500. It will include the Neolithic revolution, the ancient Near East, Greece, Rome, medieval Europe, India, China, Japan, the Islamic Middle East, Africa and pre-Columbian America. It will emphasize the basic social, economic, political and cultural characteristics of these societies and long-term developments within them. 3 hrs. lecture/wk.

**HIST 152****WORLD HISTORY II: THE MODERN WORLD (3CR)**

This course will examine the history of the world since approximately the year 1500. It will begin with the development of the phenomenon of modernism in Europe, including the scientific revolution, secularism, industrialization and the rise of new political ideologies. It will then trace the expansion of modernism in both the Western and non-Western worlds and the response to modernism in the major non-Western countries. 3 hrs. lecture/wk.

**HIST 160****MODERN RUSSIAN HISTORY (3CR)**

This course will focus on the social, economic, political and cultural forces that have shaped this important world power since the reign of Peter the Great. 3 hrs./wk.

**HIST 162****MODERN LATIN AMERICA (3CR)**

This course is an examination of the economic, social, political and cultural history of Latin America since independence. Regional identities, such as Central America, and independent national stories – Cuba and Mexico – are explored. Literary and intellectual trends together with contemporary popular culture are featured in the course. 3hrs./wk.

**HIST 164****THE CHANGING TRADITION (3CR)**

This self-paced course explores Japanese history, politics and economics from the early days of the Tokugawa regime from 1500 to the present.

## Home Economics

**HMEC 131****FAMILY COMMUNICATIONS (3CR)**

Strategies for coping with stressful situations, the adult and family life cycle and current issues involving families such as drugs, violence and divorce will be examined. 3 hrs./wk.

**HMEC 142****HOME MANAGEMENT (3CR)**

A systems approach to management, especially of the dual-career family, will be examined. Topics will include goal setting, planning, decision making and the management of time, energy and money. 3 hrs./wk.

### **HMEC 151**

#### **NUTRITION AND MEAL PLANNING (3CR)**

Upon successful completion of this course, the student should be able to identify basic food groups, their use in meal planning, their functions and their nutritional values. In addition, the student should be able to describe the current trends in eating, diet and exercise, as well as fad diets and life-cycle nutritional needs. The student should also be able to describe the effects of nutrient intake on growth and development. 3 hrs./wk.

## **Honors Program**

### **HON 250**

#### **HONORS FORUM: IN SEARCH OF SOLUTIONS (3CR)**

This course will focus on two topics during the semester and how the topics affect the local, national and global communities. It complements other courses in the curriculum by combining an emphasis on both specific content and on skill development in the areas of interaction, analysis, syntheses and conflict resolution. In the first topic, students will study issues in a historical and contemporary context, develop a greater understanding of the issues and attempt to take a position on the issues. This resolution will be subjected to further challenge and dialogue. The second topic, which is selected by the students, will have a service learning component. In this course, the process of reflecting, researching, analyzing and evaluating is as important as the content. As points of view concerning an issue are developed, the students must articulate and defend these as they are challenged by others and make judgments among alternative options. 3 hrs./wk in addition to attending scheduled forum presentations.

## **Horticulture**

### **HORT 115**

#### **HOME HORTICULTURE (2CR)**

This is an introduction to the management of a home lawn, garden and trees. Students will review the horticulture industry, look at career opportunities and practice the lab techniques studied in class. 1 hr. lecture, 2 hrs. lab/wk.

### **HORT 201**

#### **INTRODUCTORY HORTICULTURE SCIENCE (4CR)**

*Prerequisite: High school biology/botany or concurrent enrollment in BIOL 125*

This is an introduction to the principles and practices of horticultural plant systems. Plant structure and function

will be discussed, along with the effects of environmental factors on plant growth. General cultural practices will be described, including pest control, mineral nutrition and plant propagation. 3 hrs. lecture, 2 hrs. lab/wk.

## **Hospitality Management (Chef Apprenticeship) (Food and Beverage Management) (Hotel Management)**

### **HMG T 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.

### **HMG T 121**

#### **HOSPITALITY MANAGEMENT FUNDAMENTALS (3CR)**

Upon successful completion of this course, the student should be able to understand and describe the organization of the food service and public lodging industries. The student should also be able to describe the departmental functions, the positions of the industries in the American economic system and the functions and limitations of these types of establishments. 3 hrs./wk.

### **HMG T 123**

#### **BASIC FOOD PREPARATION (3CR)**

Upon successful completion of this course, the student should be able to demonstrate skills in grilling, frying, broiling, sauteing, recipe conversion, salad preparation and the production of the five basic sauces. Also, the student should be able to operate the food service equipment used in commercial kitchens. 3 hrs./wk.

### **HMG T 126**

#### **FOOD MANAGEMENT (4CR)**

*Prerequisites: HMG T 123, HMG T 145, HMG T 230, HMG T 277 and admission to the Hospitality Management Program*

Upon successful completion of this course, the student should be able to explain the components of menu planning and the styles of food service used for various occasions – buffet service and French, Russian and American service. The student will take part in the operation of the campus restaurant and will be involved in sales promotion, purchasing and costing. 6 hrs./wk.

**HMGT 128**  
**SUPERVISORY MANAGEMENT (3CR)**

Upon successful completion of this course, the student should be able to analyze and explain basic supervisory management skills, management styles, motivation with emphasis on human relations, delegation, training, evaluation and communication. In addition, the hiring and firing functions within FLSA guidelines will be covered. 3 hrs./wk.

**HMGT 130**  
**HOSPITALITY LAW (3CR)**

This course offers an overview of product and dram shop liability as well as of the various areas of federal and state legislation that regulate the hospitality industry. Emphasis will be on familiarizing the hospitality manager with ways to avoid costly and time-consuming lawsuits. A manager's or owner's legal rights and responsibilities will also be discussed. Upon successful completion of this course, the student should be able to recognize potential legal problems. 3 hrs./wk.

**HMGT 145**  
**FOOD PRODUCTION SPECIALTIES (3CR)**

*Prerequisite: HMGT 123*

Upon successful completion of this course, the student should be able to demonstrate an understanding of the handling of convenient bakery products, from the frozen state (or prepared mix) into a finished product. The student should also be able to demonstrate the proper arrangement of foods for plate and platter presentations; prepare granites, sorbets and sherbets; and demonstrate an understanding of the preparation of hors d'oeuvres and modern salads including salad dressings. The student should understand proper gourmet purchasing, be able to categorize and identify imported cheeses and plan a buffet. In addition, the student should be able to identify the uses of basic ingredients, understand the proper use of measurements and the various types of production equipment. 2 hrs. lecture, 1½ hrs. lab/wk.

**HMGT 203**  
**HOTEL SALES AND MARKETING (3CR)**

*Prerequisites: HMGT 121 and admission to the Hospitality Management program*

Upon successful completion of this course, the student should be able to understand and describe the hotel sales and marketing functions. The course will focus on practical sales techniques for targeted markets. 3 hrs. lecture/wk.

**HMGT 221**  
**DESIGN TECHNIQUES (3CR)**

*Prerequisites: HMGT 123 and HMGT 271*

This course includes detailed information about food service design that covers layout, design and equipment specifications. Upon successful completion of this course, the student should be able to understand and develop a food service design concept, including the menu, the location and the type of clientele expected. 3 hrs./wk.

**HMGT 223**  
**FUNDAMENTALS OF BAKING (3CR)**

*Prerequisite: HMGT 145*

Upon successful completion of this course, the student should be able to demonstrate an understanding of bake shop production as it relates to the basic principles of ingredients, measurements, mixing, proofing, baking and final presentation. In addition, the student will be able to identify the various types of baking equipment used in the preparation of bake shop products. The class includes lecture and participation. 3 hrs./wk.

**HMGT 226**  
**GARDE-MANGER (3CR)**

*Prerequisite: HMGT 123*

Upon successful completion of the course, students should be able to prepare force meats such as pates, terrines, ballotines, pate en croute, hors d'oeuvres and canapes. In addition, the student should be able to produce ice carvings, platter layout and design as well as cold sauces such as aspics. 3 hrs./wk.

**HMGT 228**  
**ADVANCED HOSPITALITY MANAGEMENT (3CR)**

*Prerequisites: HMGT 121, HMGT 123, HMGT 128 and HMGT 273*

Upon successful completion of this course, the student should be able to explain the various components of menu planning, food service, supervision, design and beverage control. In addition, the student should be able to demonstrate an understanding of the external factors affecting the hotel-restaurant industry. The student should also be able to describe the skills necessary to secure a position in management within the hospitality industry. 3 hrs./wk.

**HMG 230****INTERMEDIATE FOOD PREPARATION (3CR)**

*Prerequisite: HMG 123*

This course is designed to help the student's transition from basic to intermediate food skills. Upon successful completion of this course, the student should be able to demonstrate the skills necessary to prepare secondary sauces as well as a range of American regional cuisines. This course consists of lecture, demonstration and participation in food preparation. 3 hrs./wk.

**HMG 231****ADVANCED FOOD PREPARATION (4CR)**

*Prerequisite: HMG 230*

Upon successful completion of this course, the student should be able to demonstrate an understanding of the advanced skills necessary for preparing international cuisine. 4 hrs./wk.

**HMG 240****ADVANCED BAKING (4CR)**

*Prerequisites: HMG 123 and HMG 223*

Upon successful completion of this course, the student should be able to demonstrate a working knowledge of the preparation of specialty bakery products. This course will focus on lecture-demonstrations and student participation in advanced baking procedures. Student lab projects will cover specialty yeast and rich dough products as well as baked and chilled desserts. 4 hrs. lecture, lab/wk.

**HMG 248****CONFECTIONERY ARTS (3CR)**

Upon successful completion of this course, the student should be able to demonstrate skills in preparing molten sugar in a safe and economical manner. Also, the student should be able to cast, blow and pull sugar, developing decorative pieces. Pastillage, as well as casting and painting with chocolate, also is covered. 4.5 hrs. lecture, lab/wk.

**HMG 250****INTRODUCTION TO CATERING (3CR)**

Upon successful completion of this course, the student should be able to explain the different types of catered events within the hospitality industry. The student should also be able to explain the importance of marketing, contract writing, food production, room arrangements and required personnel relative to specific catered events. 3 hrs. lecture/wk.

**HMG 265****FRONT OFFICE MANAGEMENT (3CR)**

Upon successful completion of this course, the student should be able to understand the flow of business through a hotel, beginning with the reservation process

and ending with check-out and settlement. The student should be able to understand the various elements of effective front office management, procedures and the role of the front office in the operation of a hotel. 3 hrs./wk.

**HMG 268****HOTEL ACCOUNTING (3CR)**

*Prerequisites: MATH 120, HMG 121 and HMG 273*

Upon successful completion of this course, the student should be able to describe hotel accounting concepts, procedures, processing of data and the flow of financial information within the various hotel departments. 3 hrs. lecture/wk.

**HMG 271****SEMINAR IN HOSPITALITY MANAGEMENT:  
PURCHASING (3CR)**

*Prerequisite: Admission to the Hospitality Management Program*

Upon successful completion of this course, the student should be able to define purchasing techniques and specification writing for items used in the industry. In addition, the student should be able to demonstrate decision-making skills in the areas of quality, quantity, specifications and general value analysis. Two hours in class and a minimum of 15 hours a week are required in a supervised work situation in an approved area of the hospitality industry. Work experience is concurrent but does not necessarily concentrate on the subject being taught in the course.

**HMG 273****SEMINAR IN HOSPITALITY MANAGEMENT:  
ACCOUNTING (3CR)**

*Prerequisites: Admission to the Hospitality Management Program and MATH 120 or higher*

Upon successful completion of this course, the student should be able to prepare operation statements for food service operators, inventories and control systems. Areas of concentration will be food cost and controls, labor cost controls and profit production. While enrolled in this class, a student must work a minimum of 15 hours a week in the hospitality industry. The work experience is concurrent but does not necessarily concentrate on the subject being taught in the course.

**HMG 275****SEMINAR IN HOSPITALITY  
MANAGEMENT INTERNSHIP (3CR)**

*Prerequisite: Admission to the Hospitality Management Program*

Upon successful completion of this course, the student should be able to demonstrate an understanding of an actual hospitality industry operation and identify and explain operational problems. In addition, the student

should be able to construct and contrast solutions to these problems. While enrolled in this course, a student must work a minimum of 320 hours in an approved position in the hospitality industry. By arrangement.

**HMG 277**  
**SEMINAR IN MENU PLANNING (3CR)**

*Prerequisite: HMG 123*

Upon successful completion of this course, the student should be able to explain the components of menu planning for every type of service and facility. In addition, the student should be able to demonstrate an understanding of menu layout, selection and development, price structures and the theory of menu design. A minimum of 15 hours a week is required in a supervised work situation in an approved area of the hospitality industry. Work experience is concurrent but does not necessarily concentrate on the subject being taught in the course.

**HMG 279**  
**BEVERAGE CONTROL (3CR)**

Upon successful completion of this course, the student should be able to demonstrate an understanding of beverage control and how it is used in all types of operations. This course covers the history of wines and their use and storage procedures. The student will take part in an in-depth study of spirits, internal control systems and local and state alcoholic beverage control laws. 3 hrs./wk.

**HMG 281**  
**CULINARY ARTS PRACTICUM I (2CR)**

*Prerequisite: Acceptance into the American Culinary Federation Chef Apprenticeship Training Program*

A qualified American Culinary Federation chef will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation.

**HMG 282**  
**CULINARY ARTS PRACTICUM II (2CR)**

*Prerequisite: HMG 281*

This is a continuation of Culinary Arts Practicum I.

**HMG 285**  
**CULINARY ARTS PRACTICUM III (2CR)**

*Prerequisite: HMG 282*

This is a continuation of Culinary Arts Practicum II.

**HMG 286**  
**CULINARY ARTS PRACTICUM IV (2CR)**

*Prerequisite: HMG 285*

This is a continuation of Culinary Arts Practicum III.

**HMG 287**  
**CULINARY ARTS PRACTICUM V (2CR)**

*Prerequisite: HMG 286*

This is a continuation of Culinary Arts Practicum IV.

**HMG 288**  
**CULINARY ARTS PRACTICUM VI (2CR)**

*Prerequisite: HMG 287*

This is a continuation of Culinary Arts Practicum V. In this course, the student also will be required to pass a written as well as practical programmatic final exam.

## Humanities

**HUM 122**  
**INTRODUCTION TO THE HUMANITIES (3CR)**

This interdisciplinary study will begin with a look at artistic and technical elements of several art forms including painting, music and drama. The major themes expressed in these art forms also will be examined. 3 hrs. lecture/wk.

**HUM 136**  
**THE HUMAN EXPERIENCE (3CR)**

The themes of freedom and personal identity will be traced in the arts and sciences from the classical period of the 18th century through the romanticism of revolution in politics and the arts and finally in more modern idioms. The course will conclude with a consideration of each student's personal identity through family language. 3 hrs. lecture/wk.

**HUM 137**  
**INTRODUCTION TO RUSSIAN CULTURE (3CR)**

This course is a survey of the cultural history of Russia from the ninth century to the present day. The approach will be interdisciplinary, examining representative examples of Russian art, architecture, music, theater, dance literature and philosophy in their historical context. In addition to developing the students' appreciation of Russia's contribution to world culture, the course aims to enhance students' understanding of the contemporary world. 3 hrs. lecture/wk.

**HUM 138**  
**INTRODUCTION TO RUSSIAN CULTURE, FIELD STUDY (1CR)**

*Prerequisite: HUM 137 or approval of instructor*

This course is the field study portion of the HUM 137 Introduction to Russia course. Students will study, on site, selected works of art, architecture, music, literature, theater and film of the various historical periods from the perspective of Russian experts in these fields. In

addition, students will enhance their knowledge of Russian history by visiting the sites of many of the major events that have shaped the development of Russia's culture. 2 hrs. lab/wk.

#### **HUM 145**

##### **INTRODUCTION TO WORLD HUMANITIES I (3CR)**

This course will acquaint students with the arts and ideas of the world's major civilizations, from antiquity to the period of world exploration during the Renaissance. The approach will be interdisciplinary, covering the artistic values embodied in painting, sculpture, architecture, literature, theater, music and dance as they have emerged out of their historical contexts. In addition to providing the fundamental principles, generalizations and theories used in the study of the humanities, the course aims to enhance students' understanding of the contemporary world. 3 hrs. lecture/wk.

#### **HUM 146**

##### **INTRODUCTION TO WORLD HUMANITIES II (3CR)**

This course will acquaint students with the arts and ideas of the world's major civilizations, from the period of world exploration during the Renaissance to the present. The approach will be interdisciplinary, covering the artistic values embodied in painting, sculpture, architecture, literature, theater, music, dance, photography and film as they have emerged out of their historical contexts. In addition to providing the fundamental principles, generalizations and theories used in the study of the humanities, the course aims to enhance students' understanding of the contemporary world. 3 hrs. lecture/wk.

#### **HUM 155**

##### **CLASSICAL MYTHOLOGY (3CR)**

This is a systematic examination of the origins and cycles of myths and their survival and metamorphosis in Roman, medieval, Renaissance, baroque and modern cultures. Sources studied will include both literature and the visual arts. 3 hrs. lecture/wk.

#### **HUM 164**

##### **CIVILISATION (3CR)**

This course, based upon the Time-Life television series of the same name and narrated by the art historian Kenneth Clark, covers the major ideas and events that have shaped Western civilization from the fall of the Roman Empire to the 20th century. By arrangement.

## **Industrial Technology**

#### **INDT 125**

##### **INDUSTRIAL SAFETY (1CR)**

Upon successful completion of this course, the student should be able to identify various industrial safety and health considerations, list basic safety rules and regulations, identify the proper personal protective equipment needed for common industrial tasks and recognize the need for an ongoing safety program. 1 hrs. lecture/wk.

#### **INDT 140**

##### **QUALITY IMPROVEMENT USING SPC (2CR)**

Upon successful completion of this course, the student should be able to describe the concepts of quality improvement. This course will examine the application of the "Transformation of America" concept to American businesses. Statistical process control will be introduced as a tool to improve quality. W. Edwards Deming's 14 points and the management changes required to implement quality improvement also will be covered. 2 hrs./wk.

## **Information Technology**

#### **IT 160**

##### **LOCAL AREA NETWORK FUNDAMENTALS (1CR)**

*Prerequisite: CPCA 105*

In this survey course of local area networks, students will learn of the evolution of LANs in terms of the need and cost justification in both workgroup and total company environments. Ramifications of decentralizing the processing of information will be examined, and components of a local area network will be outlined. Students will receive hands-on use of a network to show practical applications for LANs. 1 hr. lab/wk.

#### **IT 200**

##### **INTRODUCTION TO INFORMATION TECHNOLOGY (3CR)**

The focus of this course is information technology, which deals with the confluence of data, voice, video and imaging in a business environment. Computerized networks will be examined from global systems to wide area networks and to local area networks that connect the user at the desktop. Applications that will make organizations and their members more effective and efficient will be discussed. Opportunities for new and emerging technologies that are being planned or implemented in large and small organizations will be examined. 3 hrs. lecture/wk.

**IT 210****LOCAL AREA NETWORKING SYSTEMS (4CR)**

*Prerequisites: IT 200, ELEC 124, CPCA 137 and CPCA 138; or IT 160 and ELEC 250*

This course is designed to provide students with the necessary knowledge and skills to perform competently in the role of network administrator or system manager. It expands on network concepts specific to the operating system being used (IntranetWare, Windows NT or Unix). 3 hrs. lecture, 3 hours lab/wk.

**IT 211****ADVANCED LOCAL AREA NETWORKING SYSTEMS (3CR)**

*Prerequisite: IT 210*

This course is designed to provide network administrators with information that enhances their network managing and monitoring skills. Included are topics that are related to server and client management and performance, server memory concepts and management and advanced print services. 2 hrs. lecture, 3 hrs. lab/wk.

**IT 213****LOCAL AREA NETWORK SUPERVISOR (1CR)**

*Prerequisite: IT 210*

Students will build on the initial environment of a local area network, concentrating on the organization of users and directories into workgroups, with emphasis on ease of administration, reliability issues and integration of LAN systems. The use of special server functions such as printing, multimedia and communication will be covered in detail. Emphasis will be on hands-on use of the system in a business scenario situation. 1 hr. lecture/wk.

**IT 215****LOCAL AREA NETWORK APPLICATIONS (1CR)**

*Prerequisite: IT 210*

Students will review the prerequisites for networking application software such as multi-user and file-sharing attributes. Products involving databases, communications, spreadsheets and word processing will be discussed. Multi-user considerations for in-house program design will be addressed. Class projects will involve sharing of physical resources, data files and application software. 1 hr. lecture/wk.

**IT 217****LOCAL AREA NETWORK COMPONENTS (2CR)**

*Prerequisite: IT 210*

This course is intended as a comprehensive investigation of the hardware components of a LAN, its topology and cable design options. After a review of IEEE 802 and ANSI protocols, practical lab work will be presented

in the configuration and installation of network components to include fabrication and testing of cable segments. The class will determine specifications for servers, workstations and hubs and identify sources for those items. 1 hr. lecture, 2 hrs. lab/wk.

**IT 219****NETWORK CONNECTIVITY (3CR)**

*Prerequisites: IT 210 and six hours of technical electives*

The current state of the communications industry will be discussed as well as trends for the future, which include the convergence of data, voice, video and imaging in a single transport. Means of connecting workstations to network resources via local area networks, internetworking technology using hubs, gateways, routers and switches, and wide-area networks will be covered. 2 hrs. lecture, 2 hrs. lab/wk.

**IT 248****LOCAL AREA NETWORK SPECIFICATIONS AND CONTRACTING (3CR)**

*Prerequisites: IT 210 and six hours of technical electives*

This course takes an investigative look at the impact of technology on today's changing business information needs. Requirements for meeting organizational goals will be translated into a formal plan based on these needs and budget limits. This plan will be further expanded into a specification phase using TIA/EIA/ANSI standards for commercial building systems. A contracting phase with equal emphasis on the contractor as well as the solicitor will be covered, along with a final system review phase. 2 hrs. lecture, 2 hrs. lab/wk.

**IT 250****NETWORK DESIGN AND IMPLEMENTATION (3CR)**

*Prerequisites: IT 211 and six hours of technical electives*

This course is intended as a capstone course that will provide a forum for applying concepts and procedures developed in previous LAN courses using realistic business scenarios. Workshop competencies will be stressed, as well as certification-level skills in LAN systems. 1 hr. lecture, 4 hrs. lab/wk.

**Information/Word Processing**

(See Office Systems Technology, page 226.)

## Interdisciplinary Studies

### **IDSP 175**

#### **GLOBAL RESOURCES FROM GEOLOGIC AND ECONOMIC VIEWPOINTS (3CR)**

This interdisciplinary course will examine the interdependence of geology and economics in the development, production and use of the world's geologic resources. Land, water, mineral and energy resources form a structure that students can use to gain a perspective on the interrelationships between resources and economics to synthesize their knowledge into intelligent and logical conclusions about past, present and future resource problems. 3 hrs./wk.

## Interior Merchandising

### **ITMD 121**

#### **INTERIOR DESIGN I (3CR)**

Upon successful completion of this course, the student should be able to demonstrate logical and usable arrangement of furniture in a house plan; use correct scale and symbols in creating a floor plan; develop a color wheel and color schemes; and develop a complete floor plan and decorative scheme for that plan. 3 hrs./wk.

### **ITMD 122**

#### **INTERIOR DESIGN II (3CR)**

*Prerequisites: ITMD 121 and DRAF 261*

Upon successful completion of this course, the student should be able to demonstrate an advanced level of furniture arrangement on a floor plan; develop color schemes that will solve specific assigned decorating problems; and demonstrate the ability to coordinate fabrics, colors, texture, patterns and finishes in a complete floor plan for a residential unit. 3 hrs./wk.

### **ITMD 125**

#### **INTERIOR TEXTILES (3CR)**

Upon successful completion of this course, the student should be able to differentiate fibers and textiles according to their specific characteristics and to select fibers and interior textiles for specific applications. This course will cover properties and characteristics of natural and man-made fibers, construction methods and various finishing processes such as weaving, knitting, felting, printing and dyeing. The course will concentrate on textiles designed for interior applications. 2 hrs. lecture, 2 hrs. lab/wk.

### **ITMD 127**

#### **ELEMENTS OF FLORAL DESIGN (1CR)**

Upon successful completion of this course, the student should be able to use the principles of floral design, develop a proficiency in the techniques of line and mass arrangements, obtain an enhanced appreciation for flowers and other plant material, use the mechanics and design considerations involved in working with silk and dried materials and design and create silk and dried floral arrangements. 1½ hrs. integrated lecture, lab/wk.

### **ITMD 132**

#### **INTERIOR PRODUCTS (3CR)**

Upon successful completion of this course, the student should be able to evaluate the quality of interior products; demonstrate the ability to use catalogs and other product information resources; identify manufacturing and construction techniques used in products; use correct terminology to describe the various types of interior products; and compare design, use, durability and cost of products. 3 hrs./wk.

### **ITMD 133**

#### **FURNITURE AND ORNAMENTATION/ ANTIQUITY TO RENAISSANCE (3CR)**

Upon successful completion of this course, the student should be able to analyze and compare furniture, ornamentation, design motifs and textiles of historical periods from antiquity to the Renaissance. Additionally, the student should be able to define the religious, political and social influences on the ornamentation and furnishings of each period. The student should also be able to identify the craftsmanship and materials used in the furniture of each historical period and use correct vocabulary related to each era. 3 hrs./wk.

### **ITMD 140**

#### **DRAPERIES, TREATMENTS AND CONSTRUCTION (1CR)**

*Prerequisites: ITMD 121 and ITMD 125*

*Corequisite: ITMD 275*

Upon successful completion of this course, the student should be able to demonstrate the use of correct vocabulary relating to drapery and window treatments; explain the use of equipment in the drapery industry; identify appropriate textiles and fabrics for specific window treatments; measure for window treatments; and describe and select the proper suspension system for specific window treatments. 1 hr./wk.

**ITMD 145****UPHOLSTERY CONSTRUCTION (1CR)**

*Prerequisites:* ITMD 121 and ITMD 125

*Corequisite:* ITMD 275

Upon successful completion of this course, the student should be able to demonstrate the use of correct vocabulary relating to upholstery construction; explain the use of equipment in the upholstery industry; identify appropriate textiles and fabrics for specific upholstery uses; and describe the various suspension systems used in bench-constructed and mass-produced furniture. 1 hr./wk.

**ITMD 147****LIGHTING DESIGN AND PLANNING (1CR)**

*Prerequisite:* ITMD 121

Upon successful completion of this course, the student should be able to define and use vocabulary relating to lighting design and planning. Additionally, the student should be able to recognize and explain the use of fixtures and other related equipment necessary to the lighting industry, identify and describe proper fixtures and equipment for lighting applications, and demonstrate skills in selecting proper lighting designs for specific applications. 1 hr./wk.

**ITMD 148****FURNITURE AND ORNAMENTATION/ORIENTAL (3CR)**

Upon successful completion of this course, the student should be able to analyze and compare furniture, ornamentation, design motifs and textiles of the Near and Far East during historical periods from antiquity to modern times. Additionally, the student should be able to define the religious, political and social influences on the ornamentation and furnishings of each period. The student should also be able to identify the craftsmanship and materials used in the furniture of each period and demonstrate the use of correct vocabulary related to each era. 3 hrs./wk.

**ITMD 223****CONTRACT DESIGN (3CR)**

*Prerequisites:* ITMD 122 and DRAF 264

Upon successful completion of this course, the student should be able to explain the differences between residential and contract design; demonstrate the use of interior design skills to convert, redesign and create contract design space; explain the concept of open office planners; and compare and analyze the costs and benefits of open planning vs. closed planning. 1 hr. lecture, 3 hrs. lab/wk.

**ITMD 231****FURNITURE AND ORNAMENTATION/  
RENAISSANCE TO 20TH CENTURY (3CR)**

Upon successful completion of this course, the student should be able to analyze and compare furniture, ornamentation, design motifs and textiles of historical periods from the Renaissance to the 20th century. Additionally, the student should be able to define social, religious and political influences on the ornamentation of each period. The student should also be able to identify the craftsmanship and materials used in the furniture of each period and use correct vocabulary related to each era. 3 hrs./wk.

**ITMD 234****KITCHEN AND BATH: PLANNING AND DESIGN (3CR)**

*Prerequisites:* DRAF 261 and DRAF 264 and ITMD 122

Upon successful completion of this course, the student should be able to define and use vocabulary related to kitchen and bath design and construction; identify and use proper architectural symbols common to kitchen and bath floor plans and elevations; state the space relationships required for proper kitchen and bath usage; and draw kitchen and bath floor plans and elevations. Additionally, the student should be able to identify and explain the work triangle, structural detail, cabinetry and appliances in kitchen design and wet walls, cabinetry, structural detail and plumbing in bath planning. 2 hrs. lecture, 1 hr. lab/wk.

**ITMD 239****CAPSTONE: PORTFOLIO AND PRESENTATION (2CR)**

*Corequisites:* ITMD 223 and ITMD 234

Upon successful completion of this course, the student should be able to select and rework portfolio materials for maximum visual potential and appeal. In addition, the student will prepare a résumé, conduct a job search and present written and oral presentations based on resource and product files from other classes. This course is designed as a capstone for the interior merchandising program. It should be taken in conjunction with or after completion of the final interiors studio course or in the graduating semester. 2 hrs. lecture/wk.

**ITMD 273****INTERIOR MERCHANDISING SEMINAR:  
PRACTICES AND PROCEDURES (2CR)**

*Prerequisite:* ITMD 121

Upon successful completion of this course, the student should be able to demonstrate the use of proper interior design industry terminology and appropriate business forms and contracts; define the types of business legal structures; and solve business organizational and ethical problems through the use of case studies. 2 hrs./wk.

**ITMD 275****INTERIOR MERCHANDISING SEMINAR:  
BUDGET AND ESTIMATING (2CR)**

*Prerequisite: ITMD 121*

Upon successful completion of this course, the student should be able to describe methods of pricing interior design materials and services; measure accurately for materials; demonstrate the use of business math in interior merchandising applications; and compute cost in example cases. 2 hrs./wk.

**ITMD 282****INTERIOR MERCHANDISING PRACTICUM I (1CR)**

*Prerequisite: ITMD 121*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the interior merchandising industry. A minimum of 15 hrs. on-the-job training/wk

**ITMD 284****INTERIOR MERCHANDISING PRACTICUM II (1CR)**

*Prerequisite: ITMD 121*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the interior merchandising industry. A minimum of 15 hrs. on-the-job training/wk.

