# Table of Contents

# Catalog of Courses Spring/Summer 2009

## JCCC Statement of General Education

## Graduation Requirements

## Associate's Degrees and Certificates

## Transfer Guides

JCCC's transfer programs range from accounting to theater. Credits from JCCC can be transferred to many colleges and universities in the United States.

## Degree and Certificate Program List

JCCC's career programs provide the opportunity for students 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 program courses usually are not intended to be transfer programs, some of the courses may transfer to four-year colleges and universities. Specific information on course transferability can be found in the Success Center on campus or on the transfer information Web site (http://web.jccc.net/academic/transfer). Several of the career programs enable students to gain valuable work experience in the community while taking the career program courses.

Students who are interested in a career program should contact a JCCC counselor for more information. Counselors can assist students 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.

Johnson County Community College and the Metropolitan Community College District (MCC) have developed cooperative agreements that allow Johnson County residents to enroll in selected career programs at MCC, while paying Johnson County resident credit hour tuition. Reverse Cooperative Programs allow Missouri residents to enroll in selected career programs at JCCC, while paying the MCC tuition rates. For more information, see the student handbook cooperative programs.

## Credit Course Descriptions

Descriptions of the courses offered at JCCC, with additional links to the course outlines.

## Accreditation

Johnson County Community College is officially accredited by the North Central Association of Colleges and Schools. In addition, individual programs are accredited by associated professional organizations:

- Accounting, Business Office Technology, Business Entrepreneurship, Business Administration and Marketing and Management - Association of Collegiate Business Schools and Programs
- Dental Hygiene - American Dental Hygienists Association and American Dental Association
- Fire Service Administration - International Fire Service Accreditation Congress
- Hospitality Food and Beverage and Chef Apprentice - American Culinary Federation
- Interior Design – National Kitchen and Bath Association
- Mobile Intensive Care Technician - Joint Review Committee on

Educational Programs for the EMT-Paramedic
- Nursing - Kansas State Board of Nursing and National League for Nursing and National League of Nursing
- Paralegal and Legal Nurse Consulting - American Bar Association
- Police Academy - University of Kansas
- Respiratory Care - Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon recommendation of the Committee on Accreditation for Respiratory Care

# Notice of Nondiscrimination

Johnson County Community College is committed to a policy of nondiscrimination.

**Johnson County Community College**
**Series 400: Personnel**
**Section 411: Application of Personnel Policies**

Johnson County Community College is a place where freedom of expression and civility are encouraged. In valuing diversity, the college recognizes the individual differences based on unique ethnic, cultural, gender and political backgrounds, and the differences represented by staff in age, education and physical ability. In a diverse environment, it becomes the responsibility of each employee to respect these individual differences and to refrain from imposing personal viewpoints on other staff or students.

All personnel policies of the Johnson County Community College shall be applied without regard to a person's race, color, age, sex, religion, marital status, national origin, disability, veteran's status, sexual orientation or other factors which can not be lawfully considered, to the extent specified by applicable federal and state laws.

*Date of Adoption:*
*Revised: 3/2/00, 4/10/06*

Johnson County Community College does not discriminate on the basis of sex, race, color, national origin, disability, age, religion, marital status, veteran's status, sexual orientation, or other factors that cannot be lawfully considered in its programs and activities as required by all applicable laws and regulations. Inquiries concerning the college's compliance with its non-discrimination policies may be referred to the Dean of Student Services or Director of Human Resources, Johnson County Community College, 12345 College Blvd, Overland Park, KS 66210, 913-469-8500; or to Office for Civil Rights, 8930 Ward Parkway, Suite 2037, Kansas City, MO 64114, 816-268-0550.

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 office of Access Services for Students With Disabilities (913) 469-8500, ext. 3521, or TDD (913) 469-3885. The Access Services office is located in the Success Center on the second floor of the Student Center.

# JCCC Statement of General Education

General education at Johnson County Community College combines essential thinking skills with knowledge from areas such as the arts, communication, humanities, language, mathematics, natural sciences, and social sciences. It prepares students to become lifelong learners capable of making informed, ethical decisions in an increasingly complex and diverse global community.

Students who pursue a course of study at JCCC will be expected to:

- Access and evaluate information from credible sources.
- Collaborate respectfully with others.
- Communicate effectively through the clear and accurate use of language.
- Demonstrate an understanding of the broad diversity of the human experience.
- Process numeric, symbolic, and graphic information.
- Read, analyze, and synthesize written material.
- Select and apply appropriate problem-solving techniques.
- Use current technology efficiently and responsibly.

# Graduation Requirements

**One semester prior to your graduation:**

Complete an Application for Degree and/or Certificate of Completion Form and turn it in at the Success Center, second floor, Student Center, or mail to the attention of the Records Office, 12345 College Blvd., Overland Park, Kan. 66210.

**Graduation Application Deadlines:**

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

**Requirements for degree or certificate of graduation**

- For an associate's degree, 15 credit hours must be earned in residence at JCCC. Advanced standing credit will not count toward satisfying this credit hour requirement.
- For the associate of arts and associate of science degrees, the completion of an approved cultural diversity course.
- For certificates, a student must complete a minimum of 50 percent of the required coursework at JCCC.
- Graduates must have earned both a 2.0 grade point average at JCCC and have a cumulative 2.0 or better on all completed course work.
- Developmental and/or prerequisite courses, required before enrollment in college-level courses, will not count toward fulfilling graduation degree/certificate requirements.
- Students must be enrolled in classes at JCCC during the semester they anticipate completing degree/certificate requirements and wish to graduate.

**Rules to determine a student's graduation catalog term**

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

**Graduation Verification Process**

**1.** When an Application for Degree and/or Certificate of Completion Form is received in the Records office, an initial verification will be completed to ensure degree and/or certificate requirements will be satisfied.

**2.** A letter will be sent to the student once the verification is complete. If you do not receive a letter, please contact the Admissions Office to verify your mailing address.

**3.** A student's degree and/or certificate status will be recorded on a student's permanent transcript once grades have been posted and a final verification is done to ensure that all graduation requirements have been completed.

Application for Degree and/or Certificate of Completion Form

**Graduation Application Deadline Appeal Process**

If a student misses the application deadline, a student may submit an Graduation Appeal Form. This form can be picked up in the Success Center, second floor, Student Center, or found online at Records (http://www.jccc.net/home/depts.php/5105).

# Associate's Degrees and Certificates

## Associate's Degrees Offered at JCCC

Graduation Requirements

To officially graduate, an application for graduation must be filed in the Records Office by the appropriate deadline.

Students graduating with an associate of arts degree or an associate of science degree must complete an approved cultural diversity course. This diversity requirement will be waived for students graduating before August 2009.

Cultural Diversity Requirement

Degree and Certificate Program List

# Associate of Arts

# Associate of Science

# Associate of Applied Science

(Associate of Science and Associate of Applied Science degrees require a student to choose an academic major. See the Degree and Certificate Program List to view the majors of study available at JCCC.)

# Associate of General Studies

Kansas AVS/TC Articulated, A.A.S.

# Certificates

Certificate programs at Johnson County Community College provide specialized training for a specific career. To earn a certificate, students must successfully complete approved certificate requirements with a cumulative grade point average of 2.0 or higher and a JCCC GPA of 2.0 or higher. Students must complete a minimum of 50 percent of the required course work at JCCC.

Students must be enrolled at the college during the semester they anticipate completing certificate requirements and must submit an Application for Graduation to the JCCC Student Success Center.

Certificates are issued at the end of each semester.

Graduation exercises are held once a year at the completion of the spring semester. Students who have completed the requirements for a certificate in prior semesters of the same academic year will be invited to participate in graduation.

JCCC offers two types of certificates.

- Certificate of Completion: A certificate of completion may be awarded for a specified course of study not exceeding 15 credit hours.

- Career Certificate: A career certificate may be awarded for programs of 16 to 59 credit hours.

# Associate of Arts

The associate of arts degree from JCCC

- is designed for students who plan to transfer to a baccalaureate college or university.

- requires completion of 64 college-level credit hours within specified course distribution areas with a 2.0 or higher GPA.

- requires the completion of a cultural diversity course from a list of approved courses. Some of the courses in this list will also meet humanities, social science or non-lab science requirements for this degree.

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

- Communications (9 credit hours)

- Humanities (6 credit hours)

    - History is included in the Humanities category

- Social Science and/or Economics (6 credit hours)

- Science and Mathematics (9 credit hours)**

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

- Health and/or Physical Education (1 credit)

**Note:** The associate of arts degree is designed as a transfer curriculum. Students should refer to the transfer program sheets in the Student Success Center.

**The following is an example of a first year schedule for an undecided transfer student.** Students interested in a specific major or degree should talk with a JCCC counselor.

**First Semester - CR (Credit Hours)**

ENGL 121 Composition I 3

Social Science Elective 3

Math/Natural Science Elective 3-5

Humanities Elective 3

General Elective 3

Total Credit Hours 15-17

**Second Semester - CR (Credit Hours)**

ENGL 122 Composition II 3

Oral Communication Elective 3

Math/Natural Science Elective 3-5

Social Science/Humanities Elective 3

General Elective 3

Total Credit Hours 15-17

An associate of arts program is designed specifically to meet your educational objectives and needs by allowing you to complete general education requirements.

# General Education Requirements

**Communications - 9 hours**

**A. English Composition - 6 hours**

```
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
ENGL 122  Composition II*.....................................3
          Prerequisite: ENGL 121
*Prerequisite/Corequisite required
```

**B. Oral Communication - 3 hours**

```
SPD  120  Interpersonal Communication.........................3
SPD  121  Public Speaking.....................................3
SPD  125  Personal Communication..............................3
SPD  180  Intercultural Communication^.......................3
^Also meets Cultural Diversity Requirement
```

# Humanities - 6 hours

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

## A. Literature/Theatre

```
ENGL 130  Introduction to Literature*.........................3
          Prerequisite: ENGL 121
ENGL 215  U.S. Latino and Latina Literature*^.................3
          Prerequisite or corequisite: ENGL 122
ENGL 227  Introduction to Poetry*.............................3
          Prerequisite: ENGL 122
ENGL 230  Introduction to Fiction*............................3
          Prerequisite: ENGL 122
ENGL 231  American Prose*.....................................3
          Prerequisite: ENGL 122
ENGL 235  Drama as Literature*................................3
          Prerequisite: ENGL 122
ENGL 241  British Writers*....................................3
ENGL 250  World Masterpieces*.................................3
          Prerequisite: ENGL 122
ENGL 254  Masterpieces of the Cinema*.........................3
          Prerequisite: ENGL 122
ENGL 256  American Poetry*....................................3
          Prerequisite: ENGL 122
THEA 120  Introduction to Theater............................3
*Prerequisite/Corequisite required
^Also meets Cultural Diversity Requirement
```

## B. Foreign Language

```
FL   178  Intermediate Russian I*.............................3
          Prerequisite: FL 151 or two years of high school Russian
FL   179  Intermediate Russian II*............................3
          Prerequisite: FL 178
          or three years of high school Russian
FL   192  Intermediate Chinese I*.............................3
          Prerequisite: FL 166 or equivalent
FL   193  Intermediate Chinese II*............................3
          Prerequisite: FL 192 or equivalent
FL   220  Intermediate German I*..............................3
          Prerequisite: FL 121 or two years of high school German
FL   221  Intermediate German II*.............................3
          Prerequisite: FL 220 or three years of high school German
FL   230  Intermediate Spanish I*.............................3
          Prerequisites: FL 131 with a grade of C or higher or
          three years of high school Spanish or the appropriate
          score on the placement test
FL   231  Intermediate Spanish II*............................3
          Prerequisite: FL 230 with a grade of C or higher or
          or four years of high school Spanish or the appropriate
          score on the placement test
FL   240  Intermediate French I*..............................3
          Prerequisite: FL 141 or two years of high school French
FL   241  Intermediate French II*.............................3
          Prerequisite: FL 240 or three years of high school French
*Prerequisite/Corequisite required
```

## C. History

```
HIST 125  Western Civilization: Readings and Discussion I......3
HIST 126  Western Civilization: Readings and Discussion II.....3
HIST 128  Medieval History....................................3
HIST 129  Early Modern Europe 1500-1789.......................3
HIST 130  European History Since 1789.........................3
HIST 135  Eastern Civilization^...............................3
HIST 137  African American Studies^...........................3
HIST 140  U.S. History to 1877................................3
HIST 141  U.S. History Since 1877.............................3
HIST 151  World History I: Traditional World^.................3
HIST 152  World History II: Modern World^.....................3
HIST 160  Modern Russian History^.............................3
HIST 162  Modern Latin America^...............................3
^Also meets Cultural Diversity Requirement
```

## D. Humanities

```
ARTH 180  Art History: Ancient to Renaissance.................3
ARTH 182  Art History: Renaissance to Modern..................3
ARTH 184  Art History: Twentieth Century......................3
ARTH 188  History of Photography..............................3
HUM  122  Introduction to Humanities..........................3
HUM  145  Introduction to World Humanities I^.................3
HUM  146  Introduction to World Humanities II^................3
HUM  155  Classical Mythology.................................3
HUM  164  Civilization........................................3
MUS  121  Introduction to Music Listening.....................3
MUS  125  Introduction to Jazz Listening......................3
MUS  126  Introduction to World Music^........................3
REL  120  Exploring World Religions^..........................3
REL  125  Religions of the East^..............................3
REL  126  Religions of the West^..............................3
^Also meets Cultural Diversity Requirement
```

## 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
```

# Social Science/Economics - 6 hours

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

## A. Anthropology

```
ANTH 125  Cultural Anthropology^..............................3
ANTH 126  Physical Anthropology...............................3
ANTH 130  World Cultures^.....................................3
ANTH 142  World Prehistory....................................3
^Also meets Cultural Diversity Requirement
```

## B. Economics

```
ECON 132  Survey of Economics.................................3
ECON 230  Economics I.........................................3
ECON 231  Economics II........................................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
^Also meets Cultural Diversity Requirement
```

## D. Psychology

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

## E. Sociology

```
SOC  122  Introduction to Sociology^..........................3
SOC  125  Social Problems^....................................3
SOC  131  Marriage and the Family.............................3
^Also meets Cultural Diversity Requirement
```

## F. Gender and Ethnic Studies

```
WGS  201  Global Women's Studies^.............................3
^Also meets Cultural Diversity Requirement
```

# Science and/or Mathematics - 9 hours

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

## A. Life Science

```
BIOL 122  Principles of Biology...............................3
BIOL 123  Principles of Biology Lab*..........................1
          Prerequisite or corequisite: BIOL 122 or
          consent of the assistant dean
BIOL 124  Oceanus: Essentials of Oceanography.................3
BIOL 125  General Botany......................................5
BIOL 127  General Zoology.....................................5
BIOL 130  Environmental Science...............................3
BIOL 131  Environmental Science Lab*..........................1
          Prerequisite or corequisite: BIOL 130
BIOL 140  Human Anatomy.......................................4
BIOL 144  Human Anatomy and Physiology........................5
BIOL 150  Biology of Organisms*...............................5
          Prerequisite: BIOL 135 or
          consent of the assistant dean
BIOL 225  Human Physiology*...................................4
          Prerequisites: CHEM 122 and either BIOL 140
          or BIOL 144
BIOL 230  Microbiology*.......................................3
          Prerequisite: CHEM 122 and
          one year of high school chemistry
BIOL 231  Microbiology Lab*...................................2
          BIOL 231 students must be currently enrolled in
          BIOL 230 or have successfully completed BIOL 230
          within the last three years.
*Prerequisite/Corequisite required
```

## B. Physical Science

```
ASTR 120  Fundamentals of Astronomy...........................3
ASTR 122  Astronomy...........................................4
CHEM 120  Chemistry in Society................................4
CHEM 122  Principles of Chemistry.............................5
CHEM 124  General Chemistry I Lecture*........................4
```

```
              Prerequisite or corequisite: MATH 171 or assessment
              test and Corequisite: CHEM 125
CHEM 125  General Chemistry I Lab*............................1
              Prerequisite or Corequisite: CHEM 124
              Students who withdraw from GENERAL CHEMISTRY I
              LECTURE must also withdraw from the corresponding
              laboratory GENERAL CHEMSITRY I LABORATORY
              Students may not withdraw from the laboratory course
              GENERAL CHEMISTRY I LABORATORY without withdrawing
              from CHEMISTRY I LECTURE.
CHEM 131  General Chemistry II Lecture*.......................4
              Prerequisites: CHEM 124 and CHEM 125 and
              Corequisite: CHEM 132
CHEM 132  General Chemistry II Lab*...........................1
              Prerequisites: CHEM 124 and CHEM 125 and
              Corequisite: CHEM 131  Students who
              withdraw from GENERAL CHEMISTRY II LECTURE
              must also withdraw from the corresponding
              laboratory GENERAL CHEMISTRY II LABORATORY.
              Students may not withdraw from the laboratory
              course GENERAL CHEMISTRY II LABORATORY without
              withdrawing from CHEMISTRY II LECTURE.
CHEM 140  Principles of Organic & Biological Chemistry*........5
              Prerequisites: BIOL 135
              and CHEM 122 or permission of the assistant dean
GEOS 130  General Geology.....................................5
GEOS 140  Physical Geography..................................3
GEOS 141  Physical Geography Lab*.............................2
              Prerequisite or corequisite: GEOS 140 or the
              equivalent
GEOS 145  World Regional Geography^...........................3
PHYS 130  General Physics I*..................................5
              Prerequisite: MATH 171 or assessment scores
PHYS 131  General Physics II*.................................5
              Prerequisite: PHYS 130
PHYS 220  Engineering Physics I*..............................5
              Prerequisite or corequisite: MATH 242
PHYS 221  Engineering Physics II*.............................5
              Prerequisites: PHYS 220 and MATH 242
PSCI 120  Physical Science....................................4
*Prerequisite/Corequisite required
^Also meets Cultural Diversity Requirement
```

## C. Mathematics

```
MATH 165  Finite Mathematics*.................................3
              Prerequisite: MATH 116 with a grade of "C" or higher
              or appropriate score on the math assessment test
MATH 171  College Algebra*+...................................3
              Prerequisite: MATH 116 with a grade of "C" or higher
              or MATH 134 with a grade of "C" or higher
              or appropriate score on the math assessment test
              Note: Not available to students with credit in
              MATH 173
MATH 172  Trigonometry*+......................................3
              Prerequisite: MATH 171 with a grade of "C" or higher
              or appropriate score on the math assessment test
              Note: Not available to students with credit in
              MATH 173
MATH 173  Precalculus*+.......................................5
              Prerequisite: MATH 116 with a grade of "C" or higher
              or appropriate score on the math assessment test
              Note: Not available for credit for students with
              credit in MATH 171 and/or MATH 172
MATH 175  Discrete Mathematics and its Applications*..........3
              Prerequisite: MATH 171 or MATH 173
              with a grade of "C" or higher
              or appropriate score on the math assessment test
MATH 181  Statistics*.........................................3
              Prerequisite: MATH 171 or MATH 173 or an
              equivalent course with a grade of "C" or higher
              or appropriate score on the math assessment test
MATH 225  Mathematics as a Decision Making Tool*..............3
              Prerequisite: MATH 171 or MATH 173
              with a grade of "C" or higher
              or appropriate score on the math assessment test
MATH 231  Business and Applied Calculus I*....................3
              Prerequisite: MATH 171 or MATH 173
              with a grade of "C" or higher
              or appropriate score on the math assessment test
MATH 232  Business and Applied Calculus II*...................3
              Prerequisites: MATH 231 and either MATH 172 or
              MATH 173 with a grade of "C" or higher
              or appropriate score on the math assessment test
MATH 241  Calculus I*.........................................5
              Prerequisite: MATH 172 or MATH 173
              or an equivalent course with a grade of "C" or higher
              or an appropriate score on an assessment test
MATH 242  Calculus II*........................................5
              Prerequisite: MATH 237 or MATH 241
              or an equivalent course with a grade of "C" or higher
MATH 243  Calculus III*.......................................5
              Prerequisite: MATH 242 with a grade of "C" or higher
              or an equivalent course with a grade of "C" or higher
MATH 244  Differential Equations*.............................3
              Prerequisite: MATH 243
              or an equivalent course with a grade of "C" or higher
*Prerequisite/Corequisite required
```

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

```
receive credit for MATH 171 and/or MATH 172.
```

## Health and/or Physical Education - 1 hour

```
HPER      Any Activity Course.................................1
EMS  121  CPR I - Basic Life Support for Healthcare Provider...1
HMEC 151  Nutrition and Meal Planning.........................3
HPER 192  Wellness for Life...................................1
HPER 200  First Aid and CPR...................................2
HPER 202  Personal Community Health...........................3
HPER 205  Individual Lifetime Sports..........................2
HPER 240  Lifetime Fitness I..................................1
HPER 255  Introduction to Physical Education..................3
```

## Cultural Diversity Requirement - 1 course

```
ANTH 125  Cultural Anthropology~..............................3
ANTH 130  World Cultures~.....................................3
ANTH 134  Native Americans....................................3
ANTH 135  American Indian Artistic Tradition..................3
ANTH 142  World Prehistory....................................3
ANTH 150  People and Cultures of Mesoamerica..................3
ARTH 186  Art History: Introduction to Asian Art..............3
BUS  235  Introduction to International Business...............3
ENGL 215  U.S. Latino and Latina Literature*~.................3
              Prerequisite or corequisite: ENGL 122
FL   145  Field Study in Russian Language & Culture...........2
GEOS 145  World Regional Geography~...........................3
HC   125  International Awareness Field Study..................2
HIST 135  Eastern Civilization~...............................3
HIST 137  African American Studies~...........................3
HIST 150  Islam: Religion & Civilization......................3
HIST 151  World History I: Traditional World~.................3
HIST 152  World History II: Modern World~.....................3
HIST 160  Modern Russian History~.............................3
HIST 162  Modern Latin America~...............................3
HIST 195  History of the Middle East..........................3
HUM  137  Introduction to Russian Culture~....................3
HUM  145  Introduction to World Humanities I~.................3
HUM  146  Introduction to World Humanities II~................3
HUM  150  Islam: Religion & Civilization......................3
INTR 145  Introduction to the Deaf Community..................3
              Prerequisite: Acceptance to interpreter training
              program and
              Prerequisite or corequisite: ANTH 125 and SPD 120 for
              Interpreter Training Program
              Corequisites for Interpreter Training Prog: INTR 122
              and INTR 126 and INTR 130 and INTR 147
              all with a grade of "C" or higher
              Note: Prerequisite or corequisite of INTR 120 or
              ASL 120 or FL 180
              required for students in the American Sign Language
              Studies Certificate
MUS  126  Introduction to World Music~........................3
POLS 132  Introduction to Comparative Government...............3
POLS 135  International Relations~.............................3
POLS 200  Model United Nations................................3
PSYC 205  Human Sexuality*....................................3
              Prerequisite: PSYC 130
REL  120  Exploring World Religions~..........................3
REL  125  Religions of the East~..............................3
REL  126  Religions of the West~..............................3
REL  150  Islam: Religion & Civilization......................3
SOC  122  Introduction to Sociology~..........................3
SOC  125  Social Problems~....................................3
SOC  146  Introduction to Social Work and Social Welfare.......3
SOC  165  Chinese Society: Past and Present...................3
SOC  200  Intercultural Applications..........................3
              Prerequisite or corequisite:  SPD 180
SPD  180  Intercultural Communication~........................3
WGS  201  Global Women's Studies~.............................3
WGS  220  The Many Women of Islam.............................3
*Prerequisite/Corequisite required
~also meets a General Education requirement
```

# Associate of Science

The associate of science degree from JCCC

- is designed with an emphasis in a specific career program.

- requires completion of a minimum of 64 college-level credit hours within specified course distribution areas, including the emphasis of study, with a 2.0 or higher GPA.

- requires the completion of a cultural diversity course from a list of approved courses. Some of the courses in this list will also meet humanities, social science or non-lab science requirements for this degree.

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

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

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

# General Education Requirements

**(available for career programs only)**

### A. Communications - 9 hours

```
ENGL 121  Composition I*........................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
*Prerequisite/Corequisite required
```

### B. Communications Elective - 6 hours

**(two of the following)**

```
ENGL 122  Composition II*.......................................3
          Prerequisite: ENGL 121
ENGL 123  Technical Writing I*..................................3
          Prerequisite: ENGL 121
ENGL 140  Writing for Interactive Media*........................3
          Prerequisite: ENGL 121
BUS  150  Business Communications*..............................3
          Prerequisite: ENGL 121
SPD  120  Interpersonal Communication...........................3
SPD  121  Public Speaking.......................................3
SPD  125  Personal Communication................................3
SPD  180  Intercultural Communication^..........................3
*Prerequisite/Corequisite required
^Also meets Cultural Diversity Requirement
```

# Humanities - 6 hours

```
Two courses from any of the following categories
may count toward the six required hours.
```

### A. Literature/Theater

```
ENGL 130  Introduction to Literature*...........................3
          Prerequisite: ENGL 121
ENGL 215  U.S. Latino and Latina Literature*^...................3
          Prerequisite or corequisite: ENGL 122
ENGL 227  Introduction to Poetry*...............................3
          Prerequisite: ENGL 122
ENGL 230  Introduction to Fiction*..............................3
          Prerequisite: ENGL 122
ENGL 231  American Prose*.......................................3
          Prerequisite: ENGL 122
ENGL 235  Drama as Literature*..................................3
          Prerequisite: ENGL 122
ENGL 241  British Writers*......................................3
ENGL 250  World Masterpieces*...................................3
          Prerequisite: ENGL 122
ENGL 254  Masterpieces of the Cinema*...........................3
          Prerequisite: ENGL 122
ENGL 256  American Poetry*......................................3
          Prerequisite: ENGL 122
THEA 120  Introduction to Theater...............................3
*Prerequisite/Corequisite required
^Also meets Cultural Diversity Requirement
```

### B. Foreign Language

```
FL   178  Intermediate Russian I*...............................3
          Prerequisite: FL 151 or two years of high school Russian
FL   179  Intermediate Russian II*..............................3
          Prerequisite: FL 178
          or three years of high school Russian
FL   192  Intermediate Chinese I*...............................3
          Prerequisite: FL 166 or equivalent
FL   193  Intermediate Chinese II*..............................3
```

```
          Prerequisite: FL 192 or equivalent
FL   220  Intermediate German I*................................3
          Prerequisite: FL 121 or two years of high school German
FL   221  Intermediate German II*...............................3
          Prerequisite: FL 220 or three years of high school German
FL   230  Intermediate Spanish I*...............................3
          Prerequisites: FL 131 with a grade of C or higher or
          three years of high school Spanish or the appropriate
          score on the placement test
FL   231  Intermediate Spanish II*..............................3
          Prerequisite: FL 230 with a grade of C or higher or
          or four years of high school Spanish or the appropriate
          score on the placement test
FL   240  Intermediate French I*................................3
          Prerequisite: FL 141 or two years of high school French
FL   241  Intermediate French II*...............................3
          Prerequisite: FL 240 or three years of high school French
*Prerequisite/Corequisite required
```

### C. History

```
HIST 125  Western Civilization: Readings and Discussion I......3
HIST 126  Western Civilization: Readings and Discussion II.....3
HIST 128  Medieval History.....................................3
HIST 129  Early Modern Europe 1500-1789........................3
HIST 130  European History Since 1789..........................3
HIST 135  Eastern Civilization^................................3
HIST 137  African American Studies^............................3
HIST 140  U.S. History to 1877.................................3
HIST 141  U.S. History Since 1877..............................3
HIST 151  World History I: Traditional World^..................3
HIST 152  World History II: Modern World^......................3
HIST 160  Modern Russian History^..............................3
HIST 162  Modern Latin America^................................3
^Also meets Cultural Diversity Requirement
```

### D. Humanities

```
ARTH 180  Art History: Ancient to Renaissance..................3
ARTH 182  Art History: Renaissance to Modern...................3
ARTH 184  Art History: Twentieth Century.......................3
ARTH 188  History of Photography...............................3
HUM  122  Introduction to Humanities...........................3
HUM  145  Introduction to World Humanities I^..................3
HUM  146  Introduction to World Humanities II^.................3
HUM  155  Classical Mythology..................................3
HUM  164  Civilization.........................................3
MUS  121  Introduction to Music Listening......................3
MUS  125  Introduction to Jazz Listening.......................3
MUS  126  Introduction to World Music^.........................3
REL  120  Exploring World Religions^...........................3
REL  125  Religions of the East^...............................3
REL  126  Religions of the West^...............................3
^Also meets Cultural Diversity Requirement
```

### 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
```

# Social Science/Economics - 6 hours

```
Two courses from any of the following categories
may count toward the six required hours.
```

### A. Anthropology

```
ANTH 125  Cultural Anthropology^...............................3
ANTH 126  Physical Anthropology................................3
ANTH 130  World Cultures^......................................3
ANTH 142  World Prehistory.....................................3
^Also meets Cultural Diversity Requirement
```

### B. Economics

```
ECON 132  Survey of Economics..................................3
ECON 230  Economics I..........................................3
ECON 231  Economics II.........................................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
^Also meets Cultural Diversity Requirement
```

### D. Psychology

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

### E. Sociology

```
SOC  122  Introduction to Sociology^...........................3
SOC  125  Social Problems^.....................................3
SOC  131  Marriage and the Family..............................3
^Also meets Cultural Diversity Requirement
```

### F. Gender and Ethnic Studies

```
WGS  201  Global Women's Studies^..............................3
^Also meets Cultural Diversity Requirement
```

# Science and Mathematics -12 hours

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

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

## A. Science

### (Life Science)

```
BIOL 122  Principles of Biology................................3
BIOL 123  Principles of Biology Lab*...........................1
          Prerequisite or corequisite: BIOL 122 or
          consent of the assistant dean
BIOL 124  Oceanus: Essentials of Oceanography..................3
BIOL 125  General Botany.......................................5
BIOL 127  General Zoology......................................5
BIOL 130  Environmental Science................................3
BIOL 131  Environmental Science Lab*...........................1
          Prerequisite or corequisite: BIOL 130
BIOL 140  Human Anatomy........................................4
BIOL 144  Human Anatomy and Physiology.........................5
BIOL 150  Biology of Organisms*................................5
          Prerequisite: BIOL 135 or
          consent of the assistant dean
BIOL 225  Human Physiology*....................................4
          Prerequisites: CHEM 122 and either BIOL 140
          or BIOL 144
BIOL 230  Microbiology*........................................3
          Prerequisite: CHEM 122 or
          one year of high school chemistry
BIOL 231  Microbiology Lab*....................................2
          BIOL 231 students must be currently enrolled in
          BIOL 230 or have successfully completed BIOL 230
          within the last three years.
*Prerequisite/Corequisite required
```

### (Physical Science)

```
ASTR 120  Fundamentals of Astronomy............................3
ASTR 122  Astronomy............................................4
CHEM 120  Chemistry in Society.................................4
CHEM 122  Principles of Chemistry..............................5
CHEM 124  General Chemistry I Lecture*.........................4
          Prerequisite or corequisite: MATH 171 or assessment
          test and Corequisite: CHEM 125
CHEM 125  General Chemistry I Lab*.............................1
          Prerequisite or Corequisite: CHEM 124
          Students who withdraw from GENERAL CHEMISTRY I
          LECTURE must also withdraw from the corresponding
          laboratory GENERAL CHEMSITRY I LABORATORY
          Students may not withdraw from the laboratory course
          GENERAL CHEMISTRY I LABORATORY without withdrawing
          from CHEMISTRY I LECTURE.
CHEM 131  General Chemistry II Lecture*........................4
          Prerequisites: CHEM 124 and CHEM 125 and
          Corequisite: CHEM 132
CHEM 132  General Chemistry II Lab*............................1
          Prerequisites: CHEM 124 and CHEM 125 and
          Corequisite: CHEM 131  Students who
          withdraw from GENERAL CHEMISTRY II LECTURE
          must also withdraw from the corresponding
          laboratory GENERAL CHEMISTRY II LABORATORY.
          Students may not withdraw from the laboratory
          course GENERAL CHEMISTRY II LABORATORY without
          withdrawing from CHEMISTRY II LECTURE.
CHEM 140  Principles of Organic & Biological Chemistry*........5
          Prerequisites: BIOL 135
          and CHEM 122 or permission of the assistant dean
GEOS 130  General Geology......................................5
```

```
GEOS 140  Physical Geography...................................3
GEOS 141  Physical Geography Lab*..............................2
          Prerequisite or corequisite: GEOS 140 or the
          equivalent
GEOS 145  World Regional Geography^............................3
PHYS 130  General Physics I*...................................5
          Prerequisite: MATH 171 or assessment scores
PHYS 131  General Physics II*..................................5
          Prerequisite: PHYS 130
PHYS 220  Engineering Physics I*...............................5
          Prerequisite or corequisite: MATH 242
PHYS 221  Engineering Physics II*..............................5
          Prerequisites: PHYS 220 and MATH 242
PSCI 120  Physical Science.....................................4
*Prerequisite/Corequisite required
^Also meets Cultural Diversity Requirement
```

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.

# Health and/or Physical Education - 1 hour

```
HPER      Any Activity Course..................................1
EMS  121  CPR I - Basic Life Support for Healthcare Provider...1
HMEC 151  Nutrition and Meal Planning..........................3
HPER 192  Wellness for Life....................................1
HPER 200  First Aid and CPR....................................2
HPER 202  Personal Community Health............................3
HPER 205  Individual Lifetime Sports...........................2
HPER 240  Lifetime Fitness I...................................1
HPER 255  Introduction to Physical Education...................3
```

# Cultural Diversity Requirement - 1 course

```
ANTH 125  Cultural Anthropology~...............................3
ANTH 130  World Cultures~......................................3
ANTH 134  Native Americans.....................................3
ANTH 135  American Indian Artistic Tradition...................3
ANTH 142  World Prehistory.....................................3
ANTH 150  People and Cultures of Mesoamerica...................3
ARTH 186  Art History: Introduction to Asian Art...............3
BUS  235  Introduction to International Business................3
ENGL 215  U.S. Latino and Latina Literature*~..................3
          Prerequisite or corequisite: ENGL 122
FL   145  Field Study in Russian Language & Culture............2
GEOS 145  World Regional Geography~............................3
HC   125  International Awareness Field Study..................2
HIST 135  Eastern Civilization~................................3
HIST 137  African American Studies~............................3
HIST 150  Islam: Religion & Civilization.......................3
HIST 151  World History I: Traditional World~..................3
HIST 152  World History II: Modern World~......................3
HIST 160  Modern Russian History~..............................3
HIST 162  Modern Latin America~................................3
HIST 195  History of the Middle East...........................3
HUM  137  Introduction to Russian Culture......................3
HUM  145  Introduction to World Humanities I~..................3
HUM  146  Introduction to World Humanities II~.................3
HUM  150  Islam: Religion & Civilization.......................3
INTR 145  Introduction to the Deaf Community...................3
          Prerequisite: Acceptance to interpreter training
          program and
          Prerequisite or corequisite: ANTH 125 and SPD 120 for
          Interpreter Training Program
          Corequisites for Interpreter Training Prog: INTR 122
          and INTR 126 and INTR 130 and INTR 147
          all with a grade of "C" or higher
          Note: Prerequisite or corequisite of INTR 120 or
          ASL 120 or FL 180
          required for students in the American Sign Language
          Studies Certificate
MUS  126  Introduction to World Music~.........................3
POLS 132  Introduction to Comparative Government...............3
POLS 135  International Relations~..............................3
POLS 200  Model United Nations.................................3
PSYC 205  Human Sexuality*.....................................3
          Prerequisite: PSYC 130
REL  120  Exploring World Religions~...........................3
REL  125  Religions of the East~...............................3
REL  126  Religions of the West~...............................3
REL  150  Islam: Religion & Civilization.......................3
SOC  122  Introduction to Sociology~...........................3
SOC  125  Social Problems~.....................................3
SOC  146  Introduction to Social Work and Social Welfare.......3
SOC  165  Chinese Society: Past and Present....................3
SOC  200  Intercultural Applications...........................3
          Prerequisite or corequisite:  SPD 180
SPD  180  Intercultural Communication~.........................3
WGS  201  Global Women's Studies~..............................3
WGS  220  The Many Women of Islam..............................3
*Prerequisite/Corequisite required
~also meets a General Education requirement
```

# Associate of Applied Science

The associate of applied science degree from JCCC

- is designed with an emphasis in a specific career program.

- requires completion of a minimum of 64 college-level credit hours within specified course distribution areas, including emphasis of study, with a 2.0 GPA.

The 64 hours of credit necessary to complete the associate of applied science degree include 15 credits of general education requirements plus the courses listed for the specific career program. At a minimum, the distribution must include:

- Communications (3 hours)

- Humanities (3 hours)

- Social Science and/or Economics (3 hours)

- Science and Mathematics (3 hours)

- 3 additional credit hours to be selected from one of the above categories

- Health and/or Physical Education (1 hour)

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

# General Education Requirements

## (available for career programs only)

### A. Communications - 3 hours

```
ENGL 121  Composition I*........................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
*Prerequisite/Corequisite required


If your specific degree program requires a communications
elective, choose three hours from the following:

ENGL 122  Composition II*.......................................3
          Prerequisite: ENGL 121
ENGL 123  Technical Writing I*..................................3
          Prerequisite: ENGL 121
ENGL 140  Writing for Interactive Media*.......................3
          Prerequisite: ENGL 121
BUS  150  Business Communications*.............................3
          Prerequisite: ENGL 121
SPD  120  Interpersonal Communication..........................3
SPD  121  Public Speaking......................................3
SPD  125  Personal Communication...............................3
SPD  180  Intercultural Communication..........................3
*Prerequisite/Corequisite required
```

## Humanities - 3 hours

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

### A. Literature/Theater

```
ENGL 130  Introduction to Literature*..........................3
          Prerequisite: ENGL 121
ENGL 215  U.S. Latino and Latina Literature*...................3
          Prerequisite or corequisite: ENGL 122
ENGL 227  Introduction to Poetry*..............................3
          Prerequisite: ENGL 122
ENGL 230  Introduction to Fiction*.............................3
          Prerequisite: ENGL 122
ENGL 231  American Prose*......................................3
          Prerequisite: ENGL 122
ENGL 235  Drama as Literature*.................................3
          Prerequisite: ENGL 122
ENGL 241  British Writers*.....................................3
ENGL 250  World Masterpieces*..................................3
          Prerequisite: ENGL 122
ENGL 254  Masterpieces of the Cinema*..........................3
          Prerequisite: ENGL 122
ENGL 256  American Poetry*.....................................3
```

```
          Prerequisite: ENGL 122
THEA 120  Introduction to Theater..............................3
*Prerequisite/Corequisite required
```

### B. Foreign Language

```
FL   178  Intermediate Russian I*..............................3
          Prerequisite: FL 151 or two years of high school Russian
FL   179  Intermediate Russian II*.............................3
          Prerequisite: FL 178
          or three years of high school Russian
FL   192  Intermediate Chinese I*..............................3
          Prerequisite: FL 166 or equivalent
FL   193  Intermediate Chinese II*.............................3
          Prerequisite: FL 192 or equivalent
FL   220  Intermediate German I*...............................3
          Prerequisite: FL 121 or two years of high school German
FL   221  Intermediate German II*..............................3
          Prerequisite: FL 220 or three years of high school German
FL   230  Intermediate Spanish I*..............................3
          Prerequisites: FL 131 with a grade of C or higher or
          three years of high school Spanish or the appropriate
          score on the placement test
FL   231  Intermediate Spanish II*.............................3
          Prerequisite: FL 230 with a grade of C or higher or
          four years of high school Spanish or the appropriate
          score on the placement test
FL   240  Intermediate French I*...............................3
          Prerequisite: FL 141 or two years of high school French
FL   241  Intermediate French II*..............................3
          Prerequisite: FL 240 or three years of high school French
*Prerequisite/Corequisite required
```

### C. History

```
HIST 125  Western Civilization: Readings and Discussion I......3
HIST 126  Western Civilization: Readings and Discussion II.....3
HIST 128  Medieval History.....................................3
HIST 129  Early Modern Europe 1500-1789........................3
HIST 130  European History Since 1789..........................3
HIST 135  Eastern Civilization.................................3
HIST 137  African American Studies.............................3
HIST 140  U.S. History to 1877.................................3
HIST 141  U.S. History Since 1877..............................3
HIST 151  World History I: Traditional World...................3
HIST 152  World History II: Modern World.......................3
HIST 160  Modern Russian History...............................3
HIST 162  Modern Latin America.................................3
```

### D. Humanities

```
ARTH 180  Art History: Ancient to Renaissance..................3
ARTH 182  Art History: Renaissance to Modern...................3
ARTH 184  Art History: Twentieth Century.......................3
ARTH 188  History of Photography...............................3
HUM  122  Introduction to Humanities...........................3
HUM  145  Introduction to World Humanities I...................3
HUM  146  Introduction to World Humanities II..................3
HUM  155  Classical Mythology..................................3
HUM  164  Civilization.........................................3
MUS  121  Introduction to Music Listening......................3
MUS  125  Introduction to Jazz Listening.......................3
MUS  126  Introduction to World Music..........................3
REL  120  Exploring World Religions............................3
REL  125  Religions of the East................................3
REL  126  Religions of the West................................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
```

## Social Science/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 142  World Prehistory.....................................3
```

### B. Economics

```
ECON 132  Survey of Economics..................................3
ECON 230  Economics I..........................................3
```

```
ECON 231   Economics II.........................................3
```

## C. Political Science

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

## D. Psychology

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

## E. Sociology

```
SOC  122   Introduction to Sociology.........................3
SOC  125   Social Problems...................................3
SOC  131   Marriage and the Family...........................3
```

## F. Gender and Ethnic Studies

```
WGS  201   Global Women's Studies............................3
```

# Science and/or Mathematics - 3 hours

Any mathematics course except Fundamentals of Mathematics or
Elementary Algebra will satisfy this requirement, or
the requirement can be satisfied by any of the following
courses.

## A. Life Science

```
BIOL 122   Principles of Biology.............................3
BIOL 123   Principles of Biology Lab*........................1
           Prerequisite or corequisite: BIOL 122 or
           consent of the assistant dean
BIOL 124   Oceanus: Essentials of Oceanography...............3
BIOL 125   General Botany....................................5
BIOL 127   General Zoology...................................5
BIOL 130   Environmental Science.............................3
BIOL 131   Environmental Science Lab*........................1
           Prerequisite or corequisite: BIOL 130
BIOL 140   Human Anatomy.....................................4
BIOL 144   Human Anatomy and Physiology......................5
BIOL 150   Biology of Organisms*.............................5
           Prerequisite: BIOL 135 or
           consent of the assistant dean
BIOL 225   Human Physiology*.................................4
           Prerequisites: CHEM 122 and either BIOL 140
           or BIOL 144
BIOL 230   Microbiology*.....................................3
           Prerequisite: CHEM 122 or
           one year of high school chemistry
BIOL 231   Microbiology Lab*.................................2
           BIOL 231 students must be currently enrolled in
           BIOL 230 or have successfully completed BIOL 230
           within the last three years.
*Prerequisite/Corequisite required
```

## B. Physical Science

```
ASTR 120   Fundamentals of Astronomy.........................3
ASTR 122   Astronomy.........................................4
CHEM 120   Chemistry in Society..............................4
CHEM 122   Principles of Chemistry...........................5
CHEM 124   General Chemistry I Lecture*......................4
           Prerequisite or corequisite: MATH 171 or assessment
           test and Corequisite: CHEM 125
CHEM 125   General Chemistry I Lab*..........................1
           Prerequisite or Corequisite: CHEM 124
           Students who withdraw from GENERAL CHEMISTRY I
           LECTURE must also withdraw from the corresponding
           laboratory GENERAL CHEMSITRY I LABORATORY
           Students may not withdraw from the laboratory course
           GENERAL CHEMISTRY I LABORATORY without withdrawing
           from CHEMISTRY I LECTURE.
CHEM 131   General Chemistry II Lecture*.....................4
           Prerequisites: CHEM 124 and CHEM 125 and
           Corequisite: CHEM 132
CHEM 132   General Chemistry II Lab*.........................1
           Prerequisites: CHEM 124 and CHEM 125 and
           Corequisite: CHEM 131  Students who
           withdraw from GENERAL CHEMISTRY II LECTURE
           must also withdraw from the corresponding
           laboratory GENERAL CHEMISTRY II LABORATORY.
           Students may not withdraw from the laboratory
           course GENERAL CHEMISTRY II LABORATORY without
           withdrawing from CHEMISTRY II LECTURE.
CHEM 140   Principles of Organic & Biological Chemistry*.....5
```

```
           Prerequisites: BIOL 135
           and CHEM 122 or permission of the assistant dean
GEOS 130   General Geology...................................5
GEOS 140   Physical Geography................................3
GEOS 141   Physical Geography Lab*...........................2
           Prerequisite or corequisite: GEOS 140 or the
           equivalent
GEOS 145   World Regional Geography..........................3
PHYS 130   General Physics I*................................5
           Prerequisite: MATH 171 or assessment scores
PHYS 131   General Physics II*...............................5
           Prerequisite: PHYS 130
PHYS 220   Engineering Physics I*............................5
           Prerequisite or corequisite: MATH 242
PHYS 221   Engineering Physics II*...........................5
           Prerequisites: PHYS 220 and MATH 242
PSCI 120   Physical Science..................................4
*Prerequisite/Corequisite required
```

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

# Health and/or Physical Education - 1 hour

```
HPER       Any Activity Course...............................1
EMS  121   CPR I - Basic Life Support for Healthcare Provider...1
HMEC 151   Nutrition and Meal Planning.......................3
HPER 192   Wellness for Life.................................1
HPER 200   First Aid and CPR.................................2
HPER 202   Personal Community Health.........................3
HPER 205   Individual Lifetime Sports........................2
HPER 240   Lifetime Fitness I................................1
HPER 255   Introduction to Physical Education................3
```

# Associate of General Studies

The associate of general studies degree from JCCC

- is designed for students who do not plan to transfer to a traditional baccalaureate institution, but wish to receive recognition for completion of a more general program of study

- requires completion of 64 college-level credit hours within specified course distribution areas with a 2.0 or higher GPA.

The 64 hours of credit necessary to complete the associate of general studies degree include the following:

General Education Requirements (26 credit hours)

- The Arts (3 hours)

- Communication Skills (6 hours)

- Culture and Ethics (6 hours)

- Health, Physical Education, Recreation (2 hours)

- Mathematics (3 hours)

- Modes of Inquiry (6 hours)

Computer Skills (3 credit hours)

Global Issues/Diversity (3 credit hours)

College level electives (32 credit hours)

Courses may not be used to satisfy requirements in more than one category.

## The Arts - 3 hours

```
ARTH 180   Art History: Ancient to Renaissance...............3
ARTH 182   Art History: Renaissance to Modern................3
ARTH 184   Art History: Twentieth Century....................3
ARTH 188   History of Photography............................3
FL   178   Intermediate Russian I*...........................3
           Prerequisite: FL 151 or two years of high school Russian
FL   179   Intermediate Russian II*..........................3
           Prerequisite: FL 178
           or three years of high school Russian
FL   192   Intermediate Chinese I*...........................3
           Prerequisite: FL 166 or equivalent
```

```
FL   193   Intermediate Chinese II*............................3
           Prerequisite: FL 192 or equivalent
FL   220   Intermediate German I*.............................3
           Prerequisite: FL 121 or two years of high school German
FL   221   Intermediate German II*............................3
           Prerequisite: FL 220 or three years of high school German
FL   230   Intermediate Spanish I*............................3
           Prerequisites: FL 131 with a grade of C or higher or
           three years of high school Spanish or the appropriate
           score on the placement test
FL   231   Intermediate Spanish II*...........................3
           Prerequisite: FL 230 with a grade of C or higher or
           or four years of high school Spanish or the appropriate
           score on the placement test
FL   240   Intermediate French I*.............................3
           Prerequisite: FL 141 or two years of high school French
FL   241   Intermediate French II*............................3
           Prerequisite: FL 240 or three years of high school French
HUM  122   Introduction to Humanities.........................3
HUM  145   Introduction to World Humanities I.................3
HUM  146   Introduction to World Humanities II................3
HUM  155   Classical Mythology................................3
HUM  164   Civilization.......................................3
MUS  121   Introduction to Music Listening....................3
MUS  125   Introduction to Jazz Listening.....................3
MUS  126   Introduction to World Music........................3
THEA 120   Introduction to Theater............................3
*Prerequisite/Corequisite required
```

```
           Prerequisite: FL 220 or three years of high school German
FL   230   Intermediate Spanish I*............................3
           Prerequisites: FL 131 with a grade of C or higher or
           three years of high school Spanish or the appropriate
           score on the placement test
FL   231   Intermediate Spanish II*...........................3
           Prerequisite: FL 230 with a grade of C or higher or
           or four years of high school Spanish or the appropriate
           score on the placement test
FL   240   Intermediate French I*.............................3
           Prerequisite: FL 141 or two years of high school French
FL   241   Intermediate French II*............................3
           Prerequisite: FL 240 or three years of high school French
GEOS 145   World Regional Geography...........................3
PHIL 121   Introduction to Philosophy.........................3
PHIL 143   Ethics.............................................3
PHIL 154   History of Ancient Philosophy......................3
PHIL 176   Philosophy of Religion.............................3
POLS 122   Political Science..................................3
POLS 124   American National Government.......................3
POLS 135   International Relations.............................3
REL  120   Exploring World Religions..........................3
REL  125   Religions of the East..............................3
REL  126   Religions of the West..............................3
SOC  122   Introduction to Sociology..........................3
SOC  131   Marriage and the Family............................3
*Prerequisite/Corequisite required
```

# Culture and Ethics - 6 hours

### Historical Perspective - 3 hours

```
ENGL 130   Introduction to Literature*........................3
           Prerequisite: ENGL 121
ENGL 230   Introduction to Fiction*...........................3
           Prerequisite: ENGL 122
ENGL 231   American Prose*....................................3
           Prerequisite: ENGL 122
ENGL 235   Drama as Literature*...............................3
           Prerequisite: ENGL 122
ENGL 241   British Writers*...................................3
ENGL 250   World Masterpieces*................................3
           Prerequisite: ENGL 122
ENGL 256   American Poetry*...................................3
           Prerequisite: ENGL 122
GEOS 130   General Geology....................................5
GEOS 140   Physical Geography.................................3
GEOS 141   Physical Geography Lab*............................2
           Prerequisite or corequisite: GEOS 140 or the
           equivalent
HIST 125   Western Civilization: Readings and Discussion I......3
HIST 126   Western Civilization: Readings and Discussion II.....3
HIST 128   Medieval History...................................3
HIST 130   European History Since 1789........................3
HIST 135   Eastern Civilization...............................3
HIST 137   African American Studies...........................3
HIST 140   U.S. History to 1877...............................3
HIST 141   U.S. History Since 1877............................3
HIST 151   World History I: Traditional World.................3
HIST 152   World History II: Modern World.....................3
HIST 160   Modern Russian History.............................3
HIST 162   Modern Latin America...............................3
PHIL 154   History of Ancient Philosophy......................3
POLS 124   American National Government.......................3
POLS 126   State and Local Government.........................3
*Prerequisite/Corequisite required
```

### Cultural Perspective - 3 hours

```
ANTH 125   Cultural Anthropology..............................3
ANTH 130   World Cultures.....................................3
ENGL 130   Introduction to Literature*........................3
           Prerequisite: ENGL 121
ENGL 230   Introduction to Fiction*...........................3
           Prerequisite: ENGL 122
ENGL 231   American Prose*....................................3
           Prerequisite: ENGL 122
ENGL 235   Drama as Literature*...............................3
           Prerequisite: ENGL 122
ENGL 241   British Writers*...................................3
ENGL 250   World Masterpieces*................................3
           Prerequisite: ENGL 122
ENGL 254   Masterpieces of the Cinema*........................3
           Prerequisite: ENGL 122
ENGL 256   American Poetry*...................................3
           Prerequisite: ENGL 122
FL   178   Intermediate Russian I*............................3
           Prerequisite: FL 151 or two years of high school Russian
FL   179   Intermediate Russian II*...........................3
           Prerequisite: FL 178
           or three years of high school Russian
FL   192   Intermediate Chinese I*............................3
           Prerequisite: FL 166 or equivalent
FL   193   Intermediate Chinese II*...........................3
           Prerequisite: FL 192 or equivalent
FL   220   Intermediate German I*.............................3
           Prerequisite: FL 121 or two years of high school German
FL   221   Intermediate German II*............................3
```

# Computer Skills - 3 hours

```
CIS  124   Introduction to Computer Concepts and Applications...3


              OR


Three hours from the following courses:

              any CPCA* course....................................1
              any CWEB* course....................................1
              any CDTP* course....................................1
LIBR 125   Introduction to Library Research....................1


              OR


MATH 181   Statistics*........................................3
           Prerequisite: MATH 171 or MATH 173 or an
           equivalent course with a grade of "C" or higher
           or appropriate score on the math assessment test
*Prerequisite/Corerequisite required
```

# Communication Skills - 6 hours

```
Writing - 3 hours
ENGL 121   Composition I*.....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
*Prerequisite/Corequisite required
Speaking - 3 hours
SPD  120   Interpersonal Communication........................3
SPD  121   Public Speaking....................................3
SPD  125   Personal Communication.............................3
SPD  180   Intercultural Communication........................3
```

# Global Issues/Diversity - 3 hours

```
ADMJ 127   Criminology........................................3
ANTH 125   Cultural Anthropology..............................3
ANTH 130   World Cultures.....................................3
ANTH 134   Native Americans...................................3
ARTH 186   Art History: Introduction to Asian Art.............3
BIOL 130   Environmental Science..............................3
BIOL 131   Environmental Science Lab*.........................1
           Prerequisite or corequisite: BIOL 130
BUS  235   Introduction to International Business..............3
FL   116   Elementary Latin I.................................3
FL   117   Elementary Latin II*...............................3
           Prerequisite: FL 116 or one year of high school Latin
FL   120   Elementary German I................................5
FL   121   Elementary German II*..............................5
           Prerequisite: FL 120 or one year of high school German
FL   130   Elementary Spanish I...............................5
FL   131   Elementary Spanish II*.............................5
           Prerequisite: FL 130 with a grade of C or higher
           or two years of high school Spanish;
           or the appropriate score on the placement test
FL   133   Basic Spanish for Hospitality Management............2
FL   140   Elementary French I................................5
FL   141   Elementary French II*..............................5
           Prerequisite: FL 140 or one year of high school French
FL   150   Elementary Russian I...............................5
FL   151   Elementary Russian II*.............................5
           Prerequisite: FL 150 or one year of high school Russian
FL   160   Elementary Italian I...............................5
```

```
FL   161  Elementary Italian II*..............................5
          Prerequisite: FL 160 or one year of high school Italian
FL   165  Elementary Chinese I................................5
FL   166  Elementary Chinese II*..............................5
          Prerequisite: FL 165
          or equivalent college-level course with
          a grade of "D" or higher
          or one year of high school Chinese with a grade
          of "D" or higher
FL   170  Elementary Japanese I...............................5
FL   171  Elementary Japanese II*.............................5
          Prerequisite: FL 170 or one year of high school Japanese
FL   175  Elementary Brazilian Portuguese I...................5
FL   176  Elementary Brazilian Portuguese II*.................5
          Prerequisite: FL 175
FL   205  Conversational Japanese*............................2
          Prerequisite: FL 171 or two years of high school Japanese
FL   223  Conversational German*..............................2
          Prerequisite: FL 121 or two years of high school German
FL   234  Conversational Spanish*.............................2
          Prerequisite: FL 230 with a grade of B or higher;
          or FL 231 with a grade of "C" or higher;
          or four years of high school Spanish;
          or the score equivalent to FL 231 on the placement test
FL   243  Conversational French*..............................2
          Prerequisite: FL 141 or two years of high school French
FL   246  Conversational Russian*.............................2
          Prerequisite: FL 151 or two years of high school Russian
HC   125  International Awareness Field Study.................2
HIST 128  Medieval History....................................3
HIST 135  Eastern Civilization................................3
HIST 137  African American Studies............................3
HIST 151  World History I: Traditional World..................3
HIST 152  World History II: Modern World......................3
HIST 160  Modern Russian History..............................3
HIST 162  Modern Latin America................................3
HUM  137  Introduction to Russian Culture.....................3
HUM  145  Introduction to World Humanities I..................3
HUM  146  Introduction to World Humanities II.................3
INTR 145  Introduction to the Deaf Community*.................3
          Prerequisite: Acceptance to interpreter training
          program and
          Prerequisite or corequisite: ANTH 125 and SPD 120 for
          Interpreter Training Program
          Corequisites for Interpreter Training Prog: INTR 122
          and INTR 126 and INTR 130 and INTR 147
          all with a grade of "C" or higher
          Note: Prerequisite or corequisite of INTR 120 or
          ASL 120 or FL 180
          required for students in the American Sign Language
          Studies Certificate
MUS  126  Introduction to World Music.........................3
POLS 122  Political Science...................................3
POLS 132  Introduction to Comparative Government..............3
POLS 135  International Relations.............................3
POLS 200  Model United Nations................................3
RDG  127  College Reading Skills..............................3
          Prerequisite: RDG 126
          or appropriate assessment score
REL  120  Exploring World Religions...........................3
REL  125  Religions of the East...............................3
REL  126  Religions of the West...............................3
SOC  125  Social Problems.....................................3
SOC  165  Chinese Society: Past and Present...................3
SOC  200  Intercultural Applications*.........................3
          Prerequisite or corequisite: SPD 180
SPD  128  Business and Professional Speech....................3
SPD  180  Intercultural Communication.........................3
*Prerequisite/Corequisite required
```

## Modes of Inquiry - 6 hours

```
Scientific - 3 hours
ANTH 126  Physical Anthropology...............................3
ASTR 120  Fundamentals of Astronomy...........................3
ASTR 122  Astronomy...........................................4
BIOL 122  Principles of Biology...............................3
BIOL 123  Principles of Biology Lab*..........................1
          Prerequisite or corequisite: BIOL 122 or
          consent of the assistant dean
BIOL 124  Oceanus: Essentials of Oceanography.................3
BIOL 125  General Botany......................................5
BIOL 127  General Zoology.....................................5
BIOL 130  Environmental Science...............................3
BIOL 131  Environmental Science Lab*..........................1
          Prerequisite or corequisite: BIOL 130
BIOL 140  Human Anatomy.......................................4
BIOL 144  Human Anatomy and Physiology........................5
BIOL 150  Biology of Organisms*...............................5
          Prerequisite: BIOL 135 or
          consent of the assistant dean
BIOL 225  Human Physiology*...................................4
          Prerequisites: CHEM 122 and either BIOL 140
          or BIOL 144
BIOL 230  Microbiology*.......................................3
          Prerequisite: CHEM 122 or
          one year of high school chemistry
BIOL 231  Microbiology Lab*...................................2
          BIOL 231 students must be currently enrolled in
          BIOL 230 or have successfully completed BIOL 230
          within the last three years.
CHEM 120  Chemistry in Society................................4
```

```
CHEM 122  Principles of Chemistry.............................5
CHEM 124  General Chemistry I Lecture*........................4
          Prerequisite or corequisite: MATH 171 or assessment
          test and Corequisite: CHEM 125
CHEM 125  General Chemistry I Lab*............................1
          Prerequisite or Corequisite: CHEM 124
          Students who withdraw from GENERAL CHEMISTRY I
          LECTURE must also withdraw from the corresponding
          laboratory GENERAL CHEMSITRY I LABORATORY
          Students may not withdraw from the laboratory course
          GENERAL CHEMISTRY I LABORATORY without withdrawing
          from CHEMISTRY I LECTURE.
CHEM 131  General Chemistry II Lecture*.......................4
          Prerequisites: CHEM 124 and CHEM 125 and
          Corequisite: CHEM 132
CHEM 132  General Chemistry II Lab*...........................1
          Prerequisites: CHEM 124 and CHEM 125 and
          Corequisite: CHEM 131  Students who
          withdraw from GENERAL CHEMISTRY II LECTURE
          must also withdraw from the corresponding
          laboratory GENERAL CHEMISTRY II LABORATORY.
          Students may not withdraw from the laboratory
          course GENERAL CHEMISTRY II LABORATORY without
          withdrawing from CHEMISTRY II LECTURE.
CHEM 140  Principles of Organic & Biological Chemistry*.......5
          Prerequisites: BIOL 135
          and CHEM 122 or permission of the assistant dean
GEOS 130  General Geology.....................................5
GEOS 140  Physical Geography..................................3
GEOS 141  Physical Geography Lab*.............................2
          Prerequisite or corequisite: GEOS 140 or the
          equivalent
PHIL 124  Logic and Critical Thinking.........................3
PHYS 130  General Physics I*..................................5
          Prerequisite: MATH 171 or assessment scores
PHYS 131  General Physics II*.................................5
          Prerequisite: PHYS 130
PHYS 220  Engineering Physics I*..............................5
          Prerequisite or corequisite: MATH 242
PHYS 221  Engineering Physics II*.............................5
          Prerequisites: PHYS 220 and MATH 242
PSCI 120  Physical Science....................................4
PSYC 130  Introduction to Psychology..........................3
*Prerequisite/Corequisite required
Social - 3 hours
ECON 132  Survey of Economics.................................3
ECON 230  Economics I.........................................3
ECON 231  Economics II........................................3
GEOS 145  World Regional Geography............................3
POLS 126  State and Local Government..........................3
POLS 132  Introduction to Comparative Government..............3
PSYC 121  Applied Psychology..................................3
PSYC 130  Introduction to Psychology..........................3
SOC  122  Introduction to Sociology...........................3
SOC  125  Social Problems.....................................3
SOC  131  Marriage and the Family.............................3
```

## Mathematics - 3 hours

```
MATH 120  Business Math and higher*...........................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
PHYS 220  Engineering Physics I*..............................5
          Prerequisite or corequisite: MATH 242
PHYS 221  Engineering Physics II*.............................5
          Prerequisites: PHYS 220 and MATH 242
*Prerequisite/Corequisite required
```

## Health, Physical Education, Recreation - 2 hours

```
HPER      Any Activity Course.................................1
EMS  121  CPR I - Basic Life Support for Healthcare Provider..1
HMEC 151  Nutrition and Meal Planning.........................3
HPER 192  Wellness for Life...................................1
HPER 200  First Aid and CPR...................................2
HPER 202  Personal Community Health...........................3
HPER 205  Individual Lifetime Sports..........................2
HPER 240  Lifetime Fitness I..................................1
HPER 241  Lifetime Fitness II*................................1
          Prerequisite: HPER 240
HPER 255  Introduction to Physical Education..................3
*Prerequisite/Corequisite required
```

# Transfer Guides

**University Transfer Program for Undecided Students**

If you are planning to transfer but have not decided upon a major or chosen a four-year school, you should select courses from the general education

requirement areas and under the associate of arts degree requirements.

In general, a total of 124 to 128 hours are required for most four-year degrees. If you are still undecided about a major in your second year, you should work closely with a counselor in making a decision that will enable you to transfer without loss of time or credit.

**University Transfer Programs for Specific Majors**

Copies of university transfer programs are available in the Success Center on campus or on the transfer information Web site.

**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.

# Degree and Certificate Program List

Programs, degrees and certificates are listed in alphabetical order (by 1st letter of title). Additionally, degrees and certificates are included under their program area.

**Academic Bridges to Learning Effectiveness (ABLE)**

> ABLE

**Accounting**

> Accounting, A.A.S.

> Bookkeeping Entrepreneurship Certificate

> Tax Preparation Entrepreneurship Certificate

**Administration of Justice/Law Enforcement**

> Administration of Justice, A.A.

> Police Academy Certificate

**Agriculture (see Horticulture)**

**Animation**

> Animation, A.A.S.

**Area Vocational Schools and Technical Colleges Completion**

> Kansas AVS/TC Articulated, A.A.S.

**Administrative Assistant (see Business Office Technology)**

**Admin Asst-Legal Emphasis (see Business Office Technology)**

**Admin Asst-Medical Emphasis (see Business Office Technology)**

**Admin Support Specialist Certificate (see Bus Office Tech)**

**American Sign Language Studies Cert (see Interpreter Train)**

**Automotive Technology**

> Automotive Technology, A.A.S.

> Automotive Technology Certificate

> Automotive Technology Entrepreneurship Certificate

**Bed and Breakfast Entrepreneur Cert (see Hospitality Mgmt)**

**Biotechnology**

> Biotechnology, A.A.S.

> Biotechnology, A.S.

> Biotechnology Certificate

**Bookkeeping Entrepreneurship Cert (see Accounting)**

**Business Administration**

Business Administration, A.A.S.

**Business Logistics Management**

Business-Logistics Mgt, A.A.S.

**Business Office Technology**

Administrative Assistant, A.A.S.

Administrative Assistant with Legal Emphasis, A.A.S.

Administrative Assistant with Medical Emphasis, A.A.S.

Administrative Support Specialist Certificate

Business Administrative Assistant Entrep Certificate

Medical Administrative Assistant Entrepreneurship Cert

Medical Office Assistant Certificate

Medical Transcription Certificate

Office Careers Certificate

**Catering Entrepreneurship Certificate (see Hospitality Mgmt)**

**Certified Medication Aide (see Health Occupations)**

**Cert Medication Aide Update (see Health Occupations)**

**Certified Nurse Aide (see Health Occupations)**

**Certified Nurse Aide Refresher (see Health Occupations)**

**Chef Apprenticeship (see Hospitality Management)**

**Civil Engineering Technology**

Civil Engineering Technology, A.A.S.

Construction Management Certificate

Engineered Plumbing Systems Certificate

**Commercial Wiring (see Electrical Technology)**

**Communication Design (see Graphic Design)**

**Computer-aided Drafting-Design Tech (see Drafting Tech)**

**Computer-aided Drafting Certificate (see Drafting Tech)**

**Computer Information Systems**

Computer Information Systems, A.A.S.

Database Certificate

Desktop Publishing Applications Specialist Certificate

Microcomputer Programmer Analyst Certificate

Personal Computer Application Specialist

Web Applications Certificate

Web Developer Advanced Certificate

**Construction Management (see Civil Engineering Technology)**

**Cosmetology**

Advanced Esthetics Certificate

Cosmetology, A.A.S.

Cosmetology Certificate

Cosmetology Instructor Training Certificate

Esthetics Certificate

Nail Technology Certificate

**Database Certificate (see Computer Information Systems)**

**Data Processing (see Computer Information Systems)**

**Dental Assisting (see Health Occupations)**

**Dental Hygiene**

Dental Hygiene, A.A.S.

**Desktop Publishing Certif (see Computer Information Systems)**

**Drafting Technology**

Computer-aided Drafting and Design Technology, A.A.S.

Computer-aided Drafting Certificate

**Early Childhood Education**

Early Childhood Education, A.S.

Early Childhood Education Certificate

**Electrical Technology**

Commercial Wiring Certificate

Electrical Technology, A.A.S.

Electrical Technology Certificate

Industrial Electrical Wiring Certificate

Residential Wiring Certificate

## Electronics Technology

Electronics Technology, A.A.S.

Industrial Controls Certificate

Microcomputer Technical Support Certificate

Smart House Technology Integrator Certificate

## Emergency Medical Science (EMS)

Emergency Medical Science, A.A.S.

Mobile Intensive Care Technician Certificate

Emergency Medical Technician Certificate

## Engineered Plumbing Systems Certif (see Civil Engineer Tech)

## Entrepreneurship

Entrepreneurship, A.A.S.

Entrepreneurship Certificate

Business Plan Certificate

Automotive Technology Entrepreneurship Cert(see Automotive)

Bed and Breakfast Entrepreneurship Certificate (see Hospitality Mgmt)

Bookkeeping Entrepreneurship Cert (see Accounting)

Business Admin Asst Entrepren Cert (see Busin Office Tech)

Catering Entrepreneurship Certificate (see Hospitality Mgmt)

Fashion Alteration Entrepreneur Cert (see Fash Merch-Design)

Fashion Design Entrepreneurship Cert (see Fash Merch-Design)

Fashion Merchandising Entrepren Cert (see Fash Merch-Design)

Floral Design Entrepreneurship Certificate (see Horticulture)

Game Entrepreneurship Advanced Certificate (see Game)

Health Care Interpreting Entrepreneurship Certificate (see Interpreter Training)

Horticulture Entrepreneurship Certificate (see Horticulture)

Hospitality Entrepreneurship Cert (see Hospitality Manage)

Interior Design and Merch Entrepren (see Interior Design)

Landscape Technician Entrepreneurship (see Horticulture)

Legal Nurse Consultant Entrepreneur. Cert.(see Legal Nurse)

Marketing Specialist Entrepren Cert (see Marketing)

Medical Admin Asst Entrepren Cert (see Business Office Tech)

Multimedia Design Entrepreneur. Cert.(see Interactive Media)

Pastry/Baking Entrepreneur Cert.(see Hospitality Management)

Sustainable Agriculture Entrepreneur Cert (see Horticulture)

Tax Preparation Entrepreneurship Cert (see Accounting)

Visual Merchandising Entre. Cert.(see Fashion Merchandising)

Web Design Entrepreneurship Cert. (see Interactive Media)

## Esthetics Certificate (see Cosmetology)

## Esthetics Advanced Training (see Cosmetology)

## Fashion Merchandising and Design

Fashion Merchandising, A.A.S.

Fashion Alteration Entrepreneurship Certificate

Fashion Design Entrepreneurship Certificate

Fashion Design, A.A.S.

Fashion Merchandising Entrep Certificate

Visual Merchandising Certificate

Visual Merchandising Entrepreneurship Certificate

## Fire Services Administration

Fire Services Administration, A.A.

## Floral Design Entrepreneurship (see Horticulture)

## Floriculture Certificate (see Horticulture)

## Food and Beverage Management (see Hospitality Management)

## Game

Game Animation & Music Advanced Certificate

Game Business Advanced Certificate

Game Development, A.A.S.

Game Entrepreneurship Advanced Certificate

Game Narrative Advanced Certificate

Game Programming Advanced Certificate

**Geographic Information Systems**

Geographic Info Systems Cert

**Graphic Design**

Graphic Design, A.A.S.

**Health Care Interpreting (see Interpreter Training)**

**Health Information Technology**

Health Information Tech, A.A.S

**Health Occupations**

Certified Medication Aide Certificate

Certified Medication Aide Update Certificate

Certified Nurse Aide Certificate

Certified Nurse Aide Refresher Certificate

Dental Assisting, A.A.S.

Dental Assisting Certificate

Dental Hygiene (see listing for Dental Hygiene)

Emergency Medical Science (see listing Emerg Medical Sci)

Home Health Aide Certificate

IV Therapy for LPN's Certificate

Nursing (see listing for Nursing)

Occupatnl Therapy Asst, A.A.S.

Physical Therapist Asst, A.A.S

Polysomnography/Sleep Technology (see Polysomnography)

Radiologic Technology, A.A.S.

Rehabilitative Aide Certificate

Respiratory Care (see listing for Respiratory Care)

Surgical Technology Cert

**Health Care Interpreting (see Interpreter Training)**

**Heating, Ventilation and Air Conditioning Technology**

General Basic HVAC Certificate

General Basic HVAC Installation and Duct Fabrication Cert.

General Basic HVAC Maintenance Certificate

General Basic HVAC Sales, Design and Estimating Cert.

HVAC Commercial Service Technician, A.A.S.

HVAC Commercial Service Technician Certificate

HVAC Installation Technician Certificate

HVAC Residential Service Technician, A.A.S.

HVAC Residential Service Technician Certificate

**Home Health Aide Certificate (see Health Occupations)**

**Horticulture**

Floral Design Entrepreneurship Certificate

Floriculture Certificate

Horticulture, A.A.S.

Horticulture Certificate

Horticulture Entrepreneurship Certificate

Landscape Technician Certificate

Landscape Technician Entrepreneurship Certificate

Sustainable Agriculture Entrepreneurship Certificate

**Hospitality Management**

Bed & Breakfast Entrepreneurship Certificate

Catering Entrepreneurship Certificate

Chef Apprenticeship, A.A.S.

Food and Beverage Management, A.A.S.

Food and Beverage Management Certificate

Hospitality Entrepreneurship Certificate

Hotel & Lodging Management, A.A.S.

Pastry/Baking Certificate

Pastry/Baking Entrepreneurship Certificate

Sustainable Agriculture Entrepreneur Cert (see Horticulture)

**Industrial Controls Certificate (see Electronics Technology)**

**Industrial Electrical Wiring Cert(see Electrical Technology)**

**Industrial Maintenance**

Industrial Maintenance, A.A.S.

Industrial Maintenance Certificate

**Information Systems (see Computer Information Systems)**

**Information Technology**

Information Technology, A.A.S.

Networking Administration: UNIX Certificate

Networking Administration: Windows Certificate

Network Connectivity Certificate

**Interactive Media**

Interactive Media, A.A.S.

Multimedia Design Certificate

Multimedia Design Entrepreneurship Certificate

Web Design Certificate

Web Design Entrepreneurship Certificate

**Interior Design**

Floral Design Entrepreneurship Certificate (see Horticulture)

Interior Design, A.A.S.

Interior Design Advanced Certificate

Interior Design Retail Sales/Manufacturing Rep Certificate

Interior Design & Merchandising Entrep Certificate

Interior Entrepreneurship, A.A.S.

Interior Merchandising, A.A.S.

Interior Products Sales Representative Certificate

**Interpreter Training**

Interpreter Training, A.A.S.

American Sign Language Studies Certificate

Health Care Interpreting Certificate

Health Care Interpreting Entrepreneurship Certificate

**IV Therapy for LPN Certificate (see Health Occupations)**

**Land Surveying**

Land Surveying, A.A.S.

Land Surveying Certificate

**Landscape Technician (see Horticulture)**

**Legal Studies**

Paralegal, A.A.

Legal Nurse Consultant Certificate

Legal Nurse Consultant Entrepreneurship Certificate

Paralegal Certificate

**Locomotive Electrical and Mechanical Cert(see Railroad Oper)**

**Introduction to Manufacturing Cert (see Metal Fab/Welding)**

**Marketing and Management**

Marketing and Management, A.A.S.

Marketing Specialist Entrepreneurship Certificate

Retail Sales Representative Certificate

Sales and Customer Relations Certificate

Supervision Management Certificate

Teleservice Representative Certificate

Teletrac Certificate

**Medical Office Assistant Certif (see Business Office Tech)**

**Medical Transcription Certificate (see Business Office Tech)**

**Metal Fabrication/Welding**

Metal Fabrication Technology, A.A.S.

Metal Fabrication Technology Certificate

Combination Welder I Certificate

Combination Welder II Certificate

Combination Welder/Machinist I Certificate

General Basic Welding Certificate

Introduction to Manufacturing Certificate

Welder Fabricator Advanced Certificate

**Microcomputer Programmer Analyst Cert(see Computer Info Sys)**

**Microcomputer Technical Support Certif (see Electronics Tech**

**Mobile Intensive Care Technician Certificate (see EMS)**

**Multimedia Design Certificate (see Interactive Media)**

**Multimedia Design Entrepreneur. Cert.(see Interactive Media)**

**Nail Technology Certificate (see Cosmetology)**

**Network Administration:UNIX Certif (see Information Tech)**

**Network Administration:Windows Certif (see Information Tech)**

**Network Connectivity Certificate (see Information Tech)**

**Nursing**

Nursing - Registered Nurse, A.A.S.

PN to RN Transition, A.A.S

Practical Nursing Day Certificate

Practical Nursing Evening Weekend Certificate

**Occupational Therapy Assistant (see Health Occupations)**

**Office Careers Certificate (see Business Office Technology)**

**Office Systems Technology (see Business Office Technology)**

**Paralegal (see Legal Studies)**

**Pastry/Baking Certificate (see Hospitality Management)**

**Personal Computer Applications Cert (see Computer Infor Sys)**

**Physical Therapy Assistant (see Health Occupations)**

**PN to RN Transition (see Nursing)**

**Polysomnography/Sleep Technology**

Polysomnography/Sleep Technology, A.A.S.

**Practical Nursing (see Nursing)**

**Professional Paraeducator**

Professional Paraeducator Program, A.A.

**Radiologic Technology (see Health Occupations)**

**Railroad Electronics**

Railroad Electronics, A.A.S.

Railroad Electronics Certificate

**Railroad Industrial Technology**

Railroad Carman Welding Certificate

Railroad Machinist Welding Certificate

Railroad Structural Welding Certificate

Railroad Track Welding Certificate

**Railroad Operations**

Railroad Operations - Conductor Option, A.A.S.

Locomotive Electrical Certificate

Locomotive Mechanical Certificate

Railroad Freight Car Certificate

Railroad Conductor Certificate

Railroad Operations - General Option, A.A.S.

Railroad Operations - Mechanical Option, A.A.S.

Railroad Operations - Welding Option, A.A.S.

**Rehabilitative Aide Cert (see Health Occupations)**

**Residential Wiring Certificate (see Electrical Technology)**

**Respiratory Care**

Respiratory Care, A.A.S.

**Retail Sales Representative Cert (see Marketing and Manage)**

**Sales and Customer Service Cert (see Marketing and Manage)**

**Science Technology (see Biotechnology)**

**Sign Language Communication Cert (see Interpreter Training)**

**Smart House Technology Integrator (see Electronics)**

**Supervision Management Cert (see Marketing and Management)**

**Surgical Technology (see Health Occupations)**

**Tax Preparation Entrepreneurship Cert (see Accounting)**

**Teleservice Technology (see Marketing and Management)**

**Teletrac Certificate (see Marketing and Management)**

**Veterinary Technology**

> Veterinary Technology, A.A.S.

**Visual Merchandising Cert (see Fashion Merch and Design)**

**Web Application Certificate (see Interactive Media)**

**Web Design Certificate (see Interactive Media)**

**Web Developer Advanced Certificate (see Computer Info Sys)**

**Welding (see Metal Fabrication or Railroad)**

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# ABLE

**Academic Bridges to Learning Effectiveness (ABLE)**

The Academic Bridges to Learning Effectiveness (ABLE) program is granted by Metropolitan Community College, but coordinated at JCCC.

This nationally recognized program teaches students with neurological disabilities (learning disabilities, traumatic brain injuries, autism spectrum disorders, ADHD, etc.) how to become independent learners.

Students take courses with supplemental workshops as well as attend weekly support group meetings to build skills and confidence for college and vocational programs.

An educational specialist works with each student to design an individualized course plan. For more information, call Longview Community College ABLE program, 816-672-2053, or Penn Valley Community College ABLE program, 816-759-4089.

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

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# Accounting, A.A.S.

Accounting is a crucial part of every business operation and the language that businesses speak. The associate of applied science degree program focuses on practical skills often required for entry-level paraprofessional positions. The internship course gives the graduate on-the-job experience working in an approved business. Two-year graduates may find positions as accounting assistants, accounting clerks and general bookkeepers.

The accounting career program (see: www.jccc.net/home/depts/1202) is accredited by the Association of Collegiate Business Schools and Programs (ACBSP). For students wishing to transfer to a four-year college accounting or business program, this accreditation makes the transfer a smoother process. For more information, please contact the career facilitator (skleiner@jccc.edu) or a JCCC counselor.

(Major Code 2400; CIP Code 52.0302)

Accounting Careers

## Associate of Applied Science Degree

### First Semester