**ITMD 295****FIELD STUDY: DESIGN AND MERCHANDISING (3CR)**

*Prerequisites: ITMD 121 and approval of the program director*

Upon successful completion of this course, the student should be able to compare, contrast and evaluate manufacturing processes and marketing techniques for interior products. This travel-for-credit course consists of visits to manufacturing plants, a market showroom and a merchandise mart in a major market city. Summer.

**ITMD 296****INTERIOR DESIGN: THE ORIENT (3CR)**

Upon successful completion of this course, the student should be able to recognize and identify Oriental furniture pieces and accessories from different countries; define and use vocabulary common to the art periods; and compare and contrast furniture and accessory pieces observed in museums, temples, homes and antique stores. This course will include five three-hour pre-departure seminars, followed by a three-week field trip to Japan, Hong Kong and Thailand. Summer.

## Interpreter Training

**INTR 110****CONVERSATIONAL SIGNED ENGLISH I (2CR)**

An introduction to signed English, this class will help students develop basic conversational skills. 4 hrs. lab/wk.

**INTR 111****CONVERSATIONAL SIGNED ENGLISH II (2CR)**

*Prerequisite: INTR 110*

This course will offer continued development of signed English skills, leading to the development of conversational skills. 4 hrs. lab/wk.

**INTR 115****CONVERSATIONAL ASL I (2CR)**

This is an introduction to American Sign Language, leading to the development of basic conversational skills. 4 hrs. lab/wk.

**INTR 116****CONVERSATIONAL ASL II (2CR)**

*Prerequisite: INTR 115*

This is an introduction to American Sign Language, leading to the development of intermediate conversational skills. 4 hrs. lab/wk.

**INTR 125****AMERICAN SIGN LANGUAGE I (ASL) (5CR)**

*Prerequisite: Admission to the Interpreter Training Program*

This class will focus on the development of beginning communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. 1 hr. lecture, 9 hrs. lab/wk.

**INTR 130****ORIENTATION TO INTERPRETING (3CR)**

*Prerequisite: Admission to the Interpreter Training Program*

In this overview of interpreting as an occupation, topics will include interpersonal skills, professional ethics, parameters of the interpreter's responsibilities, community resources and legal ramifications. 3 hrs./wk.

**INTR 132****AMERICAN SIGN LANGUAGE II (ASL) (5CR)**

*Prerequisite: INTR 125*

Students will work on developing intermediate communication skills, concentrating on comprehension and production skills. Linguistic and cultural features will be presented in the context of language-learning experiences. 1 hr. lecture, 9 hrs. lab/wk.

**INTR 135****THEORY OF AMERICAN SIGN LANGUAGE (ASL) (3CR)**

*Prerequisite:* INTR 125

Students will examine the structural and grammatical principles of ASL in this introduction to linguistic problems of equivalency in English and ASL. 3 hrs./wk.

**INTR 140****AMERICAN SIGN LANGUAGE III (ASL) (5CR)**

*Prerequisite:* INTR 132

Students will continue to develop ASL skills in this class. Emphasis will be on comprehension and production skills. Linguistic and cultural features will be presented in the context of language-learning experiences. 1 hr. lecture, 9 hrs. lab/wk.

**INTR 142****FINGERSPELLING I (3CR)**

*Prerequisite:* INTR 125

Students will work on developing beginning expressive and receptive fingerspelling skills based on word and phrase recognition principles. 2 hrs. lecture, 3 hrs. lab/wk.

**INTR 145****DEAF CULTURE (3CR)**

*Prerequisite:* Admission to the Interpreter Training Program

*Corequisite:* INTR 125

Students will compare middle-class American values, beliefs and institutions with those of the deaf community in the United States. 3 hrs./wk.

**INTR 181****INTERPRETING PRACTICUM I (1CR)**

*Prerequisite:* INTR 130

Students will observe skilled interpreters in various interpreting situations in a variety of settings during the semester. 2 hrs. lab, field work/wk.

**INTR 225****PHYSICAL AND PSYCHOLOGICAL ASPECTS OF INTERPRETING (2CR)**

*Corequisites:* INTR 181 and INTR 250

Discussion will focus on the physical and mental stress interpreting can bring about and on therapeutic exercises for preventing negative physical effects. 2 hrs./wk.

**INTR 230****AMERICAN SIGN LANGUAGE IV (ASL) (4CR)**

*Prerequisite:* INTR 140

Students will continue to develop ASL skills at an advanced level. Emphasis will be on comprehension and production skills. Additional linguistic and cultural features will be presented in the context of language-learning experiences. 1 hr. lecture, 7 hrs. lab/wk.

**INTR 242****FINGERSPELLING II (2CR)**

*Prerequisite:* INTR 142

This course will focus on continued development of expressive and receptive fingerspelling skills based on word and phrase recognition and expression. 1 hr. lecture, 2 hrs. lab/wk.

**INTR 246****ENGLISH EQUIVALENTS FOR ASL (3CR)**

*Prerequisite:* INTR 140 or permission of the division administrator and proficiency in ASL

Students will study the many English equivalents for ASL discourse, enhancing the written English skills of deaf students and the interpreting skills of hearing students. 3 hrs./wk.

**INTR 250****INTERPRETING I (6CR)**

*Prerequisite:* INTR 130

*Corequisite:* INTR 140

In this introduction to interpreting principles, emphasis will be on English-to-ASL and ASL-to-English skills. Students will participate in sequential drills and apply these skills in class. 2 hrs. lecture, 8 hrs. lab/wk.

**INTR 255****INTERPRETING II (6CR)**

*Prerequisite:* INTR 250

This is an advanced course concentrating on the continued development of English-to-ASL, ASL-to-English and transliteration skills. Students will have the opportunity to use these skills as they role-play employment situations. 2 hrs. lecture, 8 hrs. lab/wk.

**INTR 261****SPECIAL TOPICS (3CR)**

*Prerequisite:* Depends on topics

Current trends and topics in interpreting are the focus of this course. Topics may include medical/mental health interpreting, deaf-blind interpreting, oral interpreting, educational interpreting and trends in the field. These topics will be offered on an "as needed" basis, and the course may be repeated for up to eight credits. Lecture-lab hours vary from one to four hours depending on the topic and the number of lecture-lab hours needed.

**INTR 281****INTERPRETING PRACTICUM II (3CR)**

*Prerequisite:* INTR 181

*Corequisite:* INTR 255

Students will observe and interpret at assigned places as well as discuss current literature in the field. The field work totals 96 hours a semester. 6 hrs. lab, field work/wk.

## Journalism and Media Communications

### **JOUR 120 MASS MEDIA AND SOCIETY (3CR)**

This course examines the forms of mass media students are exposed to daily, including newspapers, magazines, radio, television, films, cable and video technologies. Students will be able to understand these various media, become better critics of media messages and understand the influence that the media has on their lives, decisions, goals and beliefs. 3 hrs./wk.

### **JOUR 122 INTRODUCTION TO NEWSWRITING (3CR)**

*Prerequisite: Basic typing skills or concurrent enrollment in OST 110*

This course is structured for students interested in writing news and gathering information, and especially for students who want to develop the basics of journalistic-style writing. Basic newswriting and news-style principles will be emphasized, with a focus on interviewing techniques. Practical experience will be gained through writing for the campus newspaper. 3 hrs./wk.

### **JOUR 125 FUNDAMENTALS OF ADVERTISING (3CR)**

This course will introduce students to the basics of advertising principles by familiarizing them with the forms of advertising and the types of media available. The functions and roles that both print and broadcast advertising play in business and for consumers will be included. 3 hrs./wk.

### **JOUR 127 INTRODUCTION TO BROADCASTING (3CR)**

This course serves as a general introduction to radio and television broadcasting and will include a study of the industry's development, program formats, personnel, equipment function, FCC codes and regulations, and cable. Classtime also will include discussion of current trends and issues in broadcasting so that students may develop a critical understanding of these media. Productions in the college's audio booth and TV facilities offer students real-life experiences. 3 hrs./wk.

### **JOUR 130 PRINCIPLES OF PUBLIC RELATIONS (3CR)**

This course will offer an overview of the function, purpose, procedures and practices of public relations; its roots in history; its role in society, business and government; and its potential as a career field. Primary emphasis will be on theory, practice and criticism, supplemented with written and verbal exercises in the application of public relations tech-

niques. Discussion will center on the tools and media used in communicating with the public. 3 hrs./wk.

### **JOUR 202 BROADCAST PERFORMANCE (3CR)**

Students will learn how to improve their speaking voice and body language as well as the techniques necessary to understand and communicate messages through basic announcing skills. Interviewing, radio and television news and commercial announcing are some of the topics to be covered. Students will do performances in the TV studio and audio booth. 3 hrs./wk.

### **JOUR 222 NEWS REPORTING (3CR)**

*Prerequisite: JOUR 122*

This is an advanced news gathering and reporting course designed to sharpen writing skills. Practice in writing in-depth news features, editorials, profiles, and advance and follow-up stories will be included, with an emphasis on editing and newspaper layout. Students will gain experience writing for the campus newspaper. 3 hrs./wk.

### **JOUR 225 PROMOTIONAL WRITING (3CR)**

*Prerequisite: JOUR 125 or the equivalent*

This course is for students who want to learn the elements of layout and copywriting for promotional purposes. It will emphasize how to determine advertising appeals, copy structure and copy style, and how to develop advertising campaigns. The importance of coordinating marketing goals, advertising goals and campaign strategy also will be stressed. 3 hrs./wk.

### **JOUR 227 BASIC TV PRODUCTION (3CR)**

*Prerequisite: JOUR 127*

This course provides students with the fundamentals of television production. The objective is to teach students in basic video techniques. Topics to be covered will include technology, lighting, camera operations, audio and editing. Students will gain hands-on experience in the college's television services department. 3 hrs. lecture/wk.

### **JOUR 271 JOURNALISM INTERNSHIP (3CR)**

*Prerequisite: Approval of the division administrator*

This course permits a student to gain work experience at an approved training center under staff supervision. Emphasis will be on the application of writing techniques needed to produce print news, broadcast news, and/or advertising or public relations promotional copy or production. On-the-job training involves a minimum of 12 hours a week by arrangement.

## Leadership Development

### LEAD 120 LEADERSHIP DEVELOPMENT SEMINAR (3CR)

This seminar course is designed for individuals who are interested in exploring the concepts of leadership using discussion, film, exercises, computer programs and works of classic literature. The course will lead to the development of a personal leadership philosophy and plan of action. 3 hrs./wk. Offered spring semester.

## Learning Strategies

### LS 160 TEXTBOOK LEARNING STRATEGIES (1CR)

*Corequisite: Concurrent enrollment in a course requiring the use of a textbook*

This course is designed for the student who wants to develop techniques to comprehend and retain information contained in textbooks, journals, newspapers, class handouts and other written sources. The techniques are practiced on the written materials from the student's other classes. 1 hr./wk.

### LS 172 LECTURE NOTES STRATEGY (1CR)

*Prerequisite: Concurrent enrollment in a college lecture course*

Students will have the opportunity to learn active listening skills and an effective notetaking strategy in order to improve their understanding and recall of information in lecture courses and other lecture settings. The techniques learned in this class are practiced in the other courses students are taking. 1 hr./wk.

### LS 174 LEARNING STRATEGIES FOR MATH (1CR)

*Corequisite: Concurrent enrollment in a math course*

This course teaches thinking and study skills specifically geared toward the learning of math, including problem-solving skills, test-taking skills and cognitive skills. Students practice these skills on their math textbooks and homework assignments as well as in their math class discussions and lectures. This course also addresses feelings and attitudes that may block math learning and offers strategies and techniques designed to overcome these feelings. 1 hr./wk.

### LS 176 STRATEGIC LEARNING SYSTEM (1CR)

*Corequisite: Concurrent enrollment in a college lecture course*

In this course, students will learn a series of strategies for processing information from textbooks and lectures and for studying for and taking tests. As the strategies are introduced, students apply them to the content of courses in which they are concurrently enrolled. Upon successful completion of the course, students will have developed a system for learning that can be adapted for use in any learning situation. 1 hr./wk.

### LS 178 MEMORY STRATEGIES (1CR)

*Corequisite: Concurrent enrollment in another college course*

In this course, students learn a series of techniques to help them improve their retention and recall of information needed for success in college courses. These techniques provide a systematic approach to learning and remembering. Students immediately use the techniques to learn information from their other college courses. 1 hr./wk.

### LS 186 EXAM STRATEGIES (1CR)

*Corequisite: Concurrent enrollment in at least one other college course in which exams are taken*

In this course, students have an opportunity to explore their own learning styles and to develop appropriate strategies for improving test performance through improved learning procedures. Emphasis will be placed on practical application of the learned strategies to courses in which the students are concurrently enrolled. 1 hr./wk.

### LS 195 LEARNING STRATEGIES FOR CAREER PROGRAMS (1CR)

*Corequisite: Students must be either concurrently enrolled in a JCCC career program or accepted into a program, and taking appropriate elective classes to which the strategies can be applied*

This course is designed to help students enrolled in the various career programs at JCCC develop more efficient and effective learning plans for meeting the intensive cognitive demands of the two-year programs. Techniques and strategies for managing time, acquiring and reviewing information, test taking and analyzing test errors will be presented. 1 hr. lecture/wk.

**LS 200****COLLEGE LEARNING METHODS (3CR)**

*Corequisite: Concurrent enrollment in at least one academic college course*

This course provides students with opportunities to develop skills and habits that will help them establish and maintain effective learning systems for a variety of academic courses. Students first learn and practice the learning methods in class and then apply these methods to appropriate situations in their other college coursework. The methods, which are based on valid learning and thinking principles, will help students meet the higher-level demands of the subjects encountered in college courses. 3 hrs./wk.

## Legal Nurse Consultant

**LNC 220****LEGAL NURSE CONSULTANT PROFESSION (3CR)**

*Prerequisite: Admission to the Legal Nurse Consultant Program*

Upon successful completion of this course, the student should be able to identify functions of legal nurse consultants and career opportunities available to them. In addition, the student should be able to explain applicable medical and legal ethics and apply them to professional situations. 3 hrs. lecture/wk.

**LNC 230****FOUNDATIONS OF LAW (3CR)**

*Prerequisite: Admission to the Legal Nurse Consultant Program*

Upon successful completion of this course, the student should be able to explain and identify the major principles of the structure and functioning of the American legal system. This course will concentrate on the lawmaking activities of the three branches of American government, with special attention given to the operation of the court system and the substantive and procedural aspects of American law, and will emphasize the role of the legal nurse consultant in the litigation process. 3 hrs. lecture/wk.

**LNC 240****LEGAL MEDICAL RESEARCH (3CR)**

*Prerequisite: Admission to the Legal Nurse Consultant Program and basic computer knowledge of word processing, spreadsheet and database software through course work or work experience verified by division administrator.*

Upon successful completion of this course, the student should be able to perform legal and medical research and investigative functions. Topics covered include medical records, medical and legal research techniques and interviewing of clients and medical witnesses and experts. 1 hr. lecture/wk.

**LNC 250****LEGAL MEDICAL WRITING (3CR)**

*Prerequisites: Admission to the Legal Nurse Consultant Program and LNC 240*

Upon successful completion of this course, the student should be able to produce or contribute to the preparation of correspondence, reports and other legal documents and resources used in a legal/medical-related law practice. This course will focus on the role of the legal nurse consultant in the preparation of such resources, particularly in the context of intentional tort, negligence, products liability, strict liability and medical malpractice litigation. 3 hrs. lecture/wk.

**LNC 260****PERSONAL INJURY LAW (3CR)**

*Prerequisites: Admission to the Legal Nurse Consultant Program and LNC 240*

Upon successful completion of the course, the student will be able to explain and apply substantive and procedural principles of personal injury claims. The course will concentrate on the role of a legal nurse consultant in analyzing and applying legal theories and defenses relevant to intentional torts, negligence, products liability, strict liability and medical malpractice. 3 hrs. lecture/wk.

**LNC 270****ADMINISTRATIVE LAW (3CR)**

*Prerequisites: Admission to the Legal Nurse Consultant Program and LNC 240*

Upon successful completion of the course, the student will be able to explain and apply substantive and procedural principles of administrative agencies. The course will concentrate on the basic principles of workers' compensation law, Social Security law, public health law and the Americans with Disabilities Act. 3 hrs. lecture/wk.

## Library

### LIBR 125

#### INTRODUCTION TO LIBRARY RESEARCH (1CR)

This course provides an introduction to the methods and technologies of library research. Included will be a study of the various information resources available for research and techniques for retrieving information from both print and electronic sources. The resources of the JCCC Library will be featured, although the emphasis will be on building information retrieval skills which will be useful in many settings. 1 hr. lecture/wk.

## Marketing and Management

### MKT 121

#### RETAIL MANAGEMENT (3CR)

Upon successful completion of this course, the student should be able to describe and analyze retail store organization and operation, including customer markets, store location and design, human resource management, merchandise planning and control and retail promotion and presentation. 3 hrs. lecture/wk.

### MKT 133

#### SALESMANSHIP (3CR)

Upon successful completion of this course, the student should be able to define and contrast the three main areas of selling direct, wholesale and retail, and explain the selling process. In addition, the student should be able to define the steps of selling and identify their appropriate application. The student should also be able to demonstrate selling skills through role play and presentations. Students who have received credit for MKT 134 may not receive credit for MKT 133. 3 hrs. lecture/wk.

### MKT 134

#### CREATIVE RETAIL SELLING (3CR)

Upon successful completion of this course, the student should be able to describe the process of successful selling in the retail environment. In addition, the student should be able to define the steps of selling and identify their appropriate application. The student should also apply selling principles through role playing. Students who have received credit for MKT 133 may not receive credit for MKT 134. 3 hrs. lecture/wk.

### MKT 140

#### TELESERVICE COMMUNICATION SKILLS (3CR)

Upon successful completion of this course, the student should be able to describe the process of successful communication in the teleservice field. In addition, the student should be able to define the principles of tele-client service and identify their appropriate application. The student should also be able to demonstrate effective telecommunication and client services skills through role playing. 3 hrs. lecture/wk.

### MKT 202

#### CONSUMER BEHAVIOR (3CR)

*Prerequisite: MKT 133 or MKT 134*

Upon successful completion of this course, the student should be able to demonstrate successful selling techniques for products and services. In addition, the student should be able to develop methods for listening effectively to customers; acquire product information; develop features and benefits to meet specific customer demands; refine personal selling style; develop customer follow-up techniques; create customer records of purchase; demonstrate an ability to handle difficult customers; and develop a product information book and a self-training program. 3 hrs. lecture/wk.

### MKT 206

#### AUTOMOTIVE RETAILING SALES (3CR)

*Prerequisite: MKT 133 or MKT 134*

Upon successful completion of this course, the student should be able to demonstrate the skills necessary for competency in automotive retailing. Student awareness and understanding will be directed toward: an introduction to automotive retailing, past, present and future; professionalism in sales; the components of sales transactions; a structured sales program and product knowledge; customer satisfaction and follow-up; building a clientele; and success through self-improvement. 3 hrs. lecture/wk.

### MKT 221

#### SALES MANAGEMENT (3CR)

*Prerequisite: MKT 134 or MKT 133*

Upon successful completion of this course, the student should be able to identify skills necessary to manage a sales force and develop a plan for recruitment, selection, training, motivation and evaluation. In addition, the student should be able to describe and analyze techniques to forecast and plan sales and audit results. 3 hrs. lecture/wk.

**MKT 234****SERVICES MARKETING (3CR)**

*Corequisite: BUS 230*

Upon successful completion of this course, the student should be able to describe the functioning of a services economy. In addition, students should be able to describe and define the nature and characteristics of services and the ways services are required to be marketed due to their intangible core. Additionally, students should be able to describe service quality, the foundation of services marketing, and the success factors in services marketing. 3 hrs. lecture/wk.

**MKT 271****MARKETING AND MANAGEMENT SEMINAR:  
ORGANIZATIONAL BEHAVIOR (2CR)**

Upon successful completion of this course, the student should be able to explain organizational structure and process and the principles of human behavior in organizations; describe core concepts of motivation, perception and communication in organizations; and analyze individual and team effectiveness in organizations. 2 hrs. lecture/wk.

**MKT 273****MARKETING AND MANAGEMENT SEMINAR:  
MARKETING RESEARCH (2CR)**

Upon successful completion of this course, the student should be able to explain market research design; collect, organize and analyze market research data; explain demographic and psychographic impacts on markets; and prepare and present a marketing research project. 2 hrs. lecture/wk.

**MKT 284****MARKETING AND MANAGEMENT INTERNSHIP I  
(1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

**MKT 286****MARKETING AND MANAGEMENT INTERNSHIP II  
(1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

**MKT 288****MARKETING AND MANAGEMENT INTERNSHIP III  
(1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

**MKT 289****MARKETING AND MANAGEMENT INTERNSHIP IV  
(1CR)**

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hours a week on-the-job training is required.

**MKT 290****CAPSTONE: MARKETING AND MANAGEMENT  
CASE STUDIES (3CR)**

*Prerequisites: BUS 141, BUS 230, MKT 284, MKT 286  
or permission of division administrator*

Upon successful completion of this course, the student should be able to identify problems and develop and describe the situational analysis, formulate alternative solutions and reach and explain a decision for each issue. In addition, the student should be able to apply the knowledge of marketing and management concepts and techniques in the analysis of cases and actual business situations. 3 hrs. lecture/wk.

## Mathematics

### DEVELOPMENTAL COURSES

MATH 111 and MATH 115 are designed to help students review and improve math concepts and develop math skills. MATH 111 and MATH 115 provide the mathematical foundation upon which subsequent studies in mathematics and other areas depend. These courses do not fulfill degree requirements.

#### MATH 111 FUNDAMENTALS OF MATH (3CR)

*Prerequisite: Appropriate score on the math assessment test*

Fundamentals of Mathematics is designed for the student who needs to improve or review basic math skills and concepts. This course includes computation using whole numbers, integers, fractions, decimals and percents and includes mathematical applications of exponents, measurement, geometry, statistics and linear equations. 3 hrs./wk.

#### MATH 115 INTRODUCTION TO ALGEBRA (3CR)

*Prerequisite: MATH 111 or appropriate score on the math assessment test*

Topics include simplifying numeric and algebraic expressions, including polynomials; simplifying rational, exponential and radical expressions; solving equations and inequalities, including linear and quadratic equations and equations containing rational expressions; and developing, analyzing and graphing linear equations. 3 hrs./wk.

#### MATH 116 INTERMEDIATE ALGEBRA (3CR)

*Prerequisite: MATH 115 or appropriate score on the math assessment test*

Topics include polynomials, rational expressions, exponents and radicals, equations and inequalities, graphing and systems of equations and functions. 3 hrs./wk.

#### MATH 118 GEOMETRY (3CR)

*Prerequisite or corequisite: MATH 115 or appropriate score on the math assessment test*

This course is an intuitive approach to geometry. Topics will include lines, polygons, area, volume, circles, similarity, congruence and coordinate geometry. 3 hrs./wk.

#### MATH 120 BUSINESS MATH (3CR)

*Prerequisite: MATH 111 or appropriate score on the math assessment test*

This is a course for the student who needs specific skills in math to address business problems and applications in payroll, retailing, money management, depreciation and financial statements. Students will use business calculators and computers to solve various business problems. 3 hrs./wk.

#### MATH 122 MATHEMATICS IN OUR CULTURE (3CR)

*Prerequisite: MATH 111 or appropriate score on the math assessment test*

This is a course about the extent, power and history of many interesting areas of mathematics. Topics will include mathematical reasoning and recreation, calculator activities, computer literacy, mathematics in art and music, probability, statistics and topology. 3 hrs./wk.

#### MATH 125 SURVEY OF MATHEMATICS (3CR)

*Prerequisite: MATH 111 or appropriate score on the math assessment test*

This television course surveys a variety of mathematical topics including logic, sets, equation solving, graphing, measurement, number sequences, probability statistics, calculators and computers. 3 hrs. lecture/wk.

#### MATH 133 TECHNICAL MATHEMATICS I (4CR)

*Prerequisite: MATH 111 or 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*

This course is the second of a two-semester sequence on technical applications of algebra and trigonometry. Topics will include factoring, algebraic fractions, quadratic equations, exponents, radicals, an introduction to coordinate geometry, logarithmic and exponential functions, oblique triangles, vectors, trigonometric graphs and identities. 5 hrs./wk.

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

*Prerequisite: MATH 116 or appropriate score on the math assessment test*

This course is designed to teach math concepts as well as quantitative skills. Topics will include inductive and deductive reasoning, mathematical patterns, sets, networks, geometry, probability, statistics, matrices, introduction to trigonometry, and exponential and logarithmic functions. The common themes throughout the course will be practical applications, innovations in computers, related mathematical and cultural history and reasoning ability. 3 hrs./wk.

**MATH 171****COLLEGE ALGEBRA (3CR)**

*Prerequisite: MATH 116 or appropriate score on the math assessment test*

A student in this course will analyze and graph functions, including constant, linear, absolute value, square root, polynomial, rational, exponential and logarithmic functions; solve equations and inequalities, including equations of variation, polynomial equations, exponential equations, logarithmic equations, systems of linear and nonlinear equations and systems of linear inequalities; and analyze and create algebraic and numerical patterns. Not available for credit to students currently enrolled in MATH 173 or with prior credit in MATH 173. 3 or 5 hrs./wk.

**MATH 172****TRIGONOMETRY (3CR)**

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

This is a study of trigonometric functions and their properties, identities, graphs, equations, inverse trigonometric functions, polar coordinates and applications. Not available for credit to students currently enrolled in MATH 173 or with prior credit in MATH 173. 3 hrs./wk.

**MATH 173****PRECALCULUS (5CR)**

*Prerequisite: MATH 116 or appropriate score on the math assessment test*

This course is a study of polynomial, rational, exponential, logarithmic, trigonometric and inverse trigonometric functions, equations, determinants, sequences and series, the binomial theorem and complex numbers. This course is intended for students planning to enroll in MATH 232 or MATH 241. It is not available for students currently enrolled in MATH 171 or MATH 172 or with prior credit in MATH 171 and/or MATH 172 without prior approval of the math director. 5 hrs. lecture/wk.

**MATH 175****DISCRETE MATH AND ITS APPLICATIONS (3CR)**

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

Students will study many of the puzzles that were solved by mathematicians of the 18th and 19th centuries and how these solutions are being used to find answers to 20th century problems. Topics may include network theory, the analysis of voting power, the analysis of human behavior in conflict situations using game theory, and optimal allocation of resources using the simplex method. The emphasis of the course will be on exploration and understanding. Computer/calculator applications will be incorporated into course topics. 3 hrs./wk.

**MATH 181****STATISTICS (3CR)**

*Prerequisite: MATH 171 or MATH 173 or an equivalent course or appropriate score on the math assessment test*

This is a beginning course in statistical analysis. Topics include observational studies, designed experiments, descriptive statistics and inferential statistics. The course also includes an introduction to probability, regression, correlation, confidence intervals and hypothesis testing. The course examines statistical distributions from a non-calculus point of view, including the normal, chi-square and binomial distributions. Computer/calculator applications are incorporated into the course topics. 3 hrs./wk.

**MATH 231****CALCULUS I (3CR)**

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

This is the first course in a two-semester series on calculus. It will cover differentiation of algebraic, exponential and logarithmic functions used in business, biology and the social sciences along with an introduction to the integration of algebraic and exponential functions. Trigonometry (MATH 172) may be taken concurrently with MATH 231 for those students planning to enroll in MATH 232 in subsequent semesters. 3 hrs./wk.

**MATH 232****CALCULUS II (3CR)**

*Prerequisites: MATH 231 and either MATH 172 or MATH 173 or an equivalent course*

This is the second course in a two-semester series on calculus. It will cover techniques of integration, differentiation and integration of trigonometric functions, differential equations, functions of several variables and a brief introduction to statistics. This information can be applied to business, statistics, biology and the social sciences. 3 hrs./wk.

**MATH 241****ANALYTIC GEOMETRY – CALCULUS I (5CR)**

*Prerequisite: MATH 172 or MATH 173 or appropriate score on the math assessment test*

This is the first course in a three-semester sequence on analytic geometry and calculus. Students will study and apply elements of plane analytic geometry and the differentiation and integration of algebraic and trigonometric functions. 5 hrs./wk.

**MATH 242****ANALYTIC GEOMETRY – CALCULUS II (5CR)**

*Prerequisite: MATH 241 or an equivalent course*

This is the second in a three-semester sequence on analytic geometry and calculus. The emphasis will be on infinite series, differentiation and integration of transcendental functions, polar coordinates, vectors and applications. 5 hrs./wk.

**MATH 243****ANALYTIC GEOMETRY – CALCULUS III (5CR)**

*Prerequisite: MATH 242 or an equivalent course*

This is the third course in a three-semester sequence on analytic geometry and calculus. Topics will include vector-valued functions, functions of several variables, multiple integration, vector analysis and an introduction to linear algebra. 5 hrs./wk.

**MATH 244****DIFFERENTIAL EQUATIONS (3CR)**

*Prerequisite: MATH 243 or an equivalent course*

This course will cover standard types of ordinary equations, second and higher order linear equations, solutions by series, the Laplace transform numerical solutions, and applications. 3 hrs./wk.

**MATH 285****STATISTICS FOR BUSINESS (4CR)**

*Prerequisite: MATH 232 or MATH 242 or an equivalent course*

This is a beginning course in calculus-based statistical analysis. Students must have an understanding of calculus concepts in order to successfully complete this course. Topics will include descriptive statistics, probability, sampling, confidence intervals, hypothesis testing and linear regression. The course will stress the applications to business with an emphasis on quality control. 4 hrs./wk.

**Metal Fabrication****MFAB 121****INTRODUCTION TO WELDING (4CR)**

This course is an introduction to oxyacetylene cutting, welding and brazing and shielded metal arc welding (SMAW). The SMAW portion of the course will cover fillet welds in all positions using a variety of electrodes. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

**MFAB 125****ADVANCED GAS AND ARC WELDING (4CR)**

*Prerequisite: MFAB 121*

This course is a continuation of Introduction to Welding. The course will cover more advanced projects in oxyacetylene welding, cutting, brazing, shielded metal arc welding (SMAW) and air carbon arc cutting. The SMAW process will be used to weld vee groove butt joints in the flat, horizontal, vertical up and overhead positions with root and face bend test being performed on the vertical weldment. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

**MFAB 130****GAS METAL ARC WELDING I (4CR)**

*Prerequisite: MFAB 121*

Upon successful completion of this course, the student should be able to identify basic theory of gas metal arc welding (GMAW) and flux cored arc welding (FCAW). The welding of mild steel plate will occur in all positions on both fillet and groove welds with the GMAW process. The FCAW process will be used to weld some fillet and groove welds on mild steel. Root and face bend test will be performed on a vertical up GMAW weldment. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

**MFAB 152****MANUFACTURING MATERIALS AND PROCESSES (3CR)**

Upon successful completion of this course, the student should be able to identify various manufacturing materials and processes currently used in industry. The capabilities and applications of machine tool, general fabrication, welding processes, robotics, cut-off equipment and other manufacturing processes and equipment will be studied. Lecture will be supplemented with demonstrations of various processes and equipment. 3 hrs. lecture/wk.

**MFAB 160****GAS TUNGSTEN ARC WELDING (4CR)**

*Prerequisite: MFAB 121*

Upon the successful completion of this course, the student should be able to identify the basic theory of gas tungsten arc welding (GTAW). The student will weld on mild steel, stainless steel and aluminum in a variety of positions on both fillet and groove welds using the GTAW process, with u-bend test being performed on mild steel. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hrs. lecture, 6 hrs. lab/wk.

**MFAB 170****BASIC MACHINE TOOL PROCESSES (4CR)**

Upon successful completion of this course, the student should be able to practice the basic principles of machining as well as setup and operation of machines. The laboratory will include the use of lathes, mills, drills, cut-off and other types of equipment. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 4 hrs. lab/wk.

**MFAB 230****GAS METAL ARC WELDING II (4CR)**

*Prerequisite: MFAB 130*

Upon the successful completion of this course, the student should be able to identify the theory of gas metal arc welding (GMAW) and flux cored arc welding (FCAW). The student will weld with the GMAW and FCAW processes in the flat, horizontal, vertical up and overhead positions on both fillet and groove welds. The GMAW welds will be made on aluminum, and the FCAW welds will be on one-inch mild steel with side bend test being made on the overhead and horizontal weldments. The student will be required to provide ANSI Z87 safety glasses, and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

**MFAB 240****METALLURGY (2CR)**

Metallurgy is the study of the science and technology of metals. This course covers the extractive, mechanical and physical phases of metallurgy. Topics include the identification of metals, types and classification of metals, heat treatment procedures and common steel manufacturing processes. 2 hrs. lecture-demonstration/wk.

**MFAB 271****METAL FABRICATION INTERNSHIP (3CR)**

*Prerequisite: Approval of the division administrator*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 15 hrs. minimum on-the-job training/wk.

## Music

**MUS 121****INTRODUCTION TO MUSIC LISTENING (3CR)**

The emphasis will be on listening in this survey of the development of music. Students will hear recorded medieval, Renaissance, baroque, classical, romantic and contemporary music, including popular American forms. 3 hrs./wk.

**MUS 123****INTRODUCTION TO MUSIC FUNDAMENTALS (2CR)**

This class is for the elementary classroom teacher or music student without a background in theory. It will cover notation of melody, rhythm, meter and musical terminology, intervals, chords and very basic four-part writing. 2 hrs./wk.

**MUS 125****INTRODUCTION TO JAZZ LISTENING (3CR)**

Listening will be emphasized in this introduction to the history of jazz in America. The focus will be on trends, periods and styles. 3 hrs./wk.

**MUS 131****SIGHT-SINGING AND EAR TRAINING I (2CR)**

Students will combine aural and sight-reading skills in this course on the melodic, harmonic and rhythmic elements of music. 2 hrs./wk.

**MUS 132****SIGHT-SINGING AND EAR TRAINING II (2CR)**

*Prerequisite: MUS 131*

This is a continued study of the melodic, harmonic and rhythmic elements of music, integrating aural and sight-reading skills. 2 hrs./wk.

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

*Prerequisite: MUS 132*

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

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

*Prerequisite: MUS 133*

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

**MUS 141****MUSIC THEORY: HARMONY I (3CR)**

This is a basic study of the harmonic system used in music composed from 1650 to 1900 and still in use in certain areas of music composition. Students will both write and analyze music of the period as well as play simple chord progression on the piano. Students will gain further understanding of harmonic practices through selected software programs. 3 hrs./wk.

**MUS 142****MUSIC THEORY: HARMONY II (3CR)**

*Prerequisite: MUS 141*

This is a continuation of the study of the harmonic system used in music composed from 1650 to 1900 and still in use in certain areas of music composition. The course includes introduction and extensive use of non-harmonic tones, proper usage of the supertonic and dominant sevenths, correct use of the submediant and mediant triads, advanced melodic writing and introduction of secondary dominant chords leading to elementary modulation. Students will play simple chord progressions on the piano as well as write and analyze music of the period. Selected software programs will enhance student skills and understanding. 3 hrs./wk.

**MUS 143****MUSIC THEORY: HARMONY III (3CR)**

*Prerequisite: MUS 142*

This is a continuation of the study of the harmonic system used in music composed from 1650 to 1900 and still in use in certain areas of music composition. Important topics include devices of modulation, binary and ternary musical forms and application of part writing procedures to instrumental music. Particular attention will be paid to the nature and functions of diatonic seventh chords, borrowed chords and augmented sixth chords in both minor and major keys. Keyboard harmony exercises of increasing difficulty will be utilized by the student. Advanced software programs will aid student skills and harmonic understanding. 3 hrs./wk.

**MUS 144****MUSIC THEORY: HARMONY IV (3CR)**

*Prerequisite: MUS 143*

This course is a continuation of the study of music composed from 1650 to 1900 with particular emphasis on compositional and harmonic techniques of the 20th century. Primary topics include chords of the ninth, 11th and 13th; more chromatic harmonic progressions; harmonic practices of the Debussy and Impressionism; and an introduction to 20th century music. Particular emphasis will be on the theories and techniques of Arnold Schoenberg and serial composition. Techniques since 1950 will also be explored and students will compose short excerpts utilizing contemporary styles and techniques.

**MUS 151****MIXED VOCAL ENSEMBLE I (1CR)**

Open to both majors and nonmajors, this class involves rehearsal and performance of a wide range of vocal music. 3 hrs./wk.

**MUS 152****MIXED VOCAL ENSEMBLE II (1CR)**

*Prerequisite: MUS 151*

This is a continuation of Mixed Vocal Ensemble I. 3 hrs./wk.

**MUS 153****MIXED VOCAL ENSEMBLE III (1CR)**

*Prerequisite: MUS 152*

This is a continuation of Mixed Vocal Ensemble II. 3 hrs./wk.

**MUS 154****MIXED VOCAL ENSEMBLE IV (1CR)**

*Prerequisite: MUS 153*

This is a continuation of Mixed Vocal Ensemble III. 3 hrs./wk.

**MUS 156****MIDI MUSIC COMPOSITION I (3CR)**

This course will combine the study of harmony, rhythm and melody as used in music composition with electronic technology available with the MIDI music system. Students will be introduced to the computer and the compatible equipment and software available for the expressed purpose of stimulating and enhancing the student's musical creativity. 2 hrs. lecture, 2 hrs. lab/wk.

**MUS 157****MIDI MUSIC COMPOSITION II (3CR)**

*Prerequisite: MUS 156*

This course is designed to put into practical use and to build on skills acquired in MIDI Music Composition I. Students will demonstrate the ability to create, store and utilize new, original sonorities via the graphic editing process. Students will also demonstrate a proficiency appropriate to the beginning student in notation software, learning how to use sequencing and notation software together to produce both visual and aural representations of their work. An emphasis will be placed on each student's portfolio – a comprehensive example of their work, both print and aural – for students to use, either for personal, commercial or academic purposes. 2 hrs. lecture, 2 hrs. lab/wk.

**MUS 161****CHAMBER CHOIR I (1CR)**

*Prerequisite: Audition*

Students will study and rehearse a variety of vocal music and perform at student and community activities. 3 hrs./wk.

**MUS 162****CHAMBER CHOIR II (1CR)**

*Prerequisite: MUS 161*

This is a continuation of Chamber Choir I. 3 hrs./wk.

**MUS 163****CHAMBER CHOIR III (1CR)**

*Prerequisite: MUS 162*

This is a continuation of Chamber Choir II. 3 hrs./wk.

**MUS 164****CHAMBER CHOIR IV (1CR)**

*Prerequisite: MUS 163*

This is a continuation of Chamber Choir III. 3 hrs./wk.

**MUS 171****APPLIED VOICE I (Class) (1CR)**

This class will offer instruction in singing from the beginning stages. 1 hr./wk.

**MUS 172****APPLIED VOICE II (Class) (1CR)**

*Prerequisite: MUS 171*

This is a continuation of Applied Voice I.

**MUS 173****APPLIED VOICE III (Class) (1CR)**

*Prerequisite: MUS 172*

This is a continuation of Applied Voice II.

**MUS 174****APPLIED VOICE IV (Class) (1CR)**

*Prerequisite: MUS 173*

This is a continuation of Applied Voice III.

**MUS 176****EVENING JAZZ ENSEMBLE I (1CR)**

*Prerequisite: Audition*

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

**MUS 177****EVENING JAZZ ENSEMBLE II (1CR)**

*Prerequisite: MUS 176*

This class will consist of continued performances of jazz and popular music at festivals, public concerts and college functions. 3 hrs./wk.

**MUS 178****EVENING JAZZ ENSEMBLE III (1CR)**

*Prerequisite: MUS 177*

This class will consist of continued performances of jazz and popular music at festivals, public concerts and college functions. 3 hrs./wk.

**MUS 179****EVENING JAZZ ENSEMBLE IV (1CR)**

*Prerequisite: MUS 178*

This class will consist of continued performances of jazz and popular music at festivals, public concerts and college functions. 3 hrs./wk.

**MUS 187****JAZZ IMPROVISATION I (2CR)**

*Prerequisite: Audition*

This is a fundamental approach to the rhythm and melodic lines involved in creative improvisation. Basic procedures for analyzing chords and chord structures will serve as an outline for organized spontaneous playing. 2 hrs./wk.

**MUS 188****JAZZ IMPROVISATION II (2CR)**

*Prerequisite: MUS 187*

This continuation of Jazz Improvisation I will focus on creative improvisation and procedures for analyzing chord structures as an outline for organized spontaneous playing. 2 hrs./wk.

**MUS 191****BAND I (1CR)**

*Prerequisite: Audition*

Concert band repertoire – especially early works and original contemporary selections – will be the basis of these performances. 3 hrs./wk.

**MUS 192**  
**BAND II (1CR)**

*Prerequisite: MUS 191*

This is a continuation of Band I. 3 hrs./wk.

**MUS 193**  
**BAND III (1CR)**

*Prerequisite: MUS 192*

This is a continuation of Band II. 3 hrs./wk.

**MUS 194**  
**BAND IV (1CR)**

*Prerequisite: MUS 193*

This is a continuation of Band III. 3 hrs./wk.

**MUS 195**  
**VOCAL JAZZ ENSEMBLE I (1CR)**

*Prerequisite: Audition*

This course is an introductory-level vocal ensemble musical experience. Prior choral experience is necessary to be successful in this course. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

**MUS 196**  
**VOCAL JAZZ ENSEMBLE II (1CR)**

*Prerequisite: MUS 195*

This course is a beginning-level vocal ensemble musical experience. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

**MUS 197**  
**VOCAL JAZZ ENSEMBLE III (1CR)**

*Prerequisite: MUS 196*

This course is an intermediate-level vocal ensemble musical experience. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

**MUS 198**  
**VOCAL JAZZ ENSEMBLE IV (1CR)**

*Prerequisite: MUS 197*

This course is an advanced-level vocal ensemble musical experience. Students will rehearse different styles of vocal jazz music and perform in concert at least once a semester. Emphasis will be placed on vocal blend, teamwork and stylistically accurate interpretation. 3 hrs./wk.

**MUS 201**  
**CHAMBER ENSEMBLE I (1CR)**

*Prerequisite: Audition*

Students will study and perform standard literature for ensembles: brass, woodwind, jazz combo and percussion. 2 hrs./wk.

**MUS 202**  
**CHAMBER ENSEMBLE II (1CR)**

*Prerequisite: MUS 201*

This is a continuation of Chamber Ensemble I. 2 hrs./wk.

**MUS 203**  
**CHAMBER ENSEMBLE III (1CR)**

*Prerequisite: MUS 202*

This is a continuation of Chamber Ensemble II. 2 hrs./wk.

**MUS 204**  
**CHAMBER ENSEMBLE IV (1CR)**

*Prerequisite: MUS 203*

This is a continuation of Chamber Ensemble III. 2 hrs./wk.

**MUS 211**  
**ORCHESTRA I (1CR)**

*Prerequisite: Audition*

Students will rehearse and perform with the Overland Park Civic Orchestra. 2 hrs. (1 evening)/wk.

**MUS 212**  
**ORCHESTRA II (1CR)**

*Prerequisite: MUS 211*

This is a continuation of Orchestra I. 2 hrs. (1 evening)/wk.

**MUS 213**  
**ORCHESTRA III (1CR)**

*Prerequisite: MUS 212*

This is a continuation of Orchestra II. 2 hrs. (1 evening)/wk.

**MUS 214**  
**ORCHESTRA IV (1CR)**

*Prerequisite: MUS 213*

This is a continuation of Orchestra III. 2 hrs. (1 evening)/wk.

**MUS 216**  
**APPLIED WOODWIND I (Class) (1CR)**

In this class, students will be instructed on the wind instrument of their choice. 1 hr./wk.

**MUS 217****APPLIED WOODWIND II (Class) (1CR)**

*Prerequisite: MUS 216*

This course will offer advanced instruction for those who have completed Applied Woodwind I. 1 hr./wk.

**MUS 218****APPLIED WOODWIND III (Class) (1CR)**

*Prerequisite: MUS 217*

This course will offer advanced instruction for those who have completed Applied Woodwind II. 1 hr./wk.

**MUS 219****APPLIED WOODWIND IV (Class) (1CR)**

*Prerequisite: MUS 218*

This course will offer advanced instruction for those who have completed Applied Woodwind III. 1 hr./wk.

**MUS 221****APPLIED PIANO I (Class) (2CR)**

This class will offer beginning group instruction in playing the piano. 2 hrs./wk.

**MUS 222****APPLIED PIANO II (Class) (2CR)**

*Prerequisite: MUS 221*

This course will provide advanced group instruction for those who have completed Applied Piano I. 2 hrs./wk.

**MUS 223****APPLIED PIANO III (Class) (2CR)**

*Prerequisite: MUS 222*

This course will provide advanced group instruction for those who have completed Applied Piano II. 2 hrs./wk.

**MUS 224****APPLIED PIANO IV (Class) (2CR)**

*Prerequisite: MUS 223*

This course will provide advanced group instruction for those who have completed Applied Piano III. 2 hrs./wk.

**MUS 226****APPLIED GUITAR I (Class) (1CR)**

This class will offer beginning instruction in playing the guitar. 1 hr./wk.

**MUS 227****APPLIED GUITAR II (Class) (1CR)**

*Prerequisite: MUS 226*

Advanced group instruction in playing the guitar will be offered in this course. 1 hr./wk.

**MUS 228****APPLIED GUITAR III (Class) (1CR)**

*Prerequisite: MUS 227*

This course will provide advanced group instruction in playing the guitar. 1 hr./wk.

**MUS 229****APPLIED GUITAR IV (Class) (1CR)**

*Prerequisite: MUS 228*

This course will offer advanced group instruction in playing the guitar. 1 hr./wk.

**MUS 231****APPLIED VOICE I (Private) (1CR)**

This course offers private instruction in vocal music, 1/2 hr./wk. for 16 weeks by arrangement with an approved instructor.

**MUS 232****APPLIED VOICE II (Private) (1CR)**

*Prerequisite: MUS 231*

This course will offer advanced private vocal music instruction.

**MUS 233****APPLIED VOICE III (Private) (1CR)**

*Prerequisite: MUS 232*

This course will offer advanced private vocal music instruction.

**MUS 234****APPLIED VOICE IV (Private) (1CR)**

*Prerequisite: MUS 233*

This course will offer advanced private vocal music instruction.

**MUS 236****APPLIED PIANO I (Private) (1CR)**

Students will be offered private instruction on the piano, 1/2 hr./wk. for 16 weeks by arrangement with an approved instructor.

**MUS 237****APPLIED PIANO II (Private) (1CR)**

*Prerequisite: MUS 236*

Advanced private instruction on playing the piano will be offered in this course.

**MUS 238****APPLIED PIANO III (Private) (1CR)**

*Prerequisite: MUS 237*

Advanced private instruction on playing the piano will be offered in this course.

**MUS 239****APPLIED PIANO IV (Private) (1CR)**

*Prerequisite: MUS 238*

This course will offer advanced private instruction on playing the piano.

**MUS 241****APPLIED GUITAR I (Private) (1CR)**

Students will be offered private instruction on the guitar, 1/2 hr./wk. for 16 weeks by arrangement with an approved instructor.

**MUS 242****APPLIED GUITAR II (Private) (1CR)**

*Prerequisite: MUS 241*

This course will offer advanced private instruction on playing the guitar.

**MUS 243****APPLIED GUITAR III (Private) (1CR)**

*Prerequisite: MUS 242*

This course will offer advanced private instruction on playing the guitar.

**MUS 244****APPLIED GUITAR IV (Private) (1CR)**

*Prerequisite: MUS 243*

This course will offer advanced private instruction on playing the guitar.

**MUS 246****APPLIED CLASSICAL GUITAR I (Private) (1CR)**

Students will be offered private instruction on the classical guitar, 1/2 hr./wk. for 16 weeks by arrangement with an approved instructor.

**MUS 247****APPLIED CLASSICAL GUITAR II (Private) (1CR)**

*Prerequisite: MUS 246*

This course will offer advanced private instruction on playing the classical guitar.

**MUS 248****APPLIED CLASSICAL GUITAR III (Private) (1CR)**

*Prerequisite: MUS 247*

This course will offer advanced private instruction on playing the classical guitar.

**MUS 249****APPLIED CLASSICAL GUITAR IV (Private) (1CR)**

*Prerequisite: MUS 248*

This course will offer advanced private instruction on playing the classical guitar.

**MUS 251****APPLIED BRASS I (Private) (1CR)**

Students will be offered private instruction on the brass instrument of their choice, 1/2 hr./wk. for 16 weeks by arrangement with an approved instructor.

**MUS 252****APPLIED BRASS II (Private) (1CR)**

*Prerequisite: MUS 251*

Students will be offered advanced private instruction on playing a brass instrument.

**MUS 253****APPLIED BRASS III (Private) (1CR)**

*Prerequisite: MUS 252*

This course will offer advanced private instruction on playing a brass instrument.

**MUS 254****APPLIED BRASS IV (Private) (1CR)**

*Prerequisite: MUS 253*

Advanced private instruction on playing a brass instrument will be offered in this course.

**MUS 256****APPLIED PERCUSSION I (Private) (1CR)**

Students will be offered private instruction on the percussion instrument of their choice, 1/2 hr./wk. for 16 weeks by arrangement with an approved instructor.

**MUS 257****APPLIED PERCUSSION II (Private) (1CR)**

*Prerequisite: MUS 256*

Advanced private instruction on playing a percussion instrument will be offered in this course.

**MUS 258****APPLIED PERCUSSION III (Private) (1CR)**

*Prerequisite: MUS 257*

This course will offer advanced private instruction on playing a percussion instrument.

**MUS 259****APPLIED PERCUSSION IV (Private) (1CR)**

*Prerequisite: MUS 258*

This course will offer advanced private instruction on playing a percussion instrument.

**MUS 261****APPLIED WOODWIND I (Private) (1CR)**

Students can choose their own woodwind instrument for advanced private instruction, 1/2 hr./wk. for 16 weeks by arrangement with an approved instructor.

**MUS 262****APPLIED WOODWIND II (Private) (1CR)**

*Prerequisite: MUS 261*

This course will offer advanced private instruction in playing a woodwind instrument.

**MUS 263****APPLIED WOODWIND III (Private) (1CR)**

*Prerequisite: MUS 262*

This course will offer advanced private instruction in playing a woodwind instrument.

**MUS 264****APPLIED WOODWIND IV (Private) (1CR)**

*Prerequisite: MUS 263*

This course will offer advanced private instruction in playing a woodwind instrument.

## Nursing

### Associate Degree – Registered Nurse

**NURS 121****FUNDAMENTALS OF NURSING (9CR)**

*Prerequisites: Admission to the Nursing Program, MATH 116 or higher and CPR certification*

*Corequisites: BIOL 140 and PSYC 130*

*CHEM 122 must be completed before enrolling in NURS 121.*

This course, the first in a sequence of four nursing courses, introduces the student to care of individuals along the health care continuum. Emphasis is placed on prevention of illness, assessment of health status and maintenance of wellness in individuals of various ages. A critical thinking approach is used as the course examines the concepts and principles of basic nursing care that provide a foundation for subsequent nursing practice. The clinical component of the course focuses on (1) prevention, (2) assessment of the healthy adult and (3) the application of fundamental principles in caring for adults encountering acute alterations in wellness. 4.5 hrs. lecture, 15.5 hrs. clinic/wk.

**NURS 122****NURSING ACROSS THE LIFE SPAN – PART I (9CR)**

*Prerequisites: NURS 121, BIOL 140 and PSYC 130*

*Corequisites: BIOL 225 and PSYC 218*

This course is the second in a sequence of four nursing courses. It provides an opportunity for students to explore diverse human responses to predictable events occurring throughout the life span. Students are helped to view clients within a family structure and on a wellness-illness continuum. Nursing role emphasis is on using communication and critical thinking to apply

nursing process in preventing illness and promoting wellness. The clinical component of the course focuses on (1) prevention, (2) assessment of individuals within the family structure and (3) application of knowledge in the care of a variety of clients across the life span. Students will apply concepts to individuals with acute and/or chronic alterations in the following areas: maternal/newborn, mental health, older adult, infants/children/adolescents. Clinical experiences will include a variety of settings. Each student will encounter all of these clinical areas over the course of two semesters (NURS 122 and NURS 221). 4.5 hrs. lecture, 15.5 hrs. clinic/wk.

**NURS 123****LPN-RN TRANSITION COURSE (6CR)**

*Prerequisites: Licensure as a vocational/practical nurse, admission with advanced standing to the Nursing Program and MATH 116 or higher, BIOL 140, PSYC 130, BIOL 225 and PSYC 218*

This is an orientation to the philosophy of the associate degree nursing program for LPNs entering with advanced standing. Topics will include group process, relationships, the role of the associate degree graduate, communication skills, and the nursing process. Individual assessment and assistance will be emphasized. 18 hrs./wk. for 6 wks. Summer.

**NURS 221****NURSING ACROSS THE LIFE SPAN – PART II (9CR)**

*Prerequisites: NURS 122 or NURS 123, BIOL 140, BIOL 225, PSYC 130, PSYC 218 and ENGL 121*

*Corequisites: SOC 122 or SOC 125, and communications elective*

This course is the third in a sequence of four nursing courses. It provides an opportunity for students to explore human responses to stressors occurring throughout the life span. Students are asked to view clients within a family structure and on a continuum of adaptation to maladaptation that may result in acute or chronic illnesses. Nursing role emphasis is on organizational skills and use of critical thinking to apply nursing process to diverse populations. The clinical component of the course focuses on (1) prevention, (2) assessment of individuals within the family structure and (3) application of knowledge in the care of a variety of clients across the life span. Students will apply concepts to individuals with acute and/or chronic alterations in the following areas: maternal/newborn, mental health, older adult, infants/children/adolescents. Clinical experiences will include a variety of settings. Each student will encounter all of these clinical areas over the course of two semesters (NURS 122 and NURS 221). 4.5 hrs. lecture, 15.5 hrs. clinic/wk.

**NURS 222**  
**MANAGING CLIENT CARE (9CR)**

*Prerequisites: NURS 221*

This course, the last in a sequence of four nursing courses, focuses primarily on adults experiencing common health alterations that require long-term adaptation. Using a critical-thinking approach, principles of client care management in various health care settings are studied. Ethical and legal issues are explored as they relate to nursing practice. The clinical component of the course focuses on (1) application of knowledge in the care of clients coping with long-term problems and (2) applying management principles in planning, implementing and evaluating care for a group of clients. 4/5 hrs. lecture, 15.5 hrs. clinic/wk.

## **Nursing**

### **Practical Nursing**

**AVPN 105**  
**BASIC NURSING: FUNDAMENTALS THEORY AND PRACTICE (366 CONTACT HOURS)**

*Prerequisite: Admission to the Practical Nursing program, BIOL 140, PSYC 130, CPCA 105, MATH 111*

This course emphasizes the necessary skills in the performance of nursing care, with focus on the role of the practical nurse in health care delivery. The course focuses on specific assessments of basic physiologic needs and addresses the practical nurse's role in assisting the client to deal with stressors related to interdependent health factors. The presentation and learning of techniques and procedures proceeds from simple to complex. Clinical and laboratory experience is an important part of this course and provides the foundation for subsequent nursing courses. 9 hrs. lecture, 14 hrs. clinic/wk. Fall.

**AVPN 106**  
**MEDICAL SURGICAL NURSING**  
**(366 CONTACT HOURS)**

Practical nursing students will continue to explore their role in helping clients meet basic and special physiologic needs. Students enroll for AVPN 106 in both the spring and summer term. The nursing process is used to plan client-centered nursing care for clients who require health care interventions. Clinical assignments in health care agencies are designed to continue development of assessment and technical skills in providing safe patient care. 9 hrs. lecture, 14 hrs. clinic/wk. (concurrent with AVPN 111 and AVPN 109). Spring and summer.

**AVPN 108**  
**INTRODUCTION TO PHARMACOLOGY FOR THE PRACTICAL NURSE (45 CONTACT HOURS)**

This course is designed to provide the opportunity for students to develop an understanding of the principles and methods of drug administration. Major drug categories are identified by their clinical uses, and the course presents the basic underlying pharmacological principles of drug action, uses in clinical practice and related nursing care considerations. 3 hrs. lecture/wk. Fall.

**AVPN 109**  
**PSYCHOSOCIAL ADAPTATION (117 CONTACT HOURS)**

Students will explore the adaptive capacity of clients with emotional stresses and diagnosed mental disorders. This course is designed to expose the student to knowledge and skills required to function in the mental health setting. The focus for the practical nursing student is on use of therapeutic communication skills in assisting clients and to encourage student pursuit of further education and investigation in this area. Clinical assignments occur in a structured clinical agency and are an important part of the course. 3 hrs. lecture, 14 hrs. clinic/wk. (concurrent with AVPN 106 and AVPN 111. Spring.

**AVPN 110**  
**PROFESSIONAL VOCATIONAL RELATIONSHIPS**  
**(45 CONTACT HOURS)**

This course is presented in units designed to address the transition from student to the role of the practical nurse. This course introduces the study of gerontology and the aging process and discusses physiologic, psychosocial and economic issues that impact health care needs across the life span. Development of good communication skills is addressed as a section of this course. Students enroll in PVR for both fall and spring semesters. The spring semester is designed to introduce the student to concepts of management, changes impacting nursing practice, nursing ethics and current issues in nursing and the health care delivery system. 3 hrs. lecture/wk. Fall and spring.

**AVPN 111**  
**MATERNAL/CHILD HEALTH NURSING**  
**(117 CONTACT HOURS)**

This course is designed to guide the practical nursing student in the care of the expectant mother and family during phases of the reproductive process. The role of the practical nurse is emphasized in caring for the new family. Discussion of child health issues related to normal growth and development stages is also an important focus in this course. Clinical assignments in health care agencies will be relevant to both obstetric and pediatric clients. 3 hrs. lecture, 14 hrs. clinic/wk. (concurrent with AVPN 106 and AVPN 109). Spring.

**AVPN 112**  
**NUTRITION FOR THE PRACTICAL NURSE**  
**(45 CONTACT HOURS)**

Nutrition is identified as one of the basic needs for physiologic integrity. This course is planned to assist the practical nursing student in identifying basic principles of food requirements and the relationship of nutrition to physiologic health. The content is designed to guide students in assessment of nutritional patterns influencing the client's adaptation level. The practical nurse's role in promotion of healthy patterns in this physiologic mode is emphasized. 3 hrs. lecture/wk. Fall.

## **Occupational Therapy Assistant**

**KOT 100**  
**INTRODUCTION TO OCCUPATIONAL THERAPY (5CR)**

*Prerequisite: Formal admission to the program*

This course is an introduction to the fundamentals and contemporary issues in occupational therapy and the health care guidelines for documentation procedures.

**KOT 101**  
**PEDIATRICS (3CR)**

*Prerequisites: BIOL 144, KOT 100, KOT 103, KOT 106, KOT 116 and KOT 102*

Physical, perceptual, cognitive, social, intellectual and emotional development during normal growth from prenatal stages to later adolescence will be covered, as will the role of occupational therapy in growth and development.

**KOT 102**  
**BASIC EMERGENCY PATIENT CARE (1CR)**

This course introduces current cardiopulmonary resuscitation skills, including adult, child and infant resuscitation according to American Heart Association standards. Medical and environmental emergencies are reviewed.

**KOT 103**  
**CLINICAL CONDITIONS (2CR)**

*Prerequisite: Formal admission to the program*

This course will cover common medical diseases and conditions referred to and treated by occupational therapy in the clinical setting.

**KOT 105**  
**GERONTOLOGY (3CR)**

*Prerequisite: SOC 122, KOT 204 and American Institutions*

Physical, perceptual, cognitive, social, intellectual and emotional development of human beings during normal growth and development from later adolescence to death will be covered. The role of the OTR/COTA will be explored, i.e., treatment approaches and service management.

**KOT 106**  
**GENERAL TREATMENT PROCEDURES (3CR)**

*Prerequisites: Formal admission to the program*

General treatment procedures used by OTs in the clinical setting will be presented. Use of adaptive equipment and techniques for home and work will be included.

**KOT 107**  
**KINESIOLOGY (3CR)**

*Prerequisite: KOT 102, BIOL 144, KOT 100, KOT 103, KOT 106 and KOT 116 with a minimum grade of "C"*

The study of kinetics of normal and abnormal motion of the human musculoskeletal system will be covered, as will evaluation procedures for range of motion and functional muscle strength

**KOT 111**  
**LEVEL I FIELDWORK: PEDIATRICS (.5CR)**

*Prerequisites: KOT 102, BIOL 144, KOT 100, KOT 103, KOT 106 and KOT 116 and concurrent enrollment in KOT 101*

This course is an introduction to pediatrics through observation in a clinical setting.

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

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

This course is an introduction to the medical setting through observations and clinical experience under the direct supervision of an OTR or an experienced COTA.

**KOT 154**  
**APPLIED NEUROLOGY (2CR)**

*Prerequisites: KOT 102, BIOL 144, KOT 100, KOT 103, KOT 106 and KOT 116 or BIOL 210 and KPT 152*

This course will present foundations of neuroscience necessary for practice as a rehabilitation professional. Included is anatomy and function of the nervous system and correlation of clinical problems with pathology of the nervous system.