```
ENGL 121  Composition I*.......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Social Science and/or Economics Electives...........3
ACCT 121  Accounting I.........................................3
MATH 120  Business Mathematics*...............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
          or
MATH 171  College Algebra or higher*..........................3
          Prerequisite: MATH 116 with a grade of "C" or higher
          or MATH 134 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Note: Not available to students with credit in
          MATH 173
BOT  101  Computerized Keyboarding............................1
          Business Electives..................................3
          Total Semester Credit Hours........................16
```

### Second Semester

```
ACCT 122  Accounting II*.......................................3
          Prerequisite: ACCT 121
BUS  150  Business Communications*............................3
          Prerequisite: ENGL 121
BUS  261  Business Law I......................................3
          Business Electives..................................6
BOT  115  Electronic Calculators..............................1
          Total Semester Credit Hours........................16
```

### Third Semester

```
ACCT 222  Managerial Accounting*^.............................3
          Prerequisite: ACCT 122
          or
ACCT 231  Intermediate Accounting I*^.........................3
          Prerequisite: ACCT 122
ACCT 278  Accounting Internship*..............................1
          Prerequisites: ACCT 121 plus 12 additional ACCT
          hours beyond ACCT 121 and Assistant Dean's Approval
ACCT 140  Computerized Accounting Problems*...................3
          Prerequisite or corequisite: ACCT 122
BUS  225  Human Relations.....................................3
PHIL 138  Business Ethics.....................................1
HIST 141  U.S. History Since 1877.............................3
          Business Electives..................................2
          Total Semester Credit Hours........................16
```

### Fourth Semester

```
ACCT 215  Accounting for Nonprofit Organizations*^...........3
          Prerequisite: ACCT 121
          or
ACCT 221  Cost Accounting*^...................................3
          Prerequisite: ACCT 122
          or
ACCT 232  Intermediate Accounting II*^........................3
          Prerequisite: ACCT 122
ACCT 131  Federal Income Taxes I..............................3
ACCT 135  Computerized Accounting Applications*...............3
          Prerequisite: ACCT 121 or ACCT 111
ACCT 285  Accounting Capstone*................................3
          Prerequisites: ACCT 121 and ACCT 122
          plus 15 hours of accounting courses
          and Assistant Dean's Approval
          Business Electives..................................3
          Health and/or Physical Education Elective...........1
          Total Semester Credit Hours........................16
          TOTAL PROGRAM CREDIT HOURS.........................64
Note: Business electives are any courses with the BUS,
ENTR or ECON prefix.
```

```
*Prerequisite/Corequisite required
Note: ^The student is required to complete two of the five
following accounting courses: ACCT 215, 221, 222,
231 or 232.
```

# Bookkeeping Entrepreneurship Certificate

The bookkeeping entrepreneurship certificate prepares students to open their own service business providing bookkeeping assistance to small businesses. This certificate is designed to provide the student with basic accounting skills and the basic skills in small business development and management.

(Major Code 4050; CIP Code 52.0302)

Accounting Careers

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
ENGL 121  Composition I*....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
ACCT 121  Accounting I.......................................3
ENTR 120  Introduction to Entrepreneurship...................2
ENTR 180  Opportunity Analysis...............................2
          Total Semester Credit Hours.......................10
```

### Second Semester

```
BUS  150  Business Communications*...........................3
          Prerequisite: ENGL 121
ACCT 135  Computerized Accounting Applications*..............3
          Prerequisite: ACCT 121 or ACCT 111
ACCT 122  Accounting II*.....................................3
          Prerequisite: ACCT 121
ACCT 140  Computerized Accounting Problems*..................3
          Prerequisite or corequisite: ACCT 122
          Total Semester Credit Hours.......................12
```

### Third Semester

```
ENTR 142  Fast Trac Business Plan............................3
ACCT 222  Managerial Accounting*.............................3
          Prerequisite: ACCT 122
          or
ACCT 215  Accounting for Nonprofit Organizations*............3
          Prerequisite: ACCT 121
          or
ACCT 231  Intermediate Accounting I*.........................3
          Prerequisite: ACCT 122
ACCT 285  Accounting Capstone*...............................3
          Prerequisites: ACCT 121 and ACCT 122
          plus 15 hours of accounting courses
          and Assistant Dean's Approval
          Total Semester Credit Hours........................9
          TOTAL PROGRAM CREDIT HOURS........................31
*Prerequisite/Corequisite required
```

```
Students may be interested in taking additional courses, as
noted below, to complement their certificate study.  These
courses are NOT part of the certificate requirements.
```

```
ENTR 160  Legal Issues for Small Business....................2
ENTR 195  Franchising*.......................................3
          Prerequisite: BUS 230
ENTR 220  Entrepreneurial Marketing*.........................2
          Prerequisite: BUS 230
```

# Tax Preparation Entrepreneurship Certificate

The tax preparation entrepreneurship certificate prepares students to open their own service business providing tax preparation services for simple individual tax returns. This certificate is designed to provide the student with basic accounting skills and small business development and management. Further

academic coursework and/or certifications would be necessary to prepare more advanced tax forms.

(Major Code 4310; CIP Code 52.1601)

Accounting Careers

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
BUS  230  Marketing..........................................3
ACCT 121  Accounting I.......................................3
ACCT 131  Federal Income Taxes I.............................3
ENTR 120  Introduction to Entrepreneurship...................2
ENTR 180  Opportunity Analysis...............................2
ENTR 160  Legal Issues for Small Business....................2
          Total Semester Credit Hours.......................15
```

### Second Semester

```
ACCT 122  Accounting II*.....................................3
          Prerequisite: ACCT 121
ACCT 135  Computerized Accounting Applications*..............3
          Prerequisite: ACCT 121 or ACCT 111
ACCT 140  Computerized Accounting Problems*..................3
          Prerequisite or corequisite: ACCT 122
ENTR 142  Fast Trac Business Plan............................3
ENTR 220  Entrepreneurial Marketing*.........................2
          Prerequisite: BUS 230
          Total Semester Credit Hours.......................14
```

### Third Semester

```
ACCT 285  Accounting Capstone*...............................3
          Prerequisites: ACCT 121 and ACCT 122
          plus 15 hours of accounting courses
          and Assistant Dean's Approval
ACCT 278  Accounting Internship*.............................1
          Prerequisites: ACCT 121 plus 12 additional ACCT
          hours beyond ACCT 121 and Assistant Dean's Approval
          Total Semester Credit Hours........................4
          TOTAL PROGRAM CREDIT HOURS........................33
*Prerequisite/Corequisite required
```

```
Students may be interested in taking an additional course,
as noted below, to complement their certificate study.  This
course is NOT part of the certificate requirements.
```

```
ENTR 195  Franchising*.......................................3
          Prerequisite: BUS 230
```

# Administration of Justice, A.A.

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 as or slightly faster than average for all occupations in the field.

JCCC's administration of justice/law enforcement program provides you the opportunity to study various aspects of the criminal justice fields. 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.

(Major Code 2120; CIP Code 43.0107)

Administration of Justice

## Associate of Arts Degree

```
Students graduating with an Associate of Arts degree or an
Associate of Science degree must complete an approved
```

cultural diversity course. Some of these courses are able to meet both a diversity requirement and a general education requirement.

### First Semester

```
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Social Science Course**..........................3
ADMJ 121  Introduction to Administration of Justice+.........3
ADMJ 124  Criminal Justice and Corrections..................3
ADMJ 127  Criminology.......................................3
          Total Semester Credit Hours......................15
```

### Second Semester

```
SPD  120  Interpersonal Communication........................3
ENGL 122  Composition II*....................................3
          Prerequisite: ENGL 121
PHIL 143  Ethics.............................................3
ADMJ 140  Constitutional Case Law+...........................3
ADMJ 230  Criminal Behavior*.................................3
          Prerequisite:  PSYC 130
          ADMJ Program Elective.............................3
          Total Semester Credit Hours......................18
```

### Third Semester

```
FL   130  Elementary Spanish I...............................5
ADMJ 220  Writing for Criminal Justice*......................1
          Prerequisites: ENGL 121 and ENGL 122
          ADMJ Program Elective.............................3
          Science and/or Math Elective***...................6
          Total Semester Credit Hours......................15
```

### Fourth Semester

```
          Humanities Course..................................3
          (cannot be a philosophy course)
          Social Science Course**............................3
ADMJ 280  Criminal Justice and the Public*...................3
          Prerequisites: ADMJ 121 and ADMJ 124
          and ADMJ 127 and ADMJ 220
          and at least five (5) additional credit hours of
          Administration of Justice course work
          Science and/or Math Elective***...................3
          Health and/or Physical Education Elective.........1
          ADMJ  Program Elective............................3
          Total Semester Credit Hours......................16
          TOTAL PROGRAM CREDIT HOURS.......................64
*Prerequisite/Corequisite required
```

### ADMJ Program Electives

```
9 hours - any three courses
ADMJ 130  Crime Prevention...................................3
ADMJ 133  Juvenile Delinquency...............................3
ADMJ 141  Criminal Law*+.....................................3
          Prerequisite:  ADMJ 121 or LAW 121
ADMJ 143  Crime Analysis.....................................3
ADMJ 145  Fundamentals Private Security......................3
ADMJ 146  Retail Security....................................3
ADMJ 148  Family Violence/Sexual Abuse.......................3
ADMJ 154  Fundamentals of Criminal Investigation*+..........3
          Prerequisite:  ADMJ 124
ADMJ 170  Introduction to Substance Use and Abuse............3
ADMJ 180  Correctional Casework..............................3
ADMJ 201  Police Interrogation...............................3
          Prerequisite: Suggested course: ENGL 121
ADMJ 221  Introduction to Forensics..........................3
ADMJ 224  Introduction to Terrorism..........................3
ADMJ 235  Community Based Corrections........................3
ADMJ 281  Readings in Police Science*........................3
          Prerequisite: 15 credit hours in ADMJ courses
ADMJ 285  Administration of Justice Internship*..............3
          Prerequisites:  Fifteen credit hours in ADMJ courses
          or program facilitator approval and a grade point
          average of 2.0 or higher
```

```
** You must take two courses from the following list, but
not more than one course from each group may count
toward the required 6 hours.
```

### Group 1:

```
POLS 124  American National Government.......................3
POLS 126  State and Local Government.........................3
```

### Group 2:

```
PSYC 130  Introduction to Psychology.........................3
Note: This is a prerequisite for ADMJ 230.
```

### Group 3:

```
SOC  122  Introduction to Sociology^.........................3
SOC  125  Social Problems^...................................3
^Meets Cultural Diversity requirement
```

```
NOTE:*** The 9 hours required must include at least one
course from a lab science and one from mathematics.
```

```
NOTE: + 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.
```

# Police Academy Certificate

This course consists of 60 clock hours of law enforcement training provided in addition to the 540 hours required by the Kansas Minimum Standards Training Act for recruits attending the Police Academy. While the required 600-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.

Prerequisite: Selective Admissions - open only to currently employed full-time police officers attending the Police Academy under sponsorship of a law enforcement agency

(Major Code 4880; CIP Code 43.0103)

## Certificate of Completion

### Required Course

```
ADMJ 265  Advanced Police Training*.........................12
          Prerequisite: Selective Admissions - open only to
          currently employed full-time
          police officers attending the Police Academy under
          sponsorship of a law enforcement agency
          TOTAL PROGRAM CREDIT HOURS.......................12
*Prerequisite/Corequisite required
```

# Animation, A.A.S.

The Associate of Applied Science Degree Animation program provides instruction for creating animation, 3D modeling and special effects for applications such as animated shorts and movies and games, and rendering 3D environments. Fundamental interactive concepts, the development of assets and screen design will be covered. Depending on individual choices and talents, students who complete the Animation program should be prepared for employment as an animator, a game art creator, a 3D visual artist, and/or a special effects artist.

(Major Code 2630; CIP Code 10.0304)

## Associate of Applied Science Degree

### Prerequisites for Required Courses

```
Note: Prior to the beginning of the program, the student
must take the following prerequisites, or have taken the
equivalent transfer courses, or have passed the waiver test
(where applicable), or have obtained a waiver from the
program administrator.
```

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

```
CDTP 145  Desktop Illustration I: Illustrator.................1
CWEB 105  Introduction to Web Pages: Dreamweaver*..............1
          Prerequisite: CWEB 101
CWEB 130  Introduction to Flash*..............................1
          Prerequisite: CPCA 161 or CWEB 105 or CWEB 106
ANI  120  Conceptual Art for Animation........................1
          Prerequisite: CDTP 135
```

### First Semester

```
CIM  130  Interactive Media Concepts..........................2
CIM  140  Interactive Media Assets*...........................4
          Prerequisites: CDTP 135 and CDTP 145 and CWEB 105
          and CWEB 130
          Prerequisite or corequisite: CIM 130
CIM  133  Screen Design*......................................4
          Prerequisite: CDTP 135
ANI  145  Introduction to 3D Animation*.......................3
          Prerequisites: CDTP 135 and ANI 120
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Total Semester Credit Hours........................16
```

### Second Semester

```
ANI  245  Character Animation*................................3
          Prerequisite: ANI 145
ENGL 140  Writing for Interactive Media*......................3
          Prerequisite: ENGL 121
          Animation Elective..................................3
          Elective............................................3
          Humanities Electives................................3
          Science and/or Math Elective*.......................3
          Total Semester Credit Hours........................18
```

### Third Semester

```
ANI  255  Advanced Animation and Effects*.....................3
          Prerequisite: ANI 245
ENGL 150  Digital Narratives*.................................3
          Prerequisite: ENGL 121
MUS  156  MIDI Music Composition..............................3
BUS  141  Principles of Management............................3
          Elective............................................3
          Health and/or Physical Education Elective...........1
          Total Semester Credit Hours........................16
```

### Fourth Semester

```
ANI  260  Animation Capstone*.................................3
          Prerequisite: ANI 255
ANI  273  Career Preparation*.................................4
          Prerequisite or corequisite: ANI 260
          Animation Elective..................................3
          Elective............................................3
          Social Science and/or Economics Elective............3
          Total Semester Credit Hours........................16
          TOTAL PROGRAM CREDIT HOURS.........................66
```

### Animation Electives

```
GAME 101  Computer Game Creation..............................4
GAME 110  Flash Gaming*.......................................4
GAME 200  Game Design.........................................3
CIS  134  Programming Fundamentals............................4
CIS  162  Database Programming*...............................4
          Prerequisite: CIS 134 or the equivalent
CS   180  Introduction to Artificial Intelligence*............3
          Prerequisite: CIS 145 or CIS 148 or
          CIS 150 or CS 200
CIM  135  Digital Imaging and Video*..........................3
          Prerequisite: CDTP 135
          Recommended: PHOT 121
CIM  154  Interactive Authoring I: Director*..................4
          Prerequisite: CIM 130 and
          Prerequisite or corequisite: CIM 140
CIM  156  Interactive Authoring I: Web*.......................4
          Prerequisite: CIM 130
          Prerequisite or corequisite: CIM 140
CIM  200  Interactive Communication Form*.....................3
          Prerequisite or corequisite: CIM 130
CIM  235  Advanced Digital Video*.............................3
          Prerequisite: CIM 135
CIM  254  Interactive Authoring II: Director*.................4
          Prerequisite: CIM 154
ART  130  Drawing I...........................................3
ART  131  Drawing II*.........................................3
          Prerequisite: ART 130
ART  231  Life Drawing I*.....................................3
          Prerequisite: ART 130
ART  232  Life Drawing II*....................................3
          Prerequisite: ART 231
PHOT 121  Fundamentals of Photography.........................3
PHOT 128  Digital Photography.................................3
*Prerequisite/Corequisite required
```

# Kansas AVS/TC Articulated, A.A.S.

This degree is designed to facilitate student transfer of technical education programs under the provisions outlined in the Transfer Agreement and Articulation Guide for Kansas Community Colleges, Area Technical Schools and Colleges for the Associate in Applied Science, dated September 1999.

Beginning Fall 1999, this degree may be earned by a student wishing to transfer from a Kansas Area Vocational Technical School or Kansas Technical College with the following criteria:

- Completion of an eligible technical program of 1080 hours or more from a Kansas Vocational Technical School or Kansas Technical College.

- Official transcript from the technical institution documenting the number of hours and certificate or degree awarded.

- The student must have 15 credits from JCCC in order to receive this degree from JCCC.

- The 1080 documented hours will be transferred to JCCC as 45 transfer credit hours and will be placed on the student's JCCC transcript when the student applies for graduation from JCCC.

- Students must also meet general JCCC admissions, residency and graduation requirements.

- Interested students should contact a JCCC counselor for further information prior to transfer and enrollment.

## Kansas AVS/TC Articulated

```
Associate of Applied Science Degree
Sequence of Courses
TransferredAVS/TC Program...................................45
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Communication Elective..............................3
          Humanities Elective.................................3
          Social Science and/or Economics Electives...........3
          Science and/or Math Elective*.......................3
          Electives...........................................3
          Health and/or Physical Education Elective...........1
TOTAL     PROGRAM CREDIT HOURS...............................64
*Prerequisite/Corequisite required
```

# Automotive Technology, A.A.S.

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.

In the Kansas City area, the anticipated job growth is 32 percent by 2008. About 239 annual openings are expected to occur each year. The average hourly wage in 2002 was $16.22.

(Major Code 2420; CIP Code 47.0604)

Automotive Technology

## Associate of Applied Science Degree

Prior to beginning the automotive technology associate
of applied science degree program, the student must have:

```
AUTO 125  Introduction to Automotive Shop Practices...........3
          or
          Approval of career program facilitator
```

### First Semester

```
AUTO 163  Automotive Steering and Suspension*.................3
          Prerequisite or corequisite: AUTO 125 or
          approval of program facilitator
AUTO 234  Automotive Electrical Systems*......................4
          Prerequisite or corequisite: AUTO 125 or
          approval of program administrator
INDT 125  Industrial Safety...................................3
MATH 120  Business Mathematics*...............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Total Semester Credit Hours........................16
```

### Second Semester

```
AUTO 165  Automotive Engine Repair*...........................4
          Prerequisite or corequisite: AUTO 125 or
          approval of the program administrator
AUTO 167  Automotive Brake Systems*...........................2
          Prerequisite or corequisite: AUTO 125 or
          approval of program administrator
AUTO 168  Automotive Manual Drivetrain and Axles*.............3
          Prerequisite or corequisite: AUTO 125 or
          approval of program administrator
ENGL 123  Technical Writing I*................................3
          Prerequisite: ENGL 121
          Technical/Related Electives........................3
          Health and/or Physical Education Elective..........1
          Total Semester Credit Hours........................16
```

### Third Semester

```
AUTO 250  Automatic Transmissions and Transaxles*.............4
          Prerequisite or corequisite: AUTO 125 or
          approval of program administrator
AUTO 254  Automotive Engine Performance*......................5
          Prerequisites or corequisites: AUTO 165 and
          AUTO 234
MFAB 127  Welding Processes...................................2
          Humanities Elective................................3
          Social Science and/or Economics Elective...........3
          Total Semester Credit Hours........................17
```

### Fourth Semester

```
AUTO 230  Automotive Heating and Air Conditioning*............3
          Prerequisite or corequisite: AUTO 125 or
          approval of program administrator
AUTO 260  Automotive Service Management*......................3
          Prerequisite: AUTO 254
AUTO 261  Automotive Service Techniques*......................3
          Prerequisite: AUTO 254
BUS  140  Principles of Supervision...........................3
          Technical/Related Electives........................3
          Total Semester Credit Hours........................15
          TOTAL PROGRAM CREDIT HOURS.........................64
```

### Technical/Related Electives

```
AUTO 121  Small Engine Service................................3
AUTO 122  Introduction to Automotive Glass....................3
AUTO 123  Motorcycle Maintenance and Repair...................2
AUTO 128  Automotive Parts Specialist.........................2
AUTO 130  Diesel Fundamentals*................................2
          Prerequisite or corequisite: AUTO 125
AUTO 201  ASE Certification Seminar...........................1
AUTO 210  Advanced Engine Repair*.............................3
          Prerequisite: AUTO 165
AUTO 271  Automotive Technology Internship*...................3
          Prerequisite: Program facilitator approval
          required
AUTO 291  Independent Study................................1-7
MATH 133  Technical Mathematics I*............................4
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
PHYS 133  Applied Physics*....................................5
          Prerequisite: MATH 133 or higher
ENTR 142  Fast Trac Business Plan.............................3
CIS  124  Introduction to Computer Concepts and Applications...3
CPCA 105  Introduction to Personal Computers: Windows.........1
ELEC 120  Introduction to Electronics.........................3
RRT  165  Railroad Safety, Quality and Environment............3
```

```
INDT 155  Workplace Skills....................................1
*Prerequisite/Corequisite required
```

# Automotive Technology 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.

(Major Code 4710; CIP Code 47.0604)

Automotive Technology

## Career Certificate

Prior to beginning the automotive technology career
certificate program, the student must have:

```
AUTO 125  Introduction to Automotive Shop Practices...........3
          or
          Approval of career program facilitator
```

### Fall Semester

```
INDT 155  Workplace Skills....................................1
AUTO 163  Automotive Steering and Suspension*.................3
          Prerequisite or corequisite: AUTO 125 or
          approval of program facilitator
AUTO 165  Automotive Engine Repair*...........................4
          Prerequisite or corequisite: AUTO 125 or
          approval of the program administrator
AUTO 234  Automotive Electrical Systems*......................4
          Prerequisite or corequisite: AUTO 125 or
          approval of program administrator
MFAB 127  Welding Processes...................................2
          Total Semester Credit Hours........................14
```

### Spring Semester

```
INDT 125  Industrial Safety...................................3
AUTO 167  Automotive Brake Systems*...........................2
          Prerequisite or corequisite: AUTO 125 or
          approval of program administrator
AUTO 168  Automotive Manual Drivetrain and Axles*.............3
          Prerequisite or corequisite: AUTO 125 or
          approval of program administrator
AUTO 230  Automotive Heating and Air Conditioning*............3
          Prerequisite or corequisite: AUTO 125 or
          approval of program administrator
          Total Semester Credit Hours........................11
```

### Fall Semester

```
AUTO 250  Automatic Transmissions and Transaxles*.............4
          Prerequisite or corequisite: AUTO 125 or
          approval of program administrator
AUTO 254  Automotive Engine Performance*......................5
          Prerequisites or corequisites: AUTO 165 and
          AUTO 234
          Total Semester Credit Hours.........................9
          TOTAL CREDIT HOURS.................................34
*Prerequisite/Corequisite required
```

### Second Option

### Summer Prerequisite Semester

```
AUTO 125  Introduction to Automotive Shop Practices...........3
          or
          Approval of career program facilitator
```

### Summer Semester

```
AUTO 165  Automotive Engine Repair*...........................4
          Prerequisite or corequisite: AUTO 125 or
          approval of the program administrator
          Total Semester Credit Hours.........................4
```

## Fall Semester

```
AUTO 163   Automotive Steering and Suspension*.................3
           Prerequisite or corequisite: AUTO 125 or
           approval of program facilitator
AUTO 234   Automotive Electrical Systems*.....................4
           Prerequisite or corequisite: AUTO 125 or
           approval of program administrator
AUTO 250   Automatic Transmissions and Transaxles*............4
           Prerequisite or corequisite: AUTO 125 or
           approval of program administrator
AUTO 254   Automotive Engine Performance*.....................5
           Prerequisites or corequisites: AUTO 165 and
           AUTO 234
           Total Semester Credit Hours........................16
```

## Spring Semester

```
INDT 125   Industrial Safety..................................3
INDT 155   Workplace Skills...................................1
AUTO 167   Automotive Brake Systems*..........................2
           Prerequisite or corequisite: AUTO 125 or
           approval of program administrator
AUTO 168   Automotive Manual Drivetrain and Axles*............3
           Prerequisite or corequisite: AUTO 125 or
           approval of program administrator
AUTO 230   Automotive Heating and Air Conditioning*...........3
           Prerequisite or corequisite: AUTO 125 or
           approval of program administrator
MFAB 127   Welding Processes..................................2
           Total Semester Credit Hours........................14
           TOTAL PROGRAM CREDIT HOURS.........................34
*Prerequisite/Corequisite required
```

# Automotive Technology Entrepreneurship Certificate

This 31 credit-hour certificate is designed to prepare students to open their own automotive service business. This certificate is designed to provide the student with basic skills in automotive technology and small business development and management.

(Major Code 4180; CIP Code 47.0604)

Automotive Technology

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### Prerequisites for Required Courses

### Fall Prerequisite Semester

```
AUTO 125   Introduction to Automotive Shop Practices...........3
AUTO 165   Automotive Engine Repair*..........................4
           Prerequisite or corequisite: AUTO 125
           or approval of the program administrator
AUTO 234   Automotive Electrical Systems*.....................4
           Prerequisite or corequisite: AUTO 125 or
           approval of program administrator
```

### Spring Semester

```
INDT 125   Industrial Safety..................................3
AUTO 167   Automotive Brake Systems*..........................2
           Prerequisite or corequisite: AUTO 125 or
           approval of program administrator
AUTO 168   Automotive Manual Drivetrain and Axles*............3
           Prerequisite or corequisite: AUTO 125 or
           approval of program administrator
AUTO 230   Automotive Heating and Air Conditioning*...........3
           Prerequisite or corequisite: AUTO 125 or
           approval of program administrator
ENTR 120   Introduction to Entrepreneurship...................2
ENTR 180   Opportunity Analysis...............................2
           Total Semester Credit Hours........................15
```

## Fall Semester

```
AUTO 163   Automotive Steering and Suspension*.................3
           Prerequisite or corequisite: AUTO 125 or
           approval of program facilitator
AUTO 250   Automatic Transmissions and Transaxles*............4
           Prerequisite or corequisite: AUTO 125 or
           approval of program administrator
AUTO 254   Automotive Engine Performance*.....................5
           Prerequisites or corequisites: AUTO 165 and
           AUTO 234
INDT 155   Workplace Skills...................................1
ENTR 142   Fast Trac Business Plan............................3
           Total Semester Credit Hours........................16
           TOTAL PROGRAM CREDIT HOURS.........................31
*Prerequisite/Corequisite required
```

```
Students may be interested in taking additional courses, as
noted below, to complement their certificate study.  These
courses are NOT part of the certificate requirements.

ENTR 131   Financial Management for Small Business*...........2
           Prerequisite: ACCT 111 or ACCT 121
ENTR 160   Legal Issues for Small Business....................2
ENTR 195   Franchising*.......................................3
           Prerequisite: BUS 230
ENTR 220   Entrepreneurial Marketing*.........................2
           Prerequisite: BUS 230
```

# Biotechnology, A.A.S.

The greater Kansas City area 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.

The biotechnology associate of applied science degree program will prepare students to work in biotechnology laboratories associated with universities, medical centers, private research institutions, and a variety of industrial applications. Upon completion of this 66-68 hour degree, students will be able to find entry-level or higher positions in diverse fields of biotechnology. Along with basic and more advanced science courses, students will take specialized courses such as laboratory safety and biotechnology methods.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 2110; CIP Code 41.0101)

Science Department

## Associate of Applied Science Degree

### First Semester

```
ENGL 121   Composition I*.....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
MATH 133   Technical Mathematics I or higher*...............3-5
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
BIOL 135   Principles of Cell and Molecular Biology...........4
CHEM 122   Principles of Chemistry............................5
           Total Semester Credit Hours.....................15-17
```

### Second Semester

```
BIOT 160   Introduction to Biotechnology*.....................2
           Prerequisites: CHEM 122 and
```

```
                prerequisite or corequisite BIOL 135
                or CHEM 124 and CHEM 125 and
                prerequisite or corequisite: BIOL 135
                All prerequisites and corequisites require a grade
                of "C" or higher
BIOT 165   Laboratory Safety*.................................1
                Prerequisite: CHEM 122 and
                prerequisite or corequisite BIOL 135
                or CHEM 124 and CHEM 125 and
                prerequisite or corequisite: BIOL 135
                All prerequisites and corequisites require a grade
                of "C" or higher
BIOL 144   Human Anatomy and Physiology.........................5
PHYS 133   Applied Physics*.....................................5
                Prerequisite: MATH 133 or higher
ENGL 123   Technical Writing I*.................................3
                Prerequisite: ENGL 121
                Physical Education Elective..........................1
                Total Semester Credit Hours.........................17
```

### Third Semester

```
BIOT 230   Microbiology for Biotechnology*......................5
                Prerequisites: BIOL 135 and BIOT 160 and BIOT 165 All
                prerequisites require a grade of "C" or higher
BIOL 145   Human Anatomy and Physiology Dissection*.............1
                Prerequisites: BIOL 144 and
                Assistant Dean's Approval
BIOL 205   General Genetics*....................................4
                Prerequisite: BIOL 122 or BIOL 135
                or the equivalent introductory college-level course.
                All prerequisites require a grade of "C" or higher
CHEM 140   Principles of Organic & Biological Chemistry*........5
                Prerequisites: BIOL 135
                and CHEM 122 or permission of the assistant dean
                Social Science/Economics Elective....................3
                Total Semester Credit Hours.........................18
```

### Fourth Semester

```
BIOT 260   Biotechnology Methods*...............................5
                Prerequisites: Either BIOT 160 or BIOL 160 and
                either BIOT 165 or BIOL 165 and
                Prerequisite or corequisite: BIOL 230. All
                prerequisites and corequisites require a grade of
                "C" or higher
BIOL 155   Introduction to Bioethics*...........................3
                Prerequisite: BIOL 122 or BIOL 135 or equivalent,
                or permission of the assistant dean
CIS  124   Introduction to Computer Concepts and Applications...3
BIOT 265   Biotechnology Internship*............................4
                Prerequisites: BIOT 260 and either BIOT 160 or
                BIOL 160 and either BIOT 165 or BIOL 165
                and assistant dean's approval
                Humanities Elective..................................3
                Total Semester Credit Hours.........................18
                TOTAL PROGRAM CREDIT HOURS.......................68-70
*Prerequisite/Corequisite required
```

# Biotechnology, A.S.

The greater Kansas City area 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.

The biotechnology associate of science degree program will prepare students who wish to pursue a baccalaureate degree in the biological sciences. Upon completion of this 78-hour degree, students will be able to find entry-level or higher positions in the diverse field of biotechnology. Along with basic and more advanced science courses, students will take specialized courses in subjects such as laboratory safety and biotechnology methods.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative

Program Information.

(Major Code 2130; CIP Code 41.0101)

Science Department

# Associate of Science Degree

Students graduating with an Associate of Arts degree or an Associate of Science degree must complete a specific course from the approved cultural diversity list.  This course may meet both a diversity requirement and general education requirement.

### First Semester

```
MATH 181   Statistics*..........................................3
                Prerequisite: MATH 171 or MATH 173 or an
                equivalent course with a grade of "C" or higher
                or appropriate score on the math assessment test
BIOL 135   Principles of Cell and Molecular Biology.............4
CHEM 124   General Chemistry I Lecture*.........................4
                Prerequisite or corequisite: MATH 171 or assessment
                test and Corequisite: CHEM 125
CHEM 125   General Chemistry I Lab*.............................1
                Prerequisite or Corequisite: CHEM 124
                Students who withdraw from GENERAL CHEMISTRY
                I LECTURE must also withdraw from the corresponding
                laboratory GENERAL CHEMSITRY I LABORATORY
                Students may not withdraw from the laboratory course
                GENERAL CHEMISTRY I LABORATORY without withdrawing
                from CHEMISTRY I LECTURE.
SPD  121   Public Speaking......................................3
ENGL 121   Composition I*.......................................3
                Prerequisite: ENGL 106 or appropriate placement
                test score or EAP 113 and EAP 117
                Total Semester Credit Hours.........................18
```

### Second Semester

```
BIOT 160   Introduction to Biotechnology*.......................2
                Prerequisites: CHEM 122 and
                prerequisite or corequisite BIOL 135
                or CHEM 124 and CHEM 125 and
                prerequisite or corequisite: BIOL 135
                All prerequisites and corequisites require a grade
                of "C" or higher
BIOL 150   Biology of Organisms*................................5
                Prerequisite: BIOL 135 or
                consent of the assistant dean
CHEM 131   General Chemistry II Lecture*........................4
                Prerequisites: CHEM 124 and CHEM 125 and
                Corequisite: CHEM 132
CHEM 132   General Chemistry II Lab*............................1
                Prerequisites: CHEM 124 and CHEM 125 and
                Corequisite: CHEM 131  Students who
                withdraw from GENERAL CHEMISTRY II LECTURE
                must also withdraw from the corresponding
                laboratory GENERAL CHEMISTRY II LABORATORY.
                Students may not withdraw from the laboratory
                course GENERAL CHEMISTRY II LABORATORY without
                withdrawing from CHEMISTRY II LECTURE.
ENGL 123   Technical Writing I*.................................3
                Prerequisite: ENGL 121
HIST 125   Western Civilization: Readings and Discussion I......3
                Total Semester Credit Hours.........................18
```

### Summer

```
BIOT 165   Laboratory Safety*...................................1
                Prerequisite: CHEM 122 and
                prerequisite or corequisite BIOL 135
                or CHEM 124 and CHEM 125 and
                prerequisite or corequisite BIOL 135
                All prerequisites and corequisites require a grade
                of "C" or higher
                Social Science/Economics Elective....................3
                Total Semester Credit Hours..........................4
```

### Third Semester

```
BIOT 230   Microbiology for Biotechnology*......................5
                Prerequisites: BIOL 135 and BIOT 160 and BIOT 165 All
                prerequisites require a grade of "C" or higher
BIOL 205   General Genetics*....................................4
                Prerequisite: BIOL 122 or BIOL 135
                or the equivalent introductory college-level course.
                All prerequisites require a grade of "C" or higher
PHYS 130   General Physics I*...................................5
                Prerequisite: MATH 171 or assessment scores
                Social Science/Economics Elective....................3
                Physical Education Elective..........................1
                Total Semester Credit Hours.........................18
```

```
BIOT 260  Biotechnology Methods*..............................5
          Prerequisites: Either BIOT 160 or BIOL 160 and
          either BIOT 165 or BIOL 165 and
          Prerequisite or corequisite: BIOL 230. All
          prerequisites and corequisites require a grade of
          "C" or higher
CHEM 220  Organic Chemistry I*................................5
          Prerequisites: CHEM 131 and CHEM 132
PHYS 131  General Physics II*.................................5
          Prerequisite: PHYS 130
          Humanities Elective................................3
          Total Semester Credit Hours.......................18
          TOTAL PROGRAM CREDIT HOURS........................76
```

## Optional Course

```
BIOT 265  Biotechnology Internship-Optional*..................4
          Prerequisites: BIOT 260 and either BIOT 160 or
          BIOL 160 and either BIOT 165 or BIOL 165
          and assistant dean's approval
with the optional course
          TOTAL PROGRAM CREDIT HOURS........................80
*Prerequisite/Corequisite required
```

# Biotechnology Certificate

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.

The biotechnology vocational certificate is for students seeking employment in the biotechnology industry either in private or academic research laboratories. This certificate will demonstrate to potential employers that the student has experience in performing a variety of techniques necessary for the day-to-day operation.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 6150; CIP Code 41.0101)

Science Department

## Career Certificate

### First Semester

```
CHEM 122  Principles of Chemistry.............................5
          Total Semester Credit Hours........................5
```

### Second Semester

```
BIOL 135  Principles of Cell and Molecular Biology............4
BIOT 160  Introduction to Biotechnology*.....................2
          Prerequisites: CHEM 122 and
          prerequisite or corequisite BIOL 135
          or CHEM 124 and CHEM 125 and
          prerequisite or corequisite: BIOL 135
          All prerequisites and corequisites require a grade
          of "C" or higher
MATH 133  Technical Mathematics I or higher*...............3-5
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
PHYS 133  Applied Physics*...................................5
          Prerequisite: MATH 133 or higher
          Total Semester Credit Hours....................14-16
```

```
BIOT 165  Laboratory Safety*.................................1
          Prerequisite: CHEM 122 and
          prerequisite or corequisite BIOL 135
          or CHEM 124 and CHEM 125 and
          prerequisite or corequisite BIOL 135
          All prerequisites and corequisites require a grade
          of "C" or higher
BIOT 230  Microbiology for Biotechnology*....................5
          Prerequisites: BIOL 135 and BIOT 165 All
          prerequisites require a grade of "C" or higher
BIOT 260  Biotechnology Methods*.............................5
          Prerequisites: Either BIOT 160 or BIOL 160 and
          either BIOT 165 or BIOL 165 and
          Prerequisite or corequisite: BIOL 230. All
          prerequisites and corequisites require a grade of
          "C" or higher
CHEM 140  Principles of Organic & Biological Chemistry*........5
          Prerequisites: BIOL 135
          and CHEM 122 or permission of the assistant dean
          Total Semester Credit Hours.......................16
```

### Fourth Semester (optional)

```
BIOT 265  Biotechnology Internship*..........................4
          Prerequisites: BIOT 260 and either BIOT 160 or
          BIOL 160 and either BIOT 165 or BIOL 165
          and assistant dean's approval
          TOTAL PROGRAM CREDIT HOURS.....................35-41
*Prerequisite/Corequisite required
```

# Business Administration, A.A.S.

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

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

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

(Major Code 2430; CIP Code 52.0201)

Business Administration

## Associate of Applied Science Degree

### First Semester