**KOT 201**  
**MENTAL HEALTH (2.5CR)**

*Prerequisites: SOC 122, KOT 204, American Institutions*

This is a study of occupational therapy assessment and treatment techniques in the mental health setting.

**KOT 202**  
**PHYSICAL DYSFUNCTION (4CR)**

*Prerequisites: SOC 122, KOT 204, American Institutions*

Areas covered include occupational therapy treatment techniques and assessment used with the physically and cognitively challenged population.

**KOT 203**  
**ASSISTIVE TECHNOLOGY/SPLINTING (3CR)**

*Prerequisites: SOC 160, KOT 204 and American Institutions*

This course is an introduction to and hands-on experience with assistive technology, augmentative communication and splint fabrication.

**KOT 204**  
**THERAPEUTIC MEDIA/FABRICATION (2CR)**

*Prerequisite: PSYC 130, SPD 121, KOT 101, KOT 111, KOT 107 and KOT 154*

Students will study the characteristics, adaptability and therapeutic use of activities employed in occupational therapy. Instruction in the performance of teaching techniques as they apply to special conditions also will be included, as will demonstration of use of power and hand tools for fabrication purposes.

**KOT 212**  
**LEVEL I FIELDWORK: PHYSICAL/PSYCHOSOCIAL DYSFUNCTION (2CR)**

*Prerequisites: SOC 122, KOT 204 and American Institutions*

This class will introduce students to physical and psychosocial dysfunctions through observation in a clinical setting.

**KOT 222**  
**LEVEL II FIELDWORK: PHYSICAL DISABILITIES (8CR)**

*Prerequisites: KOT 201, KOT 202, KOT 105, KOT 203 and KOT 212*

Directed occupational therapy fieldwork in different practice areas of occupational therapy will be presented in this class.

## Office Systems Technology

**OST 101**  
**COMPUTERIZED KEYBOARDING (1CR)**

Upon successful completion of this course, the student should be able to operate a computer keyboard using the touch-typing system to enter data with speed and accuracy. 1 hr./wk.

**OST 102**  
**BUSINESS ENGLISH (1CR)**

Upon successful completion of this course, the student should be able to develop business documents that demonstrate correct sentences using correct English grammar and mechanics. Students should be able to proofread written work using standard proofreading symbols. 1 hr./wk.

**OST 105**  
**KEYBOARDING/FORATTING I (3CR)**

Upon successful completion of this course, the student should be able to develop speed and accuracy by learning to use the alphabetic, numeric and symbol keys by touch; identify and operate the basic machine parts and special purpose keys; and format and type personal correspondence and business documents – letters, reports, tables and memos. A basic word processing package will be used in this class. 3 hrs./wk.

**OST 110**  
**SKILLBUILDING I (1CR)**

*Prerequisite: OST 105 or equivalent*

Upon successful completion of this course, the student should be able to use a diagnostic approach to develop typing speed and accuracy. Specific problems will be identified, and the student should be able to complete specialized drills and activities tailored to the student's own typing needs to improve or eliminate deficiencies. 1 hr./wk.

**OST 115**  
**ELECTRONIC CALCULATORS (1CR)**

Upon successful completion of this course, the student should be able to review basic arithmetic, operate the electronic calculator by touch to build speed and accuracy, use basic calculator functions and operating controls, and solve application problems. 1 hr./wk.

**OST 118****SKILLBUILDING II (1CR)**

*Prerequisite: OST 110*

Upon successful completion of this course, the student should further develop speed and accuracy. The student should be able to improve keyboard skillbuilding through diagnostic evaluation and by completing individualized drills and activities. 1 hr. lecture/wk.

**OST 120****MACHINE TRANSCRIPTION (1CR)**

*Prerequisite: OST 105 or equivalent*

Upon successful completion of this course, the student should be proficient in transcribing a variety of business documents from machine transcription. Emphasis is placed on operation of transcription equipment; development of speed and accuracy in transcription; and developing English, proofreading and formatting skills. 1 hr./wk.

**OST 125****DOCUMENT FORMATTING (1CR)**

*Prerequisite: OST 155*

Upon successful completion of this course, the student should be able to type business letters using standard letter styles (block, modified block and simplified); format letters with special features; center ruled or boxed tables, type memos, specialized reports and tables; create and complete forms; create and design letterhead stationery; and apply formatting skills in a simulated office environment. The student should also be able to use basic word processing commands to complete the activities. The student should also be able to build speed and accuracy in keyboarding and production skills. 1 hr./wk.

**OST 130****OFFICE SYSTEMS CONCEPTS (3CR)**

Upon successful completion of this course, the student should be able to understand and apply technological factors of contemporary office systems. Implementation of office automation concepts will be examined as they relate to people, technology and organizations. These concepts will be applied to organizational and strategic planning to enhance productivity in the office. 3 hrs./wk.

**OST 150****RECORDS MANAGEMENT (3CR)**

Methods for developing and controlling an office records management program will be discussed. Selection of equipment for active, semiactive and inactive records will be covered, along with procedures for document, card and special records; microrecords; mechanized and automated records; and records storage, retention and transfer. Upon successful completion of this course, the student should

be able to file documents using alphabetic, subject, consecutive numeric, terminal digit numeric and geographic filing systems using requisition charge out and transfer procedures. The student should be able to create a computer database for records management; enter, modify and delete records; print reports; and determine disposition of records filed alphabetically, numerically, by subject and geographically. The course will cover the identification of evaluation methods and standards for both staff and programs in a records management department. 3 hrs./wk.

**OST 155****WORD PROCESSING APPLICATIONS I (2CR)**

*Prerequisite: OST 105 or equivalent*

Upon successful completion of this course, the student should be able to demonstrate skill in using such word processing features as creating, saving, opening, closing, printing and editing documents. The student should be able to use all beginning and intermediate features of the designated software package. In addition, the student should be able to demonstrate knowledge of standard disk maintenance procedures. 2 hrs. lecture-demonstration/wk.

**OST 160****LEGAL TRANSCRIPTION (3CR)**

*Prerequisite: OST 125 or equivalent*

This course is a systematic approach to learning legal vocabulary. Upon successful completion of this course, the student should be able to spell, define, pronounce and use in proper context 750 legal terms. The student should also be able to learn to use legal reference sources and transcribe legal documents from shorthand notes or dictation using proper formats and typing rules. 3 hrs./wk. Spring semester only.

**OST 165****MEDICAL TRANSCRIPTION (3CR)**

*Prerequisites: LC 130 and OST 125 or equivalent*

Upon successful completion of this course, the student should be able to spell, define, pronounce and use in proper context 1,000 medical terms. Also, the student should be able to use medical reference books and transcribe medical case studies using proper formats and typing rules. 3 hrs./wk. Spring semester only.

**OST 170****MEDICAL CODING AND BILLING (3CR)**

*Prerequisite: LC 130*

This course is designed to give the student an overview of the medical insurance billing process. This includes becoming acquainted with ICD-9, HCPCS and CPT procedural coding systems as well as Blue Cross/Blue Shield, Medicaid, Medicare and Champus/Champva programs. Students will be given hands-on coding advice for optimal insurance reimbursement. 3 hrs. lecture/wk.

**OST 175****CONFLICT IN THE WORKPLACE (1CR)**

Upon successful completion of this course, the student should be able to develop the knowledge, skills, process and understanding of good working relationships in an office environment. The student will also be able to recognize and understand behavior patterns and what work-related events might trigger workplace conflict. Strategies will be developed for dealing with conflict and difficult people. 1 hr. lecture/wk.

**OST 180****BUSINESS SPREADSHEET APPLICATIONS (1CR)**

*Prerequisite: CPCA 110 or extensive experience using Windows-based spreadsheets*

Upon successful completion of this course, the student should be able to demonstrate competencies in using Microsoft Excel IntelliSense™ features including AutoSum, AutoCalculate, AutoComplete and AutoFill and use the Function Wizard to create complex formulas. Additionally, a student successfully completing this course should be able to create charts and include graphics in the worksheets and workbooks, create regional sales reports using maps, create and analyze an inventory list, link multiple worksheets and workbooks, create financial forecasts and analyze potential variations in a multitude of situations by using the Scenario, Goal Seek and Solver Functions. 1 hr. lecture/wk.

**OST 185****BUSINESS DATABASE APPLICATIONS (1CR)**

*Prerequisite: CPCA 114 or extensive experience using Windows-based databases*

Upon successful completion of this course, the student should be able to demonstrate database development skills by effectively identifying the types of projects that should be developed using a database program rather than a spreadsheet, build tables that can be related to each other in order to eliminate data entry duplication, customize forms and reports, create basic and advanced queries and define relational integrity between tables. The student should also be able to create basic and advanced queries with single and multiple tables using Boolean logic, identify and implement methods of troubleshooting and explain ways of getting additional help. 1 hr. lecture/wk.

**OST 205****PROFESSIONAL IMAGE DEVELOPMENT (1CR)**

Upon successful completion of this course, the student should be able to develop work habits and self-management skills that will affect performance on the job by reducing stress, conflict and miscommunication. 1 hr. lecture/wk.

**OST 210****WORKING IN TEAMS (1CR)**

Upon successful completion of this course, the student should possess the necessary skills to work in teams. Students should also be able to assess and adjust their perceptions of how they should communicate within a team environment and to assess their own workplace expectations, values and methods of communicating as a basis for understanding how to improve communication with others to achieve a common goal. 1 hr. lecture/wk.

**OST 255****WORD PROCESSING APPLICATIONS II (2CR)**

*Prerequisite(s): OST 155 or extensive experience using the same software with approval of the program facilitator*

Upon successful completion of this course, the student should be able to demonstrate word processing skills using such features as macros, styles, columns, outline and paragraph numbering, table of contents and indexes, graphics and other advanced features of the designated word processing package. Desktop publishing, macros and styles will also be introduced as part of the advanced features of word processing. 2 hrs. lecture-demonstration/wk.

**OST 260****DESKTOP PUBLISHING FOR THE OFFICE (3CR)**

*Prerequisite: OST 155 or the equivalent*

Upon successful completion of this course, the student should be able to use desktop publishing skills to produce publications such as fliers, newsletters, brochures, operating manuals, price lists and bulletins. 3 hrs. lecture-demonstration/wk.

**OST 265****COMPUTERIZED OFFICE APPLICATIONS (3CR)**

*Prerequisites: CPCA 110, CPCA 114, OST 255 and OST 130. This capstone course should be taken near the end of the degree or certificate program.*

Upon successful completion of this course, the student should be able to use software to complete computerized administrative tasks performed by specialists in today's electronic office. The student will select an administrative, medical or legal specialty. 3 hrs./wk.

**OST 270****OFFICE AUTOMATION IMPLEMENTATION (3CR)**

*Prerequisite(s): This course should be taken near the end of the degree or certificate program.*

The student should be able to evaluate and select office system hardware and software and identify appropriate sources of help when necessary. The student should also be able to propose and support desirable changes in office systems to a variety of audiences. 3 hrs. lecture-demonstration/wk.

**OST 275****OFFICE INTERNSHIP I (1CR)**

*Prerequisite: Admission to the Office Systems Technology Program*

Upon successful completion of this course, the student should be able to gain work experience in an approved training situation under instructional supervision. The course will provide practical experience in the use of skills acquired in Office Systems Technology courses. 240 hrs. work experience.

## Paralegal

**PL 121****INTRODUCTION TO LAW (3CR)**

Upon successful completion of this course, the student should be able to explain the major substantive and procedural aspects of law. This course is available to students with a general interest in the law, and is required for students seeking admission to the Paralegal program. 3 hrs. lecture/wk.

**PL 123****PARALEGAL PROFESSIONAL STUDIES (1CR)**

Upon successful completion of this course, the student should be able to explain the legal assistant profession. Topics will include paralegal licensing, certification, education, employment and professional ethics. The course is required for students seeking admission to the Paralegal program. 1 hr. lecture/wk.

**PL 131****LEGAL RESEARCH (3CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to demonstrate a systematic method of researching legal questions. Topics covered are issue recognition, fact analysis and primary and secondary resources. Research results will be communicated in written form. 3 hrs. lecture/wk.

**PL 132****CIVIL LITIGATION (3CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to explain the Rules of Civil Procedure and the Rule of Evidence as they relate to litigation. The emphasis in the course will be on the role of the legal assistant in a civil litigation practice and will include drafting of pleadings. 3 hrs. lecture/wk.

**PL 140****ALTERNATIVE DISPUTE RESOLUTION (3CR)**

*Prerequisites: Admission to the Paralegal program and PL 132, or division administrator approval*

This course examines the various methods utilized by the legal system for dispute resolution and the role of the legal assistant in those methods. The course will concentrate on the major alternatives to litigation, including mediation, arbitration, summary jury trials, mini-trials and the moderated settlement conferences. 3 hrs. lecture/wk.

**PL 142****TORTS (3CR)**

*Prerequisites: Admission to the Paralegal program and PL 132, or division administrator approval*

This course examines the major principles of tort law and personal injury litigation. The course will concentrate on the substantive law of negligence, intentional torts and strict liability torts. Elements of prima facie tort claims, types of damages available and defenses to tort claims will be examined. 3 hrs. lecture/wk.

**PL 148****CRIMINAL LITIGATION (3CR)**

*Prerequisite: Admission to the Paralegal program and PL 132, or division administrator approval*

The emphasis in this course will be on the role of the paralegal in criminal litigation practice and will include the preparation of documents used in the criminal litigation process. Upon successful completion of this course, the student should be able to explain the objectives, substantive principles and procedural rules of the criminal process. 3 hrs. lecture/wk.

**PL 152****REAL ESTATE LAW (3CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to describe common types of real estate transactions and conveyances. The preparation of legal instruments, namely deeds, contracts, leases and mortgages, will be studied. 3 hrs. lecture/wk.

**PL 155****SPECIAL TOPICS IN REAL ESTATE (1CR)**

*Prerequisite: PL 152 or division administrator approval*

This course will focus on current developments in real estate law. Topics will include special areas of real estate practice such as zoning, financing, mechanics lien laws and environmental concerns. 1 hr. lecture/wk.

**PL 162****FAMILY LAW (3CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to describe the substantive and procedural principles of family law. Topics will include adoption and divorces, as well as child issues of custody, support and visitation. 3 hrs. lecture/wk.

**PL 165****SPECIAL TOPICS IN FAMILY LAW (2CR)**

*Prerequisite: PL 162 or division administrator approval*

This course will focus on current developments in family law. Topics will include special areas of family law, such as finance, biological/medical advances and domestic violence. 2 hrs. lecture/wk.

**PL 171****LAW OFFICE MANAGEMENT (3CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to describe the operational systems in a law office. Some topics addressed are billing systems, pleadings organization, docket control and law library maintenance. 3 hrs. lecture/wk.

**PL 205****LEGAL WRITING (3CR)**

*Prerequisite: PL 131 or division administrator approval*

Upon successful completion of this course, the student should be able to research complex legal problems, communicate the results of this research and other law-related information clearly and effectively, and analyze legal problems using the skills of logic and reasoning. 3 hrs. lecture/wk.

**PL 212****BUSINESS ORGANIZATIONS (3CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to describe the various forms of business ownership, including corporations, partnerships and sole proprietorships. The emphasis in the course is on the role of the legal assistant in a business law practice and on the preparation of related documents. 3 hrs. lecture/wk.

**PL 220****COMPUTER-ASSISTED LEGAL RESEARCH (2CR)**

*Prerequisites: PL 131 or division administrator approval*

Upon successful completion of this course, the student should develop computer research skills allowing the use of Lexis-Nexis and Westlaw-Dialog databases. By input-

ting a search request, the student should be able to retrieve relevant cases, statutes or other important documents. Furthermore, the student should be able to use on-line cite checking and Shepardizing in order to guarantee current information by means of legal computer services. 2 hrs. lecture/wk.

**PL 223****COMPUTER APPLICATIONS IN THE LAW OFFICE (3CR)**

*Prerequisites: Admission to the Paralegal program and either DP 124 or CPCA 128 or three hours of CPCA 108 and CPCA 110 and CPCA 114*

Upon successful completion of this course, the student should be able to evaluate and use legal software to perform customary law office procedures, including computer litigation support, drafting and editing of specific legal documents, document and file management, time keeping and billing, docket control and forms generation. 3 hrs. lecture/wk.

**PL 225****ADVANCED COMPUTER-ASSISTED LEGAL RESEARCH (2CR)**

*Prerequisite: PL 220 or division administrator approval*

This course builds on the foundation of PL 220 Computer-assisted Legal Research. The computer research skills are enhanced by in-depth, hands-on training on Lexis-Nexis and Westlaw-Dialog databases. 2 hrs. lecture/wk.

**PL 241****WILLS, TRUSTS AND PROBATE ADMINISTRATION (3CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to draft a will with testamentary powers. The use of trusts, probate procedures, techniques for fact gathering and mastery of estate tax principles are emphasized in the course. 3 hrs. lecture/wk.

**PL 245****ELDER LAW (3CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to explain the legal aspects of aging. Topics include financial and estate planning, health care, personal planning and protection, taxation, housing and other legal matters affecting the elderly and people with special legal needs. 3 hrs. lecture/wk.

**PL 264****WORKERS' COMPENSATION (2CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to explain the basic principles of workers' compensation. Topics include administrative and adjudicative procedures, calculation of benefits and preparation of claims. 2 hrs. lecture/wk.

**PL 266****EMPLOYMENT LAW (3CR)**

*Prerequisites: Admission to the Paralegal program or division administrator approval*

This course examines the relationship between employer and employee. Major federal and state employment laws will be examined, including Title VII of the Civil Rights Act of 1964, the Age Discrimination Employment Act and the Americans with Disabilities Act. 3 hrs. lecture/wk.

**PL 268****BANKRUPTCY (2CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to explain the purpose and applicability of the Bankruptcy Code. This course will emphasize the role of the legal assistant in a bankruptcy practice. Topics will include bankruptcy court procedures and the preparation of bankruptcy forms and documents. 2 hrs. lecture/wk.

**PL 271****LEGAL ETHICS, INTERVIEWING AND INVESTIGATION (3CR)**

*Prerequisite: PL 132*

*Corequisite: PL 205 or division administrator approval*

Upon successful completion of this course, the student should be able to explain ethical rules and standards governing the legal profession, interview clients and witnesses and perform factual investigation pursuant to legal proceedings. The emphasis will be on recognition of ethical problems commonly encountered by legal assistants, as well as the development of interviewing and investigating skills. 3 hrs. lecture/wk.

**PL 275****PARALEGAL INTERNSHIP I (1CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to explain how a law office or legal-related office operates from practical experience. By arrangement.

**PL 276****PARALEGAL INTERNSHIP II (1CR)**

*Prerequisite: Admission to the Paralegal program or division administrator approval*

Upon successful completion of this course, the student should be able to explain how a law office or legal-related office operates from practical experience. The student should also be able to successfully draft a job résumé and conduct a job interview. By arrangement.

## Philosophy

**PHIL 121****INTRODUCTION TO PHILOSOPHY (3CR)**

This course is a study of basic issues of philosophy, including the nature of being, methods of acquiring knowledge and man's moral, social, religious and political values. Emphasis will be on the applications of the study of traditional problems of philosophy to the study of contemporary society. 3 hrs./wk.

**PHIL 124****LOGIC AND CRITICAL THINKING (3CR)**

This course is an inquiry into techniques of persuasion and the standards for interpretation and assessment that a critical thinker should employ. Argumentative and non-argumentative forms of persuasion are examined, including propaganda, exaggeration, stereotyping, slanted news and common fallacies. In addition, the course offers standards for evidential warrants based on samples, probabilities and casual claims. 3 hrs./wk.

**PHIL 138****BUSINESS ETHICS (1CR)**

Upon successful completion of this course, the student should be able to analyze and explain classical and contemporary ethical theories by examining case studies of ethical problems in contemporary business. In addition, students should be able to identify methods of ethical analysis and examine their own moral convictions in the context of the theories and cases studied. 1 hr./wk.

**PHIL 143****ETHICS (3CR)**

This course is a study of historical theories of ethics as well as contemporary perspectives and applications of these theories to specific moral issues. The goal of the course is to help the student better understand contemporary social and moral issues in order to make personal ethical decisions. 3 hrs./wk.

**PHIL 154****HISTORY OF ANCIENT PHILOSOPHY (3CR)**

This course examines ancient Greek and Roman philosophical thought from its original efforts to understand the fundamental operations of the natural world to concerns about the ways a person can live successfully in nature and society. It provides a comprehensive view of the philosophical foundations of its Western world view. 3 hrs./wk.

**PHIL 161****ELEMENTARY SYMBOLIC LOGIC (3CR)**

This course is a study of formal logic. The student will be introduced to strategies for symbolizing arguments, propositional logic, truth tables, formal proofs, quantification theory and other tests of formal validity. Attention will also be given to the historical development of formal logic. 3 hrs./wk.

**PHIL 176****PHILOSOPHY OF RELIGION (3CR)**

This course is an inquiry into the nature of religion, religious thought and religious language. It addresses philosophical topics such as the nature of religious belief, the apparent need of some people for religion, differences between religion and science and between religious and scientific language, the special problems raised by religious language, and changes religion and philosophy of religion have made to accommodate a modern world view. All readings are from traditional and contemporary theological and philosophical sources. 3 hrs./wk.

**PHIL 210****HISTORY OF MODERN PHILOSOPHY (3CR)**

*Prerequisite: PHIL 121 or PHIL 143 or HIST 125 or HIST 126*

This course takes a historical approach to the development of modern philosophy, covering the period from the Renaissance up to the 20th century. The course covers the epistemological, metaphysical and relevant axiological issues of the major philosophers and philosophical movements of the period. The course also examines the influence of modern philosophy on contemporary thought. 3 hrs. lecture/wk.

## Photography

**PHOT 121****FUNDAMENTALS OF PHOTOGRAPHY (3CR)**

This course covers basic processes and principles in black-and-white photography. The course treats the theory and practice of photography as essential tools of the visual communicator. Emphasis is on development of competence in the use of photographic equipment and materials. Topics include cameras, light meters, films, developing negatives, printing, filters, chemicals and presentation. Students must provide their own cameras with adjustable focus, shutter speeds and aperture. 3 hrs. lecture, 3 hrs. lab-demonstration/wk.

**PHOT 122****FINE ART PHOTOGRAPHY (3CR)**

*Prerequisite: PHOT 121*

An advanced course in black-and-white photography. Fine Art Photography is a continuation of Fundamentals of Photography topics and content. Emphasis will be on the development of professional standards of photographic technique and image quality and the advancement of students' abilities to think photographically. A working knowledge of camera and darkroom techniques is assumed. The course is primarily intended to advance the abilities of students interested in photography as a means of self-expression. 6 hrs./wk.

**PHOT 123****COMMERCIAL PHOTOGRAPHY (3CR)**

*Prerequisite: PHOT 121*

This advanced course treats the theory and practice of commercial photography. It is intended to satisfy requirements for students seeking commercial art degrees as well as serve as an introduction for prospective commercial photographers. 6 hrs./wk.

**PHOT 125****PHOTOJOURNALISM (3CR)**

*Prerequisite: PHOT 121*

This course is an introduction to the theory and practice of photojournalism. The student will become familiar with the issues and problems posed to the working photojournalist and will learn the techniques and methods photojournalists use to disseminate information. The course includes a practicum in which the students will observe and practice in professional news organizations. 3 hrs./wk.

**PHOT 127**  
**COLOR PHOTOGRAPHY (3CR)**

*Prerequisite: PHOT 121*

This course is a practical and theoretical treatment of the materials, equipment and processes of color photography. Camera and darkroom techniques and controls necessary to produce effective and expressive color photographic images will be emphasized. 6 hrs. lecture, studio/wk.

**PHOT 140**  
**HISTORY OF PHOTOGRAPHY (3CR)**

In this survey of the history of photography from the 1830s through today, the technology and aesthetics of photography will be studied and related to art, culture and ideas. 3 hrs./wk.

**PHOT 141**  
**ISSUES IN CONTEMPORARY PHOTOGRAPHY (3CR)**

Current photography will be surveyed along with important contemporary photographers, new color photography, recent criticism, and photography's relation to art. Photography will be viewed in relation to important aspects of modern culture and thought. 3 hrs./wk.

## Physical Education

(Refer to Health/Physical Education and Recreation [HPER], page 191.)

## Physical Science

(Also see Geoscience, page 187.)

**PSCI 120**  
**PHYSICAL SCIENCE (4CR)**

This is a study of the fundamentals of physics, chemistry, astronomy and geology. Topics will include energy, electricity, magnetism, modern physics and chemical bonding. It includes audiovisual-tutorial, computer-tutorial and other multimedia aids. This course is intended for nonscience majors. 3 hrs. lecture, 3 hrs. lab/wk.

## Physical Therapist Assistant

**KPT 100**  
**MOLECULAR BASIS OF LIVING SYSTEMS (3CR)**

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

**KPT 102**  
**BASIC EMERGENCY PATIENT CARE (1CR)**

This course introduces current cardiopulmonary resuscitation skills, including adult, child and infant resuscitation according to American Heart Association standards. Medical and environmental emergencies are reviewed. 1 hr./wk.

**KPT 151**  
**INTRODUCTION TO PHYSICAL THERAPY (2CR)**

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

**KPT 152**  
**FUNDAMENTALS OF MODALITIES I (3CR)**

*Prerequisite: BIOL 140, CHEM 122, LC 130 and KPT 151 with a minimum grade of "C" and acceptance into the program*

This course will present treatment, modalities, therapeutic measures and patient handling skills used in the physical treatment of various injuries and diseases. The course also includes field trips to an area hospital to gain exposure to the clinic and its modalities. 2 hrs. lecture, 2 hrs. lab/wk

**KPT 153**  
**KINESIOLOGY (4CR)**

*Prerequisites: BIOL 140 and KPT 152 with a minimum grade of "C" and acceptance into the program*

Students will analyze the anatomy and the functions of the musculoskeletal system and the application of physical therapy assessment procedures related to clinical kinesiology. 2 hrs. lecture, 4 hrs. lab/wk.

**KPT 154**  
**APPLIED NEUROLOGY (2CR)**

*Prerequisites: BIOL 225 and KPT 152 with a minimum grade of "C" and acceptance into the program or BIOL 144, KOT 100, KOT 102, KOT 103, KOT 106 and KOT 116, each with a minimum grade of "C"*

This course will present the student with the foundations of neuroscience necessary for practice as a P.T.A. The

student will learn anatomy and function of the nervous system, as well as correlation of clinical problems with the pathology of the nervous system. 2 hrs./wk.

**KPT 155**  
**REHABILITATION (4CR)**

*Prerequisite: KPT 160 and KPT 162 with a minimum grade of "C"*

The student will be introduced to the philosophy underlying rehabilitation theory and principles of treatment involved in normal and abnormal ambulation and mobility. Attention will be given to application of external supports and assistive devices and teaching activities of daily living with attention to description, demonstration and practice. Field trips are required. 2 hrs. lecture, 5 hrs. lab/wk.

**KPT 158**  
**THERAPEUTIC EXERCISE (4CR)**

*Prerequisite: KPT 160 and KPT 162 with a minimum grade of "C"*

This course will introduce students to the theory and principles of application of therapeutic exercise including patient instruction, manual techniques and equipment commonly used by the physical therapist assistant. Field trips are scheduled during the semester so students may learn various specialized techniques. 2 hrs. lecture, 4 hrs. lab/wk.

**KPT 159**  
**ORTHOPEDIC PATHOLOGY (2CR)**

*Prerequisite: BIOL 225 and KPT 152 with a minimum grade of "C" and acceptance into the program*

Students will study orthopedic pathologies commonly seen in physical therapy practice, diagnosis, signs and symptoms, physiological factors and treatment. 2 hrs./wk.

**KPT 160**  
**MEDICAL DISEASES (2CR)**

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

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

**KPT 161**  
**FUNDAMENTALS OF MODALITIES II (4CR)**

*Prerequisites: KPT 152 and BIOL 225 with a minimum grade of "C"*

The student will be introduced to the theory and practical application of electrotherapy, patient documentation, patient care skills and selected modalities, including indications and contraindications for use. 2.5 hrs. lecture, 3 hrs. lab/wk.

**KPT 162**  
**CLINICAL EXPERIENCE I (2CR)**

*Prerequisites: KPT 153, KPT 154, KPT 159, KPT 161 and KOT 102 with a minimum grade of "C"*

*Completion of preclinical examination with a score of 80 percent or better*

*Demonstrated competency in preclinical checkouts*

Students receive supervised clinical experience in the practical application of techniques of physical therapist assistants in the treatment of patients in a variety of clinical settings. 30 lab hrs.

**KPT 164**  
**PEDIATRICS AND GERONTOLOGY (2CR)**

*Prerequisites: KPT 160 and KPT 162 with a minimum grade of "C"*

The student will be introduced to specialized information related to the treatment of pediatric and older adult populations. 2 hrs. lecture/wk.

**KPT 170**  
**CLINICAL EXPERIENCE II (2CR)**

*Prerequisites: KPT 160 and KPT 162 with a minimum grade of "C"*

*Concurrent enrollment in KPT 155, KPT 158, KPT 164 and KPT 171*

Students receive supervised clinical experience in the practical application of techniques and procedures covered in all previous KPT courses. Students assist physical therapists and physical therapist assistants in the treatment of patients in a variety of clinical settings. (Clinical 5)

**KPT 171**  
**CLINICAL SEMINAR (2CR)**

*Prerequisites: KPT 160 and KPT 162 with a minimum grade of "C"*

Students will discuss current professional and patient care issues regarding the practice of physical therapy, ethics, departmental organization, reimbursement, safety and research. 2 hrs. lecture/wk.

**KPT 172**  
**CLINICAL EXPERIENCE III (8CR)**

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

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

## Physics

### PHYS 125

#### TECHNICAL PHYSICS I (4CR)

*Prerequisite: MATH 133*

This class is an applied study of the concepts of force, work, rate, resistance and power in mechanical, fluidal, thermal and electrical energy systems. 3 hrs. lecture, 3 hrs. lab/wk.

### PHYS 126

#### TECHNICAL PHYSICS II (3CR)

*Prerequisite: PHYS 125*

This is a continuation of the applied study of concepts begun in Technical Physics I. Concepts studied will include energy, force transformers, energy converters, and vibrations and waves in mechanical, fluidal, electrical and thermal systems. 2 hrs. lecture, 3 hrs. lab/wk.

### PHYS 130

#### GENERAL PHYSICS I (5CR)

*Prerequisite: MATH 171*

Selected topics in physics will be introduced: motion, energy, matter, thermodynamics and wave motion. 4 hrs. lecture, 3 hrs. lab/wk.

### PHYS 131

#### GENERAL PHYSICS II (5CR)

*Prerequisite: PHYS 130*

In this continuation of General Physics I, topics will include electricity, magnetism, light, atomic and nuclear structure, quantum theory, relativity and particle physics. 4 hrs. lecture, 3 hrs. lab/wk.

### PHYS 135

#### SPECIAL TOPICS IN TECHNICAL PHYSICS I (1CR)

*Prerequisite: MATH 133 or MATH 171*

*Corequisite: PHYS 125*

Students in this course will explore momentum as it operates in mechanical, fluidal and electromagnetic systems. Topics begun in PHYS 125 will be explored further. 4 hrs. lecture, 3 hrs. lab/wk.

### PHYS 136

#### SPECIAL TOPICS IN TECHNICAL PHYSICS II (2CR)

*Prerequisites: PHYS 125 and PHYS 135*

*Corequisite: PHYS 126*

Students will explore concepts involved in developing exponential constants for linear systems, radiation and optics. Students will continue studies begun in PHYS 125, PHYS 126 and PHYS 135. 4 hrs. lecture, 3 hrs. lab/wk.

### PHYS 220

#### ENGINEERING PHYSICS I (5CR)

*Corequisite: MATH 242*

This is an introduction to physics for engineering and science students. Included will be mathematical approaches to the study of mechanics, wave motion and thermodynamics. 4 hrs. lecture, 3 hrs. lab/wk.

### PHYS 221

#### ENGINEERING PHYSICS II (5CR)

*Prerequisite: PHYS 220 and MATH 242*

Electricity and magnetism, light, and topics in modern physics will be addressed. 4 hrs. lecture, 3 hrs. lab/wk.

## Political Science

### POLS 122

#### POLITICAL SCIENCE (3CR)

This course will explore the interaction between political and economic ideas and institutions in the world political arena and examine the role of communism, capitalism, fascism and democracy in political systems. 3 hrs./wk.

### POLS 124

#### AMERICAN NATIONAL GOVERNMENT (3CR)

This course is an examination of the current national policy-making structure and process. Topics of study include basic political and economic concepts, the Constitution, political parties, pressure groups, budget construction and decision-making institutions. 3 hrs./wk.

### POLS 126

#### STATE AND LOCAL GOVERNMENT (3CR)

This course is a survey of organization, theory and practice of state and local governments through examination of executive, legislative, judicial and service functions in the United States in general and Kansas in particular. The course includes guest lectures by elected officials, government personnel and community activists. 3 hrs./wk.

### POLS 132

#### INTRODUCTION TO COMPARATIVE GOVERNMENT (3CR)

This course studies the major world political systems. It will compare and contrast the resolution of key 20th-century political, social and economic issues. 3 hrs./wk.

**POLS 135****INTERNATIONAL RELATIONS (3CR)**

This course analyzes the conflict and cooperation among nation-states. Students will study contemporary problems and how they relate to power, war, terrorism, diplomacy, international organizations and the future of the nation-state system. 3 hrs./wk.

## Psychology

**PSYC 121****APPLIED PSYCHOLOGY (3CR)**

This course will examine how students can use psychological principles to better understand themselves and others. Topics will include popular approaches to psychological problems; problem-solving techniques; and the student's view of self, values and goals. The course also will show how psychology applies to other disciplines and social institutions. 3 hrs./wk.

**PSYC 124****HUMAN POTENTIAL SEMINAR (3CR)**

This is a structured group experience designed to increase self-affirmation, self-motivation, self-determination and empathetic regard for others. It will include analysis of achieving satisfaction and success, clarification of personal values, acknowledgment of personal strengths and long-range goal setting. Regular attendance is imperative. 3 hrs./wk.

**PSYC 130****INTRODUCTION TO PSYCHOLOGY (3CR)**

This is an introduction to general psychology. Topics will include the biological aspects of behavior, the brain, consciousness, sensation, perception, motivation, emotion, stress, maturation and development, learning and memory, normal and abnormal personality, and social psychology. This course is a prerequisite for other courses in psychology. 3 hrs./wk.

**PSYC 205****HUMAN SEXUALITY (2CR)**

*Prerequisites: PSYC 130*

This course is designed to provide a balanced and thoughtful account of what is known about sexuality from various perspectives. A broad and representative survey of research is presented in a number of topical areas. Psychobiology, sexual development during childhood and adolescence, sexual interactions, love relationships and behavior, gender issues, sexual orientation, health issues and diseases, and sexual problems and solutions will be studied. Primary emphasis will be

placed on the individual and the couple as units of analysis. Class discussions of issues relating to human sexuality will be encouraged. 3 hrs. lecture/wk.

**PSYC 210****METHODOLOGY IN THE SOCIAL SCIENCES (3CR)**

*Prerequisite: PSYC 130 or SOC 122 or ECON 230*

This course will involve active participation in the application of research strategies to the social and behavioral sciences. A wide range of data collection methods will be studied. Students will be expected to do an independent research project. 3 hrs./wk.

**PSYC 215****CHILD DEVELOPMENT (3CR)**

*Prerequisite: PSYC 130*

This course is a comprehensive account of human development from conception through adolescence, integrating genetic, biological, physical and anthropological influences with psychological processes. 3 hrs./wk.

**PSYC 218****HUMAN DEVELOPMENT (3CR)**

*Prerequisite: PSYC 130*

This course is a comprehensive account of human psychological and physical development from conception through infancy, childhood, adolescence, adulthood and death. The course integrates genetic, biological, physiological and anthropological influences with the psychological process, and explores determinants of development from both hereditary and environmental perspectives. 3 hrs./wk.

**PSYC 220****SOCIAL PSYCHOLOGY (3CR)**

*Prerequisite: PSYC 130*

This class will seek to comprehend the nature and causes of individual behavior in social situations. It will identify those factors that shape our feelings, overt actions and thought in social situations. Topics will include social attitudes and prejudice, conformity, aggression and leadership. 3 hrs./wk.

**PSYC 225****EDUCATIONAL PSYCHOLOGY (3CR)**

*Prerequisite: PSYC 130*

The psychology of learning-teaching situations will be addressed. Areas covered will include behavior, skills, memory, generalization of learning, assessment and measurement of learning, and intelligence. A practicum in a structured setting will be required. 3 hrs./wk.

**PSYC 230**  
**PERSONALITY THEORY (3CR)**

*Prerequisite: PSYC 130*

Three general viewpoints or paradigms in psychology will be studied with emphasis on each system's contribution to understanding human personality and its contribution to our response to everyday problems. 3 hrs./wk.

**PSYC 235**  
**TRANSPERSONAL PSYCHOLOGY (3CR)**

*Prerequisite: PSYC 130*

Human potential and capacity beyond the usual state of consciousness will be explored in this class. Students will consider assumptions, consciousness, mystical experiences, spirit, interpersonal encounters, extrasensory phenomena, ultimate values and eternal meanings. 3 hrs./wk.

**PSYC 250**  
**HEALTH PSYCHOLOGY (3CR)**

*Prerequisite: PSYC 130*

This course is intended to acquaint students with content, methods and theory regarding the interplay between psychological and biological determinants of health and illness, and to examine how these factors relate to students' own health status and that of others. The course will focus on the application of psychological methods and principles to the maintenance of health, prevention of disease and treatment of illness and to rehabilitation and recovery from impaired health, following an interdisciplinary approach to content and instruction. 3 hrs. lecture/wk.

## **Radiologic Technology**

**KRAD 160**  
**INTRODUCTION TO RADIOLOGIC TECHNOLOGY (4CR)**

*Prerequisite: Admission to the program*

Students will receive an orientation to the program and clinical responsibilities, with emphasis on body mechanics of patient transport, methods of radiation protection and types of radiographic equipment. Clinical observation is also included. 5 hrs./wk.

**KRAD 162**  
**IMAGE PROCESSING (2CR)**

*Prerequisite: Admission to the program and KRAD 173 with a minimum grade of "C"*

This course is intended for the student who is enrolled in the study of radiologic technology. The course content is intended to prepare the student for the processing of radiographs. 2.5 hrs./wk.

**KRAD 165**  
**PATIENT CARE (2CR)**

*Prerequisite: KRAD 160*

This is the study of patient care and the skills required for patient care in the procedures of radiology. 2 hrs./wk.

**KRAD 170**  
**RADIOLOGIC BIOLOGY/PROTECTION (3CR)**

*Prerequisite: KRAD 160 with a minimum grade of "C"*

Radiation biology, radiation protection and monitoring, professional attitudes and ethics will be among the topics covered. 3 hrs./wk.

**KRAD 171**  
**RADIOGRAPHIC EXPOSURES I (3CR)**

*Prerequisite: KRAD 170*

Radiographic image formation and the factors affecting or controlling it will be examined. Students will conduct related experiments. 3.5 hrs./wk.

**KRAD 172**  
**RADIOGRAPHIC POSITIONING I (3CR)**

*Prerequisite: Admission to the program and concurrent enrollment in KRAD 173*

This is a study of anatomy and positioning for the abdomen, chest, upper and lower extremities, upper and lower gastrointestinal track, gall bladder/biliary track and kidneys. 3.5 hrs./wk.

**KRAD 173**  
**CLINICAL TRAINING I (3CR)**

*Prerequisites: Admission to the program and concurrent enrollment in KRAD 172*

This class will offer training in basic radiographic procedures and related tasks that correlate with KRAD 172 course content. Training is under the supervision of a radiologic technologist. 16 hrs. clinic/wk.

**KRAD 174**  
**RADIOGRAPHIC EXPOSURES II (3CR)**

*Prerequisites: KRAD 173 with a minimum grade of "C"*

Topics will include analysis and quality control measures used for image-producing equipment including tests and calibration requirements. Computer-assisted image production will be studied in detail including the technology of computer-assisted tomography (C.A.T.) and magnetic resonance imaging (M.R.I.) scanners. 3.5 hrs./wk.

**KRAD 175****CLINICAL TRAINING II (4CR)**

*Prerequisites: KRAD 172 and KRAD 173 with a minimum grade of "C"*

*Corequisite: KRAD 176*

This training will focus on the upper and lower extremities, cervical, thoracic and lumbar vertebrae, ribs, sternum, skull and mammographic examinations. The student must be able to perform eight additional unassisted examinations by the end of the term. 26 hrs. clinic/wk.

**KRAD 176****RADIOGRAPHIC POSITIONING II (3CR)**

*Prerequisite: KRAD 172 and KRAD 173 with a minimum grade of "C"*

*Corequisite: KRAD 175*

This class will cover anatomy and positioning related to the upper and lower extremities, the vertebral column and thorax and will include mammography. 3.5 hrs./wk.

**KRAD 178****CLINICAL TRAINING III (4CR)**

*Prerequisites: KRAD 175 and KRAD 176 with a minimum grade of "C"*

Students will continue to perform examinations they have previously proven competent in. Direct supervision and instruction will be provided until competence is attained for a minimum of three additional examinations not previously learned. Students will complete 10 evening shifts during the summer session. Average 19 hrs./wk.

**KRAD 278****IMAGING MODALITIES AND PATHOLOGY (3CR)**

*Prerequisites: KRAD 279 and KRAD 280 with a minimum grade of "C"*

This course will study the disease processes of all organ systems, with an emphasis on pathology visualized on radiographs or through other image-producing modalities such as C.A.T. scans or ultrasound exams. 3 hrs./wk.

**KRAD 279****RADIOGRAPHIC POSITIONING III (2CR)**

*Prerequisites: KRAD 175 and KRAD 176 with a minimum grade of "C" and concurrent enrollment in KRAD 280*

This course will concentrate on image evaluation for every radiographic examination of the human anatomy. 2 hrs./wk.

**KRAD 280****CLINICAL TRAINING IV (4CR)**

*Prerequisite: KRAD 178 with a minimum grade of "C"*  
*Corequisite: KRAD 285*

Training opportunities in portable radiography, emergency room techniques and supervised fluoroscopy will be provided. By the end of the term, students will be expected to perform with limited supervision all the exams they have previously shown competence in as well as new exams. 29 hrs./wk.

**KRAD 281****RADIATION PHYSICS (3CR)**

*Prerequisites: KRAD 178 with a minimum grade of "C"*

Students will apply the principles of physics to the study of X-ray equipment and other diagnostic imaging devices used in the X-ray department. 3.5 hrs./wk.

**KRAD 282****CLINICAL TRAINING V (4CR)**

*Prerequisites: KRAD 280 and KRAD 285, each with a minimum grade of "C"*

Students will perform patient examinations in a clinical setting with the supervision of a radiologic technologist. 36 hrs./wk.

**KRAD 283****FINAL SEMINAR (2CR)**

*Prerequisites: KRAD 280, KRAD 281 and KRAD 285, each with a minimum grade of "C"*

Students will prepare for the National Registry examination by using tests and materials designed to simulate ARRT examinations. Completion of this course and all radiologic technology courses with a "C" or better is required for qualification for the National Registry exam. 3 hrs./wk.

**KRAD 285****SPECIAL PROCEDURES (2CR)**

*Prerequisites: KRAD 178 with a minimum grade of "C"*

This course will cover anatomy, positioning, equipment and special tasks related to the circulatory, nervous and lymphatic systems. The role of the technologist will be stressed. 2 hrs./wk.

**KRAD 289****MAMMOGRAPHY (3CR)**

*Prerequisite: Current enrollment in second year of the program or ARRT radiographer in good standing*

This course will cover the principles of mammography, with practical application under the supervision of a radiologic technologist. 2 hrs. lecture, 8 hrs. clinic/wk.

## Railroad Operations

### RRT 120

#### HISTORY OF RAILROADING (3CR)

This course covers the history and traditions of railroading and the industry's role in North American economic development. Upon successful completion of this course, students should be able to list and explain the significance of major events in North American railroading. 3 hrs. lecture/wk.

### RRT 121

#### RAILROAD TECHNICAL CAREERS (3CR)

This course includes information about technical careers in railroading, enabling students to choose suitable career paths. This course includes field trips that will demonstrate the relationship among technical work groups in day-to-day railroad operations. Upon successful completion of this course, students should be able to describe basic technical job functions, requirements and characteristics. 3 hrs. lecture/wk.

### RRT 150

#### RAILROAD OPERATIONS (3CR)

This course includes information about the industry, its major assets, structure and typical operations. Upon successful completion of this course, students should be able to define the current North American railroad industry characteristics, basic operations, components and processes, and industry structure and administrative processes. 3 hrs. lecture/wk.

### RRT 165

#### RAILROAD SAFETY, QUALITY AND ENVIRONMENT (3CR)

This course covers the importance of safety, quality, personal health and environmental awareness to the railroad industry and emphasizes the basic tools and techniques for improving these conditions on the job. Upon successful completion of this course, students should be able to define and explain the needs for improved safety, quality, health and environmental awareness; describe their basic principles; explain the elements of successful programs; and apply these elements to typical tasks on the job. 3 hrs. lecture/wk.

### RRTC 123

#### INTRODUCTION TO CONDUCTOR SERVICE (4CR)

*Prerequisite: Admission to the JCCC's Railroad Operations Program, conductor option*

Upon successful completion of this course, the student should be able to describe railroad organization and general operations, policies and practices to ensure rail-

road safety and the basic responsibilities of conductors. 5 hrs. lecture, demonstration/wk.

### RRTC 175

#### CONDUCTOR MECHANICAL OPERATIONS (2CR)

*Prerequisite: Admission to the JCCC's Railroad Operations program, conductor option, and successful completion of RRTC 123 with a grade of "C" or better*

This course covers mechanical operations that relate to conductor service. This is the second course in the conductor option of the Railroad Operations degree program. Upon successful completion of this course, the student should be able to describe the importance and application of freight care mechanical policies and practices to ensure safe railroad operations. 2.5 hrs. lecture/wk.

### RRTC 261

#### CONDUCTOR SERVICE (2CR)

*Prerequisite: Admission to the JCCC's Railroad Operations program, conductor option, and successful completion of RRTC 175 with a grade of "C" or better*

Upon successful completion of this course, the student should be able to describe and apply railroad organization and general operations, policies and practices to ensure railroad safety and the basic responsibilities of conductors. This course includes safety and the general rules with which conductors must comply and teaches the techniques and administrative procedures conductors use on the job to perform safely and effectively. 2.5 hrs. lecture/wk.

### RRTC 263

#### GENERAL CODE OF OPERATING RULES (4CR)

*Prerequisite: Admission to the JCCC's Railroad Operations program, conductor option, and successful completion of RRTC 261 with a grade of "C" or better*

This is the fourth course in the conductor option for the Railroad Operations degree program. Conductors must maintain a thorough understanding of the General Code of Operating Rules (GCOR). This course provides an in-depth study of the GCOR. Upon successful completion of this course, the student should be able to demonstrate abilities to apply the GCOR to safe and efficient train movement and operations. 5 hrs. lecture/wk.

### RRTC 265

#### CONDUCTOR FIELD APPLICATION (9CR)

*Prerequisite: Admission to the JCCC's Railroad Operations program, conductor option, and successful completion of RRTC 263 with a grade of "C" or better*

Upon successful completion of this course, the student will have observed actual operations and be able to apply skills learned in classroom-based instruction to those operations. The student will observe and perform operations under the supervision of experienced

conductor mentors in actual field locations. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

#### **RRTD 122**

##### **INTRODUCTION TO RAILROAD DISPATCHING (2CR)**

*Prerequisite: Admission to the JCCC's Railroad Operations program, dispatcher option*

Upon successful completion of this course, the student should be able to describe railroad organization and general operations, policies and practices to ensure railroad safety and basic dispatching functions. 2.5 hrs. lecture/wk.

#### **RRTD 271**

##### **APPRENTICE RAILROAD DISPATCHER TRAINING I (6CR)**

*Prerequisite: Admission to the JCCC's Railroad Operations program, dispatcher option, and successful completion of RRTD 275 with a grade of "C" or better*

Upon successful completion of this course, the student should demonstrate abilities to apply the General Code of Operating Rules, Maintenance of Way operating rules and the Train Dispatcher's Manual of policies and practices to safe and effective train movement and maintenance operations. This is an intensive course that prepares students to observe actual dispatching operations. 7.5 hrs. lecture/wk.

#### **RRTD 272**

##### **APPRENTICE RAILROAD DISPATCHER TRAINING II (6CR)**

*Prerequisite: Admission to the JCCC's Railroad Operations program, dispatcher option, and successful completion of RRTD 271 with a grade of "C" or better*

Upon successful completion of this course, the student should demonstrate the ability to use centralized traffic control equipment, computerized track warrant control equipment and management information systems that record and report train movement. Students also will identify and resolve traffic conflicts safely and effectively. This is an intensive course in which students observe, practice and demonstrate rail traffic dispatching functions in a laboratory setting. 4.5 hrs. lecture, 3 hrs. lab/wk.

#### **RRTD 275**

##### **RAILROAD DISPATCHING FIELD OBSERVATION (3CR)**

*Prerequisite: Admission to the JCCC's Railroad Operations program, dispatcher option, and RRTD 122 with a grade of "C" or better*

Upon successful completion of this course, the student will have observed actual dispatching operations and should be able to identify major job responsibilities. Students will observe operations under the supervision of experienced dispatcher mentors in actual dispatching offices. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

#### **RRTD 276**

##### **RAILROAD DISPATCHING FIELD APPLICATION (5CR)**

*Prerequisite: Admission to the JCCC's Railroad Operations program, dispatcher option, and RRTD 272 with a grade of "C" or better*

Upon successful completion of this course, the student should be able to apply skills learned in classroom-based dispatching instruction to those operations. This course is offered for 10 weeks, and students will observe and practice operations under the supervision of experienced dispatcher mentors in actual dispatching offices. Minimum 15 hrs. on-the-job training/wk.

#### **RRTM 124**

##### **ORIENTATION TO THE RAILROAD MECHANICAL CRAFT (2CR)**

*Prerequisite: Admission to the JCCC's Railroad Operations program, mechanical option*

This course is designed to familiarize the student with work in railroad mechanical crafts. Upon successful completion of the course, students should be able to describe apprenticeship program structures, benefits, organization goals, basic safety and quality principles and other aspects of mechanical craft work. 2.5 hrs. lecture/wk.

#### **RRTM 170**

##### **RAILROAD MECHANICAL SAFETY AND HEALTH (2CR)**

*Prerequisite: Admission to the JCCC's Railroad Operations program, mechanical option and completion of RRTM 124 with a grade of "C" or better*

This course is designed to teach the principles and policies governing railroad safety and health. Upon successful completion of this course, the student should be able to describe safety and health rules and policies, including applying a team process to improving safety and health, use and care of personal protective equipment, back injury prevention, hazard communications, lockout/tagout procedures and hearing conservation. Students will be qualified to perform first aid and CPR and will be able to conduct a job safety analysis. 2.5 hrs. lecture/wk.

#### **RRTM 251**

##### **LOCOMOTIVE DIESEL ENGINE FUNDAMENTALS (2CR)**

*Prerequisite: Admission to the JCCC's Railroad Operations program, mechanical option and completion of RRTM 124 and RRTM 170 with a grade of "C" or better*

This course covers the principles of diesel engine operation. Upon successful completion of this course, students should be able to identify two-cycle and four-cycle diesel engine parts and describe how diesel engine lubricating, cooling and fuel systems operate. 1.5 hrs. lecture, 1 hr. lab/wk.

**RRTM 253****FREIGHT CAR FUNDAMENTALS (2CR)**

*Prerequisite: Admission to the JCCC's Railroad Operations program, mechanical option and completion of RRTM 124 and RRTM 170 with a grade of "C" or better*

This course covers the basic types and purpose of railroad freight cars. Upon successful completion of this course, students should be able to identify five types of railroad freight cars, explain their functions, describe their basic construction and explain purposes and references for AAR rules and regulations governing freight cars. 1.5 hrs. lecture, 1 hr. lab/wk.

**RRTM 254****BASIC LOCOMOTIVE ELECTRICITY AND ELECTRONICS (2CR)**

*Prerequisite: Admission to the JCCC's Railroad Operations program, mechanical option and completion of RRTM 124 and RRTM 170 with a grade of "C" or better*

This course covers the theory and operation of electrical and electronic circuitry on board modern locomotives and complements EMD and GE electrical systems classes. Upon successful completion of this course, students should be able to describe the theory and purpose of the processes and operation of locomotive electrical system components and maintenance techniques. 1.5 hrs. lecture, 1 hr. lab/wk.

## Railroad Operations Industrial Technology

**RRIT 122****ELEMENTS OF WELDING (3CR)**

*Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student should be able to cut and weld using oxy-fuel (OFW, OFC) and shielded metal arc welding (SMAW). The OFW portion will cover puddling with and without filler metal; OFC will cover straight line cutting, beveling, piercing and gouging. The SMAW portion will cover flat position and will be limited to fillet welds. The student should be able to discuss electrical safety in SMAW, handle welding cables properly, understand eye hazards, list safe clothing requirements and discuss environmental safety. This knowledge will be evidenced by achieving the specified score on the unit test. 2 hrs. lecture, 3 hrs. lab/wk.

**RRIT 123****BASIC WELDING (3CR)**

*Prerequisites: RRIT 122 or approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student should be able to use oxy-fuel cutting (OFC), shielded metal arc welding (SMAW) and air carbon arc cutting (AAC). The SMAW portion will cover 1G and will be limited to groove welds. Processes will be limited to flat and horizontal positions of fillet and groove welds. Testing of welds will be inspected according to industrial standards. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 127****WELDING PROCESSES (2CR)**

*Prerequisites: Approval of the BNSF training director and the JCCC division administrator*

Upon successful completion of this course, the student should be able to identify various welding processes used by railroads and industry. Standard shop and maintenance welding processes will be taught and demonstrated. Welds will be tested and inspected according to industry standards. 1 hr. lecture, 1.5 hrs. lab/wk.

**RRIT 132****THERMITE WELDING (3CR)**

*Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student should be able to produce, in a safe manner, high-quality, sound Thermite welds on standard rail and mismatched rail. This course is intended for people who are employed in the railroad industry. This will be specific, in-depth industrial training. Students will be required to make various rail alignments and grind various new and worn rail. The students also should be able to clean a used crucible, assemble a crucible and temper new and used crucibles. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 135****COMPONENT WELDING (3CR)**

*Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student should be able to identify industrial welding of track components. The course will involve the study of different welding processes, metallurgy and the effects of heat on track components. Demonstrations on actual track components will be given with the lecture. The student will be required to experience all appropriate methods and processes of welding and straight edging rail steel for evaluation. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 137****STRUCTURAL WELDING SMAW (3CR)**

*Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student will be qualified to weld with SMAW according to AWS D1.5.88 code. All welds will be made in the vertical (3G) and overhead (4G) positions. Passing or failing will be determined by the student's ability to successfully produce welds according to the prescribed standards in AWS D1.5.88. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 138****STRUCTURAL WELDING FCAW (3CR)**

*Prerequisites: RRIT 137 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student will be qualified to weld with FCAW according to AWS D1.5.88 code. All welding will be made in the vertical (3G) and overhead (4G) positions. Passing or failing will be determined by the student's ability to successfully produce welds according to prescribed standards in AWS D1.5.88. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 139****STRUCTURAL WELDING PIPE (3CR)**

*Prerequisites: RRIT 137 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student should be qualified to weld on pipe using the SMAW process. All welding will be made in the vertical uphill fixed position. Passing or failing the course will be determined by the student's ability to successfully produce test welds according to standards. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 140****STRUCTURAL QUALITY SMAW (3CR)**

*Prerequisites: RRIT 127 or approval of BNSF training director and JCCC division administrator*

Upon successful completion of this course, the student should be qualified to weld with Shielded Metal Arc Welding (SMAW) according to industrial standards. Test welds will be made in the vertical (3G) and overhead (4G) positions; limited thickness. Passing or failing will be determined by the student's ability to successfully produce welds according to prescribed standards. The ox-fuel (OF) portion will include cutting to specific sizes and shapes. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 141****STRUCTURAL QUALITY GMAW (3CR)**

*Prerequisites: RRIT 127 or approval of BNSF training director and JCCC division administrator*

Upon successful completion of this course, the student should be able to explain the theory of gas metal arc (GMAW) and fluxed cored arc welding (FCAW, identify materials, and use equipment related to the processes. The student will weld on mild steel plate in all positions producing both fillet and groove welds with the GMAW process with a U-bend test being performed in selected positions according to industrial standards. The student will also weld in selected positions on mild steel plate with the FCAW process. Selected welding codes and specifications will be used as a reference for this class. The ox-fuel cutting (OF) will be used to prepare mild steel for welding. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 143****THERMITE WELDING FOR SUPERVISORS (2CR)**

*Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student should be able to produce, in a safe manner, high-quality sound thermite welds on standard rail and mismatched rail. This course is intended for people who are employed in the railroad industry. This will be specific, in-depth, industrial training. Students will be required to make various rail alignments and grind various new and worn rail. The student should also be able to clean a used crucible, assemble a crucible and temper new and used crucibles. 1.5 hrs. lecture, 1 hr. lab/wk.

**RRIT 145****FROG WELDING (3CR)**

*Prerequisites: RRIT 135 and approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student should be able to repair by welding a frog casting. Students will be required to grind, straight edge, dye penetrant test and monitor heat input during the repair process. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 147****COMPONENT WELDING FOR SUPERVISORS (2CR)**

*Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student should be able to identify industrial welding of track components. This course will introduce the student to various types of welding processes, metallurgy and the effects of heat on rail steel and frog castings. Demonstration and experience will be given regarding grinding on rail steel and frog castings, air arc cutting (CAC-A), straight edging, temperature monitoring and dye penetrant on both rail steel and frog castings. 1.5 hrs. lecture, 1 hr. lab/wk.

**RRIT 150****SWITCH POINT REPAIR (2CR)**

*Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student should be able to produce, in a safe manner, high-quality repairs of switch points, switch point protectors, adjacent railends and adjacent and associated rail components. This specific in-depth industrial training course is intended for people who are employed in the railroad industry. Students will be required to complete repairs of components with flux cored arc welding (FCAW), shielded metal arc welding (SMAW) and associated welding processes. Students will also be able to grind components before and after welding to meet current standards. Straight edging according to current standards will be required of all students. 1.5 hrs. lecture, 1 hr. lab/wk.

**RRIT 155****RAILROAD WELDING REVIEW (2CR)**

*Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC division administrator*

Upon successful completion of this course, the student should be able to identify currently used rail, frogs, switch points, crossings, Conley's and insulated joint plugs. The student should be able to locate operating procedures in an approved manual and apply them to the appropriate component. In addition, the student should be able to describe the proper application of OFC, OFW, heating, SMAW, FCAW, CAC-A and thermite welding procedures. Welds will be tested and inspected according to industry standards. 1.5 hrs. lecture, 1 hr. lab/wk.

## Religion

**REL 120****EXPLORING WORLD RELIGIONS (3CR)**

This course is a comparative study of the world's major religious traditions. The basic beliefs of Hinduism, Buddhism, Confucianism, Taoism, Judaism, Christianity and Islam will be explored. A comparative framework for religious studies will be provided, and essential differences between Eastern and Western religions will be noted. Literary texts and iconographic images will be studied as appropriate. 3 hrs. lecture/wk.

## Respiratory Care

**RC 125****BEGINNING PRINCIPLES OF RESPIRATORY CARE (4CR)**

*Prerequisite: Admission to the Respiratory Care program*

This is an introduction to respiratory therapy. Students will focus on basic anatomy, physiology, patho-physiology and respiratory therapy techniques needed in the care of pulmonary disease patients. Students will have contact with patients after two to three weeks of introductory material. Lab time also will be scheduled. 6 hrs. lecture, 16 hrs. lab/wk. Summer.

**RC 130****RESPIRATORY CARE EQUIPMENT (4CR)**

*Prerequisite: Admission to the Respiratory Care program*

The equipment used in providing basic patient care will be introduced. Topics will include equipment for oxygen therapy, humidity and aerosol therapy and IPPB. Students will gain hands-on experience in the lab before actually treating patients. 6 hrs. lecture, 8 hrs. lab/wk. Summer.

**RC 135****CARDIOPULMONARY MEDICINE I (1CR)**

*Prerequisite: Admission to the Respiratory Care program*

This is the first of three courses in which the medical director of the program will lecture. This course will be an introduction to the diagnostic procedures used by the pulmonary physician in evaluating patients with respiratory disease. The class also will provide information on the pathology of disease states the student will encounter. 2 hrs./wk. Summer.

**RC 220****CLINICAL CARDIOPULMONARY PHYSIOLOGY (2CR)**

*Prerequisite: Successful completion of the summer sequence of respiratory care courses*

This is a comprehensive study of the physiology and pathophysiology of the pulmonary, cardiovascular and renal systems as they relate to respiratory therapy. 2 hrs./wk. Fall.