```
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
MATH 120  Business Math or higher*............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
BUS  121  Introduction to Business...........................3
BUS  225  Human Relations....................................3
CIS  124  Introduction to Computer Concepts and Applications...3
          and
          CPCA/CDTP elective.................................1
Note: CPCA 105/106 will not meet this one hour requirement.

          or
          CPCA/CDTP electives................................4
          or
CIS  134  Programming Fundamentals...........................4
          Total Semester 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
          Prerequisite: ENGL 121
```

```
ECON 230  Economics I.........................................3
HIST 141  U.S. History Since 1877.............................3
          Health and/or Physical Education Elective...........1
          Total Semester Credit Hours........................16
```

### Third Semester

```
ACCT 122  Accounting II*......................................3
          Prerequisite: ACCT 121
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 Semester Credit Hours........................16
```

### Fourth Semester

```
ACCT 222  Managerial Accounting*..............................3
          Prerequisite: ACCT 122
BUS  123  Personal Finance....................................3
          or
BUS  215  Savings and Investments.............................3
BUS  263  Business Law II*....................................3
          Prerequisite: BUS 261
BUS  243  Human Resource Management...........................3
          or
BUS  235  Introduction to International Business...............3
BIOL 130  Environmental Science...............................3
          Elective............................................1
          Total Semester Credit Hours........................16
          TOTAL PROGRAM CREDIT HOURS.........................64
```

### Recommended Electives

```
BUS  120  Management Attitudes and Motivation.................3
BUS  140  Principles of Supervision...........................3
*Prerequisite/Corequisite required
```

# Business-Logistics Mgt, A.A.S.

The Business-Logistics Management, AAS degree program is granted by Metropolitan Community College, but coordinated at JCCC.

This program focuses not only on those who currently work in a logistics career but also those who wish to test their interest and want more knowledge about that field. The program stretches all employees, including management personnel, professionally. Students receive information and training that can lead them to one of hundreds of careers tied to logistics. In addition to classroom knowledge, students receive current insights from professionals in the field.

The JCCC business logistics management program is offered to Johnson County residents in cooperation with Metropolitan Community Colleges of Kansas City. Related courses are taken at JCCC. You must be accepted as a student to JCCC and accepted into the program by MCC. Students must be residents of Johnson County in order to receive in-state tuition rates. Consult with a JCCC counselor for more information.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact MCC-Blue River at 816-220-6532 or visit www.mcckc.edu

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

## Associate of Applied Science

```
Degree Granted by Metropolitan Community College
```

### General Education Requirements-can be taken at JCCC

```
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
ECON 230  Economics I.........................................3
```

```
MATH 120  Business Mathematics*...............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
          or
MATH 116  Intermediate Algebra or higher*.....................3
          Prerequisite: MATH 115 with a grade of "C" or higher
          or appropriate score on the math assessment test
PSYC 130  Introduction to Psychology..........................3
          or
SOC  122  Introduction to Sociology...........................3
SPD  121  Public Speaking.....................................3
          or
SPD  125  Personal Communication..............................3
```

### American Institutions

```
HIST 140  U.S. History to 1877................................3
          or
HIST 141  U.S. History Since 1877.............................3
          or
POLS 122  Political Science...................................3
          or
POLS 124  American National Government........................3
          or
POLS 126  State and Local Government..........................3
```

### Specific Program Requirements taken at JCCC

```
          Specific Program Electives..........................9
ACCT 121  Accounting I........................................3
BUS  141  Principles of Management............................3
BUS  230  Marketing...........................................3
BUS  150  Business Communications*............................3
          Prerequisite: ENGL 121
BUS  261  Business Law I......................................3
CIS  124  Introduction to Computer Concepts and Applications...3
          or
CPCA 128  PC Applications: MS Office...........................3
          Electives...........................................6
          Note: Electives may be any non-developmental courses.
```

### Specific Program Requirements-taken at MCC

```
KSS  153  The Missouri Constitution...........................1
KSCL 210  Logistics Management................................3
KSCL 211  Operations Management...............................3
KSCL 212  Transportation Operations and Management............3
KSCL 213  Warehousing and Distribution Centers................3
          TOTAL PROGRAM CREDIT HOURS.........................64
```

### Specific Program Electives

```
ACCT 111  Small Business Accounting...........................3
ACCT 122  Accounting II*......................................3
          Prerequisite: ACCT 121
ACCT 135  Computerized Accounting Applications*...............3
          Prerequisite: ACCT 121 or ACCT 111
ACCT 221  Cost Accounting*....................................3
          Prerequisite: ACCT 122
ACCT 222  Managerial Accounting*..............................3
          Prerequisite: ACCT 122
ACCT 231  Intermediate Accounting I*..........................3
          Prerequisite: ACCT 122
BOT  103  Business English....................................3
BUS  121  Introduction to Business............................3
BUS  123  Personal Finance....................................3
BUS  140  Principles of Supervision...........................3
BUS  145  Small Business Management...........................3
BUS  225  Human Relations.....................................3
BUS  243  Human Resource Management...........................3
BUS  263  Business Law II*....................................3
          Prerequisite: BUS 261
ENTR 120  Introduction to Entrepreneurship....................2
FASH 121  Fashion Fundamentals................................3
JOUR 125  Fundamentals of Advertising.........................3
MKT  121  Retail Management...................................3
MKT  133  Salesmanship........................................3
SPD  128  Business and Professional Speech....................3
*Prerequisite/Corequisite required
```

# Administrative Assistant, A.A.S.

This degree program prepares students for administrative professional positions as supervisors and managers in office environments. Emphasis is on the development of communications, decision-making, organizational and management skills and knowledge of software options, applications, and concepts. This program is designed to prepare students to function in the business office by using a combination of technical and academic training.

(Major Code 2680; CIP Code 52.0401)

Business Office Technology

# Associate of Applied Science Degree

### Prerequisite for Required Courses

Note: Prior to beginning the program, the student must take the following prerequisite, or have taken the equivalent transfer course, or have passed the waiver test (if applicable), or have obtained a waiver from the program administrator.

```
BOT  105   Keyboarding and Formatting I........................3
```

### First Semester

```
BOT  103   Business English...................................3
BOT  106   Intro to Business Computer Applications*...........3
           Prerequisite or corequisite: BOT 105
BOT  110   Skillbuilding I*...................................1
           Prerequisite:  BOT 105
BOT  130   Office Systems Concepts............................3
MATH 120   Business Mathematics*..............................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
ENGL 121   Composition I*.....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
           Health and/or Physical Education Elective...........1
           Total Semester Credit Hours........................17
```

### Second Semester

```
BOT  155   Word Processing Application I*......................2
           Prerequisites:  BOT 105 and BOT 106
BUS  225   Human Relations....................................3
ACCT 121   Accounting I.......................................3
BUS  121   Introduction to Business...........................3
BOT  150   Records Management.................................3
CPCA 141   Internet I*........................................1
           Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
           CIS 124 or appropriate score on an assessment test
           Total Semester Credit Hours........................15
```

### Third Semester

```
LAW  121   Introduction to Law................................3
BOT  125   Document Formatting*...............................1
           Prerequisite:  BOT 155
BUS  140   Principles of Supervision..........................3
           or
BUS  141   Principles of Management...........................3
BOT  255   Word Processing Applications II*....................2
           Prerequisite: BOT 155
BUS  150   Business Communications*...........................3
           Prerequisite: ENGL 121
           Humanities Elective................................3
           Total Semester Credit Hours........................15
```

### Fourth Semester

```
ECON 132   Survey of Economics................................3
           or
ECON 230   Economics I........................................3
BOT  275   Office Internship I*...............................1
           Prerequisite: Admission to the business office
           technology program. This course should be taken
           near the end of the BOT degree or certificate
           program.
BUS  243   Human Resource Management..........................3
BOT  265   Computerized Office Applications*..................3
           Prerequisites: BOT 106 and also CPCA 141
           and BOT 255 and BOT 130
           (This capstone course should be taken near the end
           of the degree or certificate program) This course is
           offered in the spring semester only.
BOT  260   Desktop Publishing for the Office*.................3
           Prerequisite: BOT 155
           BOT Electives......................................4
           Total Semester Credit Hours........................17
           TOTAL PROGRAM CREDIT HOURS.........................64
```

### BOT Electives

```
BOT  115   Electronic Calculators.............................1
BOT  118   Skillbuilding II*..................................1
           Prerequisite:  BOT 110
BOT  180   Business Spreadsheet Applications*.................1
           Prerequisite:  BOT 106
```

```
BOT  185   Business Database Applications*....................1
           Prerequisite: BOT 106
BOT  205   Professional Image Development.....................1
BOT  280   Office Internship II*..............................1
           Prerequisite: BOT 275
*Prerequisite/Corequisite required
```

# Administrative Assistant with Legal Emphasis, A.A.S.

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

(Major Code 2780; CIP Code 22.0301)

Business Office Technology

# Associate of Applied Science Degree

### Prerequisite for Required Courses

Note: Prior to the beginning of the program, the student must take the following prerequisite, or have taken the equivalent transfer course, or have passed the waiver test, or have obtained a waiver from the program administrator.

```
BOT  105   Keyboarding and Formatting I........................3
```

### First Semester

```
BOT  103   Business English...................................3
BOT  106   Intro to Business Computer Applications*...........3
           Prerequisite or corequisite: BOT 105
BOT  115   Electronic Calculators.............................1
BOT  130   Office Systems Concepts............................3
LAW  121   Introduction to Law................................3
ENGL 121   Composition I*.....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
           Health and/or Physical Education Elective...........1
           Total Semester Credit Hours........................17
```

### Second Semester

```
BOT  155   Word Processing Application I*......................2
           Prerequisites:  BOT 105 and BOT 106
BOT  110   Skillbuilding I*...................................1
           Prerequisite:  BOT 105
BOT  150   Records Management.................................3
MATH 120   Business Mathematics*..............................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
BUS  150   Business Communications*...........................3
           Prerequisite: ENGL 121
ACCT 111   Small Business Accounting..........................3
           or
ACCT 121   Accounting I.......................................3
CPCA 141   Internet I*........................................1
           Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
           CIS 124 or appropriate score on an assessment test
           Total Semester Credit Hours........................16
```

### Third Semester

```
LAW  223   Law Office Computing*..............................3
           Prerequisites: Paralegal program students - admission
           to the paralegal program and completion of BOT 106
BOT  160   Legal Transcription*...............................3
           Prerequisite:  BOT 155
BUS  225   Human Relations....................................3
BOT  255   Word Processing Applications II*....................2
           Prerequisite: BOT 155
BOT  125   Document Formatting*...............................1
           Prerequisite:  BOT 155
           BOT Electives......................................3
           Total Semester Credit Hours........................15
```

**Fourth Semester**

```
ECON 132  Survey of Economics................................3
            or
ECON 230  Economics I.......................................3
BOT  265  Computerized Office Applications*.................3
            Prerequisites: BOT 106 and also CPCA 141
            and BOT 255 and BOT 130
            (This capstone course should be taken near the end
            of the degree or certificate program) This course is
            offered in the spring semester only.
BOT  275  Office Internship I*...............................1
            Prerequisite: Admission to the business office
            technology program. This course should be taken
            near the end of the BOT degree or certificate
            program.
BUS  140  Principles of Supervision.........................3
            or
BUS  141  Principles of Management..........................3
          Humanities Elective...............................3
          General Electives.................................3
          Total Semester Credit Hours......................16
          TOTAL PROGRAM CREDIT HOURS.......................64
```

**BOT Electives**

```
BOT  118  Skillbuilding II*.................................1
            Prerequisite: BOT 110
BOT  180  Business Spreadsheet Applications*................1
            Prerequisite: BOT 106
BOT  185  Business Database Applications*...................1
            Prerequisite: BOT 106
BOT  205  Professional Image Development....................1
BOT  280  Office Internship II*.............................1
            Prerequisite: BOT 275
*Prerequisite/Corequisite required
```

# Administrative Assistant with Medical Emphasis, A.A.S.

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

(Major Code 2790; CIP Code 51.0710)

Business Office Technology

## Associate of Applied Science Degree

### Prerequisite for Required Courses

```
Note: Prior to beginning the program, the student
must take the following prerequisite, or have taken the
equivalent transfer course, or have passed the waiver test,
or have have obtained a waiver from the program
administrator.
```

```
BOT  105  Keyboarding and Formatting I......................3
```

### First Semester

```
BOT  103  Business English..................................3
BOT  106  Intro to Business Computer Applications*..........3
            Prerequisite or corequisite: BOT 105
AAC  130  Medical Terminology...............................3
BOT  130  Office Systems Concepts...........................3
ENGL 121  Composition I*....................................3
            Prerequisite: ENGL 106 or appropriate placement
            test score or EAP 113 and EAP 117
          Health and/or Physical Education Elective.........1
          Total Semester Credit Hours......................16
```

### Second Semester

```
BOT  155  Word Processing Application I*.....................2
            Prerequisites: BOT 105 and BOT 106
BOT  110  Skillbuilding I*..................................1
            Prerequisite: BOT 105
BOT  170  Medical Coding and Billing*.......................3
            Prerequisite: AAC 130
BOT  150  Records Management................................3
```

```
BOT  115  Electronic Calculators............................1
MATH 120  Business Mathematics*.............................3
            Prerequisite: MATH 111 with a grade of "C" or higher
            or appropriate score on the math assessment test
BUS  225  Human Relations...................................3
CPCA 141  Internet I*.......................................1
            Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
            CIS 124 or appropriate score on an assessment test
          Total Semester Credit Hours......................17
```

**Third Semester**

```
BOT  122  Medical Keyboarding*..............................1
            Prerequisite: BOT 105
LAW  121  Introduction to Law...............................3
BOT  125  Document Formatting*..............................1
            Prerequisite: BOT 155
ACCT 111  Small Business Accounting.........................3
            or
ACCT 121  Accounting I......................................3
BOT  255  Word Processing Applications II*..................2
            Prerequisite: BOT 155
BUS  150  Business Communications*..........................3
            Prerequisite: ENGL 121
          Humanities Elective...............................3
          Total Semester Credit Hours......................16
```

**Fourth Semester**

```
ECON 132  Survey of Economics................................3
            or
ECON 230  Economics I.......................................3
BOT  165  Medical Transcription*............................3
            Prerequisites: AAC 130 and BOT 155
BOT  265  Computerized Office Applications*.................3
            Prerequisites: BOT 106 and also CPCA 141
            and BOT 255 and BOT 130
            (This capstone course should be taken near the end
            of the degree or certificate program) This course is
            offered in the spring semester only.
BOT  275  Office Internship I*..............................1
            Prerequisite: Admission to the business office
            technology program. This course should be taken
            near the end of the BOT degree or certificate
            program.
BUS  140  Principles of Supervision.........................3
            or
BUS  141  Principles of Management..........................3
          BOT Electives.....................................2
          Total Semester Credit Hours......................15
          TOTAL PROGRAM CREDIT HOURS.......................64
```

**BOT Electives**

```
BOT  118  Skillbuilding II*.................................1
            Prerequisite: BOT 110
BOT  180  Business Spreadsheet Applications*................1
            Prerequisite: BOT 106
BOT  185  Business Database Applications*...................1
            Prerequisite: BOT 106
BOT  205  Professional Image Development....................1
BOT  280  Office Internship II*.............................1
            Prerequisite: BOT 275
*Prerequisite/Corequisite required
```

# Administrative Support Specialist Certificate

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

(Major Code 4690; CIP Code 52.0401)

Business Office Technology

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
BOT  103  Business English.....................................3
BOT  105  Keyboarding and Formatting I.........................3
BOT  106  Intro to Business Computer Applications*.............3
          Prerequisite or corequisite: BOT 105
BOT  130  Office Systems Concepts.............................3
          Total Semester Credit Hours.........................12
```

### Second Semester

```
BOT  110  Skillbuilding I*.....................................1
          Prerequisite:  BOT 105
BOT  115  Electronic Calculators..............................1
BOT  150  Records Management..................................3
BOT  155  Word Processing Application I*......................2
          Prerequisites:  BOT 105 and BOT 106
BOT  125  Document Formatting*...............................1
          Prerequisite:  BOT 155
Note: Students attempting to take BOT 155 and BOT 125
in the same semester should contact the department chair.

CPCA 141  Internet I*.........................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test
BUS  225  Human Relations....................................3
          Total Semester Credit Hours........................12
```

### Third Semester

```
BOT  255  Word Processing Applications II*....................2
          Prerequisite: BOT 155
BOT  260  Desktop Publishing for the Office*.................3
          Prerequisite: BOT 155
          Total Semester Credit Hours.........................5
```

### Fourth Semester

```
BOT  265  Computerized Office Applications*...................3
          Prerequisites: BOT 106 and also CPCA 141
          and BOT 255 and BOT 130
          (This capstone course should be taken near the end
          of the degree or certificate program) This course is
          offered in the spring semester only.
BOT  275  Office Internship I*...............................1
          Prerequisite: Admission to the business office
          technology program. This course should be taken
          near the end of the BOT degree or certificate
          program.
          Total Semester Credit Hours.........................4
          TOTAL PROGRAM CREDIT HOURS.........................33
*Prerequisite/Corequisite required
```

# Business Administrative Assistant Entrep Certificate

The business administrative assistant entrepreneurship certificate will prepare students to open their own service business providing administrative assistance to businesses. This certificate is designed to provide the student with basic skills in business office technology and administration as well as basic skills in small business development and management.

(Major Code 4090; CIP Code 52.0401)

Business Office Technology

## Career Certificate

### Prerequisites for Required Courses

```
Note: Prior to beginning the program, the student must take
the following prerequisites, or have taken the equivalent
transfer courses, or have passed the waiver test (where
applicable), or have obtained a waiver from the
program administrator.

BOT  105  Keyboarding and Formatting I........................3
```

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
```

```
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
BOT  106  Intro to Business Computer Applications*.............3
          Prerequisite or corequisite: BOT 105
BOT  130  Office Systems Concepts.............................3
ENTR 120  Introduction to Entrepreneurship...................2
          Total Semester Credit Hours.........................8
```

### Second Semester

```
BOT  110  Skillbuilding I*.....................................1
          Prerequisite:  BOT 105
BOT  155  Word Processing Application I*......................2
          Prerequisites:  BOT 105 and BOT 106
BOT  125  Document Formatting*...............................1
          Prerequisite:  BOT 155
Note: Students attempting to take BOT 155 and BOT 125
in the same semester should contact the department chair.

CPCA 141  Internet I*.........................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test
BUS  230  Marketing..........................................3
BOT  180  Business Spreadsheet Applications*.................1
          Prerequisite:  BOT 106
ENTR 180  Opportunity Analysis...............................2
          Total Semester Credit Hours........................11
```

### Third Semester

```
BOT  255  Word Processing Applications II*....................2
          Prerequisite: BOT 155
BOT  260  Desktop Publishing for the Office*.................3
          Prerequisite: BOT 155
BOT  185  Business Database Applications*....................1
          Prerequisite: BOT 106
ENTR 142  Fast Trac Business Plan............................3
          Total Semester Credit Hours.........................9
```

### Fourth Semester

```
BOT  265  Computerized Office Applications*...................3
          Prerequisites: BOT 106 and also CPCA 141
          and BOT 255 and BOT 130
          (This capstone course should be taken near the end
          of the degree or certificate program) This course is
          offered in the spring semester only.
          NOTE: BOT 265 is offered Spring term only
BOT  275  Office Internship I*...............................1
          Prerequisite: Admission to the business office
          technology program. This course should be taken
          near the end of the BOT degree or certificate
          program.
          Total Semester Credit Hours.........................4
          TOTAL PROGRAM CREDIT HOURS.........................32
*Prerequisite/Corequisite required
```

# Medical Administrative Assistant Entrepreneurship Cert

The medical administrative assistant entrepreneurship certificate prepares students to open their own service business providing administrative assistance to the medical profession. This certificate is designed to provide the student with basic skills in medical office administration and the basic skills in small business development and management.

(Major Code 4290; CIP Code 52.0710)

Business Office Technology

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
AAC  130  Medical Terminology..................................3
BOT  105  Keyboarding and Formatting I.........................3
BOT  106  Intro to Business Computer Applications*.............3
          Prerequisite or corequisite: BOT 105
BOT  130  Office Systems Concepts..............................3
ENTR 120  Introduction to Entrepreneurship....................2
          Total Semester Credit Hours........................14
```

### Second Semester

```
BOT  110  Skillbuilding I*....................................1
          Prerequisite: BOT 105
BOT  155  Word Processing Application I*......................2
          Prerequisites: BOT 105 and BOT 106
CPCA 141  Internet I*.........................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test
BOT  170  Medical Coding and Billing*.........................3
          Prerequisite: AAC 130
BOT  180  Business Spreadsheet Applications*..................1
          Prerequisite: BOT 106
ENTR 180  Opportunity Analysis................................2
          Total Semester Credit Hours........................10
```

### Third Semester

```
BOT  255  Word Processing Applications II*....................2
          Prerequisite: BOT 155
BOT  185  Business Database Applications*.....................1
          Prerequisite: BOT 106
ENTR 142  Fast Trac Business Plan.............................3
          Total Semester Credit Hours.........................6
```

### Fourth Semester

```
BOT  265  Computerized Office Applications*...................3
          Prerequisites: BOT 106 and also CPCA 141
          and BOT 255 and BOT 130
          (This capstone course should be taken near the end
          of the degree or certificate program) This course is
          offered in the spring semester only.
          Note: BOT 265 is offered Spring term only
BOT  275  Office Internship I*................................1
          Prerequisite: Admission to the business office
          technology program. This course should be taken
          near the end of the BOT degree or certificate
          program.
          Total Semester Credit Hours.........................4
          TOTAL PROGRAM CREDIT HOURS.........................34
*Prerequisite/Corequisite required
```

```
Students may be interested in taking additional courses, as
noted below, to complement their certificate study.  These
courses are NOT part of the certificate requirements.

BUS  230  Marketing...........................................3
ENTR 160  Legal Issues for Small Business.....................2
ENTR 220  Entrepreneurial Marketing*..........................2
          Prerequisite: BUS 230
ENTR 195  Franchising*........................................3
          Prerequisite: BUS 230
ENTR 131  Financial Management for Small Business*............2
          Prerequisite: ACCT 111 or ACCT 121
```

# Medical Office Assistant Certificate

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

(Major Code 5400; CIP Code 51.0710)

Business Office Technology

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
BOT  103  Business English....................................3
BOT  105  Keyboarding and Formatting I........................3
BOT  106  Intro to Business Computer Applications*.............3
          Prerequisite or corequisite: BOT 105
AAC  130  Medical Terminology.................................3
          Total Semester Credit Hours........................12
```

### Second Semester

```
BOT  110  Skillbuilding I*....................................1
          Prerequisite: BOT 105
BOT  155  Word Processing Application I*......................2
          Prerequisites: BOT 105 and BOT 106
BOT  122  Medical Keyboarding*................................1
          Prerequisite: BOT 105
BOT  125  Document Formatting*................................1
          Prerequisite: BOT 155
Note: Students attempting to take BOT 155 and BOT 125
in the same semester should contact the department chair.

BOT  130  Office Systems Concepts.............................3
BOT  170  Medical Coding and Billing*.........................3
          Prerequisite: AAC 130
          Total Semester Credit Hours........................11
```

### Third Semester

```
BOT  165  Medical Transcription*..............................3
          Prerequisites: AAC 130 and BOT 155
          Total Semester Credit Hours.........................3
          TOTAL PROGRAM CREDIT HOURS.........................26
*Prerequisite/Corequisite required
```

# Medical Transcription Certificate

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

(Major Code 5410; CIP Code 51.0708)

Business Office Technology

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
BOT  103  Business English....................................3
BOT  105  Keyboarding and Formatting I........................3
BOT  106  Intro to Business Computer Applications*.............3
          Prerequisite or corequisite: BOT 105
AAC  130  Medical Terminology.................................3
          Total Semester Credit Hours........................12
```

### Second Semester

```
BOT  122  Medical Keyboarding*................................1
          Prerequisite: BOT 105
BOT  155  Word Processing Application I*......................2
          Prerequisites: BOT 105 and BOT 106
BOT  170  Medical Coding and Billing*.........................3
          Prerequisite: AAC 130
BOT  220  Pharmacology Terminology*...........................2
          Prerequisite: AAC 130
          This course is offered in the spring semester only.
BIOL 140  Human Anatomy.......................................4
          Total Semester Credit Hours........................12
```

### Third Semester

```
BOT  165  Medical Transcription*..............................3
          Prerequisites: AAC 130 and BOT 155
```

```
BOT 255  Word Processing Applications II*.....................2
         Prerequisite: BOT 155
         Total Semester Credit Hours..........................5
```

### Fourth Semester

```
BOT 270  Advanced Medical Transcription*......................3
         Prerequisite: BOT 165
BOT 275  Office Internship I*................................1
         Prerequisite: Admission to the business office
         technology program. This course should be taken
         near the end of the BOT degree or certificate
         program.
         Total Semester Credit Hours..........................4
         TOTAL PROGRAM CREDIT HOURS..........................33
*Prerequisite/Corequisite required
```

# Office Careers Certificate

At the completion of this 18-credit-hour certificate, students will be able to demonstrate proficiency in office skills, including computer and word processing knowledge. This certificate program prepares students to enter an office career in a minimal time period.

(Major Code 4900; CIP Code 52.0401)

Business Office Technology

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
BOT 103  Business English....................................3
BOT 105  Keyboarding and Formatting I........................3
BOT 106  Intro to Business Computer Applications*............3
         Prerequisite or corequisite: BOT 105
BOT 130  Office Systems Concepts.............................3
         Total Semester Credit Hours.........................12
```

### Second Semester

```
BOT 110  Skillbuilding I*....................................1
         Prerequisite:  BOT 105
BOT 115  Electronic Calculators..............................1
BOT 155  Word Processing Application I*......................2
         Prerequisites:  BOT 105 and BOT 106
BOT 180  Business Spreadsheet Applications*..................1
         Prerequisite:  BOT 106
         or
BOT 185  Business Database Applications*.....................1
         Prerequisite: BOT 106
BOT 125  Document Formatting*...............................1
         Corequisite:  BOT 155
Note: Students attempting to take BOT 155 and BOT 125
in the same semester should contact the department chair.


         Total Semester Credit Hours.........................6
         TOTAL PROGRAM CREDIT HOURS.........................18
*Prerequisite/Corequisites required
```

# Civil Engineering Technology, A.A.S.

Civil engineering technicians use theory and practical application in planning, designing, constructing, inspecting and maintaining civil engineering projects. Job duties can include performing land surveys, creating civil engineering drawings using computer aided drafting, assisting engineers with design, and project management.

JCCC's civil engineering technology program offers a broad base of instruction in mathematics, engineering design, drawing interpretation, computer-aided drafting, construction methods and communication skills. The program will qualify graduates for a variety of entry-level positions in design firms, construction companies or public agencies. Successful completion of 64 hours from the civil engineering technology curriculum will lead to an associate of applied science degree.

(Major Code 2210; CIP Code 15.0201)

Civil Engineering Technology

## Associate of Applied Science Degree

### First Semester

```
DRAF 129  Interpreting Architectural Drawings.................2
ENGR 131  Engineering Graphics I*............................4
          Corequisite: MATH 133 or MATH 171 or MATH 172 or
          MATH 173 or MATH 241
MATH 133  Technical Mathematics I*...........................4
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
CET 125   Construction Specifications*.......................2
          Prerequisite or corequisite: CET 105 or equivalent
CET 105   Construction Methods...............................3
INDT 155  Workplace Skills...................................1
          Total Semester Credit Hours.......................16
```

### Second Semester

```
CET 129   Construction Management............................3
DRAF 244  Land Development Desktop/CIVIL 3D*..................2
          Prerequisite: DRAF 230 or ENGR 131
          or approval of the program assistant dean
DRAF 225  Civil Drafting*....................................3
          Prerequisite: DRAF 230 or ENGR 131
          Corequisite: MATH 134
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
MATH 134  Technical Mathematics II*..........................5
          Prerequisite: MATH 133 or an equivalent course
          with a grade of "C" or higher
          Total Semester Credit Hours.......................16
```

### Third Semester

```
CET 227   Construction Cost Estimating*......................3
          Prerequisites: CET 105 and CET 125 or permission
          of program administrator and
          Prerequisite or corequisite: DRAF 129 or permission
          of program administrator
CET 211   Technical Statics and Design*......................3
          Prerequisite: MATH 134 or MATH 172 or MATH 173 or
          MATH 241
ENGR 180  Engineering Land Surveying I*......................3
          Corequisite: MATH 134 or MATH 172
ENGL 123  Technical Writing I*...............................3
          Prerequisite: ENGL 121
PHIL 138  Business Ethics....................................1
          Humanities Elective................................3
          Total Semester Credit Hours.......................16
```

### Fourth Semester

```
CET 140   Civil Engineering Materials*.......................3
          Corequisite: MATH 133
CET 270   Fluid Mechanics*...................................3
          Prerequisites: MATH 172 or MATH 134
DRAF 252  Structural Drafting*...............................3
          Prerequisite: DRAF 230 or ENGR 131
          Corequisite: MATH 134
CET 150   Construction Safety................................3
          Health/Physical Education Elective.................1
          Social Science/Economics Elective..................3
          Total Semester Credit Hours.......................16
          TOTAL PROGRAM CREDIT HOURS........................64
*Prerequisite/Corequisite required
```

# Construction Management Certificate

The construction management certificate is designed to address the management training needs of supervisors in the construction industry. Necessary management skills include construction methods, safety, 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.

(Major Code 4750; CIP Code 52.2001)

Civil Engineering Technology

# Career Certificate

## Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
CET  105   Construction Methods................................3
CET  125   Construction Specifications*.........................2
           Prerequisite or corequisite: CET 105 or equivalent
DRAF 129   Interpreting Architectural Drawings..................2
MATH 120   Business Math or higher*.............................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
BUS  140   Principles of Supervision...........................3
           Total Semester Credit Hours........................13
```

### Second Semester

```
ACCT 111   Small Business Accounting...........................3
           or
ACCT 121   Accounting I........................................3
CET  129   Construction Management.............................3
CET  227   Construction Cost Estimating*.......................3
           Prerequisites: CET 105 and CET 125 or permission
           of program administrator and
           Prerequisite or corequisite: DRAF 129 or permission
           of program administrator
CET  150   Construction Safety.................................3
           Management Electives................................2
INDT 155   Workplace Skills....................................1
           Total Semester Credit Hours........................15
           TOTAL PROGRAM CREDIT HOURS.........................28
*Prerequisite/Corequisite required
```

### Management Electives

```
BUS  141   Principles of Management............................3
BUS  145   Small Business Management...........................3
BUS  243   Human Resource Management...........................3
BUS  261   Business Law I......................................3
ENTR 131   Financial Management for Small Business.............2
           Prerequisite: ACCT 111 or ACCT 121
ENTR 160   Legal Issues for Small Business.....................2
*Prerequisite/Corequisite required
```

# Engineered Plumbing Systems Certificate

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

(Major Code 6300; CIP Code 15.0201)

Civil Engineering Technology

# Certificate of Completion

## Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
CET  120   Engineered Plumbing Systems I.......................3
           Total Semester Credit Hours.........................3
```

### Second Semester

```
CET  122   Engineered Plumbing Systems II......................3
CET  270   Fluid Mechanics*....................................3
           Prerequisites: MATH 172 or MATH 134
           Total Semester Credit Hours.........................6
           TOTAL PROGRAM CREDIT HOURS..........................9
*Prerequisite/Corequisite required
```

# Computer Information Systems, A.A.S.

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

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

The associate of applied science degree is awarded for successful completion of 69 credit hours.

(Major Code 2930; CIP Code 11.0201)

Information Systems

# Associate of Applied Science Degree

## Prerequisite for Required Courses

```
Prior to beginning the information systems program,
the student must take the following prerequisite, or have
taken an equivalent transfer course, or have passed the
waiver test, or have obtained a waiver from the program
administrator:
```

```
CIS  134   Programming Fundamentals............................4
```

### First Semester

```
CS   200   Concepts of Programming Algorithms Using C++*.......4
           Prerequisite: CIS 134 or ENGR 171
           or equivalent experience
           or
CS   205   Concepts of Programming Algorithms using JAVA*......4
           Prerequisite: CIS 134 or ENGR 171
           or equivalent experience
CIM  133   Screen Design*......................................4
           Prerequisite: CDTP 135
ACCT 121   Accounting I........................................3
ENGL 121   Composition I*......................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
MATH 171   College Algebra*....................................3
           Prerequisite: MATH 116 with a grade of "C" or higher
           or MATH 134 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Note: Not available to students with credit in
           MATH 173
           or
           Any Precalculus/Calculus Course*....................3
           Total Semester Credit Hours........................17
```

### Second Semester

```
           Level One Programming Language
           Option..............................................4
```

```
CS    210  Discrete Structures I*...............................3
           Prerequisites: MATH 171 or both MATH 116 and CIS 134
           or appropriate math assessment scores
CIS   162  Database Programming*...............................4
           Prerequisite: CIS 134 or the equivalent
CIS   242  Introduction to System Design and Analysis*.........3
           Prerequisite: CIS 138 or CS 200 or CS 201 or
           CS205
SPD   125  Personal Communication..............................3
           or
ENGL  123  Technical Writing I*................................3
           Prerequisite: ENGL 121
           Total Semester Credit Hours........................17
```

### Third Semester

```
           Level Two Programming Language
           Option..............................................4
CIS   258  Operating Systems*..................................3
           Prerequisite: CIS 138 or CIS 162 or
           CS 200 or CS 201 or CS 205
           or
CIS   204  UNIX Operating System*..............................3
           Prerequisites: CS 200 or CS 205 or
           CS 201 and CPCA 139
           CIS Elective........................................3
           Humanities/Art Elective.............................3
           Social Science and/or Economic Electives............3
           Health and/or Physical Education Elective...........1
           Total Semester Credit Hours........................17
```

### Fourth Semester

```
           Level Three Programming Language
           Option..............................................4
CIS   264  Application Development and Programming*.............4
           Prerequisites: CIS 242 and either CIS 260 or CIS 162
           Prerequisites or Corequisites: CIS 238 or CIS 253 or
           CIS 269 or CIS 240 and CIS 262
CIS   260  Database Management*................................4
           Prerequisite: CS 250 or CS 255 or CIS 235 or
           CIS 238 or CIS 248
CIS   262  Project Management*.................................3
           Prerequisite: CIS 242
           CIS Elective........................................3
           Total Semester Credit Hours........................18
           TOTAL PROGRAM CREDIT HOURS.........................69
Each student should select one option area from
the following list.

All three levels of programming language must
be from the same option area.
```

### Level One Programming Language Options:

```
Option in C++:

CIS   235  Object-Oriented Programming Using C++*..............4
           Prerequisite: CS 200 using C++
           or
CS    250  Basic Data Structures using C++*....................4
           Prerequisite:CS 200
           Prerequisite or corequisite: CS 210
           for students transferring to most four-year
           computer science programs


Option in JAVA:

CS    255  Basic Data Structures using JAVA*...................4
           Prerequisite: CS 205


Option in VISUAL BASIC:

CIS   138  Visual Basic .Net*..................................4
           Prerequisite: CIS 134
```

### Level Two Programming Language Options:

```
Option in C++:

CIS   235  Object-Oriented Programming Using C++*..............4
           Prerequisite: CS 200 using C++
           or
CS    250  Basic Data Structures using C++*....................4
           Prerequisite:CS 200
           Prerequisite or corequisite: CS 210
           for students transferring to most four-year
           computer science programs


Option in JAVA:

CIS   240  Advanced Topics in JAVA I*..........................4
           Prerequisite: CS 250 or CIS 235 or CS 255
```

```
Option in VISUAL BASIC:

CIS   238  Visual Basic Intermediate Topics*...................4
           Prerequisite: CIS 138
```

### Level Three Programming Language Options:

```
Option in C++:

CIS   269  GUI Programming*....................................4
           Prerequisites: CIS 235 or CS 250


Option in JAVA:

CIS   280  Advanced Topics in JAVA II*.........................4
           Prerequisite: CIS 240


Option in VISUAL BASIC:

CIS   277  Active Server Pages.Net*............................4
           Prerequisites: CS 200 or CS 201 or CS 205 or CIS 162
           and either CPCA 139 or CIS 204 and either CPCA 161
           or CPCA 158


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

CS    180  Introduction to Artificial Intelligence*............3
           Prerequisite: CIS 145 or CIS 148 or
           CIS 150 or CS 200
CS    200  Concepts of Programming Algorithms Using C++*.......4
           Prerequisite: CIS 134 or ENGR 171
           or equivalent experience
CS    201  Concepts of Programming Algorithms using C#*........4
           Prerequisite: CIS 134 or ENGR 171
           or equivalent experience
CS    205  Concepts of Programming Algorithms using JAVA*......4
           Prerequisite: CIS 134 or ENGR 171
           or equivalent experience
CS    250  Basic Data Structures using C++*....................4
           Prerequisite:CS 200
           Prerequisite or corequisite: CS 210
           for students transferring to most four-year
           computer science programs
CS    255  Basic Data Structures using JAVA*...................4
           Prerequisite: CS 205
CS    211  Discrete Structures II*.............................3
           Prerequisite: CS 210
CIS   138  Visual Basic .Net*^.................................4
           Prerequisite: CIS 134
CIS   204  UNIX Operating System*^.............................3
           Prerequisites: CS 200 or CS 205 or
           CS 201 and CPCA 139
CIS   206  Programming in PERL*................................4
           Prerequisites: CS 200 or CS 205 or CS 201 and
           CPCA 139
CIS   223  Law Office Computing*...............................3
           Prerequisites: Paralegal program students - admission
           to the paralegal program and either CIS 124 or
           CPCA 128 or three hours of CPCA 108 and CPCA 110
           and CPCA 114
CIS   235  Object-Oriented Programming Using C++*..............4
           Prerequisite: CS 200 using C++
CIS   238  Visual Basic Intermediate Topics*...................4
           Prerequisite: CIS 138
CIS   240  Advanced Topics in JAVA I*..........................4
           Prerequisite: CS 250 or CIS 235 or CS 255
CIS   243  Object-Oriented Analysis and Design*^...............4
           Prerequisite: One programming course using an
           object-oriented programming language
           or equivalent experience
CIS   244  Advanced Topics in C# I*............................4
           Prerequisite: CS 250 or CIS 235 or CS 255
CIS   254  UNIX System Administration*.........................4
           Prerequisite: CIS 204
CIS   258  Operating Systems*^.................................3
           Prerequisite: CIS 138 or CIS 162 or
           CS 200 or CS 201 or CS 205
CIS   269  GUI Programming*....................................4
           Prerequisites: CIS 235 or CS 250
CIS   270  Information Systems Internship*^....................3
           Prerequisites: CS 250 or CS 255 or CIS 235 or
           CIS 238 or CIS 248 and
           program facilitator approval
CIS   275  Web-Enabled Database Programming*...................4
           Prerequisites: CS 200 or CS 201 or CS 205 or
           CIS 162 and either CPCA 139
           or CIS 204 and either CPCA 161 or CPCA 158
CIS   277  Active Server Pages.Net*............................4
           Prerequisites: CS 200 or CS 201 or CS 205 or CIS 162
           and either CPCA 139 or CIS 204 and either CPCA 161
           or CPCA 158
CIS   280  Advanced Topics in JAVA II*.........................4
           Prerequisite: CIS 240
CFOR  150  Introduction to Computer Forensics*.................3
           Prerequisites: CIS 134 and CPCA 139 and assistant
           dean's approval
CFOR  180  File Structure & Residual Artifacts*................3
           Prerequisite: CFOR 150
```

```
IT  200  Networking Technologies.............................3
*Prerequisite/Corequisite required
^ recommended electives
```

# Database Certificate

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

(Major Code 5190; CIP Code 11.0802)

Computing Sciences and Information Technology Department

## Career Certificate

```
Prior to beginning the database certificate program,
the student must take the following prerequisite or have
taken an equivalent transfer course, or have passed the
waiver test, or have obtained a waiver from the program
administrator.