**RC 230****CLINIC TOPICS AND PROCEDURES I (4CR)**

*Prerequisite: Successful completion of the summer sequence of respiratory care courses*

In this lecture and lab course, students will focus on basic and emergency care and be introduced to mechanical ventilators and critical care of the respiratory patient. 3 hrs. lecture, 3 hrs. lab/wk. Fall.

**RC 231****CLINIC TOPICS AND PROCEDURES II (4CR)**

*Prerequisite: Successful completion of the fall sequence of respiratory care courses*

Critical care and more sophisticated aspects of respiratory therapy will be emphasized in this lab/lecture course. Medical ethics and department management will be covered. 3 hrs. lecture, 3 hrs. lab/wk. Spring.

**RC 233****RESPIRATORY CARE OF CHILDREN (2CR)**

*Prerequisite: RC 230*

The focus will be on the respiratory care of neonatal and pediatric patients with emphasis on the management of cardiopulmonary disease states unique to children. Information will be based on developmental anatomy and physiology, pathology, diagnostic/laboratory procedures, and equipment manipulation in acute, chronic, critical and emergency care settings. 2 hrs./wk. Spring.

**RC 235****CARDIOPULMONARY MEDICINE II (2CR)**

*Prerequisite: Successful completion of the summer sequence of respiratory care courses*

This is a continuation of the series taught by the program medical director emphasizing disease states of the cardiopulmonary system. Discussion will cover the pathology, diagnosis and treatment of various diseases and the role of the respiratory therapist in the medical management of these patients. 2 hrs./wk. Fall.

**RC 236****CARDIOPULMONARY MEDICINE III (2CR)**

*Prerequisite: Successful completion of the fall sequence of respiratory care courses*

This is a continuation of the medical director's discussion of pulmonary diseases, their pathology and their treatment. 2 hrs./wk. Spring.

**RC 240****RESPIRATORY PHARMACOLOGY (2CR)**

*Prerequisite: Successful completion of the summer sequence of respiratory care courses*

This class will present all the pharmacology that respiratory therapists provide. A general study of most of the drugs used in the care of patients with cardiopulmonary problems will be included. Drugs administered during a code blue also will be stressed. 2 hrs./wk. Fall.

**RC 245****CRTT-RRT CLINIC TOPICS AND PROCEDURES (4CR)**

*Prerequisite: Admission to the Respiratory Care program CRTT to RRT transition process*

This course is a transition course for the certified respiratory therapy technician preparing for the registry respiratory care process. Assessment, monitoring and respiratory management of the adult critical care patient is the primary emphasis. 4 hrs./wk.

**RC 271****CLINICAL PRACTICE I (4CR)**

*Prerequisite: Successful completion of the summer sequence of respiratory care courses*

In the first eight-week period, students will give basic care to adults and children. In the second eight-week period, they will concentrate on critical care medicine, giving treatments in the intensive care unit. Also during the semester, students will learn to intubate under the guidance of anesthesia personnel, will go on rounds with the program medical director, and will learn to perform arterial punctures. 24 hrs. clinic/wk. Fall.

**RC 272****CLINICAL PRACTICE II (4CR)**

*Prerequisite: Successful completion of the fall sequence of respiratory care courses*

Two eight-week quarters will emphasize critical care of adults and newborns. Students will participate in rehabilitation, department management, intubations and medical rounds rotations. 24 hrs./wk. Spring.

**RC 274****CRTT-RRT CLINICAL PRACTICE TRANSITION (4CR)**

*Prerequisites: RC 233 and RC 245*

Students will assess and treat adult, pediatric and neonatal patients with respiratory and/or cardiac-related conditions using the basic respiratory therapy arsenal, as well as the critical care monitoring, mechanical ventilation and airway management techniques required for the more critically ill patient. Students will be exposed to cardiopulmonary diagnostic procedures, pulmonary rehabilitation and home care management of the respiratory patient. 4 hrs./wk.

## Sociology

### **SOC 122 SOCIOLOGY (3CR)**

This overview of social life will cover group structure and processes, social interaction and an examination of major institutions. Theories, methods of study and uses of social research will be examined. 3 hrs./wk.

### **SOC 125 SOCIAL PROBLEMS (3CR)**

Selected social problems from crime to racism will be analyzed. The history and development of each problem will be examined from a variety of sociological perspectives, as will possible solutions. 3 hrs./wk.

### **SOC 131 MARRIAGE AND THE FAMILY (3CR)**

This is a sociological examination of marriage and the family as a social institution. It will emphasize changing roles, family formation, socialization, domestic conflict, interaction among family members and marriage partners, and the role of marriage and the family in society. 3 hrs./wk.

### **SOC 146 SOCIAL WELFARE (3CR)**

Social welfare and its relationship to other social systems in America will be introduced. The social, economic and political factors that foster inequality as well as social welfare as a response to social deprivation will be examined. 3 hrs./wk.

### **SOC 147 SOCIAL WORK AND SOCIAL SERVICES (3CR)**

Students will study social work as a profession in this class. Origins, values, skills, fields of service and current issues in social work will be analyzed. 3 hrs./wk.

### **SOC 152 PERSPECTIVES ON AGING (3CR)**

Social aspects of aging will be identified. Areas of special interest will include research themes and demographic trends; aging and its relationship to family, the economy, politics, religion and education; the effect of cultural values on behavior; and the future of the elderly. 3 hrs./wk.

### **SOC 160 SOCIAL POWER: MOTIVATION AND ACTION (3CR)**

This course will concentrate on the socio-psychological aspects of power. Topics will include the development of personality, the role of social class and ideology, the mechanics of domination and subordination, discrimination, economic inequality, powerlessness and the search

for community. Basic terminology and theoretical foundations of both sociology and psychology will be at the heart of the course. 3 hrs./wk.

### **SOC 165 CHINESE SOCIETY: PAST AND PRESENT (3CR)**

This self-paced course is an introduction to Chinese society since 1949. The course examines Chinese society and culture in the 20th century and focuses on contemporary developments while tracing the historical roots of Chinese values and institutions. Issues such as socialization, economic development, political change, social organization and conflict are studied.

## Speech

### **SPD 120 INTERPERSONAL COMMUNICATION (3CR)**

In this basic speech course, students will study principles of effective communication in one-to-one relationships and in small groups. They will apply these principles in a variety of learning exercises and situations. Individualized talks may be given, but everyday communication will be stressed. 3 hrs./wk.

### **SPD 121 PUBLIC SPEAKING (3CR)**

This fundamental speech course will emphasize speech organization, development of ideas, audience analysis and delivery. Students will deliver informative and persuasive speeches in the impromptu, extemporaneous and manuscript styles. 3 hrs./wk.

### **SPD 122 GROUP DISCUSSION (3CR)**

Students will participate in small groups to study the principles of effective group dynamics and leadership skills and to practice these principles in class. 3 hrs./wk.

### **SPD 125 PERSONAL COMMUNICATION (3CR)**

An integration of interpersonal communication and public speaking, this course will focus on communication theory, listening, self-concept, language and perception. It also will discuss types of speaking including impromptu, informative and persuasive speaking. Emphasis will be on the natural relationship that exists between one-to-one and public communication. 3 hrs./wk.

### **SPD 128 BUSINESS AND PROFESSIONAL SPEECH (3CR)**

Students will improve their verbal communication skills both formally and informally by studying interviewing

techniques, making effective presentations, working in groups, negotiating, studying listening techniques, and recognizing verbal and nonverbal messages. The course is designed for the student presently working in business or planning to pursue a business degree. 3 hrs./wk.

**SPD 130**  
**ELEMENTARY DEBATE (3CR)**

Theories of argumentation and debate will be introduced. Students will attend two to eight weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

**SPD 132**  
**INTERMEDIATE DEBATE I (3CR)**

*Prerequisite: SPD 130 or the equivalent*

This is a continuation of argumentation and debate theories. Students will attend two to eight weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

**SPD 180**  
**INTERCULTURAL COMMUNICATIONS (3CR)**

This interdisciplinary course will draw on the disciplines of psychology, sociology, anthropology and communications to analyze how communication is influenced by culture. Students will explore the cultural basis of values, perceptions and behavior and learn how this affects communication across cultural lines. Specific topics will include the role of verbal and nonverbal symbols, cues, stereotypes, prejudice and ethnocentrism. Specific cultures will be studied, and role play and simulations will be used. 3 hrs. lecture/wk.

**SPD 230**  
**INTERMEDIATE DEBATE II (3CR)**

*Prerequisite: SPD 132 or the equivalent*

Intercollegiate debates will be stressed in this review of argumentation and debate theories. Students will attend two to eight weekend debate tournaments each semester. 3 hrs./wk.

**SPD 235**  
**ADVANCED DEBATE (3CR)**

*Prerequisite: SPD 230 or the equivalent*

Students will participate on the senior level in intercollegiate debate, attending two to eight debate tournaments a semester. 3 hrs./wk.

**SPD 298**  
**INTERCULTURAL COMMUNICATION:  
GREAT BRITAIN AND THE UNITED STATES (3CR)**

In this travel-for-credit course, students will visit selected cities in Great Britain where they will compare British and U.S. languages, values and institutions. Offered periodically.

## **Surgical Technology**

**KSUR 100**  
**INTRODUCTION TO SURGICAL TECHNOLOGY (2CR)**

This course explores the historical development of surgery, health care facilities development and organization, the composition and duties of the surgical team, ethical, legal and moral responsibilities and career obligation of the surgical technologist. Focus is on effective communication skills, accurate medical terminology and the impact of transcultural psychosocial outcomes for clients in the surgical setting. 4 hrs./wk.

**KSUR 102**  
**FUNDAMENTALS OF OPERATING ROOM  
TECHNIQUE (11 CR)**

This course explores the application of the principles of medical and surgical asepsis, preparation and maintenance of the sterile field, identification of instruments, sutures, supplies and equipment. Emphasis is on basic skills of the surgical technologist in preparation for and during the operative procedure. The student will practice maintaining a safe client environment and explore the responsibilities and duties of surgery personnel. Common surgical techniques and procedures are introduced. 21 hrs. (clinical 15 hrs.)/wk.

**KSUR 104**  
**BODY STRUCTURE AND FUNCTION (2 CR)**

*Prerequisite: Students must meet entrance standards and must be accepted into the program.*

This course introduces students to the major structures and function of the human body. Each body system is explored. Laboratory time is used to introduce and reinforce classroom instruction. 2 hrs. lecture, 4 hrs. lab/wk.

**KSUR 105**  
**PHARMACOLOGY FOR THE SURGICAL  
TECHNOLOGIST (2 CR)**

This course explores the development of knowledge and understanding of the metric, apothecary, household and linear systems of measurement. The conversion of equivalents from one system to another is explored. Focus is on terminology associated with pharmacology and procedures for safe and accurate handling of medications and solutions. Included is discussion of principles of anesthesia administration, postanesthesia client care and care in emergencies. 3 hrs. lecture, 1 hr. lab/wk.

**KSUR 106**  
**ASEPTIC TECHNIQUE FOR THE SURGICAL TECHNOLOGIST (2 CR)**

This course studies the structure, function and pathogenicity of microorganisms and immune and infectious responses. Emphasis is on principles of sterilization, disinfecting, environmental sanitation and practices that promote optimal healing. 4 hrs. lecture/wk.

**KSUR 109**  
**PRINCIPLES OF SURGICAL PROCEDURES I (8 CR)**

*Prerequisite: Successful completion of all previously attempted courses of the program*

This course focuses on the diagnosis, pathology and surgical sequence of general surgery, gynecological surgery, genitourinary surgery and laparoscopic surgery. Included is discussion of postoperative care and complications. 16 hrs. (clinical 12 hrs.)/wk.

**KSUR 110**  
**PRINCIPLES OF SURGICAL PROCEDURES II (7 CR)**

This course focuses on diagnosis, pathology and surgical sequence of ophthalmological, ENT, head and neck, plastic/reconstructive and orthopedic surgeries. Included is a discussion of postoperative care and complications. 15 hrs. (clinical 12 hrs.)/wk.

**KSUR 111**  
**CAREER DEVELOPMENT FOR THE SURGICAL TECHNOLOGIST (2 CR)**

This course focuses on résumé development, interviewing techniques and introduction to the current health care market. Emphasis is on self-evaluation of professional skills and their potential application to the current health care market. 2 hrs. /wk.

**KSUR 114**  
**PRINCIPLES OF SURGICAL PROCEDURES III (7 CR)**

This course focuses on diagnosis, pathology and surgical sequence with complex surgical specialties: neurosurgery, cardiovascular and peripheral vascular, thoracic, pediatric, geriatric and trauma. Included is discussion of postoperative care and complications. 13 hrs. (clinical 9 hrs.)/wk.

## Theater

**THEA 120**  
**INTRODUCTION TO THEATER (3CR)**

Students will be introduced to a variety of theatrical experiences, read great plays and see live theater presentations. They also will discuss theater practices, dramatic literature and the history of the theater. Includes 12 required shop hours. 3 hrs./wk.

**THEA 123**  
**IMPROVISATION FOR THEATER (1CR)**

*Prerequisite: THEA 130*

Theater improvisation will be introduced in this class, which will emphasize creative stage activities not requiring a written script. 1 hr./wk.

**THEA 130**  
**ACTING I (3CR)**

The fundamentals of acting will be studied in this class. Emphasis will be on discovering and expanding creative potential through exercises in self-awareness, posture, movement, voice and personality projection. Students will complete a minimum of three in-class performances. 3 hrs./wk. plus rehearsals and performances.

**THEA 133**  
**TECHNICAL PRACTICUM I (1CR)**

Students can gain practical experience in technical theater techniques in this class. 2 hrs. lab/wk.

**THEA 134**  
**PERFORMANCE PRACTICUM I (1CR)**

This course will enable students to gain practical experience in performance-related aspects of college theater productions. Admission is by audition. 2 hrs. lab/wk.

**THEA 135**  
**MAKEUP (1CR)**

Students will study and practice applying stage makeup. 1 hr./wk.

**THEA 136**  
**BASIC COSTUMING (3CR)**

This course is a survey of the theory, techniques and skills used in costume production for the theater and film. Areas of study and practice include basic construction, patterning and cutting; fabrics, design and realization; millinery, craft work and organization. 2 hrs. lecture, 2 hrs. lab/wk.

**THEA 140**  
**BASIC STAGECRAFT (3CR)**

This course will provide students with stagecraft theory as well as practical experience with stage scenery and current theater technology. 2 hrs. lecture, 2 hrs. lab/wk.

**THEA 145**  
**INTRODUCTION TO THEATER DESIGN (3CR)**

This lecture and studio class introduces the theory and practice of theater design and the graphics and standards of entertainment technology. Emphasis will be on the processes and practices used in designing for the performing arts. Using course-taught computer and hand-based drawing techniques, the student will begin to create a portfolio of work through in-class projects. 2 hrs. lecture, 2 hrs. lab/wk.

**THEA 225**  
**READER'S THEATER (3CR)**

Students will combine acting, interpretation and rhetoric as they analyze and perform prose, poetry and dramatic literature and present public performances. 3 hrs./wk. plus rehearsals.

**THEA 230**  
**ACTING II (3CR)**

*Prerequisite: THEA 130*

This continuation of Acting I will focus on more in-depth character analysis and development, emphasizing the actor's responsibility in creating the character. 3 hrs./wk. plus rehearsals and performances.

**THEA 233**  
**TECHNICAL PRACTICUM II (1CR)**

*Prerequisite: THEA 133*

This class will provide additional practice in technical theater techniques. 4 hrs. lab/wk.

**THEA 234**  
**PERFORMANCE PRACTICUM II (1CR)**

*Prerequisite: THEA 134*

This course will enable students to gain further practical experience in the performance-related aspects of college theater productions. Admission is by audition. 2 hrs. lab/wk.

**THEA 240**  
**COSTUMING (1CR)**

Students will study designing and creating costumes for theatrical productions. 2 hrs./wk.

**THEA 298**  
**BACKSTAGE ON BROADWAY (2CR)**

In this travel-for-credit course, students will have a week of intensive study in professional New York theaters. The course will involve five one-hour sessions on campus and five full days of study on location in New York City. Sessions on campus will cover such topics as working in professional theaters, American theater history, writing theater criticism and initiating theater research. While in New York, time will be spent in daily class sessions, doing theater research at special performing arts archives, touring professional theater facilities, seeing professional theater productions and visiting with various guest lecturers. Spring.

## Travel and Tourism Management

**KTT 101**  
**INTRODUCTION TO THE TRAVEL INDUSTRY (3CR)**

This survey of all aspects of the travel industry includes domestic and international air travel, cruises, railroads, hotels, tours and vacation planning. 3 hrs. lecture/wk.

**KTT 102**  
**DESTINATION GEOGRAPHY (3CR)**

*Prerequisite: Completion or enrollment in KTT 101*

Major travel destinations and how to get there from Kansas City will be studied. Also included will be required documents for travelers, major suppliers and activities and attractions. 3 hrs. lecture/wk.

**KTT 103**  
**TRAVEL SALES (3CR)**

*Prerequisite: KTT 102*

Topics in this course include sales techniques with travel reservations, travel customer counseling and cross selling of specific travel products. 3 hrs. lecture/wk.

**KTT 104**  
**TRAVEL OPERATIONS (3CR)**

*Prerequisite: Completion or enrollment in KTT 103*

This survey of major activities of travel specialists includes reservations, work flow, communications and automation. 3 hrs. lecture/wk.

**KTT 105**  
**COMPUTER RESERVATIONS SYSTEMS (4CR)**

*Prerequisite: Completion or enrollment in KTT 104*

This training on a computer reservation system of a major airline includes codes and inputting data, reservation formats, pricing and ticketing and booking cars and hotel. 3 hrs. lecture, 2 hrs. lab/wk.

**KTT 111****DESTINATION SPECIALIST – CARIBBEAN AND MEXICO (3CR)**

Designed as an applied geography course for professional certification for travel agency, cruise line, and airline employees, this course provides in-depth knowledge of the geography, climate, cultures, politics, languages and history of the region. Emphasis will be placed on both physical and cultural attractions and activities and on the dynamics of the tourism industry. Students will take a national certification test to become a destination specialist. This is also a good introduction for people simply planning to visit the region.

**KTT 112****DESTINATION SPECIALIST – PACIFIC RIM (3CR)**

Designed as an applied destination geography course leading to professional certification for travel agency, cruise line, and airline employees, this course provides in-depth knowledge of the geography, climate, cultures, politics, languages, and history of the Pacific Rim including Australia, New Zealand, Tahiti and Polynesia, Melanesia, Micronesia, Japan, China, and East Asia. Emphasis will be placed on both physical and cultural attractions and activities as well as the dynamics of the regional tourist industry. Students will take a national certification test to become a destination specialist.

**KTT 113****DESTINATION SPECIALIST – NORTH AMERICA (3CR)**

Designed as an applied destination geography course leading to professional certification for travel agency, cruise line and airline employees, this course provides in-depth knowledge of the geography, climate, cultures, politics, languages and history of North America, especially Canada and the United States. Students will take a national certification test to become a destination specialist.

**KTT 114****DESTINATION SPECIALIST – WESTERN EUROPE (3CR)**

Designed as an applied destination geography course leading to professional certification for travel agency, cruise line and airline employees, this course provides in-depth knowledge of the geography, climate, cultures, politics, languages and history of Western Europe. Students will take a national certification test to become a destination specialist.

**KTT 115****DESTINATION SPECIALIST – CORPORATE TRAVEL (3CR)**

This is an in-depth study of major business travel destinations. Both U.S. and international cities are reviewed. Topics include the fundamentals of business travel, needs of business travelers and types of business travel. Students will work in teams to develop a service plan for commercial accounts. Each student will take a certification test from the Institute of Certified Travel Agents.

**KTT 121****TRAVEL SALES AND CUSTOMER SERVICE (3CR)**

This course is designed for airline, travel agency and tour operator employees who have direct contact with the public. Emphasis is placed on developing a customer service program to retain customers and enhance sales.

**KTT 122****CRUISE COUNSELING AND MARKETING (3CR)**

This course covers the fundamentals of arranging and selling cruises, including port facilities, services, itineraries, shore and optional excursions, and reference materials. Emphasis is on cruise counseling, determining needs, making recommendations, customer service and marketing.

**KTT 124****ADVANCED STUDIES IN TRAVEL AND TOURISM (3CR)**

This is the capstone course for students seeking an advanced certificate in travel management or an A.A.S. degree in travel and tourism. The student will complete a major project in corporate travel management or leisure travel management.

**KTT 127****MANAGEMENT INTERNSHIP I (1CR)**

*Prerequisite: Approval of the instructor*

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

**KTT 128****MANAGEMENT INTERNSHIP II (1CR)**

*Prerequisite: KTT 127 and approval of the instructor*

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

**KTT 129****MANAGEMENT INTERNSHIP III (1CR)**

*Prerequisite: KTT 128 and approval of the instructor*

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

## Veterinary Technology

### **KSAH 100** **INTRODUCTION TO** **VETERINARY TECHNOLOGY (2CR)**

This course is an orientation to career opportunities available in veterinary technology. Professional ethics, public relations, and the psychological adjustment of the student to the need for physical treatment and emotional involvement in the care of animals will be discussed. Client relations, vaccination programs, regulatory organizations, receptionist duties, breeds and breed characteristics, neutering, puppy care, diets and hospital management also will be covered. 2 hrs./wk.

### **KSAH 101** **PRINCIPLES OF ANIMAL SCIENCE I (3CR)**

This course will present the principles of handling, housing and managing animals; basic dietary and sanitation requirements; restraint and handling; administration of medications; bathing; skin scraping TPRs; and basic laboratory tests. The emphasis will be on animal physiology including the cell, muscle, nervous, respiratory and cardiovascular systems. An introduction to anesthesia and general animal nursing also will be included. 2 hrs. lecture, 2 hrs. lab/wk.

### **KSAH 108** **CLINICAL MATH (1CR)**

The metric system and conversion of units; apothecaries' equivalents and vocabulary; preparation of solutions – strengths, procedures and computations; and drug administration – calculating and measuring dosages – will be covered. 1 hr./wk.

### **KSAH 110** **PRINCIPLES OF ANIMAL SCIENCE II (3CR)**

*Prerequisite: KSAH 101*

This course is a continuation of Animal Science I. Specimen collection, urinary catheterization, blood collection, basic bandaging and an introduction to surgical preps and radiographic processing will be covered. Emphasis will be on anesthesia and the physiology of the digestive, urinary, endocrine and reproductive systems. 2 hrs. lecture, 2 hrs. lab/wk.

### **KSAH 111** **SANITATION AND ANIMAL CARE (2CR)**

This course is an introduction to micro-organisms, sanitation, disinfectants and sterilization. Zoonotic diseases and public health problems; parasitology and vermin control; specimen preservation, instrument identification, cleaning and sterilization; and anesthesia monitoring and patient care will be discussed. 1 hr. lecture, 2 hrs. lab/wk.

### **KSAH 120** **CLINICAL PATHOLOGY TECHNIQUES I (4CR)**

This course is an introduction to laboratory procedures including preparation of blood smears, cell identification, fecal analysis and parasitology. Urinalysis and urine sediment evaluation also will be covered. 1 hr. lecture, 6 hrs. lab/wk.

### **KSAH 182** **VETERINARY OFFICE AND COMPUTER SKILLS (3CR)**

*Prerequisite: Ability to key or type*

This specialized training course in veterinary office skills and computer applications will include computerized office management skills, bookkeeping and accounts management, records and supply control, telecommunication and client relation techniques. 2 hrs. lecture, 2 hrs. lab/wk.

### **KSAH 200** **VETERINARY HOSPITAL TECHNOLOGY I (3CR)**

This course will cover the administration of anesthetics and surgical assisting, bandaging, casting, blood transfusions, surgical preparation and postoperative procedures. Parenteral fluid administration, intravenous hook-ups and an introduction to orthopedics, electrocardiography, bone marrow cytology and pharmacology also will be presented. 1 hr. lecture, 4 hrs. lab/wk.

### **KSAH 202** **VETERINARY TECHNOLOGY ANATOMY (5CR)**

This course will present the basic principles of anatomy using a systemic approach. Physiology as it relates to anatomy and applicable pathology involving the animal body systems will be covered, as will a comparison of the animal species using the cat for dissection. 3 hrs. lecture, 4 hrs. lab/wk.

### **KSAH 203** **LABORATORY ANIMAL TECHNOLOGY (2CR)**

*Prerequisites: KSAH 101, KSAH 110 and KSAH 120*

Restraint and handling of laboratory animals and birds, blood collection, physical examinations, medicating and anesthesia of various species will be covered. 1 hr. lecture, 2 hrs. lab/wk.

### **KSAH 209** **EQUINE MEDICINE AND MANAGEMENT (3CR)**

This course will cover breeds and types of horses and their use. Also presented will be conformation as it relates to soundness, horse psychology, fitting, conditioning, first aid and restraint, parasites and their control, farm management for safety, nutrition, mare care, breeding, foaling, hoof soundness, diseases and their prevention. 2 hrs. lecture, 2 hrs. lab/wk.

**KSAH 210**  
**VETERINARY HOSPITAL TECHNOLOGY II (3CR)**

*Prerequisite: KSAH 200*

This course will cover the administration of anesthetics and surgical assisting, bandaging, casting, blood transfusions, surgical preparations and postoperative care. Parenteral fluid administration, emergency treatments, an introduction to ophthalmology and dermatology also will be covered. 1 hr. lecture, 4 hrs. lab/wk.

**KSAH 211**  
**CLINICAL PATHOLOGICAL TECHNIQUES II (5CR)**

*Prerequisite: KSAH 120*

Theory and performance in hematology, urinalysis, clinical chemistry and parasitology will be covered. This course is an introduction to immunologic testing, blood coagulation tests and bone marrow evaluation. 2 hrs. lecture, 6 hrs. lab/wk.

**KSAH 212**  
**LARGE ANIMAL TECHNOLOGY (4CR)**

*Prerequisites: KSAH 101 and KSAH 110*

Studied will be the techniques necessary to assist the veterinarian in a large animal or mixed practice and in research facilities. Equine, bovine, porcine and ovine medicine and management, including restraint, blood collection, medicating and nursing techniques, will be covered. 2 hrs. lecture, 4 hrs. lab/wk.

**KSAH 213**  
**RADIOLOGY AND  
ELECTRONIC PROCEDURES (2CR)**

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

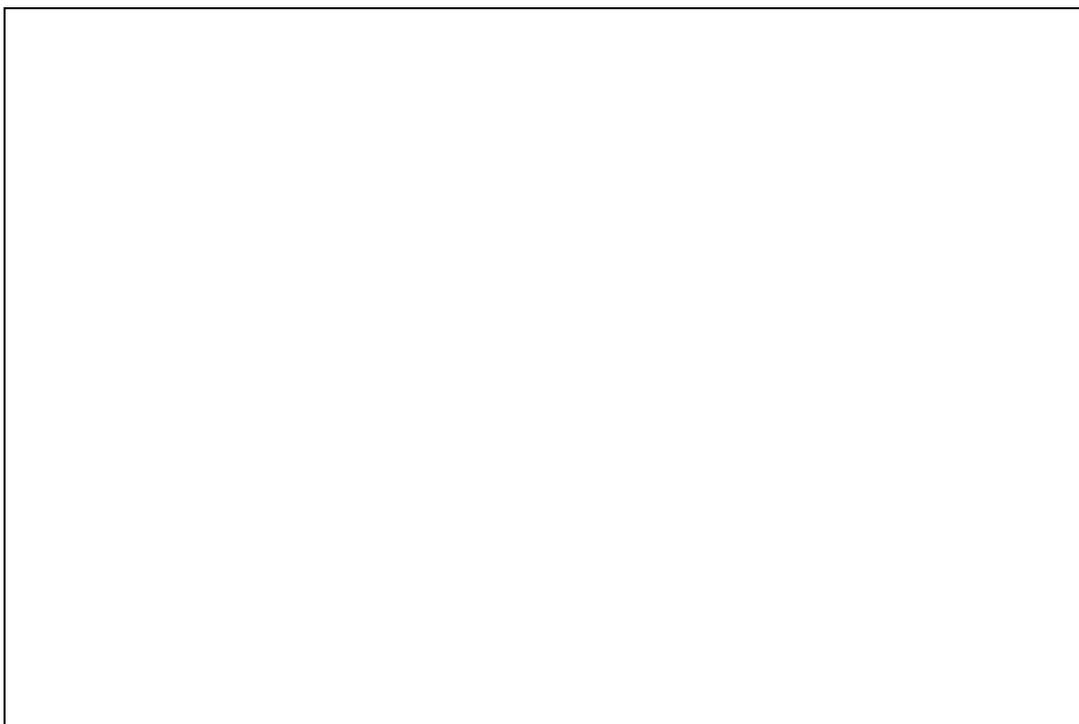
**KSAH 214**  
**VETERINARY TECHNICIAN INTERNSHIP (6CR)**

*Prerequisite: Two semesters of first-year animal health courses*

Supervised intensive clinical study under the direction of a cooperating veterinarian will provide the student with actual work experience. 420 work hours.

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# Staff



**Margaret Ackelson**

Instructor, Learning Strategies  
B.A., MidAmerica Nazarene College  
M.A., University of Missouri-Kansas City

**Mazen Akkam**

Instructor, Electronics/Information Technology  
B.S., M.S., Kansas State University

**Ateegh Al-Arabi**

Instructor, Life Science  
B.S., University of El-Fathe, Libya  
M.S., University of Dayton  
Ph.D., University of Dublin, Ireland

**Daniel Alexander**

Instructor, English  
B.A., M.A., Oklahoma State University

**David Allen**

Instructor, Life Science  
B.S., University of Kansas  
M.A., University of Missouri-Kansas City

**Douglas Allen**

Executive Director, Network Services  
B.Music Ed., University of Nebraska

**Michael Alley**

Theater Manager  
A.A., Johnson County Community College  
B.A., University of Missouri-Kansas City

**Luz Maria Alvarez**

Instructor, Foreign Language  
B.A., Universidad Cuauhtemoc, Mexico  
M.A., M.A., University of Kansas

**Jean Alvers**

Instructor, Psychology  
B.S., Eastern Michigan University  
M.A., University of Michigan

**Betty Anastasio**

Program Director, Industrial Technical Training/  
Economic Development  
B.S., Fairleigh Dickinson University

**Carl Anderson**

Instructor, Mathematics  
B.S., Northern Michigan University  
M.S., University of Michigan

**Jeffrey Anderson**

Counselor  
B.A., M.A., University of Northern Iowa

**Lowry Anderson**

Instructor, English  
B.A., Baker University  
M.S., University of Kansas

**Rebecca Anderson**

Instructor, Speech  
B.S., M.A., Southwest Missouri State University

**Susan Annen**

Instructor, Hospitality Management  
B.S., University of Wisconsin-Stout

**Dennis Arjo**

Instructor, Philosophy  
B.A., University of California-Santa Cruz  
M.A., University of Colorado-Boulder  
Ph.D., University of California-Santa Barbara

**Renee Arnett**

Instructor, Dental Hygiene  
B.S., Loyola University  
M.S., University of Missouri-Kansas City

**Jonathan P. Bacon**

Program Director, Educational Technology Center  
B.A., M.A., Michigan State University

**Larry Baggerly**

Instructor, Foreign Language  
B.A., M.A., University of Missouri-Kansas City

**Gerald Baird**

Vice President, Administrative Services  
B.S., M.Ed., Ph.D., University of Nebraska

**Lilliana Bajich-Bock**

Counselor  
B.S., M.S., Kansas State University

**Judi A. Ballard**

Instructor, Reading/Academic Achievement Center  
A.B., William Jewell College  
M.A., University of Missouri-Kansas City

**Brian Balman**

Instructor, Mathematics  
B.S., Calvary Bible College  
M.A., Fort Hays State University

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**John Barnes**

Instructor, Metal Fabrication  
B.S., Metropolitan State College

**Thomas M. Barnett**

Instructor, Physical Science  
B.S., M.S., Eastern New Mexico University  
Ed.D., North Texas State University

**Anne F. Bauman**

Instructor, English  
B.A., Fontbonne College  
M.A., Loyola University

**Brian Baumgardner**

Instructor, Life Science  
A.A., Johnson County Community College  
B.S., Pittsburg State University  
D.D.S., University of Missouri-Kansas City

**Connie Beachler**

Program Director, Personal Enrichment  
B.S.S.W., M.A., Ohio State University

**Stuart A. Beals**

Instructor, Photography  
B.A., M.A., University of Kansas

**Larry Beardslee**

Instructor, Data Processing  
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**

Instructor, Physical Science  
B.S., Murray State University  
M.S., Southern Illinois University

**Joni Becker**

Coordinator, Foundation Events  
A.A., Johnson County Community College  
B.G.S., University of Kansas

**Zohreh Saeed Behbehani**

Instructor, 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**

Instructor/Career Program Facilitator, Fire Science  
B.S., M.S., Central Missouri State University

**James Bennett**

Instructor, Heating, Ventilation and  
Air Conditioning Technology  
B.S., University of Kansas

**Roslyn Bethke**

Instructor, Reading/Academic Achievement Center  
B.A., Fort Hays State University  
M.S., University of Kansas

**Margaret Biethman**

Academic Director, Dental Hygiene  
B.S., Marquette University  
M.S., University of Missouri-Kansas City

**Charles C. Bishop Jr.**

Instructor, 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

**Joanne C. Bodner**

Instructor, Academic Achievement Center  
B.S., University of Kansas  
M.S., Indiana State University  
Ed.D., University of Kansas

**Stacy Boline**

College Information Writer/Editor  
B.S., Kansas State University

**Amy Bonham**

Program Manager, Student Activities  
B.S., Kansas State University  
M.S., Emporia State University

**Elizabeth Borowicz**

Programmer Analyst  
B.S., Park College

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**Marilyn Bottrell**  
Senior Buyer  
B.S., University of Nebraska-Kearney

**Roger Box**  
Instructor, Electronics  
B.S., M.S., Pittsburg State University

**Robert Brannan Jr.**  
Instructor, English  
B.A., University of Missouri-Kansas City  
M.A., Iowa State University

**Judy Brazil**  
Instructor, Commercial Art  
B.A., Avila College  
M.A., University of Kansas

**Alicia Bredehoeft**  
Counselor  
B.A., M.Ed., University of Missouri-Columbia

**Susan Haas Brown**  
Instructor, Physical Education  
B.S., Kansas State University  
M.S.Ed., University of Kansas

**Mark Browning**  
Instructor, English  
B.A., William Jewell College  
M.A., University of Missouri-Kansas City  
Ph.D., University of Kansas

**Elizabeth Bryant**  
Instructor, Sociology  
B.A., University of the State of New York  
M.A., Ph.D., SUNY-Albany

**William Buese**  
Instructor/Trainer  
B.S.E., M.S., Central Missouri State University

**Albert Bundons**  
Academic Director, Business Administration  
B.S., Columbus College  
M.B.A., Northwest Missouri State University

**N. Burgess Burch**  
Academic Director, Technologies Program  
B.A., Hendrix College  
B.S.C.E., M.S.C.E., University of Arkansas

**C. David Burgess**  
Instructor/Coach  
B.A., McPherson College  
M.S., University of Kansas

**Helen Burnstad**  
Director, Staff Development  
B.A., Colorado State College  
M.A., University of Northern Colorado  
Ed.D., University of Arkansas

**Andy Burton**  
Academic Director, Railroad Operations  
A.A., Central Texas College  
B.S., State University of New York  
M.S., Kansas State University

**Wayne R. Busse**  
Manager, Maintenance and Operations

**Eugene S. Butler**  
Instructor, Vocal Music  
B.M.E., University of Oklahoma  
S.M.M., Union Theological Seminary  
D.M.A., University of Missouri-Kansas City

**Donnie Byers**  
Instructor, Physical Science  
B.A., Knox College  
M.S., Michigan State University

**Paige Cahill**  
Instructor, Personal Computer Applications  
B.S., Missouri Western State College

**Gayle Callahan**  
Manager, Business Office Services  
B.B.A., Pittsburg State University  
M.B.A., University of Kansas

**Sandra Calvin-Law**  
Instructor, English  
B.A., Hollins College  
M.L.A., Baker University

**Carol Campbell**  
Librarian  
B.A., University of Virginia  
M.L., University of Washington

---

**Gloria Campbell**

Program Director, Career Center  
A.A., Ottumwa Heights College  
B.S., Emporia State Teachers College  
M.S.Ed., University of Kansas

**Matt C. Campbell**

Instructor/Program Facilitator, College Now/Honors  
B.A., Park College  
M.A., Tulsa University

**Charles J. Carlsen**

President  
B.S., M.S., Southern Illinois University  
Ed.D., University of Illinois

**Nancy Carpenter**

Instructor, Mathematics  
B.S., Elizabethtown College  
M.A., University of Missouri-Kansas City

**Dana Elaine Carr**

Adviser, Career Center  
A.A., Johnson County Community College  
B.S.E., M.A., University of Kansas

**Stephen Carr**

Instructor/Career Program Facilitator,  
Automotive Technology  
B.A., Hanover College  
B.S., University of Wyoming  
M.A., Purdue University

**Deborah Carrier**

Instructor/Coach  
B.S., M.S., Emporia State University  
M.S., Northern Montana College

**Gratia Carver**

Microcomputer Program Technology Specialist  
B.A., MidAmerica Nazarene College

**Kathy A. Carver**

Instructor, Nursing  
B.S.N., Washburn University  
M.S., University of Kansas

**Patrick Casey**

Manager, Audiovisual Services  
B.S., Kansas State University

**Carol Cattaneo**

Instructor, Nursing  
B.S.N., University of the State of New York  
M.N., University of Kansas

**Daniel Chang**

Programmer/Computer Support Specialist  
B.S., Southwest Baptist University

**John Chapman**

Instructor, Data Processing  
B.S., University of Missouri-Kansas City  
M.S., Kansas State University

**Hsing Chen**

Database Administrator, Information Services  
B.C., Soochow University  
M.B.A., Colorado State College

**Judith Choice**

Program Director, Community Services  
B.A., M.A., University of Iowa

**Vincent Clark**

Instructor, History  
B.A., Pacific Union College  
M.A., Loma Linda University  
Ph.D., University of California

**Gene Clegg**

Instructor, Mathematics  
B.A., Bethany Nazarene College  
M.A., University of Oklahoma

**Lydia Cline**

Instructor, Drafting  
B.A., Iowa State University

**Charlyn Cloud**

Instructor, Respiratory Therapy  
B.S., Cornell College

**Kenneth L. Coffey**

Academic Director, Office Occupations  
A.A., Pueblo Junior College  
B.A., M.A., Colorado State College

**Linda L. Cole**

Director, Community Services  
B.J., M.Ed., University of Missouri-Columbia

**Karen Conklin**

Marketing and Survey Research Analyst  
B.S., M.S., Ed.S., Pittsburg State University

---

**Julianne Cooper**

Program Director/Financial Aid  
B.A., San Francisco State University  
M.S., M.S., Emporia State University

**Cody Copeland**

Instructor, Personal Computer Applications  
B.S., University of Arizona  
M.Ed., University of Wyoming

**Douglas Copeland**

Instructor, Economics  
B.S., M.S., University of Missouri-Kansas City

**Sally Copeland**

Instructor, Mathematics  
A.A., Johnson County Community College  
B.A., M.S.Ed., University of Kansas

**Julia Cotter**

Instructor, Fashion Merchandising  
B.S., University of Missouri-Columbia  
M.S., University of Kansas

**Jeffrey Couch**

Program Coordinator, Intensive ESL Program  
B.S., M.A., Central Missouri State University

**John Courtney**

Instructor, Hospitality Management  
B.S., M.S., Mississippi Valley State University

**Marsha Cousino**

Librarian  
B.A., Kansas State University  
M.L.S., University of Michigan

**Julane Crabtree**

Instructor, Mathematics  
B.S., M.A., West Virginia University

**Clarissa Craig**

Academic Director, Respiratory Care  
A.S., Penn Valley Community College  
B.S., Rockhurst College  
M.A., University of Missouri-Kansas City

**Rebecca L. Cramer**

Instructor, Anthropology  
B.A., State University of New York-Stony Brook  
M.A., University of Iowa

**Patrick Crowe**

Instructor, Mathematics  
B.S., University of Notre Dame  
M.A., Washington University

**Jan Cummings**

Instructor, Fashion/Interior Merchandising  
B.S., William Woods College  
M.S., Kansas State University

**Forrest Cunningham**

Instructor, Electronics  
B.S., Bethany Nazarene College  
B.S.E.E., M.S.E.E., U.S. Naval Postgraduate School

**Mel Cunningham**

Assistant Dean, Educational Media Center  
B.G.S., Municipal University of Omaha  
M.S.E., University of Nebraska-Omaha  
M.L., Emporia State University  
Ph.D., University of Kansas

**David Davis**

Instructor, English  
B.A., Coe College  
M.A., University of Kansas

**Janet Davis**

Bookstore Manager  
B.A., Ottawa University

**Dennis Day**

Assistant Dean, Student Enrollment Services  
and Financial Aid  
B.S., M.S., Southwest Missouri State University  
Ph.D., University of Kansas

**Paul Decelles**

Instructor, 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**

Instructor, Sociology/Anthropology  
B.A., Adams State College of Colorado  
M.A., University of Northern Colorado  
Ph.D., University of Kansas

**Mary L. Dover**

Records Manager  
A.A., Kansas City Missouri Junior College  
B.A., Ottawa University

**Kristin Downing**

Counselor  
B.A., M.S., Emporia State University

**Holly Dressler**

Support Services Supervisor, Student Access Center  
B.S., University of Illinois

**James Drone**

Programmer/Computer Support Specialist  
B.S., Emporia State University

**John Drysdale**

Instructor/Career Program Facilitator,  
Hospitality Management  
B.A., Michigan State University  
M.S., Central Michigan University

**Julia Duckwall**

Senior Research Analyst  
B.A., Bethany College  
M.A., Ph.D., Florida State University

**Donna Duffey**

Instructor/Career Program Facilitator,  
Marketing/Management  
B.S., Wisconsin State University  
M.S., M.B.A., Baker University

**Colleen Duggan**

Instructor, Nursing  
B.S.N., Northern Illinois University  
M.S.N., St. Louis University

**Leon C. Duggar**

Instructor, Electronics  
B.S.E.E., Colorado State University  
M.S.E.E., Air Force Institute of Technology

**Csilla Duneczky**

Instructor, Physical Science  
B.A., University of Colorado  
Ph.D., University of Pennsylvania

**Richard Dyer**

Director, Budget and Auxiliary Services  
B.B.A., M.B.A., University of Missouri-Kansas City

**David Ellis**

Counselor  
B.S., M.S., Emporia State University

**David Emerson**

Instructor, Life Science  
A.B., University of California  
A.M., Ph.D., State University of South Dakota

**Janie Epstein**

Instructor, Data Processing  
A.A., Graceland College  
B.A., University of Missouri-Kansas City

**James D. Evans**

Instructor, Business Administration  
B.S., Kansas State University  
M.S., Emporia State University

**Lawrence Everhart**

Career Coordinator  
B.S., B.S., M.S.E., Emporia State University

**Roberta A. Eveslage**

Instructor, Psychology  
B.F.A., Texas Christian University  
M.A., Ph.D., University of Kansas

**Wendy Farwell**

Counselor  
B.A., M.S., University of Nebraska

**Elise Fischer**

Instructor, 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**

Instructor, English  
B.A., Iowa State University  
M.A., University of Missouri-Columbia

---

**Heather Flick**

Instructor, 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**

Instructor, English  
B.A., M.A., M.Ed., University of Mississippi

**Richard Fort**

Instructor, Automotive Technology  
B.S., M.S., Pittsburg State University

**Johanna Foster**

Instructor, Life Science  
B.S., University of Nevada  
Ph.M., Ph.D., University of Kansas

**Mark Foster**

Instructor, Sociology  
A.A., Nassau Community College  
B.A., University of Georgia  
M.A., Long Island University  
Ph.D., Mississippi State University

**Mary Jo Fourier**

Instructor, Life Science  
B.S., M.Ed., University of Oregon  
M.S., University of New Mexico  
Ph.D., University of Missouri-Kansas City

**Emily Fowler**

Coordinator, Foundation Events  
B.A., University of Missouri-Kansas City

**Carl Frailey**

Instructor, Life Science  
B.A., Southern Illinois University  
M.S., University of Florida  
Ph.D., University of Kansas

**Philip Franklin**

Instructor, Physical Science  
A.A., Johnson County Community College  
B.S., Pittsburg State University  
M.S., University of Kansas

**Willa Franklin**

Financial Aid Accountant  
B.S., Avila College

**James Freed**

Director, Facility Planning  
B.A., Kansas State University

**Constance Freund**

Instructor, 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**

Instructor, 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**

Instructor, Mathematics  
B.S., B.A., Kansas State University  
M.A., University of Kansas

**Amy Fugate**

Instructor, Speech/Debate Coach  
B.S., Northern Michigan University  
M.A., University of Michigan  
Ph.D., University of Kansas

**Marilyn Gaar**

Instructor, 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**

Systems Specialist  
B.S., B.A., Rockhurst College

**Sean T. Garvey**

Systems Software Programmer  
A.A., Kansas City Kansas Community College

---

**Keith Geekie**

Instructor, English  
B.S., M.A., Murray State University  
Ph.D., University of Missouri-Columbia

**Dennis J. George**

Instructor, Life Science  
B.S., Rockhurst College  
M.A., University of Missouri-Kansas City

**Steven M. Gerson**

Instructor, English  
B.A., University of Texas  
M.A., Southwest Texas State University  
Ph.D., Texas Tech University

**Ken Gibson**

Dean, Instruction  
B.A., St. Mary's College  
B.A., Brescia College  
M.A., University of Kentucky  
Ph.D., Southern Illinois University

**Linda Gill**

Financial Aid Officer  
B.S.Ed., Emporia State University

**Richard Gist**

Academic Director, Social Sciences and Social Services  
B.A., M.A., Ph.D., University of Missouri-Kansas City

**Phyllis Goldberg**

Counselor  
B.A., Hunter College  
M.A., Webster University

**Peggy Graham**

Media Relations Specialist  
B.S., University of Kansas  
M.L.A., Baker University

**Kevin A. Gratton**

Instructor, Physical Science  
A.B., Rockhurst College  
Ph.D., University of Kansas

**Carolyn Jean Green-Nigro**

Instructor, Nursing  
A.A., Johnson County Community College  
B.S.N., M.N., Ph.D., University of Kansas

**Frank S. Grigsby**

Project Manager  
B.S., Central Missouri State University

**Kim C. Grubbs**

Instructor, MICT  
B.S., Bethel College

**Julie Haas**

Director, College Information and Publications  
B.A., M.A., University of Kansas

**John J. Halligan**

Instructor, 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**

Instructor, Data Processing  
B.S., M.S., University of Missouri-Rolla

**Steve Hansen**

Instructor, Computer Science  
A.A., Metropolitan Community College  
B.A., M.S., University of Missouri-Kansas City

**John Hanson**

Instructor, Physical Science  
B.S., Bethany College  
M.A., Webster University

**William Hardiman**

Director, Purchasing  
B.S., M.P.S., Western Kentucky University

**Terry Haren**

Manager, Computer Resource Center  
B.A., University of Kansas  
M.B.A., Webster University

**Harold Harp**

Instructor, English  
B.S., M.A., Central Missouri State College

**Jean Harpst**

Instructor, Mathematics  
B.A., Dana College  
M.S., University of Nebraska-Omaha

**Greg Harrell**

Instructor, Journalism, English and Learning Strategies  
B.S., Ball State Teacher's College  
M.S., Northwestern University

**Nancy Harrington**

Instructor, Data Processing  
B.S., Mississippi State University  
M.S., University of Arkansas

**Bruce Hartman**

Program Director, Campus Art/Foundation  
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

**Larry Haushahn**

Drafting Lab Technician  
A.S., College of San Mateo  
A.S., Ohlone College  
B.S., San Jose State University

**Carl Heinrich**

Program Coordinator, Student Life  
B.S., University of Kansas  
M.S., Northwest Missouri State University

**Josh Heizman**

Senior Internet Analyst

**Gina Helget**

Registration Supervisor  
B.A., M.S., University of Kansas

**Teresa Helmick**

Instructor, Speech  
B.S.E., M.A., Central Missouri State University  
Ph.D., University of Kansas

**Michael Hembree**

Instructor, History  
B.A., Florida Presbyterian College  
M.A., Ph.D., Florida State University

**Brandon Henry**

Senior Educational Technology Analyst  
B.S., Kansas State University

**Wayne Hewitt**

Instructor/Career Program Facilitator, Data Processing  
A.B., Princeton University  
M.B.A., University of Pittsburgh

**William Hickerson**

Instructor/Career Program Facilitator,  
Heating, Ventilation and Air Conditioning Technology  
A.A.S., B.S.T., University of South Dakota-Springfield

**Ron D. Hicks**

Instructor, Art  
B.S., M.S., Pittsburg State University

**Roxanne Hillman**

House Manager  
B.A., Southern Illinois University

**Barry Hincks**

Instructor, 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

**Roger Hobson**

Television Engineer  
A.S., Johnson County Community College

**Kay Hoech**

Instructor, Life Science  
B.S., M.A., University of Missouri-Kansas City

**Elizabeth Holmgren**

Supervisor, Math Resource Center  
B.S., Morningside College

**Donna Hoopes**

Instructor, Mathematics  
B.S., University of Kansas  
M.S., Wichita State University

**James Hopper**

Instructor, Data Processing  
B.A., University of Missouri-Kansas City  
M.A., University of Kansas

**Michael Hoskins**

Senior Analyst/Assistant Database Administrator  
B.S., Evangel College

**David Hufnagel**

Instructor, Physical Science  
B.S., U.S. Military Academy, West Point  
M.S., Rensselaer Polytechnic Institute

---

**Dale Hughes**

Instructor, Mathematics  
B.S., University of Missouri-Rolla  
M.A., Washington University

**Tom Hughes**

Instructor/Career Program Facilitator, Drafting  
A.A.S., Kalamazoo Valley Community College

**Robert Hunt**

Instructor, Physical Science  
B.S.Ed., University of Kansas  
M.S., M.S., Rensselaer Polytechnic Institute

**Janalee Isaacson**

Instructor, Nursing  
B.S., University of Kansas

**Mary Beth Izard**

Instructor/Career Program Facilitator,  
Business Entrepreneurship  
B.S., Indiana State University  
M.B.A., University of Missouri-Kansas City

**H. Eugene Jack**

Instructor, Physical Science  
B.S., M.S., Pittsburg State University

**James Jackson**

Instructor, Humanities  
B.A., Arkansas Polytechnic College  
M.Ed., University of Arkansas  
Ed.D., University of Kansas

**Gretchen Janis**

Instructor, Foreign Language  
B.A., Drury College  
M.A., Arizona State University  
M.A., University of Missouri-Kansas City

**Steve Javorek**

Instructor, Fitness  
Diploma, Cluj Institute, Romania

**Michael Jeffers**

Instructor/Coach  
B.S.Ed., M.Ed., Georgia Southern University

**Susan Johnson**

Instructor, Drafting/Engineering/  
Civil Engineering Technology  
B.S., M.S., Ohio State University

**Patricia Jonason**

Instructor, Reading/Academic Achievement Center  
B.A., Yankton College  
M.A., University of Missouri-Kansas City

**Bernhardt Jones**

Instructor, Interpreter Training  
B.A., M.Ed., University of Arizona  
Ed.D., University of Kansas

**Kelly Jones**

Instructor, Dental Hygiene  
A.A., Johnson County Community College  
B.S., University of Missouri-Kansas City

**John Joyce**

Instructor, Hospitality Management

**Carolyn J. Kadel**

Instructor, Political Science  
A.B., Elmira College  
M.A.T., Brown University

**Norman H. Karl**

Instructor, Marketing/Management  
B.A., Wartburg College  
M.A., University of Northern Colorado

**William C. Karnaze Jr.**

Instructor, Physical Science  
A.A., Kansas City Kansas Community College  
B.A., M.A., University of Kansas

**Andrea Kempf**

Librarian  
A.B., Brandeis University  
M.A., Johns Hopkins University  
M.S., Simmons College

**Raymond Kenny**

Hazardous Materials Coordinator  
B.A., University of Kansas  
M.P.A., University of Kansas

**Kyong-Mal Kim**

Instructor, Economics  
B.S., Nihon University  
M.A., California State University  
Ph.D., Union Graduate School

**Juliet Kincaid**

Instructor, English  
B.A., Marshall University  
M.A., University of Colorado  
Ph.D., Ohio State University

**Ed Kindermann**  
Instructor, Physical Science  
B.A., M.S., University of Missouri-Kansas City

**Russell D. Kinion**  
Electronics Technician

**Landon C. Kirchner**  
Instructor, Philosophy  
A.S., Flint Junior College  
A.B., A.M., University of Michigan

**Walt E. Klarner**  
Instructor, English  
B.A., College of Emporia  
M.S., Emporia State University

**Shirly Kleiner**  
Instructor, Accounting/Office Systems Technology  
B.A., Avila College  
M.B.A., University of Kansas

**Toby Klinger**  
Instructor, Psychology  
B.A., Douglass College  
M.A., M.Ed., Columbia Teachers College

**Lin Knudson**  
Assistant 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, Food Service  
B.S., Iowa State University

**Judy Korb**  
Instructor, Accounting  
A.A., Johnson County Community College  
B.A., MidAmerica Nazarene College  
M.A., Webster University

**Jeff Kosko**  
Academic Educational Technology Analyst  
A.A., Johnson County Community College  
B.S., Avila College

**Nancy L. Krause**  
Instructor, Reading/Academic Achievement Center  
B.S., Central Missouri State College  
M.A., University of Missouri-Kansas City

**Fred Krebs**  
Instructor, History  
B.A., University of Kansas  
M.A., University of Missouri-Kansas City

**Lyle D. Krebbiel**  
Instructor, Electronics  
B.S.E.E., Kansas State University  
M.S.E.E., A.M., University of Missouri-Columbia

**Donna Krichiver**  
Instructor, Mathematics  
B.A., M.A., Northeastern Illinois State College

**Dennis Kuder**  
Buyer  
B.B.A., Baker University

**William E. Kuehn**  
Manager, Housekeeping and Custodial Services  
B.S., Concordia Teachers College

**Jane Kuo**  
Programmer/Analyst  
B.A., Soochow University  
M.A., University of Kansas

**Dennis Kurogi**  
Academic Director, Emergency Medical Science

**Mark LaBarge**  
Instructor, Life Science  
B.S., M.S., Emporia State University

**Susan Laird**  
Systems Specialist

**Bill Lamb**  
Academic Director, Writing, Literature  
and Media Communications  
B.A., University of Kansas  
M.S., Pittsburg State University  
Ph.D., Kansas State University

**Wayne Lamer**  
Instructor, Personal Computer Applications  
B.A., U.S. Naval Postgraduate School

**James Lane**  
Technical Theater Director  
B.A., Washburn University  
M.F.A., University of Missouri-Kansas City

---

**R.E. "Budd" Langley**

Instructor, Drafting  
A.A., Johnson County Community College  
B.S., Pittsburg State University

**Darwin D. Lawyer**

Counselor  
A.A., Estherville Junior College  
B.A., Northwest Missouri State College  
M.Ed., University of Missouri-Columbia

**J. Ronald Leake**

Instructor, Personal Computer Applications  
B.A., University of California-Berkeley

**William Lehman**

Instructor, Physical Science  
B.S., Eastern Illinois University  
M.S., Arizona State University

**Susan Lindahl**

Program Director, Testing and Assessment Services  
B.S. Ed., M.S. Ed., University of Kansas

**Pat Long**

Dean, Student Services  
B.A., Southwest Baptist College  
M.S., Central Missouri State University  
Ed.D., University of Kansas

**David Loring**

Instructor, Life Science  
B.S., M.S., Kansas State University

**Jim R. Lossing**

Instructor, Data Processing  
B.A., Western New Mexico University  
M.A., M.S., University of Arizona

**Delphine Lovitt**

Systems Specialist  
B.S., Fort Hays State University

**Edward Lovitt**

Technology Training Coordinator  
B.A., B.S., Kearney State College  
M.S., Pittsburg State University

**Deborah Ludwig**

Librarian  
B.A., University of Kansas  
M.L.S., Texas Women's University

**Gregory J. Luthi**

Instructor, English  
B.A., M.A., Kansas State University  
Ph.D., Oklahoma State University

**Darryl Luton**

Instructor/Career Program Facilitator,  
Interpreter Training  
B.A., Gallaudet University

**Arden MacDowell**

Instructor, Interpreter Training  
B.S., Gallaudet College  
M.Ed., Western Maryland College

**Gerald Magliano**

Instructor, CPCA  
B.A., University of Detroit  
M.B.A., Rockhurst College

**Barbara Mahring**

Instructor, Personal Computer Applications  
A.A., Johnson County Community College  
A.A., Kirkwood Community College  
B.S., MidAmerica Nazarene College  
M.S., Central Michigan University  
M.Ed., MidAmerican Nazarene College

**Lori Mallory**

Director, Physical Education/Athletics  
B.S., Bethel College  
M.A., Wichita State University

**Doreen Maronde**

Academic Director, Humanities  
B.A., Hamline University  
M.S., Iowa State University

**Penny Marshall**

Instructor, Nursing  
B.S.N., Washburn University  
M.N., Ph.D., University of Kansas

**Michael Martin**

Instructor, Mathematics  
B.S., M.A., University of Kansas

**Karen Martley**

Program Director, Training and Development Services  
B.S., Avila College  
M.S., Pittsburg State University

---

**Craig Maxim**

Instructor, Hospitality Management  
A.A.S., A.A., Penn Valley Community College  
B.S./B.A., Avila College  
M.Div., University of St. Mary's of the Lake

**Charlotte McAnerney**

Instructor, Cosmetology

**Joan E. McCrillis**

Instructor/Career Program Facilitator,  
Fashion Merchandising  
B.S., M.S., Kansas State University

**Karen McDaniel**

Program Director, Professional Education  
B.S., Southwestern College  
M.S., Kansas State University

**Sara McElhenny**

Program Director, Children's Center  
B.A., University of Kansas  
M.S., Emporia State University

**Leslie D. McKinzie**

Systems Specialist  
B.S., Oklahoma State University

**William McKown**

Instructor, Physical Science  
B.A., Sterling College  
M.A., Sam Houston State University  
Ph.D., University of Minnesota

**Sylvia J. McMorris**

Instructor, Nursing  
B.S.N., University of Kansas  
M.S., Emporia State University  
Ed. Specialist, University of Missouri-Kansas City

**James McWard**

Instructor, English  
B.A., M.A., University of Missouri-Columbia

**Mickey McWilliams**

Instructor, Drafting  
B.S., Wayne State University  
M.A., Eastern Michigan University  
Ed.S., Michigan State University

**Philip Mein**

Senior Support Specialist  
B.S., University of Kansas

**Al Mettenburg**

Instructor, Administration of Justice  
B.S., University of Missouri-Columbia

**Larry Mills**

Instructor, Mathematics  
B.S., Central Missouri State University  
M.S., University of Missouri-Kansas City

**Sam Mirsepasi**

Academic Computing Technical Support Specialist

**Rick Moehring**

Counselor  
B.A., MidAmerica Nazarene College  
M.S., University of Kansas

**Ellen Mohr**

Instructor, Writing Center  
B.S., M.A., Northwest Missouri State College

**Michelle Moriarty**

Instructor, Psychology  
B.A., Rockhurst College  
M.S., Avila College

**Mark Morman**

Instructor, Speech  
A.A., Tyler Junior College  
B.S., Southern Utah State College  
M.S., University of Kansas

**James A. Morris**

Instructor, Metal Fabrication  
B.S., Oklahoma State University

**Glen V. Moser**

Instructor/Coach  
B.S., M.S., Bowling Green State University

**Ahmad Nasseri**

Instructor, Physical Science  
B.A., Tehran Teacher Training Institute  
M.A., Ed.D., University of Northern Colorado

**Carolynn L. Nellis**

Instructor, Emergency Medical Technology  
B.S., Emporia State University  
M.L.A., Baker University

**Virginia Nelson**

Instructor, English  
B.A., M.A., Indiana University

**Carolyn Neptune**  
Instructor, Mathematics  
B.S., M.S., Purdue University

**John Nicholson**  
Instructor, Office Systems Technology  
B.A., University of Colorado

**Gary Nicklaus**  
Instructor, Metal Fabrication  
B.F.A., M.S., Kansas State College of Pittsburg

**Zohreh Niknia**  
Instructor, Economics  
B.A., University of Minnesota  
M.A., University of Missouri-Kansas City

**Paul Northam**  
Instructor, English  
B.S., University of Wisconsin-Oshkosh  
M.A., M.Phil., University of Kansas  
Ph.D., University of Kansas