CPCA 105  Introduction to Personal Computers: Windows..........1
          or
CPCA 106  Introduction to Personal Computers: Macintosh........1
```

**First Semester**

```
Full Semester Course
CIS  134  Programming Fundamentals.............................4


First Five Week Session
CPCA 114  Databases I: MS Access*...............................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test


Second Five Week Session
CPCA 115  Databases II: MS Access*.............................2
          Prerequisite: CPCA 114
CWEB 101  Introduction to the Web using Internet Explorer......1
          Prerequisites: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test


Third Five Week Session
CPCA 141  Internet I*..........................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test
          Total Semester Credit Hours.........................9
```

**Second Semester**

```
Full Semester Course
CIS  138  Visual Basic .Net*..................................4
          Prerequisite: CIS 134


First Five Week Session
CPCA 138  Windows for Microcomputers*.........................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on an
          assessment test


Second Five Week Session
CWEB 136  Introduction to PHP*................................1
          Prerequisites: CWEB 101 and CPCA 114


Third Five Week Session
CWEB 146  PHP with MySQL*.....................................1
          Prerequisite: CWEB 136
CPCA 117  Databases III: MS Access*...........................1
          Prerequisite: CPCA 115
          Total Semester Credit Hours.........................8
```

**Third Semester**

```
Full Semester Courses
CIS  238  Visual Basic Intermediate Topics*...................4
          Prerequisite: CIS 138
CIS  162  Database Programming*...............................4
          Prerequisite: CIS 134 or the equivalent
          Total Semester Credit Hours.........................8
```

**Fourth Semester**

```
Full Semester Courses
CIS  260  Database Management*................................4
          Prerequisite: CS 250 or CS 255 or CIS 235 or
          CIS 238 or CIS 248
CIS  242  Introduction to System Design and Analysis*.........3
          Prerequisite: CIS 138 or CS 200 or CS 201 or
          CS205
          Total Semester Credit Hours.........................7
          TOTAL PROGRAM CREDIT HOURS.........................32
*Prerequisite/Corequisite required
```

# Desktop Publishing Applications Specialist Certificate

An individual, with or without a college degree, with the goal to acquire or improve computer desktop publishing application skills, will accomplish that goal in this certificate. Emphasis is placed upon the acquisition of results-oriented career business and industry skills.

The desktop publishing certificate is intended for those seeking entry-level positions, as well as for those currently employed, who desire to enhance their job skills. This certificate provides current or prospective employers with tangible evidence of desktop publishing competency, on the part of the certificate completer.

Application courses for the certificate will encourage students to develop a "cross-platform" mastery, which is made possible by offering most on-campus courses in a dual-platform Macintosh and Windows computing environment.

Required courses that cover skills a student already has may be replaced with other CDTP courses at the discretion of the Assistant Dean of Computing Sciences and Information Technology or a desktop publishing professor. An applicant must complete 14 credits at Johnson County Community College.

(Major Code 4830; CIP Code 11.0202)

Computing Sciences and Information Technology Department

## Certificate of Completion

```
Prior to beginning the database career certificate
program the student must take the following prerequisite
or have taken an equivalent transfer course, or have passed
the waiver test, or have obtained a waiver from the program
administrator.


CPCA 105  Introduction to Personal Computers: Windows..........1
          or
CPCA 106  Introduction to Personal Computers: Macintosh........1
```

**Suggested/Sample Course Sequence Completion in One Semester**

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

**First Five Week Session**

```
CPCA 134  Managing Your Macintosh*............................1
          Prerequisite: CPCA 106 or an appropriate score on an
          assessment test
          or
CPCA 138  Windows for Microcomputers*.........................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on an
          assessment test
CDTP 135  Desktop Photo Manipulation I: Photoshop.............1
```

```
CDTP 140   Desktop Publishing I: InDesign.......................1
CDTP 145   Desktop Illustration I: Illustrator..................1
```

**Second Five Week Session**

```
CDTP 155   Desktop Photo Manipulation II: Photoshop*............1
           Prerequisite: CDTP 135
CDTP 160   Desktop Publishing II: InDesign*....................1
           Prerequisite: CDTP 140
CDTP 165   Desktop Illustration II: Illustrator*...............1
           Prerequisite: CDTP 145
```

**Third Five Week Session**

```
CDTP 175   Desktop Photo Manipulation III: Photoshop*...........1
           Prerequisite: CDTP 155
CDTP 168   Desktop Publishing III: InDesign*...................1
           Prerequisite: CDTP 160
CDTP 185   Desktop Illustration III: Illustrator*..............1
           Prerequisite: CDTP 165
```

**Select four of the following twelve courses:**

```
CPCA 108   Word Processing I: MS Word*.........................1
           Prerequisites: CPCA 105 or CPCA 106 or CIS 124
           or CPCA 128 or appropriate score on a waiver test
CPCA 123   E-Presentation: MS PowerPoint*......................1
           Prerequisite: CPCA 105 or CPCA 106
           or CIS 124 or CPCA 128 or an appropriate score on a
           waiver test
CPCA 125   Word Processing II: MS Word*........................1
           Prerequisite: CPCA 108
CWEB 105   Introduction to Web Pages: Dreamweaver*.............1
           Prerequisite: CWEB 101
CWEB 106   Introduction to Microsoft FrontPage*...............1
           Prerequisite: CWEB 101
CWEB 115   Intermediate Web Pages: Dreamweaver*................1
           Prerequisite: CWEB 105
CWEB 125   Introduction to Dynamic Web Pages: Dreamweaver*.....1
           Prerequisites: CWEB 115 and CPCA 114
CWEB 130   Introduction to Flash*..............................1
           Prerequisite: CPCA 161 or CWEB 105 or CWEB 106
CWEB 140   Intermediate Flash*.................................1
           Prerequisite: CWEB 130
CWEB 150   Advanced Flash*.....................................1
           Prerequisite: CWEB 140
           TOTAL PROGRAM CREDIT HOURS..........................14
*Prerequisite/Corequisite required
```

# Microcomputer Programmer Analyst Certificate

The Microcomputer Programmer/Analyst Certificate provides a foundation in skills needed to analyze business problems and develop software solutions using current industry standard development tools. The certificate provides an academic credential reflecting enhanced job skills for those seeking advancement in their information services career or for individuals with a prior degree in another discipline seeking a career change.

(Major Code 5030; CIP Code 11.0201)

Computing Sciences and Information Technology Department

## Career Certificate

### Prerequisite for Required Courses

```
Note: Prior to beginning the program, the student must take
the following prerequisite, or have taken an equivalent
transfer course, or have passed the waiver test (if
applicable), or have obtained a waiver from the program
administrator.

CIS  134   Programming Fundamentals............................4
```

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

**First Semester**

```
CS   200   Concepts of Programming Algorithms Using C++*^.......4
           Prerequisite: CIS 134 or ENGR 171
           or equivalent experience
           or
CS   205   Concepts of Programming Algorithms using JAVA*~......4
           Prerequisite: CIS 134 or ENGR 171
           or equivalent experience
CS   210   Discrete Structures I*..............................3
           Prerequisites: MATH 171 or both MATH 116 and CIS 134
           or appropriate math assessment scores
CIS  162   Database Programming*...............................4
           Prerequisite: CIS 134 or the equivalent
           Total Semester Credit Hours........................11
```

**Second Semester**

```
CIS  235   Object-Oriented Programming Using C++*^.............4
           Prerequisite: CS 200 using C++
           or
CS   250   Basic Data Structures using C++*^...................4
           Prerequisite:CS 200
           Prerequisite or corequisite: CS 210
           for students transferring to most four-year
           computer science programs
           or
CS   255   Basic Data Structures using JAVA*~.................4
           Prerequisite: CS 205
CIS  242   Introduction to System Design and Analysis*.........3
           Prerequisite: CIS 138 or CS 200 or CS 201 or
           CS205
CIS  204   UNIX Operating System*..............................3
           Prerequisites: CS 200 or CS 205 or
           CS 201 and CPCA 139
           Total Semester Credit Hours........................10
```

**Third Semester**

```
CIS  269   GUI Programming*....................................4
           Prerequisites: CIS 235 or CS 250
           or
CIS  240   Advanced Topics in JAVA I*..........................4
           Prerequisite: CS 250 or CIS 235 or CS 255
CIS  262   Project Management*.................................3
           Prerequisite: CIS 242
CIS  260   Database Management*................................4
           Prerequisite: CS 250 or CS 255 or CIS 235 or
           CIS 238 or CIS 248
           Total Semester Credit Hours........................11
           TOTAL PROGRAM CREDIT HOURS.........................32
*Prerequisite/Corequisite required
```

```
Note: ^ CS 200 students must take either CS 250 or CIS 235
Note: ~ CS 205 students must take CS 255
```

# Personal Computer Application Specialist

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 and take MOUS (Microsoft Office User Specialist) certification tests. It provides employers and current prospective employees with tangible evidence of computer competencies.

(Major Code 4730; CIP Code 11.0202)

Computing Sciences and Information Technology Department

## Certificate of Completion

```
Prior to beginning the database career certificate
program the student must take the following prerequisite
or have taken an equivalent transfer course, or have passed
the waiver test, or have obtained a waiver from the program
administrator.

CPCA 105   Introduction to Personal Computers: Windows..........1
           or
CPCA 106   Introduction to Personal Computers: Macintosh........1
```

**Suggested/Sample Course Sequence Completion - Two Semesters**

The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.

### First Semester

```
First Five Week Session
CPCA 123  E-Presentation: MS PowerPoint*.....................1
          Prerequisite: CPCA 105 or CPCA 106
          or CIS 124 or CPCA 128 or an appropriate score on a
          waiver test
CPCA 138  Windows for Microcomputers*.........................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on an
          assessment test


Second Five Week Session
CPCA 108  Word Processing I: MS Word*.........................1
          Prerequisites: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
CPCA 110  Spreadsheets I: MS Excel*...........................1
          Prerequisite: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test


Third Five Week Session
CPCA 111  Spreadsheets II: MS Excel*..........................1
          Prerequisite: CPCA 110 or CPCA 128
CPCA 125  Word Processing II: MS Word*........................1
          Prerequisite: CPCA 108
          Total Semester Credit Hours.........................6
```

### Second Semester

```
First Five Week Session
CPCA 114  Databases I: MS Access*.............................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test
CPCA 141  Internet I*.........................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test


Second Five Week Session
CPCA 115  Databases II: MS Access*............................2
          Prerequisite: CPCA 114


Third Five Week Session
Continuation of CPCA 115-Database II: MS Acess*
          CPCA Elective.......................................1
          Total Semester Credit Hours.........................5
          TOTAL PROGRAM CREDIT HOURS.........................11
*Prerequisite/Corequisite required
```

### CPCA Electives

```
CPCA 118  Groupware: Outlook*.................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124
          or an appropriate score on a waiver test
CPCA 121  Introduction to Project Management*.................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test
CPCA 151  Internet II*........................................1
          Prerequisite: CPCA 141 or an appropriate score on an
          assessment test
CPCA 161  Introduction to Web Pages using HTML*...............1
          Prerequisite: CPCA 151 or an appropriate score on an
          assessment test
```

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

### Second Option

### Suggested/Sample Course Sequence Completion in One Semester

The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.

### First Semester

```
First Five Week Session
CPCA 108  Word Processing I: MS Word*.........................1
```

```
          Prerequisites: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
CPCA 110  Spreadsheets I: MS Excel*...........................1
          Prerequisite: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
CPCA 114  Databases I: MS Access*.............................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test
CPCA 141  Internet I*.........................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test


Second Five Week Session
CPCA 123  E-Presentation: MS PowerPoint*.....................1
          Prerequisite: CPCA 105 or CPCA 106
          or CIS 124 or CPCA 128 or an appropriate score on a
          waiver test
CPCA 138  Windows for Microcomputers*.........................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on an
          assessment test
CPCA 115  Databases II: MS Access*............................2
          Prerequisite: CPCA 114


Third Five Week Session
Continuation of CPCA 115-Database II: MS Acess*
CPCA 111  Spreadsheets II: MS Excel*..........................1
          Prerequisite: CPCA 110 or CPCA 128
CPCA 125  Word Processing II: MS Word*........................1
          Prerequisite: CPCA 108
          CPCA Elective.......................................1
          TOTAL PROGRAM CREDIT HOURS.........................11
*Prerequisite/Corequisite required
```

### CPCA Electives

```
CPCA 118  Groupware: Outlook*.................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124
          or an appropriate score on a waiver test
CPCA 121  Introduction to Project Management*.................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test
CPCA 151  Internet II*........................................1
          Prerequisite: CPCA 141 or an appropriate score on an
          assessment test
CPCA 161  Introduction to Web Pages using HTML*...............1
          Prerequisite: CPCA 151 or an appropriate score on an
          assessment test
```

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

# Web Applications Certificate

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

(Major Code 5610; CIP Code 11.0202)

Computing Sciences and Information Technology Department

## Certificate of Completion

### Prerequisite for Required Courses

```
Prior to beginning the program, the student must take
the follow prerequisite, or have taken an equivalent course,
or have passed the waiver test, or have obtained a
waiver from the program administrator.



CPCA 105  Introduction to Personal Computers: Windows..........1
```

### First Semester

```
First Five Week Session
CWEB 101  Introduction to the Web using Internet Explorer*.....1
          Prerequisites: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test
          Elective from First Semester List of Electives.......1
```

```
Second Five Week Session
CWEB 105  Introduction to Web Pages: Dreamweaver*..............1
          Prerequisite: CWEB 101
CWEB 106  Introduction to Microsoft FrontPage*................1
          Prerequisite: CWEB 101


Third Five Week Session
CWEB 111  Intermed Web Concepts/Techniques using Explorer*.....1
          Prerequisite: CWEB 101
CWEB 116  Intermediate Microsoft FrontPage*...................1
          Prerequisite: CWEB 106
          or
CWEB 115  Intermediate Web Pages: Dreamweaver*................1
          Prerequisite: CWEB 105
          Elective from First Semester List of Electives.......1
          Total Semester Credit Hours..........................7


FIRST SEMESTER LIST OF ELECTIVES
CDTP 135  Desktop Photo Manipulation I: Photoshop..............1
CDTP 145  Desktop Illustration I: Illustrator.................1
CWEB 130  Introduction to Flash*..............................1
          Prerequisite: CPCA 161 or CWEB 105 or CWEB 106
```

## Second Semester

```
First Five Week Session
CWEB 230  Introductory E-Commerce Applications*................1
          Prerequisite: CWEB 101 or CPCA 141
CPCA 114  Databases I: MS Access*.............................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test


Second Five Week Session
CWEB 136  Introduction to PHP*................................1
          Prerequisites: CWEB 101 and CPCA 114
CWEB 240  Intermediate E-Commerce Applications*...............1
          Prerequisite: CWEB 230
          Elective from Second Semester List of Electives......1


Third Five Week Session
CWEB 146  PHP with MySQL*.....................................1
          Prerequisite: CWEB 136
          Elective from Second Semester List of Electives......1
          Total Semester Credit Hours..........................7
          TOTAL PROGRAM CREDIT HOURS..........................14


SECOND SEMESTER LIST OF ELECTIVES
CPCA 161  Introduction to Web Pages using HTML*...............1
          Prerequisite: CPCA 151 or an appropriate score on an
          assessment test
CWEB 160  Introduction to JavaScript*.........................1
          Prerequisite: CWEB 105 or CWEB 106 or CPCA 161
CWEB 107  Web Tools: Microsoft Office*........................1
          Prerequisites: CWEB 101 and CPCA 110 or CPCA 114
*Prerequisite/Corequisite required
```

```
CDTP 135  Desktop Photo Manipulation I: Photoshop.............1
CIS  162  Database Programming*...............................4
          Prerequisite: CIS 134 or the equivalent
CS   200  Concepts of Programming Algorithms Using C++*........4
          Prerequisite: CIS 134 or ENGR 171
          or equivalent experience
          or
CS   205  Concepts of Programming Algorithms using JAVA*.......4
          Prerequisite: CIS 134 or ENGR 171
          or equivalent experience
CIS  235  Object-Oriented Programming Using C++*..............4
          Prerequisite: CS 200 using C++
          or
CS   255  Basic Data Structures using JAVA*...................4
          Prerequisite: CS 205
```

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
CIM  133  Screen Design*......................................4
          Prerequisite: CDTP 135
CIS  204  UNIX Operating System*..............................3
          Prerequisites: CS 200 or CS 205 or
          CS 201 and CPCA 139
CIS  240  Advanced Topics in JAVA I*..........................4
          Prerequisite: CS 250 or CIS 235 or CS 255
CIS  260  Database Management*................................4
          Prerequisite: CS 250 or CS 255 or CIS 235 or
          CIS 238 or CIS 248
          Total Semester Credit Hours.........................15
```

### Second Semester

```
CIM  130  Interactive Media Concepts..........................2
CIS  254  UNIX System Administration*.........................4
          Prerequisite: CIS 204
CIS  275  Web-Enabled Database Programming*...................4
          Prerequisites: CS 200 or CS 201 or CS 205 or
          CIS 162 and either CPCA 139
          or CIS 204 and either CPCA 161 or CPCA 158


          or


CIS  277  Active Server Pages.Net*............................4
          Prerequisites: CS 200 or CS 201 or CS 205 or CIS 162
          and either CPCA 139 or CIS 204 and either CPCA 161
          or CPCA 158
CIS  280  Advanced Topics in JAVA II*.........................4
          Prerequisite: CIS 240
          Total Semester Credit Hours.........................14
          TOTAL PROGRAM CREDIT HOURS..........................29
*Prerequisite/Corequisite required
```

# Web Developer Advanced Certificate

The Web developer advanced certificate is for the computer professional who wants to acquire the necessary skills to enable clients to interface with databases on the World Wide Web.

(Major Code 5150; CIP Code 11.1004)

Computing Sciences and Information Technology Department

## Career Certificate

### Prerequisites for Required Courses

```
Note: Prior to beginning the program, the student must take
the following prerequisites, or have taken an equivalent
transfer course, or have passed the waiver test (if
applicable), or have obtained a waiver from the program
administrator.


CIS  134  Programming Fundamentals............................4
CPCA 161  Introduction to Web Pages using HTML*...............1
          Prerequisite: CPCA 151 or an appropriate score on an
          assessment test
CDTP 131  *...................................................1
          or
CDTP 140  Desktop Publishing I: InDesign......................1
          or
```

# Advanced Esthetics Certificate

This 100 contact hour course is designed to meet the educational requirements for licensure by the Missouri Board of Cosmetology for estheticians in the cosmetology sciences and meet the needs of students who desire exposure to advanced esthetics techniques. Students will attend 44 hours of lecture/discussion/demonstration, practice 44 hours of integrated lecture/clinical, complete 4 hours assisting in a salon and participate in 8 hours of community service. Topics covered include body treatments, theory of the day spa, airbrush, makeup, microderm abrasion, and manual lymphatic drainage.

Prerequisite: Must possess current esthetics license granted by the Kansas Board of Cosmetology or a current cosmetology license.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 3760; CIP Code 12.0409)

Cosmetology/Esthetics/Nail Technology

## Certificate of Completion

**Required Course**

```
AVCO 218  Advanced Esthetics Training*.........................6
          Prerequisite: Must possess current esthetics license
          granted by the Kansas Board of Cosmetology, a current
          cosmetology license, or the minimum of 500 hours of
          esthetics training from another institution.
          TOTAL PROGRAM CREDIT HOURS...........................6
*Prerequisite/Corequisite required
```

# Cosmetology, A.A.S.

This degree may be earned only by a student who has completed the JCCC cosmetology certificate program. A student must have 19 additional credits in order to receive a degree from Johnson County Community College. Students who graduated with the certificate prior to conversion to credit hours will receive 45 hours of documented advanced standing credit, which will be placed on the student's record when the application for graduation is filed. Students must also meet JCCC admissions, residency and graduation requirements.

Interested students should contact the JCCC Student Success Center for further information prior to enrollment in the sequence of courses.

Certain courses within this program require a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 2090; CIP Code 12.0401)

Cosmetology/Esthetics/Nail Technology

## Associate of Applied Science Degree

**Sequence of Courses**

```
Option 1 - No Professional Licensure
AVCO 110  Introduction to Cosmetology.........................21
          Prerequisite: Selective Admission Approval
AVCO 112  Clinical Cosmetology*...............................12
          Prerequisite: Selective Admission Approval
AVCO 114  Advanced Cosmetology*...............................12
          Prerequisites: AVCO 110 with a min grade of "C" or
          higher and selective admission approval
          or
Option 2 - With Nail Technology Licensure
AVCO 110  Introduction to Cosmetology.........................21
          Prerequisite: Selective Admission Approval
AVCO 112  Clinical Cosmetology*...............................12
          Prerequisite: Selective Admission Approval
AVCO 115  Cosmetology with Nail Technology License*...........12
          Prerequisites: AVCO 110 and current Kansas nail
          technology license
          or
Option 3 - With Esthetics Licensure
AVCO 110  Introduction to Cosmetology.........................21
          Prerequisite: Selective Admission Approval
AVCO 112  Clinical Cosmetology*...............................12
          Prerequisite: Selective Admission Approval
AVCO 116  Cosmetology with Esthetics License*.................12
          Prerequisites: AVCO 110 and current Kansas esthetics
          license
          or
Option 4 - With Both Nail Technology & Esthetics Licensure
AVCO 110  Introduction to Cosmetology.........................21
          Prerequisite: Selective Admission Approval
AVCO 115  Cosmetology with Nail Technology License*...........12
          Prerequisites: AVCO 110 and current Kansas nail
          technology license
AVCO 116  Cosmetology with Esthetics License*.................12
          Prerequisites: AVCO 110 and current Kansas esthetics
          license


ENGL 121  Composition I*.......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Communication Elective...............................3
          Humanities Elective..................................3
          Social Science and/or Economics Electives............3
          Science and/or Math Elective.........................3
          Electives............................................3
          Health and/or Physical Education Elective............1
```

```
          TOTAL PROGRAM CREDIT HOURS..........................64
*Prerequisite/Corequisite required
```

# Cosmetology Certificate

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.

Enrollment is limited in the program. Admission requires an interview, testing and a physical examination. Contact the salon at 913-469-8500, ext. 4723 or 2390, for additional information.

Certain courses within this program require a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 370A; CIP Code 12.0401)

Cosmetology/Esthetics/Nail Technology

## Career Certificate

```
Option 1 - No Professional Licensure
AVCO 110  Introduction to Cosmetology.........................21
          Prerequisite: Selective Admission Approval
AVCO 112  Clinical Cosmetology*...............................12
          Prerequisite: Selective Admission Approval
AVCO 114  Advanced Cosmetology*...............................12
          Prerequisites: AVCO 110 with a min grade of "C" or
          higher and selective admission approval
          TOTAL PROGRAM CREDIT HOURS..........................45


          or


Option 2 - With Nail Technology Licensure
AVCO 110  Introduction to Cosmetology.........................21
          Prerequisite: Selective Admission Approval
AVCO 112  Clinical Cosmetology*...............................12
          Prerequisite: Selective Admission Approval
AVCO 115  Cosmetology with Nail Technology License*...........12
          Prerequisites: AVCO 110 and current Kansas nail
          technology license
          TOTAL PROGRAM CREDIT HOURS..........................45


          or


Option 3 - With Esthetics Licensure
AVCO 110  Introduction to Cosmetology.........................21
          Prerequisite: Selective Admission Approval
AVCO 112  Clinical Cosmetology*...............................12
          Prerequisite: Selective Admission Approval
AVCO 116  Cosmetology with Esthetics License*.................12
          Prerequisites: AVCO 110 and current Kansas esthetics
          license
          TOTAL PROGRAM CREDIT HOURS..........................45


          or


Option 4 - With Both Nail Technology & Esthetics Licensure
AVCO 110  Introduction to Cosmetology.........................21
          Prerequisite: Selective Admission Approval
AVCO 115  Cosmetology with Nail Technology License*...........12
          Prerequisites: AVCO 110 and current Kansas nail
          technology license
AVCO 116  Cosmetology with Esthetics License*.................12
          Prerequisites: AVCO 110 and current Kansas esthetics
          license
          TOTAL PROGRAM CREDIT HOURS..........................45
*Prerequisite/Corequisite required
```

# Cosmetology Instructor Training Certificate

This 300 contact hour course is designed to meet the educational requirements for licensure by the Kansas Board of Cosmetology for instructors in the cosmetology sciences. Students will attend 40 hours of lecture and participate in 260 hours of observation, clinic supervision, and classroom teaching. Topics covered include instructor characteristics, student motivation, methods and evaluation.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 3740; CIP Code 12.0401)

Cosmetology/Esthetics/Nail Technology

## Certificate of Completion

### Required Course

```
AVCO 212  Cosmetology Instructor Training*.....................9
          Prerequisites: Current Kansas Cosmetology and
          Esthetics or Nail Technology License. Minimum of
          one year of practice in trained area and
          selective admission approval
          TOTAL PROGRAM CREDIT HOURS...........................9
*Prerequisite/Corequisite required
```

# Esthetics Certificate

Theory and skill development in sanitation, skin sciences, skin treatments, waxing, makeup and business practices are offered. Upon completion of this program, students are prepared for the Kansas State Board of Cosmetology for Estheticians licensure written and practical exams. Admission requires an interview, testing and a physical examination. Contact the salon at 913-469-8500, ext. 4721 or 2390, for additional information.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 372A; CIP Code 12.0409)

Cosmetology/Esthetics/Nail Technology

## Career Certificate

### Required Course

```
AVCO 118  Esthetics*........................................26
          Prerequisite: selective admission approval
          TOTAL PROGRAM CREDIT HOURS..........................26
*Prerequisite/Corequisite required
```

# Nail Technology Certificate

The program provides theory and skill development in artistic application of artificial nail services which includes the application of fiberglass and silk wraps, tips with overlay, sculptured nails, and gels. Pedicures, manicures, and identifying the various diseases and disorders of the nails will also be taught. Upon completion of this program, students are prepared for the Kansas State Board of Cosmetology Onychology licensure written and practical exams. Admission requires an interview, testing and a physical examination. Contact

the Salon at 913-469-8500, ext. 6402 or 2390, for additional information.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 369A; CIP Code 12.0410)

Cosmetology/Esthetics/Nail Technology

# Career Certificate

## Required Course

```
AVCO 102  Nail Technology....................................17
          TOTAL PROGRAM CREDIT HOURS..........................17
```

# Dental Hygiene, A.A.S.

A key member of the professional dental team, the licensed dental hygienist is on the "front line" of patient care, responsible for providing educational, clinical and therapeutic services that promote total health through good oral health. The growing public awareness of the benefits of oral health, combined with the growth of corporate dental plans, has significantly increased the demand for dental care and has made dental hygiene one of the country's fastest-growing careers. The demand for dental hygienists is expected to grow 46 percent by 2010. Competitive salaries and flexible work schedules are added benefits. Students in JCCC's dental hygiene program prepare for careers as preventive dental professionals who have a choice of working in a variety of settings. Upon successful completion of licensure requirements and board examinations, graduates get jobs in school systems, nursing homes and dental supply firms, as well as private dental offices.

Fully accredited by the American Dental Association Commission on Dental Accreditation, this 83-credit-hour program requires four semesters and one summer session of full-time study. Successful completion leads to an associate of applied science degree. All dental hygiene students gain important practical experience working in JCCC's state-of-the-art clinical facility under the supervision of licensed dental hygienists and dentists.

Enrollment is limited. The deadline for fall semester applications is December 1st. Fall course transcripts are due January 15th. For an application, call the dental hygiene program at 913-469-3808 or download a copy by clicking http://www.jccc.net/home/depts/001253

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 223A; CIP Code 51.0602)

Dental Hygiene Program

## Associate of Applied Science Degree

### Before beginning clinical courses

```
CHEM 122  Principles of Chemistry............................5
ENGL 121  Composition I*....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
BIOL 140  Human Anatomy......................................4
PSYC 130  Introduction to Psychology.........................3
BIOL 230  Microbiology*.....................................3
          Prerequisite: CHEM 122 or
          one year of high school chemistry
BIOL 231  Microbiology Lab*..................................2
          BIOL 231 students must be currently enrolled in
          BIOL 230 or have successfully completed BIOL 230
          within the last three years.
          Total Preclinical Hours...........................20
Note: CHEM 122 or BIOL 230 and one of the other
prerequisites must be completed by the end of the fall
semester.  Transcripts from the fall semester are due
January 15.  The application deadline is December 1.
```

**First Semester**

```
DHYG 121  Clinical Dental Hygiene I: Pre-Clinic*..............5
          Prerequisites: Admission to the Dental Hygiene
          Program, a minimum 2.0 GPA in curriculum courses
          and CHEM 122 and ENGL 121 and  BIOL 140 and
          PSYC 130 and BIOL 230
          Corequisites: DHYG 125 and DHYG 138
          Prerequisite or corequisite: DHYG 135 and SOC 122
DHYG 125  Developmental Dentistry*............................2
          Prerequisites: Admission to Dental Hygiene Program
          and CHEM 122 and ENGL 121 and BIOL 140 and
          PSYC 130 and BIOL 230 and
          Corequisites: DHYG 121 and DHYG 138 and
          Prerequisites or corequisites: SOC 122 and DHYG 135
DHYG 135  Dental Materials*...................................2
          Prerequisites: CHEM 122 and ENGL 121 and PSYC 130 and
          BIOL 140 and BIOL 230 and
          Prerequisite or corequisite: SOC 122
          Corequisites: DHYG 121 and DHYG 125 and DHYG 138
DHYG 138  Head and Neck Anatomy*..............................2
          Prerequisites: BIOL 230 and CHEM 122 and ENGL 121
          and PSYC 130 and BIOL 140 and admission to the
          Dental Hygiene Program and
          Prerequisites or corequisites: SOC 122 and DHYG 135
          Corequisites: DHYG 121 and DHYG 125
SOC  122  Introduction to Sociology..........................3
          Total Semester Credit Hours.......................14
```

**Second Semester**

```
DHYG 140  Clinical Dental Hygiene II*.........................4
          Prerequisite: DHYG 121
          Corequisites: DHYG 142 and DHYG 146
          and DHYG 148 and
          prerequisites or corequisites: BIOL 225 and DHYG 135
DHYG 142  Dental Radiology*...................................2
          Prerequisites: DHYG 121
          Corequisites: DHYG 140 and
          DHYG 146 and DHYG 148 and
          Prerequisites or corequisites: BIOL 225 and DHYG 135
DHYG 146  Periodontics*......................................3
          Prerequisite: DHYG 121
          Corequisites: DHYG 140 and
          DHYG 142 and DHYG 148
          Prerequisites or Corequisites: BIOL 225 and DHYG 135
DHYG 148  Dental Health Education*...........................2
          Prerequisite: DHYG 121
          Corequisites: DHYG 140 and
          DHYG 142 and DHYG 146
          Prerequisites or Corequisites: BIOL 225 and DHYG 135
BIOL 225  Human Physiology*...................................4
          Prerequisites: CHEM 122 and either BIOL 140
          or BIOL 144
          Total Semester Credit Hours.......................15
```

**Summer**

```
BIOL 235  General Nutrition*..................................3
          Prerequisites: CHEM 122 and BIOL 144 or
          CHEM 122 and BIOL 140 and BIOL 225
Note: CHEM 122 and BIOL 144 or CHEM 122 and BIOL 140 and
BIOL 225 are prerequisites to BIOL 235


          Humanities Elective................................3
          Mathematics Elective*..............................3
          Total Semester Credit Hours........................9
```

**Third Semester**

```
DHYG 221  Clinical Dental Hygiene III*........................6
          Prerequisites: DHYG 140 and BIOL 235
          Corequisites: DHYG 225 and DHYG 230 and DHYG 240
DHYG 225  Pathology*.........................................3
          Prerequisites: DHYG 140 and BIOL 235
          Corequisites: DHYG 221 and DHYG 230 and DHYG 240
DHYG 230  Dental Therapeutics*...............................3
          Prerequisites: DHYG 140
          and BIOL 235
          Corequisites: DHYG 221 and DHYG 225 and DHYG 240
DHYG 240  Community Dental Health*...........................2
          Prerequisites: DHYG 140
          and BIOL 235
          Corequisites: DHYG 221 and DHYG 225 and DHYG 230
          Total Semester Credit Hours.......................14
```

**Fourth Semester**

```
DHYG 245  Nitrous Oxide Analgesia*...........................1
          Prerequisite: DHYG 221
          Corequisite: DHYG 250
DHYG 250  Clinical Dental Hygiene IV*.........................6
          Prerequisite: DHYG 221
          Corequisite: DHYG 245
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 Semester Credit Hours.......................11
          TOTAL PROGRAM CREDIT HOURS........................83
*Prerequisite/Corequisite required
```

# Computer-aided Drafting and Design Technology, A.A.S.

Drafting technicians are engineering communication specialists who apply mathematics, computer applications and manual skills to develop specifications and drawings for the manufacturing and construction of virtually everything made in the world. JCCC's drafting technology program offers students up-to-date equipment in facilities located in the Industrial Training Center on the JCCC campus. In addition, the program offers departmental specialty courses. The program provides students with the skills necessary to produce detailed shop drawings, land plats, erection drawings and designs for manufacturing, building, production, commercial building and site construction as well as detailed drawings and designs of components, assemblies and systems used in manufactured products.

Industrial growth and increasingly complex design problems will greatly increase the demand for design and drafting services, particularly using CAD equipment. Employers are most interested in applicants with drafting and mechanical skills, a background in CAD techniques and courses in math, science and engineering technology.

The two-year curriculum enables students to use the latest computer-aided design equipment. Course projects and laboratory procedures are similar to those used in industry.

An associate of applied science degree is awarded upon the successful completion of 67 credit hours.