**Lafayette Norwood**  
Instructor/Coach  
B.A., Southwestern College  
M.A., Wichita State University

**Linda O'Brien**  
Instructor, Mathematics  
B.A., New York University  
M.A., State University of New York-Binghamton

**Judy Oden**  
Instructor, English  
B.A., M.A., University of Kansas

**Ronald H. Oetting**  
Instructor, Mathematics  
B.S., Central Missouri State University  
M.A., Louisiana State University

**Judy Ogden**  
Instructor, Data Processing  
A.B., Fairmont State College  
M.A., West Virginia University-Morgantown

**Kathleen O'Hara**  
Program Director, Off-campus and Nontraditional  
Credit Instruction  
B.A., Mercyhurst College  
M.S., Kansas State University

**Leland Olmsted**  
Instructor, Electronics  
B.S.E.E., University of Missouri-Columbia

**Nancy Olson**  
Instructor, Mathematics  
B.S., University of Kansas  
M.A., University of Northern Colorado

**William Osborn**  
Academic Director, Technology Programs  
B.S.E., Emporia State University  
M.S.E., Pittsburg State University  
Ed.D., University of Kansas

**Mary O'Sullivan**  
Computer Support Specialist  
A.A., Johnson County Community College  
B.A., MidAmerica Nazarene College

**Linda Overbay**  
College Information Writer/Editor  
B.J., University of Missouri

**Lynne Overesch-Maister**  
Instructor, Foreign Language  
B.A., Michigan State University  
M.A., Ph.D., University of Kentucky

**Laura Pappenfort**  
Director, Network Services  
B.B.S., Texas Christian University

**Michael Pener**  
Instructor, Paralegal  
A.B., University of Missouri-Columbia  
J.D., L.L.M., University of Missouri-Kansas City

**Donald Perkins**  
Internal Auditor  
B.A., St. Xavier College

**Robert Perry**  
Instructor, 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**

Instructor, Psychology  
B.A., M.A., California State University-Stanislaus

**Susan Pettyjohn**

Instructor, Mathematics  
A.B., William Jewell College  
M.A., University of Missouri-Kansas City

**Herb Pfeifer**

Computer Lab Supervisor  
B.L.S., St Louis University

**Polly Pfister**

Instructor, Dental Hygiene  
B.S., University of Minnesota  
A.S., North Dakota State School of Science  
M.S., University of Kansas

**Sheilah Philip-Bradfield**

Instructor, Theater  
B.A., M.S., Fort Hays State University  
M.F.A., University of Missouri-Kansas City

**Mary Pilgram**

Program Director, Seminars and Special Events  
B.A., William Jewell College  
M.A., University of Kansas

**Robert W. Pinker**

Instructor, Physical Science  
B.S., Capital University  
M.S., Ohio State University  
M.B.A., University of Kansas

**Joel Poinsett**

Sound Supervisor  
B.Music, Ball State University  
M.F.A., University of Missouri-Kansas City

**Robert Prater**

Director, Financial Services  
B.S., B.A., M.B.A., Central Missouri State College

**Zigmunds Priede**

Instructor, Fine Arts  
B.A., University of Minnesota  
M.A., University of California-Berkeley

**Mary Rack**

Instructor, Mathematics  
B.A., College of St. Elizabeth  
M.A., University of Rochester

**Dan Radakovich**

Vice President, Academic Affairs  
B.A., M.A., Ed.D., University of Wyoming

**Mark Raduziner**

Instructor, 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**

Instructor, Psychology  
B.A., Wichita State University  
M.A., University of Missouri-Kansas City  
Ph.D., University of Missouri-Kansas City

**Michael Reese**

Lighting Supervisor  
B.A., University of Nebraska-Omaha  
M.F.A., University of Kansas

**Harold Reuber**

Counselor  
A.B., Drury College  
M.A., University of Missouri-Kansas City

**Larry Reynolds**

Instructor, Speech  
A.A., San Jacinto College  
B.S., University of Texas  
M.A., Ph.D., University of Kansas

**John Rezac**

Instructor, Data Processing/Computer Science  
B.S., M.Ed., South Dakota State University  
M.S., Rutgers University

**Marilyn Rhinehart**

Assistant Dean, Arts, Humanities and Social Sciences  
B.A., M.A., Ph.D., University of Houston

**Brenda Rice**

Instructor, Paralegal  
A.A., Louisburg College  
B.A., University of Texas-Arlington  
J.D., Southern Methodist University

**Michael Robertson**

Instructor, Humanities  
B.A., M.A., Ph.D., Florida State University

---

**Lindy Robinson**

Instructor, Hospitality Management  
A.A., Johnson County Community College  
B.A., Ottawa University

**Lawrence Rochelle**

Instructor, English  
B.Ed., University of Toledo  
M.A., University of Dayton  
Ed.S., University of Toledo

**Carol Rodriguez**

Instructor, Office Systems Technology  
B.S., Northwest Missouri State University  
M.S., Central Missouri State University

**Teresa Ronnebaum**

Compensation and Benefits Manager  
B.S., Troy State University

**Liliane Rosenshield**

Instructor, Foreign Language  
License, La Sorbonne  
M.A., University of Paris

**Richard Rowe**

Instructor, Metal Fabrication  
B.S., University of Mary  
M.S., Pittsburg State University

**Claudinna Rowley**

Instructor, Mathematics  
B.A., M.S., Kansas State University

**Jeanne Russell**

Production Manager  
B.S.E., University of Kansas  
M.F.A., University of Missouri-Kansas City

**John W. Russell**

Librarian  
B.S., Trenton State College  
M.S., Syracuse University  
M.B.A., Kansas State University

**Debbie Schlegel**

Program Coordinator, Microcomputer Training  
Business and Industry Institute  
B.S., Kansas State University

**Anne Schmidt**

Instructor, Health Occupations  
A.A., Johnson County Community College  
B.A., University of Kansas

**Nancy Schneider-Wilson**

Instructor, Communication Design  
B.F.A., Kansas City Art Institute  
M.F.A., University of Kansas

**Bobbi Schoenberger**

Instructor, Cosmetology  
A.A., Kansas City Kansas Community College

**Karen R. Schory**

Instructor, Communication Design  
B.F.A., Kutztown State College  
M.F.A., Rochester Institute of Technology

**Patricia Schroeder**

Instructor, Physical Science  
B.S., Iowa State University  
M.S., University of Arkansas  
Ph.D., Kansas State University

**Ann Schwartz**

Counselor  
B.A., Kansas University  
M.Ed., Antioch University

**Thomas Scofield**

Senior Support Specialist  
A.A., Johnson County Community College  
B.S., Rockhurst College

**Richard Scott**

Academic Director, Speech, Language and  
Academic Enhancement  
B.A., Fort Hays State University  
M.S., Pittsburg State University  
Ed.D., Nova University

**Penny Seavertson**

Instructor, Mathematics  
B.A., San Jose State University  
M.S., Ed.D., University of Kansas

**David Seibel**

Instructor, Life Science  
B.S., Southwest College  
M.Phil., Ph.D., University of Kansas

**David Setser**

Instructor, 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**

Instructor, Sociology  
B.A., Western Michigan University  
M.A., University of Kansas

**Kent D. Shelley**

Instructor/Coach, Physical Education/Athletics  
A.A., Pratt Community College  
B.S., University of Kansas  
M.S., Emporia State University

**Margaret E. Shelley**

Admissions and Registration Manager  
B.S., Kansas State University  
M.S., Emporia State University

**Sherry Shively**

Instructor, Accounting  
B.A., Metropolitan State College  
M.B.A., Avila College

**Albert Shopper**

Instructor, Metal Fabrication  
B.S., M.S., Central Missouri State College  
M.S., Central Missouri State University

**Marilyn Shopper**

Instructor, 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**

Academic Educational Technology Analyst  
B.F.A., University of Utah

**Jesse Skaggs**

Counselor  
B.A., B.Th., Kansas City College and Bible School  
M.A., University of Missouri-Kansas City  
Ed.S., University of Missouri-Kansas City

**John A. Skubal**

Director, Campus Services  
B.S., Emporia State University

**Ruth Ann Slesser**

Instructor, Psychology  
B.A., M.A., University of Guelph-Canada  
Ph.D., University of Kansas

**B. Jean Smith**

Instructor, Office Systems Technology  
A.A., Hutchinson Community Junior College  
B.S., Emporia State University

**Carol Smith**

Instructor, Health Occupations  
B.S.N., Webster University

**Glenn Smith**

Instructor, Heating, Ventilation  
and Air Conditioning Technology  
B.A., Central Methodist College  
M.S., Pittsburg State University

**Mary Smith**

Instructor, Nursing  
B.S.N., M.S.N., University of Kansas

**Gerald Snider**

Director, Cultural Education  
B.S., Kansas State Teachers College  
M.S., Pittsburg State University  
Ph.D., Michigan State University

**Joseph Sopcich**

Director, Institutional Advancement  
B.A., M.B.A., University of Notre Dame

**Kimberly Stabbe**

Instructor, 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**

Academic Computing Technical Support Specialist

**Kerri Stephenson**

Instructor, 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

**Linda Stewart**

Senior Educational Technology Analyst  
A.S., Longview Community College  
B.A., MidAmerica Nazarene College

**Richard L. Stine**

Instructor, Speech  
B.S., M.S., Emporia State University  
Ph.D., University of Kansas

**Jill Stinson**

Instructor/Coach  
A.A., Cowley County Community College  
M.S., M.S.E., University of Kansas

**Ronald Stinson**

Instructor, Instrumental Music  
B.M.E., Wichita State University  
M.M., Yale University

**William Stockton**

Instructor, History  
B.A., Drake University  
M.A., Ph.D., Brandeis University

**Roger Stone**

Instructor, Automotive Technology/Metal Fabrication  
B.S., M.S., Central Missouri State College

**Stephen Storkel**

Computer Lab Supervisor  
B.A., Willamette University  
M.A., Iowa State University

**Patricia Sumner**

Information Analyst  
B.S., M.S., University of Missouri-Kansas City

**Ronald Svec**

Instructor, Information Technology  
B.S., University of Nebraska

**Lynda G. Swander**

Instructor, Life Science  
B.S., Wittenberg University  
M.A.Ed., Western Michigan University

**Alan Swarts**

Director, Academic Computing Services  
B.S., Emporia State University  
M.S., University of Kansas

**Patrick J. Sweeney**

Instructor, Hospitality Management  
A.O.S., Culinary Institute of America

**Frank Syracuse**

Instructor, Economics  
B.A., John Carroll University  
M.B.A., Avila College

**Thomas C. Tarnowski**

Instructor, Photography  
B.A., University of South Florida  
M.F.A., Rhode Island School of Design

**Annehara Tatschl**

Instructor, Life Science  
B.S., M.S., University of New Mexico  
Ph.D., University of Kansas

**Anita Tebbe**

Instructor/Career Program Facilitator, Paralegal  
B.A., Mundelein College  
M.A., University of Missouri-Kansas City  
J.D., Washburn University

**Paul L. Tebbe**

Instructor, Physical Science  
A.B., M.A., Spring Hill College  
M.A., Georgetown University

**Sandra Tebbenkamp**

Instructor, Mathematics  
B.A., William Jewell College  
M.A., Hunter College

**John Thomas**

Instructor, Art  
B.F.A., Southeast Missouri State University  
M.A., M.F.A., University of Iowa

**Karen Thomas**

Accountant  
B.S., Central Missouri State University

**George Thompson**

Academic Director, Visual Arts  
B.S., Ohio State University  
M.A., M.F.A., Kansas State University

---

**Paula Thompson**

Instructor, Respiratory Therapy  
B.S.R.T., University of Kansas

**Daniel Torchia**

Publications Manager  
B.S., University of Kansas

**Roger E. Traver**

Instructor, Economics  
B.A., Illinois Wesleyan University  
M.B.A., Washington University

**Danial R. Turner**

Instructor, Hospitality Management  
A.A., Johnson County Community College

**Richard Vallandingham**

Program Director, Counseling and Student Access  
B.A., Oklahoma State University  
M.A., Tulsa University  
Ph.D., University of Arizona

**Felix VanLeeuwen**

Instructor, Mathematics  
B.S., Fort Hays State University  
M.S., Emporia State University

**Pamela Vassar**

Program Director, Student Activities  
and Leadership Development  
B.S.E., Northeast Missouri State University  
M.S., Western Illinois University

**Judith Vaughn**

Librarian  
B.S., University of Kansas  
M.L.S., University of Missouri-Columbia

**Omar Vega**

Senior Network Analyst  
A.S., Johnson County Community College

**Jerry L. Vincent**

Academic Director, Hospitality Management  
B.S., Oklahoma State University  
M.S., Central Michigan University

**Dorothy Wadsworth**

Instructor, Commercial Art  
B.F.A., Wichita State University  
B.A.E., University of Kansas  
M.F.A., Wichita State University

**Robert Shawn Walden**

Director, Administrative Computer Services  
B.A., B.S., Emporia State University

**Jeanne Walsh**

Academic Director, Nursing  
A.D.N., Olney Central College  
B.S.N., M.S.N., University of Evansville

**Timothy Walsh**

Microcomputer Specialist

**G. David Wasson**

Instructor, Business Administration  
B.S., M.S., Central Missouri State College

**Minnie Watkins**

Tech Prep Coordinator  
B.A., MidAmerican Nazarene College  
M.A., University of Missouri-Kansas City

**Michael Waugh**

Program Director, TV Operations  
B.S., M.S., University of Kansas

**Frederick L. Webb II**

Instructor, Business Administration  
B.S., Baker University  
M.B.A., Avila College

**Rory Webb**

Senior Educational Technology Analyst  
A.A., Johnson County Community College  
B.A., M.E.D., MidAmerica Nazarene College

**Iris Irene Weber**

Deaf/Hard-of-Hearing Student Support Services Supervisor  
CSC, KsQAS 5-5

**Michael Weible**

Instructor, Electrical Technology  
B.A., Baker University

**Phil J. Wegman**

Program Director, Developmental Education  
B.A., Benedictine College  
M.S., Kansas State University  
Ed.S., University of Missouri-Kansas City

**Nancy West**

Instructor, Nursing  
A.A., Fort Scott Community College  
B.S.N., Pittsburg State University  
M.N., University of Kansas

---

**Rosalie Wetherill**

Instructor, Health Occupations  
A.D.N., Penn Valley Community College  
B.S.N., Webster University  
B.A., University of Missouri-Kansas City

**James Wheeler**

Program Director, Microcomputer Training  
and Development  
Ed.B., M.S., State University College at Buffalo, N.Y.

**Rodney Whipple**

Manager, Academic Computing Services  
B.A., Ottawa University

**Theodore H. White**

Assistant Dean, Science, Health Care and Math  
B.G.S., B.S., University of Kansas  
M.S., Wichita State University  
Ph.D., University of Michigan

**Kimberly Whittaker**

Instructor, Electronics  
B.S.E.E., University of Oklahoma

**Ann Wiklund**

Instructor, Art History  
B.A., Tulane University  
M.A., University of Kansas

**Judith M. Wilkinson**

Instructor, Nursing  
A.A., Johnson County Community College  
B.S.N., Graceland College  
M.A., M.S.N., University of Missouri-Kansas City  
Ph.D., University of Kansas

**Carmaletta Williams**

Instructor, English  
B.A., M.A., University of Missouri-Kansas City

**James M. Williams**

Assistant Dean, Communications  
and Academic Enhancement  
A.A., Independence Community College  
B.S., M.A., Emporia State University  
Ed.D., University of Kansas

**Marilynn M. Williams**

Executive Secretary to the President  
A.A., Johnson County Community College  
B.A., MidAmerica Nazarene College

**Margaret R. Willis**

Program Director, Health and Human Services  
B.S.N., University of Virginia  
M.A., University of Missouri-Kansas City

**Dina L. Wilson**

Instructor, Nursing  
B.S.N., M.S., University of Pittsburgh

**LeAnna Wilson**

Director, Business and Industry Institute  
A.A., Johnson County Community College  
B.A., MidAmerica Nazarene College  
M.S., Kansas State University  
M.S., Emporia State University

**Steve Wilson**

Instructor, Mathematics  
B.A., M.A.T., University of Chicago

**Sally Winship**

Dean, Continuing Education and Community Services  
A.S., Pensacola Junior College  
B.S., Armstrong State College  
M.S., Columbia University  
Ed.D., University of Kansas

**Jerry Wolfskill**

Instructor, Administration of Justice/  
Career Program Facilitator, Police Academy  
B.S., Central Missouri State College  
M.S., Central Missouri State University  
Ed.D., University of Kansas

**Norma Wooten**

Instructor, Paralegal  
B.A., J.D., University of Missouri-Kansas City

**Jeffrey Wright**

Instructor, Accounting  
B.S., M.B.A., University of Kansas

**Ray Wright**

Instructor, MICT  
B.A., Bethel College

**Kathleen O. Xidis**

Instructor, History  
B.A., St. Mary's College  
A.M., Ph.D., Indiana University

---

**Robert D. Xidis**

Instructor, English

B.A., University of Kansas

A.M., Indiana University

Ph.D., University of Kansas

**Robin L. Yarsulik**

Instructor, Nursing

B.S.N., Pittsburg State University

M.N., University of Kansas

**Kathy Yeager**

Program Director, Marketing

B.S., Ball State University

M.A., Webster University

**Scott A. Yeargain**

Instructor, Philosophy

A.B., A.M., Ph.D., University of Missouri-Columbia

**Patrick Yeung**

Distributed Process Specialist

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**

Instructor, 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**

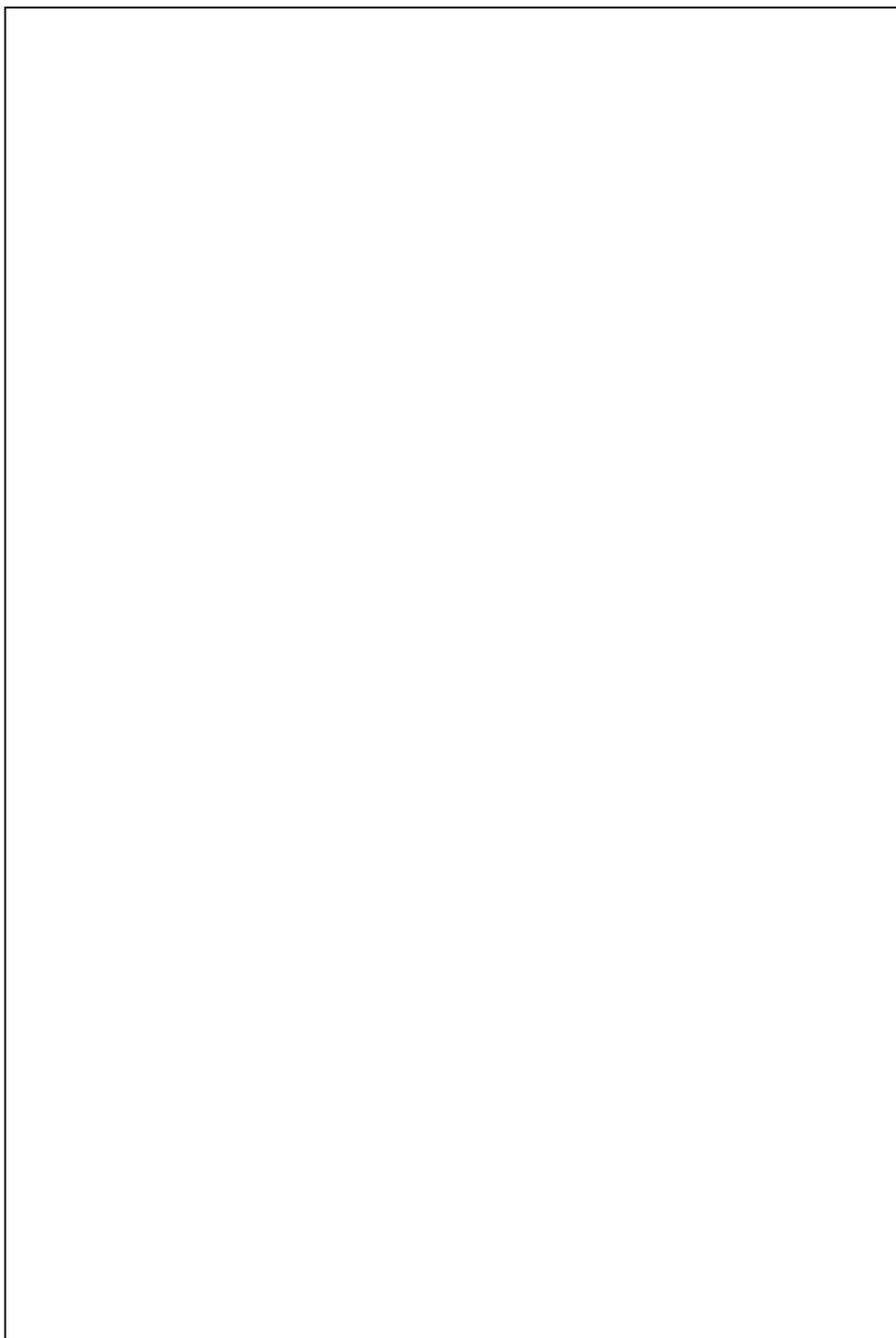
Instructor, Speech

B.S., Northwest Missouri State University

M.A., University of Northern Colorado

---

## Index



<b>A</b>	
ABE/GED Program .....	52
ABLE .....	132
Academic Achievement Center Courses.....	130
Academic and Student Policies and Procedures .....	35
Academic Calendar.....	7
Academic Offerings.....	129
Academic Progress.....	36
Academic Records Retention .....	36
Academic Renewal .....	37
Access to Student Information.....	37
Accounting Courses .....	132
Accounting Program.....	70
Adding and Dropping a Class .....	17
Administration of Justice Courses.....	133
Administration of Justice/Law Enforcement Program.....	70
Admission .....	9
Admission Policies.....	10
Admission Procedures – Credit.....	10
Admission Procedures – Area Vocational School Programs.....	14
Admission Procedures – Continuing Education .....	14
Adult Basic Education/ General Educational Development Program .....	52
Advanced Standing Credit.....	38
Agribusiness Courses .....	135
Alcohol and Drugs.....	41
Alumni Association .....	28
Anthropology Courses .....	135
Appeals, Student .....	49
Architecture Courses .....	136
Art Courses.....	136
Associate Degrees.....	58
Associate of Applied Science Degree.....	66
Associate of Arts Degree.....	59
Associate of Science Degree .....	64
Astronomy Course.....	138
Athletics, Intercollegiate and Intramural.....	28
Attendance.....	38
Auditing a Class .....	39
Automotive Technology Courses .....	138
Automotive Technology Program .....	71
Aviation Courses .....	141
Aviation Maintenance Technology Program .....	72

<b>B</b>	
Banking and Finance Courses.....	142
Biology Courses.....	143
Board of Trustees.....	6
Bookstore.....	28
Brown & Gold Club .....	28
Business Administration Courses .....	145
Business Administration Program .....	74
Business and Industry Institute.....	52

Business Entrepreneurship Courses.....	147
Business Entrepreneurship Program .....	75

<b>C</b>	
Career and Certificate Programs .....	69
Career Center .....	28
Career Development Policy, Student.....	50
Career Program Descriptions.....	70
Career Programs .....	63, 69
Center for Professional Education.....	55
Center for Literary Culture.....	54
Certificate of Completion.....	68
Changes in Enrollment Status .....	26
Cheerleading .....	29
Chef Apprenticeship Courses.....	199
Chef Apprenticeship Program.....	76
Chemistry Courses.....	148
Children's Center .....	29
Citizens Forums .....	54
Civil Engineering Technology Courses.....	150
Civil Engineering Technology Program .....	77
Classes by Arrangement.....	39
CLEAR Program.....	54
Clubs and Organizations .....	29
Code of Conduct, Student .....	46
College Now.....	12
Commencement Exercises .....	58
Communication Design Courses.....	151
Communication Design Program.....	78
Community Services Courses .....	54
Computer Information Systems Courses .....	156
Computer Information Systems Program .....	79
Computer Interactive Media Courses .....	159
Computer Science Courses .....	161
Computers: Personal Computer Applications Courses.....	152
Continuing Education and Community Services .....	52
Correctional Services Courses .....	161
Cosmetology Courses .....	162
Cosmetology Program.....	83
Cost per Credit Hour .....	18
Costs .....	24
Counseling Center.....	29
Course Prefix Listing .....	126
Courses by Division Listing.....	127
Credit Transferred from Other Colleges .....	39
Cultural Education.....	54

<b>D</b>	
Data Processing Courses (Computer Information Systems) ..	156
Data Processing Program (Computer Information Systems) ..	79
Dental Hygiene Clinic .....	30
Dental Hygiene Courses .....	162
Dental Hygiene Program.....	83
Desktop Publishing Courses.....	152

Distance Learning .....	125
Drafting Technology Courses .....	164
Drafting Technology Program .....	84
Dropping a Class .....	17

## E

Early Childhood Education Courses .....	168
Early Childhood Education Program .....	86
Economics Courses .....	169
Education Courses .....	170
Electrical Technology Courses .....	170
Electrical Technology Program .....	86
Electronics Technology Courses .....	171
Electronics Technology Program .....	88
Emergency Medical Science Courses .....	175
Emergency Medical Science Program .....	90
Engineering Courses .....	177
English Courses .....	178

## F

Fashion Merchandising Courses .....	181
Fashion Merchandising Program .....	92
Final Examinations .....	40
Financial Aid Disbursement .....	23
Financial Aid Eligibility Requirements .....	22
Financial Aid Process .....	22
Financial Aid, Student .....	21
Fire Services Administration Courses .....	183
Fire Services Administration Program .....	93
Fireworks, Firearms and Ammunition .....	43
Food and Beverage Management Program .....	97
Food Service .....	30
Foreign Language Courses .....	185
Forensics .....	30

## G

Grade Changes .....	40
Grade Point Average .....	40
Grading System .....	40
Graduation, Degree and Certificate Programs .....	57
Graduation Requirements .....	58
Geoscience Courses .....	187
Grounds and Turf Management Courses .....	188
Grounds and Turf Management Program .....	94

## H

Health Information Technology Courses .....	189
Health Information Technology Program .....	94
Health Occupations Programs .....	95
Health Occupations Courses .....	190
Health, Physical Education and Recreation Courses .....	190
Health, Student .....	50
Hearing Impaired Courses .....	194

Heating, Ventilation and Air Conditioning Technology Courses .....	195
Heating, Ventilation and Air Conditioning Technology Program .....	95
History Courses .....	197
Home Economics Courses .....	198
Honors .....	41
Honors Program .....	123
Honors Program Course .....	199
Horticulture Courses .....	199
Hospitality Management Courses .....	199
Hospitality Management Program .....	97
Hotel/Motel Management Program .....	98
Housing, Student .....	32
Humanities Courses .....	202

## I

Industrial Technology Courses .....	203
Information Systems Courses .....	156
Information Systems Program .....	79
Information Technology Courses .....	203
Information Technology Program .....	98
Information/Word Processing Courses .....	226
Instructional Support Services .....	30
Interactive Media Courses .....	159
Interdisciplinary Study Course .....	205
Interior Merchandising Courses .....	205
Interior Merchandising Program .....	100
International Education .....	125
Interpreter Training Courses .....	207
Interpreter Training Program .....	101

## J

Journalism and Media Communications Courses .....	209
---	-----

## L

Leadership Development Course .....	210
Learning Strategies Courses .....	210
Legal Nurse Consultant Courses .....	211
Library .....	31
Library Course .....	212
Lost and Found .....	43

## M

Marketing and Management Program .....	102
Marketing Management Courses .....	212
Massage Therapy Clinic .....	31
Mathematics Courses .....	214
Message from the President .....	5
Metal Fabrication Courses .....	216
Metal Fabrication Program .....	104
Mobile Intensive Care Technician Courses .....	176
Music Courses .....	217
Music Organizations .....	31

## N

Nontraditional Programs of Study .....	123
No-smoking Policy.....	43
Nursing: Associate Degree – Registered Nursing Courses.....	223
Nursing: Practical Nursing Courses .....	224
Nursing Program.....	105

## O

Occupational Therapy Assistant Courses .....	225
Occupational Therapy Assistant Program.....	106
Office Systems Technology Courses .....	226
Office Systems Technology Program .....	107

## P

Paralegal Courses .....	229
Paralegal Program .....	110
Parking .....	43
Pass/Fail Grading System.....	40
Philosophy Courses.....	231
Phi Theta Kappa.....	31
Photography Courses .....	232
Physical Education Courses.....	191
Physical Science Course .....	233
Physical Therapist Assistant Courses.....	233
Physical Therapist Assistant Program .....	112
Physics Courses .....	235
Political Science Courses .....	235
President's Message.....	5
Programs with Selective Admission .....	13
Psychology Courses .....	236
Publications, Student .....	33
Purpose of Financial Aid.....	22

## Q

Quick Step Program .....	12
--------------------------	----

## R

Radiologic Technology Courses .....	237
Radiologic Technology Program .....	112
Railroad Electronics Program .....	113
Railroad Industrial Technology Courses .....	241
Railroad Industrial Technology Program .....	113
Railroad Operations Courses.....	239
Railroad Operations Program .....	115
Records on Hold.....	41
Refunds.....	18
Registration Procedures .....	16
Registration and Costs .....	15
Religion Course .....	243
Respiratory Care Courses .....	243
Respiratory Care Program.....	117
Right to Know, Student.....	50

## S

Satisfactory Academic Progress .....	25
Scholarships and Grants .....	23
Science Technology Program .....	120
Security.....	43
Unlawful Discrimination or Harassment	
Complaint Procedure .....	44
Sociology Courses .....	245
Speakers Bureau .....	55
Special Events .....	55
Speech Courses.....	245
Staff.....	253
Student Access Center.....	32
Student Activities Program .....	32
Student Appeals .....	49
Student Code of Conduct.....	46
Student Financial Aid .....	21
Student Senate .....	32
Student Health .....	50
Student Housing.....	32
Student Publications.....	33
Student Right to Know .....	50
Student Support Services .....	27
Study Abroad.....	125
Surgical Technology Courses.....	246
Surgical Technology Program .....	121

## T

Tech Prep Program.....	13
Television Courses .....	125
Testing/Assessment Services .....	33
Textbook Costs .....	19
Theater .....	33
Theater Courses .....	247
Travel and Tourism Management Courses.....	248
Travel and Tourism Management Program .....	121
Transcripts .....	41
Transfer Information .....	63
Transfer Programs .....	61
Types of Financial Assistance .....	23

## V

Verification of Enrollment .....	41
Veterinary Technology Courses .....	250
Veterinary Technology Program.....	121
The Johnson County Community College	
Vision, Values and Mission Statements .....	3
Volunteer Program.....	33

## Y

Youth Program.....	55
--------------------	----