(Major Code 2220; CIP Code 15.1302)

Computer Aided Drafting and Design

## Associate of Applied Science Degree

### Prerequisites for Required Courses

```
Note: Prior to beginning the program, the student must take
the following prerequisite courses, or have taken an
equivalent transfer course, or have passed the waiver
test (if applicable), or have obtained a waiver from the
program administrator.


DRAF 120  Introduction to Drafting............................2
BOT  101  Computerized Keyboarding............................1
DRAF 130  Introduction to CAD Concepts - AutoCAD: 2008*.......3
          Prerequisite: DRAF 120
          or approval of the program assistant dean
CPCA 105  Introduction to Personal Computers: Windows.........1
CPCA 138  Windows for Microcomputers*........................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on an
          assessment test
CPCA 141  Internet I*........................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test
```

**First Semester**

```
DRAF 129  Interpreting Architectural Drawings.................2
DRAF 123  Interpreting Machine Drawings*.....................2
          Prerequisite or corequisite: DRAF 120
          or approval of the program assistant dean
DRAF 135  Graphic Analysis*..................................3
          Prerequisites: DRAF 120 and DRAF 130
          or approval of the program assistant dean
DRAF 230  Intermediate CAD: AutoCAD*.........................3
          Prerequisite: DRAF 130
          or approval of the program assistant dean
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
MATH 133  Technical Mathematics I*...........................4
```

```
         Prerequisite: MATH 111 with a grade of "C" or higher
         or appropriate score on the math assessment test
         Total Semester Credit Hours.........................17
```

## Second Semester

```
DRAF 238  Architectural Drafting*............................3
          Prerequisites: DRAF 129 and
          DRAF 230
DRAF 231  CAD 3-D*..........................................3
          Prerequisite: DRAF 230
DRAF 252  Structural Drafting*..............................3
          Prerequisite: DRAF 230 or ENGR 131
          Corequisite: MATH 134
          Technical Electives...............................3
MATH 134  Technical Mathematics II*.........................5
          Prerequisite: MATH 133 or an equivalent course
          with a grade of "C" or higher
          Total Semester Credit Hours......................17
```

## Third Semester

```
CET  211  Technical Statics and Design*.....................3
          Prerequisite: MATH 134 or MATH 172 or MATH 173 or
          MATH 241
DRAF 222  Mechanical Drafting*..............................3
          Prerequisites: DRAF 123 and DRAF 230
          Prerequisite and/or corequisite: MATH 134
DRAF 250  Electrical Drafting*..............................3
          Prerequisites: MATH 133 and DRAF 230 or ENGR 131
          Health and/or Physical Education Elective.........1
ENGL 123  Technical Writing I*..............................3
          Prerequisite: ENGL 121
CET  270  Fluid Mechanics*..................................3
          Prerequisites: MATH 172 or MATH 134
          Total Semester Credit Hours......................16
```

## Fourth Semester

```
DRAF 228  Industrial Design Applications*...................3
          Prerequisites: CET 211 and DRAF 222 and DRAF 250
          and DRAF 252
DRAF 243  Architectural Desktop: Revit*.....................2
          Prerequisite: DRAF 230 or ENGR 131
          or approval of the program assistant dean
          or
DRAF 244  Land Development Desktop/CIVIL 3D*................2
          Prerequisite: DRAF 230 or ENGR 131
          or approval of the program assistant dean
          or
DRAF 245  Mechanical Desktop: Inventor*.....................2
          Prerequisite: DRAF 230 or ENGR 131
          or approval of the program assistant dean
DRAF 225  Civil Drafting*...................................3
          Prerequisite: DRAF 230 or ENGR 131
          Corequisite: MATH 134
          Social Science and/or Economics Elective.........3
          Humanities Elective..............................3
          Technical Electives..............................3
          Total Semester Credit Hours......................17
          TOTAL PROGRAM CREDIT HOURS.......................67
```

## Technical Electives

```
CPCA 108  Word Processing I: MS Word*.......................1
          Prerequisites: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
CPCA 110  Spreadsheets I: MS Excel*.........................1
          Prerequisite: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
CPCA 111  Spreadsheets II: MS Excel*........................1
          Prerequisite: CPCA 110 or CPCA 128
CPCA 114  Databases I: MS Access*...........................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test
CPCA 115  Databases II: MS Access*..........................2
          Prerequisite: CPCA 114
CPCA 117  Databases III: MS Access*.........................1
          Prerequisite: CPCA 115
CPCA 121  Introduction to Project Management*...............1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test
CPCA 123  E-Presentation: MS PowerPoint*....................1
          Prerequisite: CPCA 105 or CPCA 106
          or CIS 124 or CPCA 128 or an appropriate score on a
          waiver test
CPCA 125  Word Processing II: MS Word*......................1
          Prerequisite: CPCA 108
CPCA 151  Internet II*......................................1
          Prerequisite: CPCA 141 or an appropriate score on an
          assessment test
CPCA 158  Internet Application and Utilities*...............3
          Prerequisite: CPCA 141 or an appropriate score on an
          assessment test
CPCA 161  Introduction to Web Pages using HTML*.............1
          Prerequisite: CPCA 151 or an appropriate score on an
          assessment test
DRAF 140  Topics in CAD I...................................2
```

```
DRAF 232  CAD Applications Workstation Environment*.........2
          Prerequisite: DRAF 230
          or approval of the program assistant dean
DRAF 233  CAD Administration................................2
DRAF 240  Introduction to AutoLISP*.........................2
          Prerequisite: DRAF 230
DRAF 242  Topics in CAD II*.................................2
          Prerequisite: DRAF 230
          or approval of the program assistant dean
DRAF 243  Architectural Desktop: Revit*.....................2
          Prerequisite: DRAF 230 or ENGR 131
          or approval of the program assistant dean
DRAF 244  Land Development Desktop/CIVIL 3D*................2
          Prerequisite: DRAF 230 or ENGR 131
          or approval of the program assistant dean
DRAF 245  Mechanical Desktop: Inventor*.....................2
          Prerequisite: DRAF 230 or ENGR 131
          or approval of the program assistant dean
DRAF 271  Drafting Internship I*............................3
          Prerequisite: assistant dean's approval
DRAF 272  Drafting Internship II*...........................3
          Prerequisites: DRAF 271 and
          assistant dean's approval
CET  105  Construction Methods..............................3
CET  125  Construction Specifications*......................2
          Prerequisite or corequisite: CET 105 or equivalent
CET  129  Construction Management...........................3
CET  227  Construction Cost Estimating*.....................3
          Prerequisites: CET 105 and CET 125 or permission
          of program administrator and
          Prerequisite or corequisite: DRAF 129 or permission
          of program administrator
MFAB 152  Manufacturing Materials and Processes.............3
ENGR 180  Engineering Land Surveying I*.....................3
          Corequisite: MATH 134 or MATH 172
*Prerequisite/Corequisite required
```

---

# Computer-aided Drafting 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.

(Major Code 4800; CIP Code 15.1302)

Computer Aided Drafting and Design

## Certificate of Completion

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### Prerequisite for Required Course

```
DRAF 120  Introduction to Drafting..........................2
          or
          approval of career program facilitator
          or
          prior learning credit (contact the Testing Center)
```

### First Semester

```
CPCA 105  Introduction to Personal Computers: Windows.......1
CPCA 138  Windows for Microcomputers*.......................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on an
          assessment test
CPCA      Elective..........................................1
DRAF 130  Introduction to CAD Concepts - AutoCAD: 2008*.....3
          Prerequisite: DRAF 120
          or approval of the program assistant dean
          Total Semester Credit Hours.......................6
```

### Second Semester

```
DRAF 230  Intermediate CAD: AutoCAD*........................3
          Prerequisite: DRAF 130
          or approval of the program assistant dean
          Total Semester Credit Hours.......................3
```

**Third Semester**

```
DRAF 231  CAD 3-D*...........................................3
          Prerequisite: DRAF 230
          Total Semester Credit Hours.........................3
          TOTAL PROGRAM CREDIT HOURS.........................12
*Prerequisite/Corequisite required
```

# Early Childhood Education, A.S.

The Early Childhood Education associate's degree program is for those students who currently are employed or aspire to work in early childhood care and 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 four areas of specialization: administration, care and education of young children with special needs, infant/toddler care and education and school age programs. Credits will transfer to many Kansas universities. Excellent practical education opportunities are available to students in the program.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

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).

(Major Code 2100; CIP Code 19.0708)

Early Childhood Education Program

## Associate of Science Degree

```
Students graduating with an Associate of Arts degree or an
Associate of Science degree must complete an approved
cultural diversity course.  Some of these courses are able
to meet both a diversity requirement and a general education
requirement.
```

### First Semester

```
EDUC 130  Foundations of Early Childhood Education.............3
ENGL 121  Composition I*.......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Math Elective*+......................................3
PSYC 130  Introduction to Psychology...........................3
SPD  121  Public Speaking......................................3
          Total Semester Credit Hours.........................15
```

### Second Semester

```
EDUC 131  Early Childhood Curriculum I*........................3
          Prerequisite or corequisite: EDUC 130
EDUC 250  Child Health, Safety and Nutrition...................3
          Health/Physical Education**........................1-2
          Science course with Lab***.........................4-5
PSYC 215  Child Development*...................................3
          Prerequisite: PSYC 130
          or
PSYC 218  Human Development*...................................3
          Prerequisite: PSYC 130
          Total Semester Credit Hours......................14-16
```

### Summer Semester

```
ENGL 122  Composition II*......................................3
          Prerequisite: ENGL 121
          Humanities Elective..................................3
          Total Semester Credit Hours..........................6
```

### Third Semester

```
EDUC 231  Early Childhood Curriculum II*.......................3
          Prerequisite:  EDUC 131
EDUC 210  Creative Experiences for Young Children*.............3
          Prerequisites:  EDUC 130 and one of the following:
          PSYC 215 or PSYC 218 or EDUC 270
```

```
EDUC 260  Observing and Interacting with Young Children*.......3
          Prerequisite: EDUC 130 and
          Prerequisite or corequisite: PSYC 215 or PSYC 218
          or EDUC 270
ANTH 130  World Cultures^......................................3
ANTH 125  Cultural Anthropology^...............................3
          or
SOC  131  Marriage and the Family..............................3
          Science or Math....................................4-5
          Total Semester Credit Hours......................16-17
```

### Fourth Semester

```
EDUC 235  Parenting*...........................................2
          Prerequisite or corequisite:  PSYC 215 or PSYC 218 or
          EDUC 270
EDUC 284  Seminar: Early Childhood Education*..................3
          Prerequisite: Program Facilitator Approval
          Corequisite: EDUC 285
EDUC 285  Student Teaching: Early Childhood Education*.........3
          Prerequisite: Program Facilitator Approval
          Corequisite: EDUC 284
          Humanities Elective..................................3
          Specialization courses..............................6
          Total Semester Credit Hours.........................17
          TOTAL PROGRAM CREDIT HOURS.......................69-70
*Prerequisite/Corequisite required
^Meets Cultural Diversity requirement
```

### Area of Specialization - select one:

### Child Care Administration

```
ACCT 121  Accounting I.........................................3
EDUC 280  Administration of Early Childhood Program............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
          Prerequisite:  EDUC 130
```

### School-Age Programs

```
EDUC 240  School-Age Programs and Curriculum I*................3
          Prerequisite: EDUC 130
EDUC 245  School-Age Programs and Curriculum II*...............3
          Prerequisite: EDUC 240
*Prerequisite/Corequisite required
```

### +Recommended math course information

```
NOTE: The mathematics requirement will be satisfied by any
mathematics course except MATH 111, Fundamentals
of Mathematics, and MATH 115, Elementary Algebra.
```

```
Specific recommended course
MATH 171  College Algebra*.....................................3
          Prerequisite: MATH 116 with a grade of "C" or higher
          or MATH 134 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Note: Not available to students with credit in
          MATH 173
```

### **Recommended HPER course, if not certified in CPR

```
HPER 200  First Aid and CPR....................................2
```

### ***Recommended courses for the science requirement

### Life Science

```
BIOL 122  Principles of Biology................................3
BIOL 123  Principles of Biology Lab*...........................1
          Prerequisite or corequisite: BIOL 122 or
          consent of the assistant dean
BIOL 130  Environmental Science................................3
BIOL 131  Environmental Science Lab*...........................1
          Prerequisite or corequisite: BIOL 130
```

**Physical Science**

```
ASTR 122   Astronomy...........................................4
GEOS 130   General Geology.....................................5
GEOS 140   Physical Geography.................................3
GEOS 141   Physical Geography Lab*............................2
           Prerequisite or corequisite: GEOS 140 or the
           equivalent
PSCI 120   Physical Science...................................4
*Prerequisite/Corequisite required
```

# Early Childhood Education Certificate

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

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

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 6600; CIP Code 19.0708)

Early Childhood Education Program

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
EDUC 130   Foundations of Early Childhood Education............3
EDUC 131   Early Childhood Curriculum I*......................3
           Prerequisite or corequisite: EDUC 130
EDUC 270   Early Childhood Development........................3
ENGL 121   Composition I*....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
SPD  120   Interpersonal Communication**.....................3
           or
SPD  121   Public Speaking...................................3
           Total Semester Credit Hours.......................15
```

### Summer Semester

```
EDUC 210   Creative Experiences for Young Children*..........3
           Prerequisites:  EDUC 130 and one of the following:
           PSYC 215 or PSYC 218 or EDUC 270
           Total Semester Credit Hours........................3
```

### Second Semester

```
EDUC 231   Early Childhood Curriculum II*....................3
           Prerequisite:  EDUC 131
EDUC 250   Child Health, Safety and Nutrition................3
MATH 120   Business Mathematics*.............................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
EDUC 235   Parenting*........................................2
           Prerequisite or corequisite:  PSYC 215 or PSYC 218 or
           EDUC 270
EDUC 283   Prof. Competencies: Early Childhood Education*.....1
           Prerequisite: Program Facilitator Approval
```

**Plus one of the following EDUC courses below:**

```
EDUC 205   Concepts in Early Childhood Education*^............3
           Prerequisite or corequisite: EDUC 130
           for certificate only
EDUC 240   School-Age Programs and Curriculum I*.............3
           Prerequisite: EDUC 130
EDUC 280   Administration of Early Childhood Program..........3
EDUC 215   Young Children with Special Needs.................3
EDUC 225   Infant and Toddler Education and Care*............3
           Prerequisite:  EDUC 130
           Total Semester Credit Hours.......................15
           TOTAL PROGRAM CREDIT HOURS........................33
*Prerequisite/Corequisite required
```

NOTE: **Course is not considered credit in the associate of science early childhood education degree program.

NOTE: ^Course is not considered credit in associate of science early childhood education degree program. Credit for experience is available.

# Commercial Wiring Certificate

The Electrical Technology Commercial Wiring Vocational Certificate is a 16 credit-hour program that students can complete in one semester. This certificate is designed to give the students the basic skills to gain employment as a commercial electrician.

(Major Code 4010; CIP Code 46.0302)

Electrical Technology Program

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Option

#### Spring Semester

```
ELTE 122   National Electrical Code I.........................4
ELTE 123   Electromechanical Systems..........................4
ELTE 200   Commercial Wiring Methods*.........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
INDT 125   Industrial Safety..................................3
INDT 155   Workplace Skills...................................1
           TOTAL PROGRAM CREDIT HOURS........................16
*Prerequisite/Corequisite required
```

### Second Option

#### Fall Semester

```
ELTE 122   National Electrical Code I.........................4
ELTE 123   Electromechanical Systems..........................4
INDT 155   Workplace Skills...................................1
           Total Semester Credit Hours........................9
```

#### Spring Semester

```
INDT 125   Industrial Safety..................................3
ELTE 200   Commercial Wiring Methods*.........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
           Total Semester Credit Hours........................7
           TOTAL PROGRAM CREDIT HOURS........................16
*Prerequisite/Corequisite required
```

# Electrical Technology, A.A.S.

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 65-credit-hour associate of applied science degree program and a 29-credit-hour vocational certificate program. Both programs emphasize hands-on training integrated with a knowledge of theory and study of the National Electrical Code that prepares students to take a national licensure exam.

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

(Major Code 2260; CIP Code 46.0302)

Electrical Technology Program

## Associate of Applied Science Degree

### First Semester

```
ELTE 122  National Electrical Code I..........................4
ELTE 125  Residential Wiring Methods*.........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
ELTE 123  Electromechanical Systems...........................4
INDT 125  Industrial Safety...................................3
INDT 155  Workplace Skills....................................1
          Total Semester Credit Hours........................16
```

### Second Semester

```
ELTE 200  Commercial Wiring Methods*..........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
MATH 133  Technical Mathematics I*............................4
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
CPCA 105  Introduction to Personal Computers: Windows.........1
          Technical Electives.................................3
          Total Semester Credit Hours........................16
```

### Third Semester

```
DRAF 129  Interpreting Architectural Drawings.................2
ELTE 205  Industrial Electrical Wiring*.......................4
          Prerequisite: ELTE 122 or ELTE 125 or ELTE 200
ELTE 210  Code Certification Review*..........................3
          Prerequisite: ELTE 122
ELTE 271  Electrical Internship I*............................3
          Prerequisite: program facilitator approval
HPER 200  First Aid and CPR...................................2
          Social Science and/or Economics Elective............3
          Total Semester Credit Hours........................17
```

### Fourth Semester

```
ENGL 123  Technical Writing I*................................3
          Prerequisite: ENGL 121
ELTE 215  Generators, Transformers and Motors*................4
          Prerequisites:  ELTE 123 and one of the following:
          ELTE 122 or ELTE 125 or ELTE 200
          or equivalent experience
          and division administrator's approval
CET  105  Construction Methods................................3
          Humanities Elective.................................3
          Technical Electives.................................3
          Total Semester Credit Hours........................16
          TOTAL PROGRAM CREDIT HOURS.........................65
```

### Technical Electives

```
ELTE 291  Independent Study.................................1-7
CPCA 128  PC Applications: MS Office..........................3
DRAF 120  Introduction to Drafting............................2
DRAF 130  Introduction to CAD Concepts - AutoCAD: 2008*.......3
          Prerequisite: DRAF 120
          or approval of the program assistant dean
DRAF 250  Electrical Drafting*................................3
          Prerequisites: MATH 133 and DRAF 230 or ENGR 131
ELEC 120  Introduction to Electronics.........................3
ELEC 125  Digital Electronics I...............................4
ELEC 131  Introduction to Sensors and Actuators...............3
ELEC 133  Programmable Controllers............................3
ELEC 165  Advanced Programmable Controllers*..................3
          Prerequisite: ELEC 133
ELEC 185  LAN Cabling and Installation........................3
ELTE 202  Electrical Estimating*..............................3
          Prerequisites: ELTE 122 and ELTE 125 or ELTE 200
          or permission from program facilitator
HVAC 121  Basic Principles of HVAC*...........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
MFAB 121  Intro to Shielded Metal Arc Welding I (SMAW I)*.....4
          Prerequisite or corequisite: MFAB 120 or MFAB 127
BUS  140  Principles of Supervision...........................3
BUS  145  Small Business Management...........................3
ENTR 142  Fast Trac Business Plan.............................3
RRT  165  Railroad Safety, Quality and Environment............3
*Prerequisite/Corequisite required
```

# Electrical Technology 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.

(Major Code 5200; CIP Code 46.0302)

Electrical Technology Program

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
ELTE 122  National Electrical Code I..........................4
ELTE 125  Residential Wiring Methods*.........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
ELTE 123  Electromechanical Systems...........................4
INDT 125  Industrial Safety...................................3
          Total Semester Credit Hours........................15
```

### Second Semester

```
ELTE 200  Commercial Wiring Methods*..........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
ELTE 210  Code Certification Review*..........................3
          Prerequisite: ELTE 122
ELTE 271  Electrical Internship I*............................3
          Prerequisite: program facilitator approval
          Technical Electives.................................3
INDT 155  Workplace Skills....................................1
          Total Semester Credit Hours........................14
          TOTAL PROGRAM CREDIT HOURS.........................29
```

### Technical Electives

```
ELTE 205  Industrial Electrical Wiring*.......................4
          Prerequisite: ELTE 122 or ELTE 125 or ELTE 200
ELTE 291  Independent Study.................................1-7
ELTE 215  Generators, Transformers and Motors*................4
          Prerequisites:  ELTE 123 and one of the following:
          ELTE 122 or ELTE 125 or ELTE 200
          or equivalent experience
          and division administrator's approval
ELEC 185  LAN Cabling and Installation........................3
CET  105  Construction Methods................................3
DRAF 120  Introduction to Drafting............................2
DRAF 129  Interpreting Architectural Drawings.................2
ELEC 120  Introduction to Electronics.........................3
ELEC 126  Microcomputer A+ Preparation........................4
ELEC 125  Digital Electronics I...............................4
ELEC 131  Introduction to Sensors and Actuators...............3
ELEC 133  Programmable Controllers............................3
ELEC 165  Advanced Programmable Controllers*..................3
          Prerequisite: ELEC 133
ELTE 202  Electrical Estimating*..............................3
          Prerequisites: ELTE 122 and ELTE 125 or ELTE 200
          or permission from program facilitator
```

```
HVAC 121  Basic Principles of HVAC*...........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
MFAB 121  Intro to Shielded Metal Arc Welding I (SMAW I)*......4
          Prerequisite or corequisite: MFAB 120 or MFAB 127
*Prerequisite/Corequisite required
```

```
                TOTAL PROGRAM CREDIT HOURS..........................16
*Prerequisite/Corequisite
```

# Industrial Electrical Wiring Certificate

The electrical technology industrial electrical wiring vocational certificate is a program that students can complete in two semesters. This certificate is designed to give the students the basic skills to gain employment as an industrial electrician.

(Major Code 4020; CIP Code 46.0302)

Electrical Technology Program

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
ELTE 123  Electromechanical Systems...........................4
ELEC 133  Programmable Controllers............................3
INDT 125  Industrial Safety...................................3
INDT 155  Workplace Skills....................................1
          Total Semester Credit Hours........................11
```

### Second Semester

```
ELTE 122  National Electrical Code I..........................4
          or
ELTE 200  Commercial Wiring Methods*..........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
ELTE 205  Industrial Electrical Wiring*.......................4
          Prerequisite: ELTE 122 or ELTE 125 or ELTE 200
ELTE 210  Code Certification Review*..........................3
          Prerequisite: ELTE 122
ELTE 215  Generators, Transformers and Motors*................4
          Prerequisites:  ELTE 123 and one of the following:
          ELTE 122 or ELTE 125 or ELTE 200
          or equivalent experience
          and division administrator's approval
          Total Semester Credit Hours........................15
          TOTAL PROGRAM CREDIT HOURS.........................26
*Prerequisite/Corequisite
```

# Residential Wiring Certificate

The Electrical Technology Residential Wiring Vocational Certificate is a 16-credit hour program that students can complete in one semester. This certificate is designed to give the students the basic skills to gain employment as a residential electrician (wireman).

(Major Code 4030; CIP Code 46.0302)

Electrical Technology Program

## Career Certificate

### Fall Semester

```
ELTE 122  National Electrical Code I..........................4
ELTE 123  Electromechanical Systems...........................4
ELTE 125  Residential Wiring Methods*.........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
INDT 125  Industrial Safety...................................3
INDT 155  Workplace Skills....................................1
```

# Electronics Technology, A.A.S.

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, computers and computer networks, and industrial process control systems. The program focuses on the underlying principles of electronic devices, circuit analysis and digital electronics and will provide a broad systems view of electronics.

Students in the electronics program will work with outstanding facilities and the latest laboratory equipment. Graduates of the program will have the opportunity for employment in one of today's most challenging and exciting career fields.

Program graduates also have the opportunity to pursue a baccalaureate degree (B.S.E.E.T.) in electronics engineering technology through the transfer of JCCC electronics technology and other courses to participating four-year institutions. Students contemplating this option should seek early counseling and prepare a program plan with specific course selections in anticipation of four-year institution requirements. Students should be prepared to enroll in higher-level math and physics courses when compared with current electronics technology program requirements.

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

(Major Code 2690; CIP Code 47.0101)

Electronics Technology

## Associate of Applied Science Degree

### First Semester

```
ELEC 120  Introduction to Electronics.........................3
ELEC 126  Microcomputer A+ Preparation........................4
ELEC 125  Digital Electronics I...............................4
MATH 133  Technical Mathematics I or higher*..................4
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Total Semester Credit Hours........................18
```

### Second Semester

```
ELEC 122  Circuit Analysis I*.................................3
          Prerequisites:  ELEC 120 and MATH 133 or MATH 172
ELEC 225  Digital Electronics II*.............................3
          Prerequisite: ELEC 125
MATH 134  Technical Mathematics II or higher*.................5
          Prerequisite: MATH 133 or an equivalent course
          with a grade of "C" or higher
SPD  125  Personal Communication..............................3
          Humanities Elective.................................3
          Total Semester Credit Hours........................17
```

### Third Semester

```
ELEC 130  Electronic Devices I*...............................4
          Prerequisite or corequisite: ELEC 140
ELEC 140  Circuit Analysis II*................................3
          Prerequisites: ELEC 122 and MATH 134 or
          MATH 172 or MATH 173
ENGL 123  Technical Writing I*................................3
          Prerequisite: ENGL 121
          Technical Elective..................................3
          Social Science/Economics Elective..................3
          Total Semester Credit Hours........................16
```

**Fourth Semester**

```
ELEC 230  Electronic Devices II*..............................3
          Prerequisite: ELEC 130
ELEC 240  Electronic Communication Systems*...................4
          Prerequisite or corequisite: ELEC 230
          Technical Elective.................................3
PHYS 133  Applied Physics or higher*..........................5
          Prerequisite: MATH 133 or higher
          Health and/or Physical Education Elective...........1
          Total Semester Credit Hours........................16
          TOTAL PROGRAM CREDIT HOURS.........................67
```

**Technical Electives**

```
ELEC 127  Robots for Humans...................................4
ELEC 131  Introduction to Sensors and Actuators...............3
ELEC 133  Programmable Controllers............................3
ELEC 165  Advanced Programmable Controllers*..................3
          Prerequisite: ELEC 133
ELEC 175  Telecommunications*.................................3
          Prerequisite or corequisite: ELEC 130
ELEC 185  LAN Cabling and Installation........................3
ELEC 245  Microprocessors*....................................3
          Prerequisite: ELEC 225
ELEC 250  Microcomputer Maintenance*..........................3
          Prerequisite: ELEC 126
ELEC 271  Electronics Internship I*...........................1
          Prerequisite: assistant dean's approval
ELEC 272  Electronics Internship II*..........................1
          Prerequisites: ELEC 271 and
          approval of the program assistant dean
*Prerequisite/Corequisite required
```

---

# Industrial Controls 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, 3-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.

(Major Code 4720; CIP Code 47.0101)

Electronics Technology

## Certificate of Completion

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

**First Semester**

```
ELEC 131  Introduction to Sensors and Actuators...............3
ELEC 133  Programmable Controllers............................3
          Total Semester Credit Hours.........................6
```

**Second Semester**

```
ELEC 165  Advanced Programmable Controllers*..................3
          Prerequisite: ELEC 133
          Total Semester Credit Hours.........................3
          TOTAL PROGRAM CREDIT HOURS..........................9
*Prerequisite/Corequisite required
```

---

# Microcomputer Technical Support Certificate

The microcomputer technical support vocational certificate is designed to provide an entry-level set of competencies that will allow the recipient to quickly perform satisfactorily in computer system help desk environment. This 6-course sequence will expose the student to significant aspects of computer hardware, computer networks and interconnection computer software, as well as interpersonal skills. Lectures will provide a theoretical foundation of microcomputer performance while a variety of laboratory projects will offer experience in system organization, interconnection and troubleshooting.

(Major Code 4980; CIP Code 47.0104)

Electronics Technology

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

**First Semester**

```
ELEC 126  Microcomputer A+ Preparation........................4
CPCA 128  PC Applications: MS Office..........................3
ELEC 185  LAN Cabling and Installation........................3
          Total Semester Credit Hours........................10
```

**Second Semester**

```
IT   205  Implementing Windows Client.........................3
ELEC 250  Microcomputer Maintenance*..........................3
          Prerequisite: ELEC 126
BUS  225  Human Relations.....................................3
          or
SPD  125  Personal Communication..............................3
          Total Semester Credit Hours.........................9
          TOTAL PROGRAM CREDIT HOURS.........................19
*Prerequisite/Corequisite required
```

---

# Smart House Technology Integrator Certificate

This certificate documents training that the recipient has received to qualify for the area of installing and integrating a wide range of home networking, automation and remote control systems into homes.

(Major Code 4400; CIP Code 47.0199)

Electronics Technology

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

**Fall Semester**

```
ELEC 123  Smart House Technology..............................3
ELEC 126  Microcomputer A+ Preparation........................4
ELTE 123  Electromechanical Systems...........................4
          or
HVAC 123  Electromechanical Systems...........................4
ELTE 125  Residential Wiring Methods*.........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
          Total Semester Credit Hours........................15
```

**Spring Semester**

```
ELTE 122  National Electrical Code I..........................4
IT   200  Networking Technologies.............................3
ELEC 185  LAN Cabling and Installation........................3
INDT 155  Workplace Skills....................................1
          Total Semester Credit Hours........................11
          TOTAL PROGRAM CREDIT HOURS.........................26
*Prerequisite/Corequisite required
```

# Emergency Medical Science, A.A.S.

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

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

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

### EMS First Responder Course

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

- people without a medical background who wish to enter the EMT program

- anyone who wishes to learn basics of emergency medical care

- firefighters, police officers, lifeguards and others from agencies involved in public safety

- employees involved in company safety programs

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

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

EMS 128 EMS First Responder...................5

TOTAL CREDIT HOURS....................5

### Emergency Medical Technician Course

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

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

Classroom instruction includes anatomy, physiology, recognition and care of actual medical emergencies and trauma-related injuries. Skills in performing CPR, bandaging, splinting, childbirth techniques and other emergency care procedures are taught. An extrication session will give students hands-on experience with auto accident situations and provide the opportunity to observe an air evacuation of a patient. Upon instructor recommendation, students will participate in a clinical observation in a hospital setting. Students participate in seven hours of lecture and five hours of lab a week (average). Students are also required to attend Saturday session(s) as necessary. Saturday dates and times will be announced during the first class session.

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

EMS 130 Emergency Medical Technician Course*............9

*Prerequisite - 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.

TOTAL PROGRAM CREDIT HOURS....................9

### EMT Practicum

EMT Practicum is designed to give the EMT-B, recently certified or those with limited field experience, the additional skills and confidence needed to successfully compete for a position as an EMT-B with an EMS service. Skills will include ambulance operation, driving, map reading, insurance billing and unit maintenance. This course will also provide high-fidelity scenario training in all aspects of the EMS call, as well as extensive field lab time with a local EMS service.

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

EMS 133 EMT Practicum*....................3

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

TOTAL CREDIT HOURS.......3

### Mobile Intensive Care Technician (Paramedic) Program

This advanced emergency medical care program consists of four courses, including a clinical rotation in a hospital setting and a field internship with an ambulance service. You learn emergency procedures such as cardiac monitoring and defibrillation and the administration of medications and IV fluids. Successful completion of this program and subsequent certification exams will enable graduates to work as skilled paramedics and to provide sophisticated, advanced pre-hospital life support.

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

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

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

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 248A; CIP Code 51.0904)

Emergency Medical Science

## Associate of Applied Science Degree

### Prior to beginning professional courses

```
Successful completion of an EMT course and successful
completion of the following courses:

BIOL 144   Human Anatomy and Physiology.........................5
           or
BIOL 140   Human Anatomy.......................................4
           and
BIOL 225   Human Physiology*..................................4
           Prerequisites: CHEM 122 and either BIOL 140
           or BIOL 144
ENGL 121   Composition I*......................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
SOC  125   Social Problems.....................................3
           or
           Social Science/Economics Elective....................3
PHIL 143   Ethics..............................................3
```

```
            or
            Humanities Elective....................................3
            Health/Physical Education Elective...................1
            Electives.........................................0-2
            {depending on which science
            class(es) are taken}
            Total General Education Credit Hours.............17-18
```

### First Semester

```
EMS  220  MICT I*............................................10
            Prerequisite: Admission to the MICT program
EMS  225  MICT II*...........................................10
            Prerequisite: EMS 220 with a grade of "C" or higher
            Total Semester Credit Hours........................20
```

### Second Semester

```
EMS  230  MICT III Clinicals*................................12
            Prerequisite: EMS 225 with a grade of "C" or higher
            Total Semester Credit Hours........................12
```

### Third Semester

```
EMS  271  MICT IV Field Internship*..........................15
            Prerequisite: EMS 230 with a grade of "C" or higher
            Total Semester Credit Hours........................15
            Total Professional Credit Hours....................47
            TOTAL PROGRAM CREDIT HOURS......................64-65
*Prerequisite/Corequisite required
```

# Mobile Intensive Care Technician Certificate

Prior to beginning profession courses:

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

**Mobile Intensive Care Technician (Paramedic) Program**

This advanced emergency medical care program consists of four courses, including a clinical rotation in a hospital setting and a field internship with an ambulance service. You learn emergency procedures such as cardiac monitoring and defibrillation and the administration of medications and IV fluids. Successful completion of this program and subsequent certification exams will enable graduates to work as skilled paramedics and to provide sophisticated, advanced pre-hospital life support.

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

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

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

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 486A; CIP Code 51.0904)

Emergency Medical Science

# Career Certificate

### First Semester

```
EMS  220  MICT I*............................................10
            Prerequisite: Admission to the MICT program
EMS  225  MICT II*...........................................10
            Prerequisite: EMS 220 with a grade of "C" or higher
            Total Semester Credit Hours........................20
```

### Second Session

```
EMS  230  MICT III Clinicals*................................12
            Prerequisite: EMS 225 with a grade of "C" or higher
            Total Semester Credit Hours........................12
```

### Third Semester

```
EMS  271  MICT IV Field Internship*..........................15
            Prerequisite: EMS 230 with a grade of "C" or higher
            Total Semester Credit Hours........................15
            TOTAL PROGRAM CREDIT HOURS.........................47
*Prerequisite/Corequisite required
```

# Emergency Medical Technician Certificate

This certificate program is designed for individuals interested in providing medical care to patients in the pre-hospital setting and prepares the student to enter the workforce as a trained and certified Emergency Medical Technician. Successful graduates of this Kansas Board of Emergency Medical Services (BEMS) course are eligible to take Kansas State and national Certifying examinations.

(Major Code 4760; CIP 51.0904)

Emergency Medical Science

## Certificate of Completion

### Required Course

```
EMS  130  Emergency Medical Technician*.......................9
            Prerequisite: 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 attaned the minimum of an associate's degree
            TOTAL PROGRAM CREDIT HOURS..........................9
*Prerequisite/Corequisite required
```

# Entrepreneurship, A.A.S.

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

You will learn the fundamentals of starting and operating your own business. The program includes basic business skills as well as specific courses in starting and managing an entrepreneurial business. Course work covers evaluating a business opportunity, preparing a business plan, legal issues for small business, planning advertising and sales promotions, marketing a product or service, developing an accounting system and financial management for the entrepreneurial company.

You also will complete two internships 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.

(Major Code 2340; CIP Code 52.0701)

Entrepreneurship

# Associate of Applied Science Degree

### First Semester

```
ENTR 120  Introduction to Entrepreneurship....................2
BUS  230  Marketing..........................................3
BUS  225  Human Relations....................................3
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
MATH 120  Business Math or higher*...........................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Health and/or Physical Education Elective...........1
          Total Semester Credit Hours.......................15
```

### Second Semester

```
ENTR 180  Opportunity Analysis...............................2
ENTR 195  Franchising*.......................................3
          Prerequisite: BUS 230
BUS  150  Business Communications*...........................3
          Prerequisite: ENGL 121
MKT  134  Professional Selling...............................3
ACCT 111  Small Business Accounting..........................3
          or
ACCT 121  Accounting I.......................................3
ECON 132  Survey of Economics................................3
          or
ECON 230  Economics I........................................3
          or
ECON 231  Economics II.......................................3
          Total Semester Credit Hours.......................17
```

### Third Semester

```
ENTR 131  Financial Management for Small Business*...........2
          Prerequisite: ACCT 111 or ACCT 121
ENTR 160  Legal Issues for Small Business....................2
ENTR 210  Entrepreneurship Internship I*.....................1
          Prerequisite: Career program facilitator or
          assistant dean approval
BUS  140  Principles of Supervision..........................3
HIST 141  U.S. History Since 1877............................3
CIS  124  Introduction to Computer Concepts and Applications...3
          and
          CPCA/CDTP elective.................................1
Note: CPCA 105/106 will not meet this one hour requirement.


          or
          CPCA/CDTP electives...............................4
ENTR 225  Family Business*...................................3
          Total Semester Credit Hours.......................18
```

### Fourth Semester

```
ENTR 220  Entrepreneurial Marketing*.........................2
          Prerequisite: BUS 230
ENTR 142  Fast Trac Business Plan............................3
ENTR 215  Entrepreneurship Internship II*....................1
          Prerequisites: ENTR 210 and Assistant Dean's Approval
ENTR 190  Small Business Analysis*...........................2
          Prerequisites: BUSE 131 or ENTR 131 and BUSE 160 or
          ENTR 160 and BUS 230 or permission of division
          administrator
PHIL 138  Business Ethics....................................1
          Humanities Elective................................3
ENTR 240  Funding Acquisition for Entrepreneurs*.............2
          Prerequisite: ENTR 142
          Total Semester Credit Hours.......................14
          TOTAL PROGRAM CREDIT HOURS........................64
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as
noted below, to complement their degree study.  These
courses are NOT part of the certificate requirements.

```
BUS  120  Management Attitudes and Motivation................3
BUS  123  Personal Finance...................................3
BUS  235  Introduction to International Business..............3
BUS  141  Principles of Management...........................3
BUS  243  Human Resource Management..........................3
BUS  261  Business Law I.....................................3
BUS  263  Business Law II*...................................3
          Prerequisite: BUS 261
CPCA 105  Introduction to Personal Computers: Windows........1
```

```
CPCA 108  Word Processing I: MS Word*........................1
          Prerequisites: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
CPCA 110  Spreadsheets I: MS Excel*..........................1
          Prerequisite: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
CPCA 111  Spreadsheets II: MS Excel*.........................1
          Prerequisite: CPCA 110 or CPCA 128
CPCA 114  Databases I: MS Access*............................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test
CPCA 115  Databases II: MS Access*...........................2
          Prerequisite: CPCA 114
CPCA 141  Internet I*........................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test
CPCA 151  Internet II*.......................................1
          Prerequisite: CPCA 141 or an appropriate score on an
          assessment test
FASH 231  Merchandising Planning and Control*................3
          Prerequisite: MATH 120
HMGT 121  Perspectives of Hospitality Management.............3
MKT  121  Retail Management..................................3
MKT  202  Consumer Behavior..................................3
MKT  234  Services Marketing*................................3
          Corequisite: BUS 230
```

# Entrepreneurship Certificate

Students in entrepreneurship certificate programs learn the fundamentals of
starting and operating their own businesses. Course work includes evaluating a
business idea, preparing a business plan, financial management, legal issues,
marketing a product or service and developing an accounting system.

(Major Code 5080; CIP Code 52.0701)

Entrepreneurship

## Career Certificate

### Prerequisites for Required Courses

```
BUS  230  Marketing..........................................3
ACCT 121  Accounting I.......................................3
          or
ACCT 111  Small Business Accounting..........................3
```

### Required Courses

```
ENTR 120  Introduction to Entrepreneurship...................2
ENTR 180  Opportunity Analysis...............................2
ENTR 160  Legal Issues for Small Business....................2
ENTR 210  Entrepreneurship Internship I*.....................1
          Prerequisite: Career program facilitator or
          assistant dean approval
CIS  124  Introduction to Computer Concepts and Applications...3
          or
          CPCA/CDTP electives...............................3
ENTR 131  Financial Management for Small Business*...........2
          Prerequisite: ACCT 111 or ACCT 121
ENTR 195  Franchising*.......................................3
          Prerequisite: BUS 230
ENTR 220  Entrepreneurial Marketing*.........................2
          Prerequisite: BUS 230
ENTR 142  Fast Trac Business Plan............................3
ENTR 190  Small Business Analysis*...........................2
          Prerequisites: BUSE 131 or ENTR 131 and BUSE 160 or
          ENTR 160 and BUS 230 or permission of division
          administrator
MKT  134  Professional Selling...............................3
ENTR 225  Family Business....................................3
ENTR 240  Funding Acquisition for Entrepreneurs*.............2
          Prerequisite: ENTR 142
          TOTAL PROGRAM CREDIT HOURS........................30
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as
noted below, to complement their certificate study.  These
courses are NOT part of the certificate requirements.

```
BUS  120  Management Attitudes and Motivation................3
BUS  123  Personal Finance...................................3
BUS  141  Principles of Management...........................3
BUS  235  Introduction to International Business..............3
BUS  243  Human Resource Management..........................3
BUS  261  Business Law I.....................................3
BUS  263  Business Law II*...................................3
          Prerequisite: BUS 261
CPCA 105  Introduction to Personal Computers: Windows........1
```

```
CPCA 108  Word Processing I: MS Word*.........................1
          Prerequisites: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
CPCA 110  Spreadsheets I: MS Excel*...........................1
          Prerequisite: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
CPCA 111  Spreadsheets II: MS Excel*..........................1
          Prerequisite: CPCA 110 or CPCA 128
CPCA 114  Databases I: MS Access*.............................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test
CPCA 115  Databases II: MS Access*............................2
          Prerequisite: CPCA 114
CPCA 141  Internet I*.........................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test
CPCA 151  Internet II*........................................1
          Prerequisite: CPCA 141 or an appropriate score on an
          assessment test
FASH 231  Merchandising Planning and Control*.................3
          Prerequisite: MATH 120
HMGT 121  Perspectives of Hospitality Management..............3
MKT  121  Retail Management...................................3
MKT  202  Consumer Behavior..................................3
ENTR 215  Entrepreneurship Internship II*....................1
          Prerequisites: ENTR 210 and Assistant Dean's Approval
*Prerequisite/Corequisite required
```

# Business Plan Certificate

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

(Major Code 4810; CIP Code 52.0701)

Entrepreneurship

## Certificate of Completion

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
ENTR 120  Introduction to Entrepreneurship....................2
ENTR 180  Opportunity Analysis................................2
          Total Semester Credit Hours.........................4
```

### Second Semester

```
ENTR 142  Fast Trac Business Plan.............................3
          Total Semester Credit Hours.........................3
          TOTAL PROGRAM CREDIT HOURS..........................7
```

# Fashion Merchandising, A.A.S.

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

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

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

An associate of applied science degree is awarded after successful completion of the 65-credit-hour curriculum in fashion merchandising or fashion design. The program also offers an 18-credit-hour certificate in visual merchandising. Seminars in career options and industry topics are available. Required work-study internships in the fashion business of your choice will give you experience in technical, creative and merchandising skills and make you more marketable in the industry.

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

(Major Code 2520; CIP Code 52.1902)

Fashion Merchandising and Design

## Associate of Applied Science Degree

### First Semester

```
FASH 277  Fashion Seminar: Career Options.....................2
FASH 283  Fashion Internship I................................1
FASH 121  Fashion Fundamentals................................3
FASH 220  CAD Apparel Design..................................3
MKT  134  Professional Selling................................3
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
FASH 135  Image Management....................................1
          Total Semester Credit Hours........................16
```

### Second Semester

```
FASH 242  Consumer Product Evaluation.........................3
FASH 284  Fashion Internship II...............................1
          Health and/or Physical Education Elective...........1
MATH 120  Business Math or higher*............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
FASH 150  Textiles............................................3
FASH 125  Visual Merchandising................................3
BUS  150  Business Communications*............................3
          Prerequisite: ENGL 121
          Total Semester Credit Hours........................17
```

### Third Semester

```
BUS  225  Human Relations.....................................3
FASH 285  Fashion Internship III..............................1
FASH 132  Marketing Communications............................3
MKT  121  Retail Management...................................3
ECON 132  Survey of Economics.................................3
          or
ECON 230  Economics I.........................................3
          Electives...........................................3
          Total Semester Credit Hours........................16
```

### Fourth Semester

```
FASH 286  Fashion Internship IV*..............................1
          Prerequisites: FASH 283 and FASH 284 and FASH 285 and
          45 hours toward degree in Fashion Merchandising
BUS  230  Marketing...........................................3
FASH 231  Merchandising Planning and Control*.................3
          Prerequisite: MATH 120
FASH 280  Capstone: Industry Topics*..........................3
          Prerequisites: FASH 283 and FASH 284
          Corequisite: FASH 231
          Humanities Elective.................................3
          Electives...........................................2
          Total Semester Credit Hours........................15
          TOTAL PROGRAM CREDIT HOURS.........................64
```

### Recommended Electives

```
FASH 123  Apparel Construction I..............................4
FASH 130  Fashion Illustration I..............................3
FASH 140  Garment Design I*...................................3
          Prerequisite: FASH 123
FASH 224  History of Costume..................................3
FASH 268  Field Study: The Market Center*.....................3
          Prerequisite: FASH 121
*Prerequisite/Corequisite required
```

# Fashion Alteration Entrepreneurship Certificate

The certificate should prepare the student with basic skills in fashion construction and alterations (resizing and repairing) as well as skills in small business development and management. It should provide the student with skills in the fashion alterations service business.

Fashion Merchandising and Design

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
FASH 123   Apparel Construction I.............................4
FASH 150   Textiles...........................................3
ENTR 120   Introduction to Entrepreneurship...................2
ENTR 180   Opportunity Analysis...............................2
           Total Semester Credit Hours.......................11
```

### Second Semester

```
FASH 124   Apparel Construction II*...........................4
           Prerequisite: FASH 123 or two years of
           high school apparel construction
           training or division administrator approval
FASH 141   Garment Alterations I*.............................3
           Prerequisites: FASH 123 and
           Prerequisite or Corequisite: FASH 124
FASH 140   Garment Design I*..................................3
           Prerequisite: FASH 123
FASH 283   Fashion Internship I...............................1
           Total Semester Credit Hours.......................11
```

### Third Semester

```
FASH 142   Garment Alterations II*............................3
           Prerequisite: FASH 141 and
           Prerequisite or Corequisite: FASH 143
FASH 143   Tailoring*.........................................4
           Prerequisite: FASH 124
ENTR 142   Fast Trac Business Plan............................3
           Total Semester Credit Hours.......................10
           TOTAL PROGRAM CREDIT HOURS........................32
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study.  These courses are NOT part of the certificate requirements.

```
FASH 121   Fashion Fundamentals...............................3
FASH 127   CAD: Pattern Design I*.............................4
           Prerequisite: FASH 123
FASH 128   CAD: Pattern Design II*............................4
           Prerequisite: FASH 127
FASH 220   CAD Apparel Design.................................3
FASH 130   Fashion Illustration I.............................3
FASH 230   Fashion Illustration II*...........................3
           Prerequisite: FASH 130
FASH 224   History of Costume.................................3
ENTR 220   Entrepreneurial Marketing*.........................2
           Prerequisite: BUS 230
ENTR 195   Franchising*.......................................3
           Prerequisite: BUS 230
ENTR 131   Financial Management for Small Business*...........2
           Prerequisite: ACCT 111 or ACCT 121
ENTR 160   Legal Issues for Small Business....................2
ENTR 225   Family Business....................................3
ENTR 240   Funding Acquisition for Entrepreneurs*.............2
           Prerequisite: ENTR 142
```

# Fashion Design Entrepreneurship Certificate

The fashion design entrepreneurship certificate prepares students to open their own fashion design business. This certificate is designed to provide the student with basic skills in fashion design and small business development and management.

(Major Code 4110; CIP Code 50.0407)

Fashion Merchandising and Design

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
FASH 121   Fashion Fundamentals...............................3
FASH 123   Apparel Construction I.............................4
FASH 130   Fashion Illustration I.............................3
           Total Semester Credit Hours.......................10
```

### Second Semester

```
FASH 150   Textiles...........................................3
FASH 220   CAD Apparel Design.................................3
ENTR 180   Opportunity Analysis...............................2
FASH 124   Apparel Construction II*...........................4
           Prerequisite: FASH 123 or two years of
           high school apparel construction
           training or division administrator approval
           Total Semester Credit Hours.......................12
```

### Third Semester

```
ENTR 120   Introduction to Entrepreneurship...................2
FASH 127   CAD: Pattern Design I*.............................4
           Prerequisite: FASH 123
           or
FASH 140   Garment Design I*..................................3
           Prerequisite: FASH 123
           or
FASH 143   Tailoring*.........................................4
           Prerequisite: FASH 124
ENTR 142   Fast Trac Business Plan............................3
FASH 283   Fashion Internship I...............................1
           Total Semester Credit Hours......................9-10
           TOTAL PROGRAM CREDIT HOURS.....................31-32
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study.  These courses are NOT part of the certificate requirements.

```
ENTR 220   Entrepreneurial Marketing*.........................2
           Prerequisite: BUS 230
ENTR 195   Franchising*.......................................3
           Prerequisite: BUS 230
ENTR 131   Financial Management for Small Business*...........2
           Prerequisite: ACCT 111 or ACCT 121
ENTR 160   Legal Issues for Small Business....................2
```

# Fashion Design, A.A.S.

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

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

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

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

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

(Major Code 2600; CIP Code 50.0407)

Fashion Merchandising and Design

## Associate of Applied Science Degree

### First Semester

```
FASH 121  Fashion Fundamentals................................3
FASH 123  Apparel Construction I..............................4
FASH 135  Image Management....................................1
FASH 220  CAD Apparel Design..................................3
FASH 277  Fashion Seminar: Career Options.....................2
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Total Semester Credit Hours.........................16
```

### Second Semester

```
FASH 124  Apparel Construction II*............................4
          Prerequisite: FASH 123 or two years of
          high school apparel construction
          training or division administrator approval
FASH 130  Fashion Illustration I..............................3
FASH 150  Textiles............................................3
FASH 224  History of Costume..................................3
BUS  150  Business Communications*............................3
          Prerequisite: ENGL 121
          Health and/or Physical Education Elective...........1
          Total Semester Credit Hours.........................17
```

### Third Semester

```
FASH 127  CAD: Pattern Design I*..............................4
          Prerequisite: FASH 123
FASH 242  Consumer Product Evaluation.........................3
FASH 283  Fashion Internship I................................1
MATH 120  Business Math or higher*............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Fashion Electives...................................3
          Elective............................................2
          Total Semester Credit Hours.........................16
```

### Fourth Semester

```
FASH 279  Fashion Portfolio Development*......................2
          Prerequisites: FASH 121 and FASH 124 and FASH 127 and
          FASH 130 and FASH 150 and FASH 220
          Prerequisites or corequisites: FASH 280 and FASH 140
FASH 280  Capstone: Industry Topics*..........................3
          Prerequisites: FASH 283 and FASH 284
          Corequisite: FASH 231
FASH 284  Fashion Internship II...............................1
FASH 140  Garment Design I*...................................3
          Prerequisite: FASH 123
          Humanities Electives................................3
          Social Science and/or Economics Elective............3
          Total Semester Credit Hours.........................15
          TOTAL PROGRAM CREDIT HOURS..........................64
```

### Fashion Electives

```
FASH 128  CAD: Pattern Design II*.............................4
          Prerequisite: FASH 127
FASH 141  Garment Alterations I*..............................3
          Prerequisites: FASH 123 and
```

```
          Prerequisite or Corequisite: FASH 124
FASH 142  Garment Alterations II*.............................3
          Prerequisite: FASH 141 and
          Prerequisite or Corequisite: FASH 143
FASH 143  Tailoring*..........................................4
          Prerequisite: FASH 124
FASH 230  Fashion Illustration II*............................3
          Prerequisite: FASH 130
FASH 268  Field Study: The Market Center*.....................3
          Prerequisite: FASH 121
BUS  225  Human Relations.....................................3
MKT  134  Professional Selling................................3
*Prerequisite/Corequisite required
```

# Fashion Merchandising Entrep Certificate

The fashion merchandising entrepreneurship certificate prepares students to open their own fashion retail business. This certificate is designed to provide the student with basic skills in fashion merchandising and small business development and management.

(Major Code 4150; CIP Code 52.1902)

Fashion Merchandising and Design

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
MATH 120  Business Mathematics*...............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
FASH 121  Fashion Fundamentals................................3
FASH 125  Visual Merchandising................................3
MKT  134  Professional Selling................................3
          Total Semester Credit Hours.........................12
```

### Second Semester

```
ENTR 120  Introduction to Entrepreneurship....................2
ENTR 180  Opportunity Analysis................................2
FASH 150  Textiles............................................3
FASH 231  Merchandising Planning and Control*.................3
          Prerequisite: MATH 120
          Total Semester Credit Hours.........................10
```

### Third Semester

```
FASH 242  Consumer Product Evaluation.........................3
MKT  121  Retail Management...................................3
ENTR 142  Fast Trac Business Plan.............................3
FASH 283  Fashion Internship I................................1
          Total Semester Credit Hours.........................10
          TOTAL PROGRAM CREDIT HOURS..........................32
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study. These courses are NOT part of the certificate requirements.

```
ENTR 220  Entrepreneurial Marketing*..........................2
          Prerequisite: BUS 230
ENTR 195  Franchising*........................................3
          Prerequisite: BUS 230
ENTR 131  Financial Management for Small Business*............2
          Prerequisite: ACCT 111 or ACCT 121
ENTR 160  Legal Issues for Small Business.....................2
```

# Visual Merchandising Certificate

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

(Major Code 7200; CIP Code 52.1902)

Fashion Merchandising and Design

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
FASH 121   Fashion Fundamentals................................3
FASH 125   Visual Merchandising................................3
MKT  121   Retail Management...................................3
ITMD 127   Elements of Floral Design..........................1
           Total Semester Credit Hours.......................10
```

### Second Semester

```
ITMD 147   Lighting Basics*....................................1
           Prerequisite: ITMD 121 with a grade of "C" or higher
           or FASH 125
FASH 225   Store Planning*.....................................3
           Prerequisite: FASH 125
FASH 283   Fashion Internship I................................1
           Fashion Elective....................................3
           Total Semester Credit Hours........................8
           TOTAL PROGRAM CREDIT HOURS.........................18
*Prerequisite/Corequisite required
```

### Fashion Electives

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

# Visual Merchandising Entrepreneurship Certificate

This certificate is designed for students interested in opening their own visual merchandising service business providing clients in the retail and wholesale market visual merchandising and design services.

(Major Code 4040; CIP Code 52.1902)

Fashion Merchandising and Design

## Career Certificate

### Prerequisites for Required Courses

```
BUS  230   Marketing...........................................3
```

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
FASH 121   Fashion Fundamentals................................3
FASH 125   Visual Merchandising................................3
ENTR 120   Introduction to Entrepreneurship....................2
```

```
ENTR 180   Opportunity Analysis................................2
ACCT 121   Accounting I........................................3
           or
ACCT 111   Small Business Accounting...........................3
ITMD 127   Elements of Floral Design...........................1
           Total Semester Credit Hours........................14
```

### Second Semester

```
FASH 130   Fashion Illustration I..............................3
           or
FASH 132   Marketing Communications............................3
           or
FASH 150   Textiles............................................3
           or
FASH 242   Consumer Product Evaluation.........................3
MKT  121   Retail Management...................................3
ENTR 131   Financial Management for Small Business*............2
           Prerequisite: ACCT 111 or ACCT 121
ENTR 142   Fast Trac Business Plan.............................3
ENTR 220   Entrepreneurial Marketing*..........................2
           Prerequisite: BUS 230
ITMD 147   Lighting Basics*....................................1
           Prerequisite: ITMD 121 with a grade of "C" or higher
           or FASH 125
FASH 225   Store Planning*.....................................3
           Prerequisite: FASH 125
FASH 283   Fashion Internship I................................1
           Total Semester Credit Hours........................18
           TOTAL PROGRAM CREDIT HOURS.........................32
*Prerequisite/Corequisite required
```

# Fire Services Administration, A.A.

The goal of the fire science program at Johnson County Community College is to provide comprehensive education and training, specifically designed to:

- Promote the academic and professional development of fire service company-level officers.

- Prepare those seeking employment with fire service agencies of Johnson County.

The program serves to provide higher academic education, technical training and lifelong learning for members of Johnson County fire-related organizations and those seeking employment in those organizations.

The fire science program at JCCC, in close cooperation with the Johnson County Fire Chiefs Association and the University of Kansas Fire and Rescue Training Institute, has developed a degree for advancement in the fire service and for further study toward the baccalaureate degree at a four-year institution, should you elect to pursue your education goals beyond the associate's level.

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

JCCC also offers course work that will prepare you to take the Fire Fighter I and II certification examinations offered by the University of Kansas Fire and Rescue Training Institute. This course work includes FIRE 110, Essentials of Fire Fighting; EMS 130; HPER 240, Lifetime Fitness I; or equivalent. HPER 240, Lifetime Fitness I, is the prerequisite/corequisite for FIRE 110, Essentials of Fire Fighting.

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

(Major Code 2320; CIP Code 43.0203)

## Associate of Arts Degree

Students graduating with an Associate of Arts degree or an Associate of Science degree must complete an approved cultural diversity course. Some of these courses are able to meet both a diversity requirement and a general education

requirement.

## Prerequisite

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

### First Semester

```
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
BUS  140  Principles of Supervision...........................3
MATH 171  College Algebra equivalent or higher*..............3
          Prerequisite: MATH 116 with a grade of "C" or higher
          or MATH 134 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Note: Not available to students with credit in
          MATH 173
FIRE 162  Fire Tactics and Strategy*..........................3
          Prerequisite:  FIRE 110
          Social Science Elective.............................3
          Health and/or Physical Education Elective...........1
          Total Semester Credit Hours........................16
```

### Second Semester

```
ENGL 122  Composition II*......................................3
          Prerequisite: ENGL 121
BUS  141  Principles of Management............................3
FIRE 224  Incident Command Systems*...........................3
          Prerequisite:  FIRE 110
          Humanities Elective.................................3
          Physical Science, with lab.........................4
          Total Semester Credit Hours........................16
```

### Third Semester

```
FIRE 135  Building and Fire Codes*............................3
          Prerequisite:  FIRE 110
FIRE 130  Fire Investigation*.................................1
          Prerequisite:  FIRE 110
FIRE 222  Fire Science Law*...................................3
          Prerequisite:  FIRE 110
          Technical Electives.................................3
          Oral Communication..................................3
          Science and/or Math Elective........................3
          Total Semester Credit Hours........................16
```

### Fourth Semester

```
FIRE 220  Fire Administration*................................3
          Prerequisite:  FIRE 110
FIRE 250  Fire Service Science Instructional Methodology*.....3
          Prerequisite:  FIRE 110
          Technical Electives.................................4
          Humanities Electives................................3
          Social Science Elective.............................3
          Total Semester Credit Hours........................16
          TOTAL PROGRAM CREDIT HOURS.........................64
```

### Technical Electives

```
FIRE 110  Essentials of Fire Fighting*........................9
          Prerequisite or corequisite: HPER 240
EMS  128  EMS First Responder.................................5
EMS  130  Emergency Medical Technician*.......................9
          Prerequisite: 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 attaned the minimum of an associate's degree
EMS  220  MICT I*............................................10
          Prerequisite: Admission to the MICT program
EMS  225  MICT II*...........................................10
          Prerequisite: EMS 220 with a grade of "C" or higher
CS   200  Concepts of Programming Algorithms Using C++*.......4
          Prerequisite: CIS 134 or ENGR 171
          or equivalent experience
CS   205  Concepts of Programming Algorithms using JAVA*......4
          Prerequisite: CIS 134 or ENGR 171
          or equivalent experience
CS   210  Discrete Structures I*..............................3
          Prerequisites: MATH 171 or both MATH 116 and CIS 134
          or appropriate math assessment scores
CIS  162  Database Programming*...............................4
          Prerequisite: CIS 134 or the equivalent
CIS  242  Introduction to System Design and Analysis*.........3
          Prerequisite: CIS 138 or CS 200 or CS 201 or
          CS205
CIS  243  Object-Oriented Analysis and Design*................4
```

```
          Prerequisite: One programming course using an
          object-oriented programming language
          or equivalent experience
CIS  258  Operating Systems*..................................3
          Prerequisite: CIS 138 or CIS 162 or
          CS 200 or CS 201 or CS 205
CIS  204  UNIX Operating System*..............................3
          Prerequisites: CS 200 or CS 205 or
          CS 201 and CPCA 139
BUS  120  Management Attitudes and Motivation.................3
BUS  121  Introduction to Business............................3
BUS  145  Small Business Management...........................3
BUS  150  Business Communications*............................3
          Prerequisite: ENGL 121
BUS  225  Human Relations.....................................3
BUS  230  Marketing...........................................3
BUS  243  Human Resource Management...........................3
BUS  261  Business Law I......................................3
POLS 245  Introduction to Public Administration...............3
*Prerequisite/Corequisite required
```

# Game Animation & Music Advanced Certificate

The advanced certificate in game animation and music provides tangible
evidence that a student has completed all the requirements to be an entry level
game programmer but with more depth in the art and music aspects of the
industry.

(Major Code 4330; CIP Code 11.0899)

Computing Sciences and Information Technology Department

## Career Certificate

### Prerequisites for Required Courses

Prior to beginning the program, the student must take
the following prerequisites, or have taken an equivalent
transfer course, or have passed the waiver test, or have
obtained a waiver from the program administrator

```
CPCA 105  Introduction to Personal Computers: Windows.........1
CS   200  Concepts of Programming Algorithms Using C++*.......4
          Prerequisite: CIS 134 or ENGR 171
          or equivalent experience
CIS  134  Programming Fundamentals............................4
MATH 171  College Algebra*....................................3
          Prerequisite: MATH 116 with a grade of "C" or higher
          or MATH 134 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Note: Not available to students with credit in
          MATH 173

              or

MATH 173  Precalculus*........................................5
          Prerequisite: MATH 116 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Note: Not available for credit for students with
          credit in MATH 171 and/or MATH 172
```

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.

### First Semester

```
CDTP 135  Desktop Photo Manipulation I: Photoshop.............1
ANI  120  Conceptual Art for Animation........................1
          Prerequisite: CDTP 135
GAME 101  Computer Game Creation..............................4
GAME 200  Game Design.........................................3
MUS  156  MIDI Music Composition..............................3
          Total Semester Credit Hours........................12
```

### Second Semester

```
ANI  145  Introduction to 3D Animation*.......................3
```

GAME 140 Game Programming I - 2D*...........................4
        Prerequisite: CS 200
MATH 191 Math & Physics for Games I*.........................4
        Prerequisites: MATH 171 or MATH 173 with a grade of
        "C" or higher or appropriate score on math
        assessment test and CS 200

        or

PHYS 191 Math & Physics for Games I*.........................4
        Prerequisite: MATH 171 or MATH 173 with grade of
        "C" or higher or appropriate score on math
        assessment test and CS 200
        Total Semester Credit Hours........................11

### Third Semester

ANI 245 Character Animation*................................3
        Prerequisite: ANI 145
GAME 230 Game Programming II -3D*...........................4
        Prerequisite: GAME 140
        Total Semester Credit Hours.........................7
        TOTAL PROGRAM CREDIT HOURS.........................30
*Prerequisite/Corequisite required

# Game Business Advanced Certificate

This certificate provides tangible evidence that a student has completed all the requirements to be an entry level game programmer or game business person.

(Major Code 4340; CIP Code 11.0899)

Computing Sciences and Information Technology Department

## Career Certificate

### Prerequisites for Required Courses

Note: Prior to beginning the program, the student must take the following prerequisites, or have taken an equivalent transfer course, or have passed the waiver test (where applicable) or have obtained a waiver from the program administrator.

CIS 134 Programming Fundamentals............................4
MATH 171 College Algebra*...................................3
        Prerequisite: MATH 116 with a grade of "C" or higher
        or MATH 134 with a grade of "C" or higher
        or appropriate score on the math assessment test
        Note: Not available to students with credit in
        MATH 173
        or
MATH 173 Precalculus*.......................................5
        Prerequisite: MATH 116 with a grade of "C" or higher
        or appropriate score on the math assessment test
        Note: Not available for credit for students with
        credit in MATH 171 and/or MATH 172

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

CS 200 Concepts of Programming Algorithms Using C++*........4
        Prerequisite: CIS 134 or ENGR 171
        or equivalent experience
GAME 101 Computer Game Creation.............................4
GAME 102 The Business of Games.............................3
GAME 200 Game Design.......................................3
        Total Semester Credit Hours........................14

### Second Semester

CIS 242 Introduction to System Design and Analysis*........3
        Prerequisite: CIS 138 or CS 200 or CS 201 or

CS205
GAME 140 Game Programming I - 2D*...........................4
        Prerequisite: CS 200
MATH 191 Math & Physics for Games I*.........................4
        Prerequisites: MATH 171 or MATH 173 with a grade of
        "C" or higher or appropriate score on math
        assessment test and CS 200

        or

PHYS 191 Math & Physics for Games I*.........................4
        Prerequisite: MATH 171 or MATH 173 with grade of
        "C" or higher or appropriate score on math
        assessment test and CS 200
        Total Semester Credit Hours........................11

### Third Semester

GAME 230 Game Programming II -3D*...........................4
        Prerequisite: GAME 140
CIS 262 Project Management*................................3
        Prerequisite: CIS 242
        Total Semester Credit Hours.........................7
        TOTAL PROGRAM CREDIT HOURS.........................32
*Prerequisite/Corequisite required

# Game Development, A.A.S.

The game development associate of applied science degree provides students with the focused knowledge and understanding of game design and development useful in qualifying for entry level industry positions as game programmers, tool builders, collision detection developers, engine builders and interface programmers as well as video and online training developers, Q/A (Question/Answer) Testers, customer supporters and simulations developers. Completion of this degree program will greatly enhance students' ability to create code for 2D/3D graphics and real time virtual environments. Additional skills will include an understanding of game ethics, of the proper presentation of "game bibles" and of math and physics required to model a realistic game world.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 2650; CIP Code 11.0899)

Computing Sciences and Information Technology Department

## Associate of Applied Science

Note: Prior to beginning the game development program, the student must take the following prerequisites, or have taken an equivalent transfer course, or have passed the waiver test (where applicable), or have obtained a waiver from the program administrator.

### Prerequisites for Required Courses

CIS 134 Programming Fundamentals............................4
CDTP 135 Desktop Photo Manipulation I: Photoshop.............1

### First Semester

CS 200 Concepts of Programming Algorithms Using C++*........4
        Prerequisite: CIS 134 or ENGR 171
        or equivalent experience
GAME 101 Computer Game Creation.............................4
GAME 102 The Business of Games.............................3
ENGL 121 Composition I*....................................3
        Prerequisite: ENGL 106 or appropriate placement
        test score or EAP 113 and EAP 117
MATH 171 College Algebra*..................................3
        Prerequisite: MATH 116 with a grade of "C" or higher
        or MATH 134 with a grade of "C" or higher
        or appropriate score on the math assessment test
        Note: Not available to students with credit in
        MATH 173

or

       Any Precalculus/Calculus Course*.....................3
       Total Semester Credit Hours.........................17

## Second Semester

```
GAME 140  Game Programming I - 2D*............................4
          Prerequisite: CS 200
CIS  235  Object-Oriented Programming Using C++*...............4
          Prerequisite: CS 200 using C++
          or
CS   250  Basic Data Structures using C++*.....................4
          Prerequisite:CS 200
          Prerequisite or corequisite: CS 210
          for students transferring to most four-year
          computer science programs
ANI  120  Conceptual Art for Animation........................1
          Prerequisite: CDTP 135
GAME 200  Game Design.........................................3
MATH 191  Math & Physics for Games I*..........................4
          Prerequisites: MATH 171 or MATH 173 with a grade of
          "C" or higher or appropriate score on math
          assessment test and CS 200
          or
PHYS 191  Math & Physics for Games I*..........................4
          Prerequisite: MATH 171 or MATH 173 with grade of
          "C" or higher or appropriate score on math
          assessment test and CS 200
          Total Semester Credit Hours.........................16
```

## Third Semester

```
ENGL 150  Digital Narratives*.................................3
          Prerequisite: ENGL 121
          Game Elective....................................3-4
GAME 230  Game Programming II -3D*............................4
          Prerequisite: GAME 140
ANI  145  Introduction to 3D Animation*.......................3
          Prerequisites: CDTP 135 and ANI 120
GAME 180  Artificial Intelligence for Games*..................3
          Prerequisite: CS 200
          Health and/or Physical Education Elective...........1
          Total Semester Credit Hours.....................17-18
```

## Fourth Semester

```
GAME 250  Game Programming III-Capstone*......................4
          Prerequisites: GAME 200 and GAME 230 and
          CIM 145 and ENGL 150 and
          Prerequisite or corequisite: GAME 180
GAME 110  Flash Gaming........................................4
          or
GAME 255  Mobile Game Programming*............................4
          Prerequisites: GAME 140 and GAME 200
HUM  155  Classical Mythology.................................3
          Social Science and/or Economics Elective............3
ENGL 140  Writing for Interactive Media*......................3
          Prerequisite: ENGL 121
          Total Semester Credit Hours.........................17
          TOTAL PROGRAM CREDIT HOURS.......................67-68
```

## Game Electives

```
CIM  140  Interactive Media Assets*...........................4
          Prerequisites: CDTP 135 and CDTP 145 and CWEB 105
          and CWEB 130
          Prerequisite or corequisite: CIM 130
ANI  245  Character Animation*................................3
          Prerequisite: ANI 145
CIS  243  Object-Oriented Analysis and Design*................4
          Prerequisite: One programming course using an
          object-oriented programming language
          or equivalent experience
CIS  262  Project Management*.................................3
          Prerequisite: CIS 242
MUS  156  MIDI Music Composition..............................3
GAME 110  Flash Gaming........................................4
GAME 255  Mobile Game Programming*............................4
          Prerequisites: GAME 140 and GAME 200
*Prerequisite/Corequisite required
```

# Game Entrepreneurship Advanced Certificate

The advanced certificate in game entrepreneurship provides tangible evidence that a student has completed all the requirements to be an entry level game

programmer with additional skills necessary to start a game company.

(Major Code 4140; CIP Code 11.0899)

Computing Sciences and Information Technology Department

# Career Certificate

## Prerequisites for Required Courses

Note: Prior to beginning the program, the student must take the following prerequisites, or have taken an equivalent transfer course, or have passed the waiver test (where applicable), or have obtained a waiver from the program administrator:

```
CIS  134  Programming Fundamentals............................4
CS   200  Concepts of Programming Algorithms Using C++*........4
          Prerequisite: CIS 134 or ENGR 171
          or equivalent experience
MATH 171  College Algebra*....................................3
          Prerequisite: MATH 116 with a grade of "C" or higher
          or MATH 134 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Note: Not available to students with credit in
          MATH 173


          or


MATH 173  Precalculus*........................................5
          Prerequisite: MATH 116 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Note: Not available for credit for students with
          credit in MATH 171 and/or MATH 172
```

## Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

## First Semester

```
BUS  230  Marketing...........................................3
ENTR 120  Introduction to Entrepreneurship....................2
ENTR 180  Opportunity Analysis................................2
GAME 101  Computer Game Creation..............................4
          Total Semester Credit Hours.........................11
```

## Second Semester

```
ENTR 142  Fast Trac Business Plan.............................3
ENTR 220  Entrepreneurial Marketing*..........................2
          Prerequisite: BUS 230
GAME 140  Game Programming I - 2D*............................4
          Prerequisite: CS 200
GAME 200  Game Design.........................................3
MATH 191  Math & Physics for Games I*.........................4
          Prerequisites: MATH 171 or MATH 173 with a grade of
          "C" or higher or appropriate score on math
          assessment test and CS 200


          or


PHYS 191  Math & Physics for Games I*.........................4
          Prerequisite: MATH 171 or MATH 173 with grade of
          "C" or higher or appropriate score on math
          assessment test and CS 200
          Total Semester Credit Hours.........................16
```

## Third Semester

```
GAME 230  Game Programming II -3D*............................4
          Prerequisite: GAME 140
          Total Semester Credit Hours.........................4
          TOTAL PROGRAM CREDIT HOURS..........................31
*Prerequisite/Corequisite required
```

# Game Narrative Advanced Certificate

The advanced certificate in game narrative will provide students with more depth in game narrative as well as tangible evidence that a student is skilled in basic programming for games.

(Major Code 4130; CIP Code 11.0899)

Computing Sciences and Information Technology Department

## Career Certificate

### Prerequisites for Required Courses

```
Note: Prior to beginning the program, the student must take
the following prerequisites, or have taken an equivalent
course, or have passed the waiver test (where applicable),
or have obtained a waiver from the program administrator:


ENGL 121   Composition I*......................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
CIS  134   Programming Fundamentals............................4
MATH 171   College Algebra*....................................3
           Prerequisite: MATH 116 with a grade of "C" or higher
           or MATH 134 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Note: Not available to students with credit in
           MATH 173


           or


MATH 173   Precalculus*.......................................5
           Prerequisite: MATH 116 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Note: Not available for credit for students with
           credit in MATH 171 and/or MATH 172
```

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
CS   200   Concepts of Programming Algorithms Using C++*........4
           Prerequisite: CIS 134 or ENGR 171
           or equivalent experience
ENGL 150   Digital Narratives*................................3
           Prerequisite: ENGL 121
           NOTE: ENGL 150 is offered Fall semster only.
ENGL 140   Writing for Interactive Media*.....................3
           Prerequisite: ENGL 121
GAME 101   Computer Game Creation.............................4
           Total Semester Credit Hours........................14
```

### Second Semester

```
GAME 140   Game Programming I - 2D*...........................4
           Prerequisite: CS 200
GAME 200   Game Design........................................3
HUM  155   Classical Mythology................................3
MATH 191   Math & Physics for Games I*........................4
           Prerequisites: MATH 171 or MATH 173 with a grade of
           "C" or higher or appropriate score on math
           assessment test and CS 200


           or


PHYS 191   Math & Physics for Games I*........................4
           Prerequisite: MATH 171 or MATH 173 with grade of
           "C" or higher or appropriate score on math
           assessment test and CS 200
           Total Semester Credit Hours........................14
```

### Third Semester

```
GAME 230   Game Programming II -3D*...........................4
           Prerequisite: GAME 140
           Total Semester Credit Hours........................4
           TOTAL PROGRAM CREDIT HOURS.........................32
*Prerequisite/Corequisite required
```

# Game Programming Advanced Certificate

The advanced certificate in game programming provides tangible evidence that a student has completed all the requirements to be an entry level game programmer with additional skills in the art of game programming.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 4120; CIP Code 11.0899)

Computing Sciences and Information Technology Department

## Career Certificate

### Prerequisites for Required Courses

```
Note: Prior to beginning the program, the student must take
the following prerequisites, or have taken an equivalent
transfer course, or have passed the waiver test (where
applicable), or have obtained a waiver from the
program administrator:


CS   200   Concepts of Programming Algorithms Using C++*........4
           Prerequisite: CIS 134 or ENGR 171
           or equivalent experience
CIS  134   Programming Fundamentals............................4
MATH 171   College Algebra*....................................3
           Prerequisite: MATH 116 with a grade of "C" or higher
           or MATH 134 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Note: Not available to students with credit in
           MATH 173


           or


MATH 173   Precalculus*.......................................5
           Prerequisite: MATH 116 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Note: Not available for credit for students with
           credit in MATH 171 and/or MATH 172
```

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
GAME 101   Computer Game Creation.............................4
GAME 110   Flash Gaming.......................................4
GAME 200   Game Design........................................3
           Total Semester Credit Hours........................11
```

### Secoond Semester

```
GAME 140   Game Programming I - 2D*...........................4
           Prerequisite: CS 200
MATH 191   Math & Physics for Games I*........................4
           Prerequisites: MATH 171 or MATH 173 with a grade of
           "C" or higher or appropriate score on math
           assessment test and CS 200


           or


PHYS 191   Math & Physics for Games I*........................4
           Prerequisite: MATH 171 or MATH 173 with grade of
           "C" or higher or appropriate score on math
           assessment test and CS 200
GAME 180   Artificial Intelligence for Games*.................3
           Prerequisite: CS 200
           Total Semester Credit Hours........................11
```

**Third Semester**

```
GAME 230  Game Programming II -3D*............................4
          Prerequisite: GAME 140
GAME 255  Mobile Game Programming*............................4
          Prerequisites: GAME 140 and GAME 200
          Total Semester Credit Hours.........................8
          TOTAL PROGRAM CREDIT HOURS.........................30
*Prerequisite/Corequisite required
```

# Geographic Info Systems Cert

The Geographic Information Systems Certificate program is granted by Metropolitan Community College, but coordinated at JCCC.

This is a professional certificate that gives the GIS user the tools needed to attract a good job in the exciting field of GIS or to advance in their chosen field. It also prepares students to complete their AA degree or transfer to a four year institution. GIS professionals are found in the fields of city, county and state business, economics, natural resources, conservation, pollution, industry, science, infrastructure planners, public works, transportation, architects, education, healthcare, travel, space industry.

The JCCC geographic information systems program is offered to Johnson County residents in cooperation with Metropolitan Community Colleges of Kansas City. Related courses are taken at JCCC. You must be accepted as a student to JCCC and accepted into the program by MCC. Students must be residents of Johnson County in order to receive in-state tuition rates. Consult with a JCCC counselor for more information.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact www.mcckc.edu. Required GIS classes are taught at MCC-Longview and MCC-Maple Woods Community Colleges as early evening courses.

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

## Career Certificate

```
Certificate granted by Metropolitan Community College
```

### Specific Program Requirements-must be taken MCC

```
KEOG 120  Introduction to Geographic Information Systems.......3
KEOG 220  Geographic Information Systems Database & Design*....3
          Prerequisite: KEOG 120
KEOG 224  Applications in Geographic Information Systems*......3
          Prerequistes: KEOG 120 and KEOG 220
KEOG 228  Administrative Issues in Geographic Info Systems*....3
          Prerequisite: KEOG 120
KEOG 230  Geographic Information Systems Internship*.........1-3
          Prerequisites: KEOG 120 and KEOG 220


Note: A student currently employed in a GIS Facility may
take the 1-hour option.  All others must complete the 3-hour
internship.
```

### Specific Program Requirements-must be taken at JCCC

```
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
CIS  162  Database Programming*...............................4
          Prerequisite: CIS 134 or the equivalent
          or
CIS  260  Database Management*................................4
          Prerequisite: CS 250 or CS 255 or CIS 235 or
          CIS 238 or CIS 248
GEOS 145  World Regional Geography............................3
GEOS 130  General Geology.....................................5
          or
GEOS 140  Physical Geography..................................3
          and
GEOS 141  Physical Geography Lab*.............................2
          Prerequisite or corequisite: GEOS 140 or the
          equivalent
```

**Select two courses from the following list:**

```
ADMJ 121  Introduction to Administration of Justice...........3
BIOL 122  Principles of Biology...............................3
          and
BIOL 123  Principles of Biology Lab*..........................1
          Prerequisite or corequisite: BIOL 122 or
          consent of the assistant dean
BIOL 125  General Botany......................................5
BIOL 127  General Zoology.....................................5
BIOL 130  Environmental Science...............................3
          and
BIOL 131  Environmental Science Lab*..........................1
          Prerequisite or corequisite: BIOL 130
BUS  230  Marketing...........................................3
DRAF 120  Introduction to Drafting............................2
          and
DRAF 130  Introduction to CAD Concepts - AutoCAD: 2008*.......3
          Prerequisite: DRAF 120
          or approval of the program assistant dean
Note: DRAF 120 and DRAF 130 must both be taken and
count for only ONE course.


ECON 230  Economics I.........................................3
ECON 231  Economics II........................................3
CIS  162  Database Programming*...............................4
          Prerequisite: CIS 134 or the equivalent
          or
CIS  260  Database Management*................................4
          Prerequisite: CS 250 or CS 255 or CIS 235 or
          CIS 238 or CIS 248
GEOS 140  Physical Geography..................................3
          and
GEOS 141  Physical Geography Lab*.............................2
          Prerequisite or corequisite: GEOS 140 or the
          equivalent
GEOS 130  General Geology.....................................5
          TOTAL PROGRAM CREDIT HOURS......................34-40
*Prerequisite/Corequisite required
```

# Graphic Design, A.A.S.

The graphic 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 graphic design field. JCCC has structured its graphic 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 71 credit hours leads to an associate of applied science degree.

Some GDES courses are typically offered in the fall semester only, and some courses are typically offered in the spring semester only. This information can be found under the relevant course descriptions.

(Major Code 2290; CIP Code 50.0409)

Graphic Design

## Associate of Applied Science Degree

### IMPORTANT:

```
Please enroll in the CDTP sections identified in the credit
class search as a Graphic Design Qualifier section.  The
content of these CDTP sections places emphasis on the
Graphic Design career specific application of the Adobe
Creative Suite to industry standards for print production
and is reserved for students enrolling in the Qualifier
semester courses.

It is recommended that you enroll in these five-week CDTP
classes in sequence in the Qualifier semester.
```

### Qualifier Semester

```
ART  124  Design 2D*..........................................3
```

```
                    Prerequisite or corequisite: CDTP 145
GDES 120    Introduction to Graphic Design.........................3
CDTP 145    Desktop Illustration I: Illustrator...................1
CDTP 135    Desktop Photo Manipulation I: Photoshop..............1
CDTP 140    Desktop Publishing I: InDesign........................1
            Total Semester Credit Hours..........................9
```

### Fall Semester

```
ART  129    Design Color*.........................................3
            Prerequisite or corequisite: CDTP 135
GDES 130    Drawing and Media Methods 1*..........................3
            Prerequisites: GDES 120 and ART 124 and CDTP 135
            and CDTP 140 and CDTP 145
GDES 132    Typography*...........................................3
            Prerequisites: ART 124 and GDES 120 and CDTP 135 and
            CDTP 140 and CDTP 145
PHOT 121    Fundamentals of Photography...........................3
ENGL 121    Composition I*........................................3
            Prerequisite: ENGL 106 or appropriate placement
            test score or EAP 113 and EAP 117
            Total Semester Credit Hours..........................15
```

### Spring Semester

```
ART  127    Design 3D*............................................3
            Prerequisite: ART 124
GDES 131    Drawing and Media Methods 2*..........................3
            Prerequisite: GDES 130
GDES 134    Layout Design*........................................3
            Prerequisite: GDES 132
GDES 140    Technical Processes*..................................3
            Prerequisites: PHOT 121 and CDTP 135 and CDTP 140
            and CDTP 145
            Humanities Electives..................................3
            Total Semester Credit Hours..........................15
```

### Fall Semester

```
GDES 230    Drawing and Media Methods 3*..........................3
            Prerequisites: GDES 131 and
            GDES 132 and GDES 134
GDES 231    Advanced Typography*..................................3
            Prerequisite: GDES 134
GDES 235    Production Methods*...................................3
            Prerequisites: GDES 134 and GDES 140
            Social Science and/or Economics Elective.............3
            Humanities Electives..................................3
            Health and/or Physical Education Elective............1
            Total Semester Credit Hours..........................16
```

### Spring Semester

```
GDES 236    Electronic Production*................................3
            Prerequisites: GDES 230 and GDES 231
            and GDES 235
GDES 244    Communication Systems*................................3
            Prerequisites: GDES 230
            GDES 231 and GDES 235
GDES 245    Advanced Design Practice*.............................3
            Prerequisites: GDES 230 and
            GDES 231 and GDES 235
GDES 272    Professional Preparation*.............................3
            Prerequisites: GDES 230 and GDES 231 and GDES 235
            Prerequisite: The student must have completed
            all required studio courses in the graphic design
            program prior to the semester for which he or she is
            enrolling in this course or be co-enrolled in all
            fourth-semester studio courses.
            Science and/or Math Elective*.........................3
            Technical/Studio Elective.............................1
            Total Semester Credit Hours..........................16
            TOTAL PROGRAM CREDIT HOURS...........................71
```

### Technical/Studio Electives

```
CDTP 160    Desktop Publishing II: InDesign*......................1
            Prerequisite: CDTP 140
CDTP 165    Desktop Illustration II: Illustrator*.................1
            Prerequisite: CDTP 145
CDTP 185    Desktop Illustration III: Illustrator*...............1
            Prerequisite: CDTP 165
CDTP 155    Desktop Photo Manipulation II: Photoshop*............1
            Prerequisite: CDTP 135
CDTP 175    Desktop Photo Manipulation III: Photoshop*...........1
            Prerequisite: CDTP 155
CWEB 105    Introduction to Web Pages: Dreamweaver*...............1
            Prerequisite: CWEB 101
CWEB 115    Intermediate Web Pages: Dreamweaver*..................1
            Prerequisite: CWEB 105
CWEB 130    Introduction to Flash*................................1
            Prerequisite: CPCA 161 or CWEB 105 or CWEB 106
CIM  135    Digital Imaging and Video*+...........................3
            Prerequisite: CDTP 135
            Recommended: PHOT 121
PHOT 122    Advanced Photography*.................................3
```

```
            Prerequisite: PHOT 121
PHOT 123    Studio Photography*...................................3
            Prerequisite: PHOT 121
ART  135    Painting I............................................3
ART  136    Painting II*..........................................3
            Prerequisite: ART 135
ART  172    Watercolor Painting...................................3
ART  231    Life Drawing I*.......................................3
            Prerequisite: ART 130
ART  232    Life Drawing II*......................................3
            Prerequisite: ART 231
GDES 275    Graphic Design Internship*^...........................1
            Prerequisite: Graphic design faculty review committee
            approval
*Prerequisite/Corequisite required
```

Note: ^A graphic design major may apply to this
internship course if the student is also enrolled in or has
completed all fourth-semester studio courses.

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# Health Information Tech, A.A.S

The Health Information Technology, AAS degree program is granted by Metropolitan Community College, but coordinated at JCCC.

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. When the 70-72 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.

Health information technology is a cooperative program between JCCC and MCC-Penn Valley Community College for Johnson County residents. You must be accepted as a student at JCCC and accepted into the program by MCC-Penn Valley. Consult with a JCCC counselor for more information.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact MCC-Penn Valley Community College at 816-759-4231 for an application packet, which includes deadlines, program prerequisites and admission requirements.

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

## Associate of Applied Science Degree

```
Degree granted by Metropolitan Community College
```

### General Education Requirements-must be taken at JCCC

```
BIOL 144    Human Anatomy and Physiology..........................5
BIOL 227    Human Pathophysiology*................................4
            Prerequisite: BIOL 144 or BIOL 225
ENGL 121    Composition I*........................................3
            Prerequisite: ENGL 106 or appropriate placement
            test score or EAP 113 and EAP 117
SPD  121    Public Speaking.......................................3
            Elective (Intro to Psych strongly recommended).......3
```

### American Institutions

```
HIST 140    U.S. History to 1877..................................3
            or
HIST 141    U.S. History Since 1877...............................3
            or
POLS 122    Political Science.....................................3
            or
POLS 124    American National Government..........................3
            or
POLS 126    State and Local Government............................3
```

**Specific Program Requirements-must be taken at JCCC**

```
CIS  124   Introduction to Computer Concepts and Applications...3
CPCA 110   Spreadsheets I: MS Excel*...........................1
           Prerequisite: CPCA 105 or CPCA 106 or CIS 124
           or CPCA 128 or appropriate score on a waiver test
CPCA 114   Databases I: MS Access*.............................1
           Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
           CIS 124 or an appropriate score on a waiver test
CPCA 141   Internet I*........................................1
           Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
           CIS 124 or appropriate score on an assessment test
```

**Specific Program Requirements-taken at MCC-Penn Valley**

```
KSS  153   The Missouri Constitution...........................1
KMRT 101   Introduction to the Health Information Technology ...2
KMRT 102   Health Records Systems, Analysis and Control.......3.5
KMRT 103   Medical Terminology for Health Records..............3
KMRT 106   Health Care Statistics*.............................3
           Prerequisite: KMRT 102
KMRT 108   Legal Aspects of the Health Information Technology*...2
           Prerequisite: KMRT 102
KMRT 109   Directed Practice I*..............................2.5
           Prerequisites: BIOL 144 and KMRT 102
KMRT 110   Pharmacology*.....................................1.5
           Prerequisites: BIOL 144 and KMRT 103
KMRT 200   Introduction to Classification Systems..............1
KMRT 201   Quality Management*.................................3
           Prerequisite: KMRT 108
KMRT 202   Class. Systms/Nomenclatures/Indexes & Registers I*...4
           Prerequisite: KMRT 200
KMRT 203   Directed Practice II*...............................2
           Prerequisites: BIOL 144 and KMRT 202 and KMRT 210
           or BIOL 144 and concurrent enrollment in KMRT 202 and
           KMRT 210
KMRT 206   Specialized Health Records Systems..................2
KMRT 207   Class. System/Nomenclature/Index & Register II*......3
           Prerequisites: BIOL 144 and KMRT 202
KMRT 208   Directed Practice III*..............................2
           Prerequisite: KMRT 203
KMRT 210   Classif Systems & Nomenclatures/Ambulatory Care*.....3
           Prerequisites: KMRT 200 and BIOL 108/PVCC
           or concurrent enrollment in BIOL 108/PVCC
KMRT 211   Organization & Administration Health Information*....3
           Prerequisites: KMRT 201, KMRT 202, and KMRT 203
KMRT 212   Intro to Medical Insurance & Office Procedures*....1.5
           Prerequisites: KMRT 103, KMRT 202, KMRT 210 and
           BIOL 144
           TOTAL PROGRAM CREDIT HOURS.........................70
*Prerequisite/Corequisite required
```

# Certified Medication Aide Certificate

This 80-hour course covers information related to many commonly prescribed medications. Students learn the classification, side effects and techniques of administration, including preparations and accurate distribution of medications. Safety of clients in long-term care will be discussed and demonstrated by students. Clinical practice sessions will be conducted in a long-term care facility.

A pre-requisite to admission is successful completion of a reading level exam/assessment. Copies of the following will be required on the first day of class: social security card, current Kansas CNA card, current CPR for Health Care Provider card and documentation of a current negative TB test. The Kansas CMA examination is administered to successful completers of this course.

The employment outlook for the future is excellent. Facilities employing the CMA include long-term care nursing centers as well as other types of group homes and agencies.

For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/CMA_Information-Requirements

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 3560; CIP Code 51.2603)

Health Occupations

# Certificate of Completion

**Required Course**

```
AVHO 104   Certified Medication Aide (CMA)*....................4
           Prerequisites: Appropriate Compass reading test score,
           and proof of Kansas CNA certification
           or having completed the state CNA examination and
           awaiting results. If CNA examination results are not
           satisfactory, the student must withdraw from the CMA
           course.
           Documentation of current TB skin test - negative
           results within the last year.
           Current CPR for Health Care Providers and Social
           Security card.
           TOTAL PROGRAM CREDIT HOURS..........................4
*Prerequisite/Corequisite required
```

# Certified Medication Aide Update Certificate

Certified medication aides in Kansas are required to obtain continuing education every two years to renew the CMA certificate. This course meets the state requirements for recertification. The update course includes review of commonly used drugs and their interactions with foods and other drugs.

Students will discuss and identify legal implications and regulations related to administration and record keeping. Biological effects of medications on the elderly and basic safety principles are reviewed and discussed with other CMAU course participants. This course is available in the classroom and online. A roster of CMAs who complete the update course will be submitted to the Department of Health and Environment for certificate renewal.

Copies of the following are required on the first day of class: social security card, CNA card, and CMA card. Students also must provide a check or money order payable to KDHE for $20.00.

For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/CMA_Update_Info-Requirements

(Major Code 3600; CIP Code 51.2603)

Health Occupations

## Certificate of Completion

**Required Course**

```
AVHO 108   Certified Medication Aide Update (CMA)*.............1
           Prerequisites: Proof of Kansas CMA certification and
           Proof of Kansas CNA Certification
           TOTAL PROGRAM CREDIT HOURS.........................1
*Prerequisite/Corequisite required
```

# Certified Nurse Aide Certificate

This 96-hour course provides classroom and clinical instruction for basic care of clients in long-term and acute-care facilities. Students will learn skills for daily hygiene, bedside care, vital-sign measurement, positioning and safe transfer of clients. You will learn about common health problems and chronic illnesses. Clinical practice sessions are conducted in the nursing home setting. This course is offered in a classroom setting as well as non-traditional online.

Enrollees for this course must pass a reading level exam/assessment prior to admission. Copies of the following will be required on the first day of class: social security card, current CPR for Health Care Providers card and documentation of a current negative TB test.

Attendance is critical and should be given top priority. Failure to meet the criteria outlined in the syllabus will necessitate withdrawal from a class. Upon

successful completion of the course, students will be scheduled to take the Kansas CNA examination. Sufficient notice of the exam date is given to allow students to make arrangements to be in attendance on the appointed day.

Employment for workers with CNA skills and training is abundant in long-term care facilities. Acute-care hospitals also employ basic patient care aides who are willing to learn advanced skills.

For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/CNA_Information-Requirements

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 3530; CIP Code 51.1614)

Health Occupations

# Certificate of Completion

### Required Course

```
AVHO 102   Certified Nurse Aide (CNA)*...........................5
           Prerequisite: ENGL 121 with a grade of "C" or higher
           or Appropriate Compass reading test score.
           Documentation
           of current
           TB test and current CPR for Health Care Providers
           and a Social Security Card.
           TOTAL PROGRAM CREDIT HOURS...........................5
*Prerequisite/Corequisite required
```

# Certified Nurse Aide Refresher Certificate

The CNA in Kansas is required to work at least eight hours every two years for the CNA certificate to remain active. If the CNA does not work for two years, a 21-hour refresher course must be completed. This course meets the state requirement to activate the CNA certificate.

This course includes 12 hours of classroom instruction and 9 hours of laboratory experience. Students will discuss the nurse aide's responsibility in the current health care system and the importance of resident's rights. The student will demonstrate safety measures, infection control procedures, personal care skills, measurement of vital signs and transfers, positioning and turning.

Students enrolled in the refresher course must show proof of certification as a Kansas CNA by bringing a copy of their card on the first day of class.

For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/CNA_Refresher_Info-Requirement

(Major Code 3540; CIP Code 51.1614)

Health Occupations

# Certificate of Completion

### Required Course

```
AVHO 103   Certified Nurse Aide Refresher Course (CNA)*.........1
           Prerequisite: Kansas CNA Certification
           TOTAL PROGRAM CREDIT HOURS...........................1
*Prerequisite/Corequisite required
```

# Dental Assisting, A.A.S.

The Dental Assisting, AAS degree program is granted by Metropolitan Community College, but coordinated at JCCC.

This program, which leads to either an associate in applied science degree or a certificate of proficiency, prepares the student to enter the workforce as a trained dental auxiliary. Graduates of this program are eligible to take the national certifying examination given by the Dental Assisting National Board.

Admission to the Dental Assisting Program - Because enrollment in the program is limited, a student must meet the requirements and apply for admission.

JCCC offers the cooperative dental assisting degree for Johnson County residents with MCC-Penn Valley Community College. You must be accepted as a student at JCCC and accepted into the program at MCC-Penn Valley Community College. The student is awarded the degree from MCC-Penn Valley Community College upon successful completion of all requirements. It is the student's responsibility to check with a JCCC counselor before enrollment.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact MCC-Penn Valley Community College at 816-759-4231 for an application packet, which includes deadlines, program prerequisites and admission requirements.

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

# Associate of Applied Science

```
Degree Granted by Metropolitan Community College
```

### General Education Requirements-can be taken at JCCC

```
ENGL 121   Composition I*.......................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
MATH 116   Intermediate Algebra or higher*.....................3
           Prerequisite: MATH 115 with a grade of "C" or higher
           or appropriate score on the math assessment test
SPD  121   Public Speaking.....................................3
PSYC 130   Introduction to Psychology..........................3
SOC  122   Introduction to Sociology...........................3
```

### American Institutions

```
HIST 140   U.S. History to 1877................................3
           or
HIST 141   U.S. History Since 1877.............................3
           or
POLS 122   Political Science...................................3
           or
POLS 124   American National Government........................3
           or
POLS 126   State and Local Government..........................3
```

### Specific Program Requirements

### The following courses can be taken at any campus

```
BIOL 144   Human Anatomy and Physiology........................5
           and
BIOL 145   Human Anatomy and Physiology Dissection*............1
           Prerequisites: BIOL 144 and
           Assistant Dean's Approval


           or


BIOL 140   Human Anatomy.......................................4
           and
BIOL 225   Human Physiology*...................................4
           Prerequisites: CHEM 122 and either BIOL 140
           or BIOL 144
```

```
BIOL 230   Microbiology*........................................3
           Prerequisite: CHEM 122 or
           one year of high school chemistry
BIOL 231   Microbiology Lab*...................................2
           BIOL 231 students must be currently enrolled in
           BIOL 230 or have successfully completed BIOL 230
           within the last three years.
CHEM 122   Principles of Chemistry.............................5
```

**Specific Program Requirements-taken at MCC-Penn Valley**

```
KSS  153   The Missouri Constitution...........................1
KDA  100   Introduction to Dental Assisting....................1
KDA  101   Body Structure and Function*........................2
           Prerequisite: Admission to dental assisting program
KDA  102   Head & Neck Anatomy*................................2
           Prerequisite: Admission to the dental assisting
           program
KDA  103   Dental Anatomy......................................2
KDA  104   Dental Emergencies & Pharmacology...................1
KDA  105   Dental Materials I*.................................2
KDA  108   Oral Microbiology & Infection Control...............2
KDA  110   Chairside Assisting I*..............................5
KDA  115   Dental Radiology I*.................................4
           Prerequisite: KDA 102
KDA  125   Clinical Experience I*..............................2
           Prerequisite: Admission to the Dental Assisting
           Program and completion of CPR for healthcare workers.
KDA  205   Dental Materials II*................................3
           Prerequisite: KDA 105
KDA  210   Chairside Assisting II*.............................5
           Prerequisite: KDA 110
KDA  215   Dental Radiology II*................................2
           Prerequisite: KDA 115
KDA  225   Dental Office Management*...........................2
           Prerequisite: Enrollment in the Dental Assisting
           Program
KDA  230   Oral Pathology*.....................................1
           Prerequisites: KDA 108 and KDA 110
KDA  250   Clinical Experience II*.............................4
           Prerequisite: KDA 125
KDA  260   Dental Assisting Seminar*...........................2
           Prerequisite: KDA 125
```

```
Note: For dental assistants who are already working and wish
to obtain additional certification.
```

```
KDA  270   Expanded Functions in Restorative Dentistry*.........1
           Prequisite:  Student must meet one of the following:
           1) Certified dental or orthodontic assistant through
           the Dental Assisting National Board, Inc.  2) Graduate
           of an ADA-accredited dental assisting or dental
           hygiene program 3) Completion of KDA 106
           Basic Dental Techniques and successful completion
           of Basic Skills Mastery Exam given by the
           Missouri Dental Association
KDA  271   Expanded Functions in Orthodontics*.................5
           Prerequisite:  Student must meet one of the following:
           1) Certified dental or orthodontic assistant through
           the Dental Assisting National Board, Inc.
           2) Graduate of an ADA-accredited dental assisting or
           Dental hygiene program 3) Completion of KDA 106
           Basic Dental Techniques and successful completion of
           Basic Skills Mastery Exame given
           by the Missouri Dental Assistants Association
           NOTE: KDA 271 is .50 credit hour
KDA  272   Expanded Functions in Periodontics*.................5
           Prerequisite:  Student must meet one of the following:
           1) Certified dental or orthodontic assistant through
           the Dental Assisting National Board, Inc.
           2) Graduate of an ADA-accredited dental assisting or
           dental hygiene program 3) Completion of
           KDA Basic Dental Techniques and successful
           completion of Basic Skills Mastery Exam given
           by the Missouri Dental Assistants Association
           NOTE: KDA 272 is .50 credit hour
KDA  273   Expanded Functions in Prosthetic Dentistry*.........1
           Prequisite:  Student must meet one of the following:
           1) Certified dental or orthodontic assistant through
           the Dental Assisting National Board, Inc.
           2) Graduate of an ADA-accredited dental assisting
           or dental hygiene program 3) Completion of
           KDA 106 Basic Dental Techniques and
           successful completion of Basic Skills Mastery Exam
           given by the Missouri Dental Assistants Association
           TOTAL PROGRAM CREDIT HOURS.......................77-82
*Prerequisite/Corequisite required
```

# Dental Assisting Certificate

The Dental Assisting Certificate program is granted by Metropolitan
Community College, but coordinated at JCCC.

One of the most exciting features of a dental assistant career is the variety of work experiences you'll have, including working chair-side with dentists, taking radiographs, mixing dental materials, performing laboratory procedures, taking dental impressions, creating models, and fabricating bleaching trays and mouth guards. The demand for dental assistants and other professionals that dentists rely on to serve patients has increased dramatically.

The dental assistant program has accreditation from the American Dental Association (ADA), Commission on Dental Accreditation. Graduating from an ADA-accredited dental assisting program allows you to take the Dental Assisting National Board examination without the two years of full-time work experience that would otherwise be required.

JCCC offers the cooperative dental assisting certificate program for Johnson County residents with MCC-Penn Valley Community College. You must be accepted as a student at JCCC and accepted into the program at MCC-Penn Valley Community College. Consult with a JCCC counselor for more information.

Program courses and credit hours are subject to change because of requirement changes at the certificate-granting institution. Contact MCC-Penn Valley Community College at 816-759-4231 for an application packet, which includes deadlines, program prerequisites and admission requirements.

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

## Career Certificate

```
Certificate granted by Metropolitan Community College
```

### Specific Program Requirements-must be taken at JCCC

```
ENGL 121   Composition I*......................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
PSYC 130   Introduction to Psychology..........................3
SPD  121   Public Speaking.....................................3
```

### Specific Program Requirements taken at MCC-Penn Valley

```
KDA  100   Introduction to Dental Assisting....................1
KDA  101   Body Structure and Function*........................2
           Prerequisite: Admission to dental assisting program
KDA  102   Head & Neck Anatomy*................................2
           Prerequisite: Admission to the dental assisting
           program
KDA  103   Dental Anatomy......................................2
KDA  104   Dental Emergencies & Pharmacology...................1
KDA  105   Dental Materials I*.................................2
KDA  108   Oral Microbiology & Infection Control...............2
KDA  110   Chairside Assisting I*..............................5
KDA  115   Dental Radiology I*.................................4
           Prerequisite: KDA 102
KDA  125   Clinical Experience I*..............................2
           Prerequisite: Admission to the Dental Assisting
           Program and completion of CPR for healthcare workers.
KDA  205   Dental Materials II*................................3
           Prerequisite: KDA 105
KDA  210   Chairside Assisting II*.............................5
           Prerequisite: KDA 110
KDA  215   Dental Radiology II*................................2
           Prerequisite: KDA 115
KDA  225   Dental Office Management*...........................2
           Prerequisite: Enrollment in the Dental Assisting
           Program
KDA  230   Oral Pathology*.....................................1
           Prerequisites: KDA 108 and KDA 110
KDA  250   Clinical Experience II*.............................4
           Prerequisite: KDA 125
KDA  260   Dental Assisting Seminar*...........................2
           Prerequisite: KDA 125
```

```
Note: For dental assistants who are already working and wish
to obtain additional certification.
```

```
KDA  270   Expanded Functions in Restorative Dentistry*.........1
           Prequisite:  Student must meet one of the following:
           1) Certified dental or orthodontic assistant through
           the Dental Assisting National Board, Inc.  2) Graduate
           of an ADA-accredited dental assisting or dental
           hygiene program 3) Completion of KDA 106
```

```
           Basic Dental Techniques and successful completion
           of Basic Skills Mastery Exam given by the
           Missouri Dental Association
KDA  271   Expanded Functions in Orthodontics*.................5
           Prerequisite:  Student must meet one of the following:
           1) Certified dental or orthodontic assistant through
           the Dental Assisting National Board, Inc.
           2) Graduate of an ADA-accredited dental assisting or
           Dental hygiene program 3) Completion of KDA 106
           Basic Dental Techniques and successful completion of
           Basic Skills Mastery Exame given
           by the Missouri Dental Assistants Association
           NOTE: KDA 271 is .50 credit hour
KDA  272   Expanded Functions in Periodontics*.................5
           Prerequisite:  Student must meet one of the following:
           1) Certified dental or orthodontic assistant through
           the Dental Assisting National Board, Inc.
           2) Graduate of an ADA-accredited dental assisting or
           dental hygiene program 3) Completion of
           KDA Basic Dental Techniques and successful
           completion of Basic Skills Mastery Exam given
           by the Missouri Dental Assistants Association
           NOTE: KDA 272 is .50 credit hour
KDA  273   Expanded Functions in Prosthetic Dentistry*..........1
           Prequisite:  Student must meet one of the following:
           1) Certified dental or orthodontic assistant through
           the Dental Assisting National Board, Inc.
           2) Graduate of an ADA-accredited dental assisting
           or dental hygiene program 3) Completion of
           KDA 106 Basic Dental Techniques and
           successful completion of Basic Skills Mastery Exam
           given by the Missouri Dental Assistants Association
           TOTAL PROGRAM CREDIT HOURS......................51-53
*Prerequisite/Corequisite required
```

# Home Health Aide Certificate

Home health care services are in demand, and continued growth in employment opportunities is expected into the next century. Home health aides may be required to provide support services for all age levels in the home setting. This 21-hour course will provide you with information necessary for nutritional meal planning, task modification, emotional support and personal services to clients and families needing health care assistance at home.

Enrollees must complete a reading comprehension exam/assessment prior to admission. Copies of the following will be required on the first day of class: social security card, current Kansas CNA card, current CPR for Health Care Provider card and documentation of a current negative TB test. Those who successfully complete this course will be scheduled to take the Kansas HHA certification examination. Sufficient notice of the exam date is given to allow students to make arrangements to be in attendance on the appointed day.

For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/HHA_Information-Requirements

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 3580; CIP Code 51.2602)

Health Occupations

## Certificate of Completion

### Required Course

```
AVHO 106   Home Health Aide*...................................1
           Prerequisites: Proof of Kansas CNA certification
           and appropriate Compass reading test score
           Requirements - copy of current TB test, current CPR for
           Health Care Providers card, social security card
           TOTAL PROGRAM CREDIT HOURS...........................1
*Prerequisite/Corequisite required
```

# IV Therapy for LPN's Certificate

This 48-hour course is designed to prepare the student for clients who require intravenous fluid therapy. This course meets the Kansas requirements for nurses seeking certification in IV therapy.

During this course, you will review basic physiology of the circulatory system and learn principles of site selection for veins appropriate to assess for IV therapy. A pharmacology review will include action, interaction, breakdown and allergic responses to medications commonly administered via the intravenous route. Principles of infection control, correct legal documentation and calculation of infusion rates will be taught. Equipment and supplies routinely used to initiate and administer IV therapy will be used in instruction. You will use the laboratory setting to demonstrate the basic skills of initiating intravenous therapy along with clinical sessions in a hospital setting.

At the conclusion of the class, a comprehensive written exam will be administered. Upon successful completion of the exam, the Kansas State Board of Nursing will be notified and the individual's nursing license will be updated to reflect IV certification.

Copies of the following are required at the first class: Current LPN License, documentation of current Professional Liability Insurance-standard policy, current CPR for Health Care Provider card and documentation of a current negative TB skin test or negative chest X-ray.

For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/IV_Therapy_Info-Requirements

(Major Code 3640; CIP Code 51.1613)

Health Occupations

## Certificate of Completion

### Required Course

```
AVHO 115   I V Therapy For LPNs*...............................3
           Prerequisites: Proof of Kansas LPN licensure.
           Present evidence of personal liability insurance at
           the time of application for admission to the program
           and maintain it throughout the clinical practicum.
           Maintenance of current CPR certification
           for the duration of the course.
           Evidence of negative TB test or chest X-ray within the
           past year.
           TOTAL PROGRAM CREDIT HOURS...........................3
*Prerequisite/Corequisite required
```

# Occupatnl Therapy Asst, A.A.S.

The Occupational Therapy Assistant, AAS degree program is granted by Metropolitan Community College, but coordinated at JCCC.

The occupational therapy assistant works under the supervision of a registered occupational therapist, helping people with emotional and developmental limitations achieve more functional lives. Graduates are eligible to sit for the national certification examination for the occupational therapy assistant administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of the exam, the individual will be a Certified Occupational Therapy Assistant (COTA). Most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination.

The JCCC occupational therapy assistant program is offered to Johnson County residents in cooperation with MCC-Penn Valley Community College. The support courses are held at JCCC. The clinical courses are held at MCC-Penn Valley or at affiliated clinical agencies. You must be accepted as a student at JCCC and accepted into the program at MCC-Penn Valley. Consult with a JCCC counselor for more information.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact MCC-Penn Valley Community College at 816-759-4231 for an application packet, which includes deadlines, program prerequisites and admission requirements.

Note: Johnson County Community College students should seek specific

counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

Health Occupations

# Associate of Applied Science Degree

```
Degree granted by Metropolitan Community College
General Education Requirements-must be taken at JCCC
ENGL 121  Composition I*.......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
SPD  121  Public Speaking......................................3
PSYC 130  Introduction to Psychology...........................3
```

### American Institutions

```
HIST 140  U.S. History to 1877.................................3
          or
HIST 141  U.S. History Since 1877..............................3
          or
POLS 122  Political Science....................................3
          or
POLS 124  American National Government.........................3
          or
POLS 126  State and Local Government...........................3
```

### Prerequisite Courses-must be taken at JCCC

```
CHEM 122  Principles of Chemistry..............................5
AAC  130  Medical Terminology..................................3
```

### Specific Program Requirements-must be taken at JCCC

### Option 1

```
BIOL 144  Human Anatomy and Physiology.........................5
          and
BIOL 145  Human Anatomy and Physiology Dissection*.............1
          Prerequisites: BIOL 144 and
          Assistant Dean's Approval
Note: BIOL 144 must be taken before BIOL 145


          or
```

### Option 2

```
BIOL 140  Human Anatomy.......................................4
          and
BIOL 225  Human Physiology*...................................4
          Prerequisites: CHEM 122 and either BIOL 140
          or BIOL 144
Note: BIOL 140 and CHEM 122 must be taken prior to BIOL 225
```

### Specific Program Requirements-taken at MCC-Penn Valley

```
KSS  153  The Missouri Constitution...........................1
KOT  112  Basic Emergency Patient Care........................1
KOT  100  Introduction to Occupational Therapy................2
KOT  102  Documentation Guidelines*...........................2
          Prerequisite: Formal admission into the occupational
          therapy assistant program
KOT  103  Clinical Conditions*................................2
          Prerequisite: Formal admission into the occupational
          therapy assistant program
KOT  106  Therapeutic Interventions I*........................4
          Prerequisite: Formal admission into the occupational
          therapy assistant program
KOT  116  Level I Fieldwork I*................................1
          Prerequisite: Formal admission into the occupational
          therapy assistant program
KOT  118  Assistive Technology*...............................2
          Prerequisites: BIOL 144 and BIOL 145,  KOT 112,
          KOT 100, 102, 103, 106 and  116
KOT  120  Pediatrics*.........................................3
          Prerequisites: KOT 112, BIOL 144 and BIOL 145 and
          KOT 100, KOT 102, KOT 103, KOT 106 and KOT 116
KOT  121  Level I Fieldwork II*...............................5
          Prerequisites:  BIOL 144 and BIOL 145, KOT 112, and
          KOT 100, KOT 102, KOT 103, KOT 106 and KOT 116 and
          concurrent enrollment in KOT 120
          NOTE: KOT 121 is .50 credit hour
KOT  130  Analysis of Physical Performance*...................3
          Prerequisites: KOT 112, BIOL 144 and BIOL 145,
          KOT 100, KOT 102 KOT 103 KOT 106 and KOT 116
KOT  154  Applied Neurology*..................................2
```

```
          Prerequisites: BIOL 144 and BIOL 145, MCC BIOL 210,
          and admission to OTHA or PTHA program.
KOT  201  Mental Health*....................................2.5
          Prerequisites: KOT 118 and KOT 120 and KOT 121 and
          KOT 130 and
          KOT 154
KOT  202  Physical Dysfunction*...............................3
          Prerequisites: KOT 118 and KOT 120 and KOT 121 and
          KOT 130 and
          KOT 154
KOT  203  Gerontology*........................................3
          Prerequisites: KOT 118 and KOT 120 and KOT 121 and
          KOT 130 and KOT 154
KOT  208  Therapeutic Interventions II*.......................2
          Prerequisites:
          KOT 118 and KOT 120 and KOT 121
          and KOT 130 and KOT 154
KOT  212  Level I Fieldwork III*..............................2
          Prequisites:  KOT 118
          and KOT 120 and KOT 121 and KOT 130 and KOT 154
KOT  217  Fieldwork Seminar*..................................3
          Prerequisites: KOT 118 and KOT 120 and KOT 121 and
          KOT 130 and KOT 154
KOT  222  Level II Fieldwork*................................12
          Prerequisites: KOT 201, KOT 202, KOT 203, KOT 208 and
          KOT 212 and KOT 217
          TOTAL PROGRAM CREDIT HOURS.....................77-79
*Prerequisite/Corequisite required
```

# Physical Therapist Asst, A.A.S

The Physical Therapist Assistant, AAS degree program is granted by Metropolitan Community College, but coordinated at JCCC.

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. The Commission on Accreditation in Physical Therapy Education accredits the program.

The JCCC physical therapist assistant program is offered to Johnson County residents in cooperation with MCC-Penn Valley Community College. The support courses are held at JCCC. All the clinical courses are held at MCC-Penn Valley and affiliated clinical agencies. You must be accepted as a student at JCCC and accepted into the program at MCC-Penn Valley. Consult with a JCCC counselor for more information.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact MCC-Penn Valley Community College at 816-759-4231 for an application packet, which includes deadlines, program prerequisites and admission requirements.

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

## Associate of Applied Science Degree

```
Degree granted by Metropolitan Community College
```

### General Education Requirements-must be taken at JCCC

```
ENGL 121  Composition I*.......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
SPD  121  Public Speaking......................................3
PSYC 130  Introduction to Psychology...........................3
```

### American Institutions

```
HIST 140  U.S. History to 1877.................................3
          or
HIST 141  U.S. History Since 1877..............................3
          or
POLS 122  Political Science....................................3
          or
POLS 124  American National Government.........................3
          or
POLS 126  State and Local Government...........................3
```

**Prerequisite Courses-must be taken at JCCC**

```
CHEM 122  Principles of Chemistry.............................5
AAC  130  Medical Terminology.................................3
```

**Specific Program Requirements-must be taken at JCCC**

**Option 1**

```
BIOL 144  Human Anatomy and Physiology........................5
          and
BIOL 145  Human Anatomy and Physiology Dissection*............1
          Prerequisites: BIOL 144 and
          Assistant Dean's Approval
Note: BIOL 144 must be taken first


          or
```

**Option 2**

```
BIOL 140  Human Anatomy.......................................4
          and
BIOL 225  Human Physiology*...................................4
          Prerequisites: CHEM 122 and either BIOL 140
          or BIOL 144
Note: BIOL 140 and CHEM 122 must be taken before BIOL 225.
```

**Specific Program Requirements-taken at MCC-Penn Valley**

```
KSS  153  The Missouri Constitution...........................1
KPT  151  Introduction to Physical Therapy....................2
Note: KPT 151 is a prerequisite course)


KPT  102  Basic Emergency Patient Care........................1
KPT  152  Physical Therapy Fundamentals I*....................4
          Prerequisite:  Formal acceptance into the program.
KPT  153  Kinesiology*........................................4
          Prerequisites: BIOL 144,  BIOL 145, KPT 152 and
          KPT 160
KPT  154  Applied Neurology*..................................2
          Prerequisites: BIOL 144 and BIOL 145, MCC BIOL 210
          and admission to OTHA or PTHA program.
KPT  155  Rehabilitation*.....................................4
          Prerequisite: KPT 162
KPT  158  Therapeutic Exercise*...............................4
          Prerequisite: KPT 162
KPT  159  Orthopedic Pathology*...............................2
          Prerequisites: BIOL 144, BIOL 145,  KPT 152 and
          KPT 160
KPT  160  Medical Diseases*...................................2
          Prerequisites: Formal acceptance into the program.
KPT  161  Physical Therapy Fundamentals II*...................4
          Prerequisites: BIOL 144, BIOL 145, KPT 152, and
          KPT 160
KPT  162  Clinical Experience I*..............................2
          Prerequisites: KPT 153, KPT 154, KPT 159, KPT 161,
          and KPT 102
KPT  164  Pediatrics and Gerontology*.........................2
          Prerequisite: KPT 162
KPT  170  Clinical Experience II*.............................2
          Prerequisites: KPT 162 and
          concurrent enrollment in KPT 155, KPT 158, KPT 164
          and KPT 171
KPT  171  Clinical Seminar*...................................2
          Prerequisite: KPT 162
KPT  172  Clinical Experience III*...........................12
          Prerequisites: Completion of all other required
          courses in the KPT program
          TOTAL PROGRAM CREDIT HOURS.....................76-78
*Prerequisite/Corequisite required
```

---

# Radiologic Technology, A.A.S.

The Radiologic Technology, AAS degree program is granted by Metropolitan Community College, but coordinated at JCCC.

The radiologic technology curriculum (X-ray technology) consists of a continuous 24-month period of study. Areas of study are radiographic exposure, positioning and anatomy, and the use of imaging equipment. The program is fully accredited by the Joint Review Committee on Education in Radiologic Technology.

The JCCC radiologic technology program is offered to Johnson County residents in cooperation with MCC-Penn Valley Community College. Related courses are taken at JCCC with lab and clinical courses held at MCC-Penn

Valley or at a cooperating health facility. You must be accepted as a student at JCCC and accepted into the program by MCC-Penn Valley. Consult with a JCCC counselor for more information.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact MCC-Penn Valley Community College at 816-759-4231 for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

## Associate of Applied Science Degree

```
Degree granted by Metropolitan Community College
```

**General Education Requirements-must be taken at JCCC**

```
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
SPD  121  Public Speaking.....................................3
PSYC 130  Introduction to Psychology..........................3
```

**American Institutions**

```
HIST 140  U.S. History to 1877................................3
          or
HIST 141  U.S. History Since 1877.............................3
          or
POLS 122  Political Science...................................3
          or
POLS 124  American National Government........................3
          or
POLS 126  State and Local Government..........................3
```

**Specific Program Requirements-must be taken at JCCC**

```
BIOL 140  Human Anatomy.......................................4
AAC  130  Medical Terminology.................................3
```

**Specific Program Requirements-taken at MCC-Penn Valley**

```
KSS  153  The Missouri Constitution...........................1
KRAD 150  Introduction to Radiologic Technology...............2
KRAD 160  Survey of Radiologic Technology.....................6
          Prerequisite: Admission to the radiologic technology
          program
KRAD 162  Image Processing*...................................2
          Prerequisites: KRAD 160, KRAD 172 and KRAD 173
KRAD 165  Patient Care*.......................................2
          Prerequisite: KRAD 160
KRAD 170  Radiation Biology and Protection*...................3
          Prerequisite: KRAD 160 with concurrent  enrollment in
          corresponding semester of clinical training
KRAD 171  Radiographic Exposures I*...........................3
          Prerequisite: Admission to the program
KRAD 172  Radiographic Positioning I*.........................3
          Prerequisite: KRAD 160
          and concurrent enrollment in KRAD 165 and KRAD 173
KRAD 173  Clinical Practice I*................................3
          Prerequisite: KRAD 160
          and concurrent enrollment in KRAD 165 and KRAD 172
KRAD 174  Radiographic Exposures II*..........................3
          Prerequisites: KRAD 160, KRAD 171, KRAD 172 and
          KRAD 173
KRAD 175  Clinical Practice II*...............................4
          Prerequisites: KRAD 165, KRAD 172 and KRAD 173
          and concurrent
          enrollment in KRAD 176
KRAD 176  Radiographic Positioning II*........................3
          Prerequisites: BIOL 140 and KRAD 165, KRAD 172 and
          KRAD 173 and
          concurrent enrollment in KRAD 162 and KRAD 175
KRAD 178  Clinical Practice III*..............................4
          Prerequisites: KRAD 175 and KRAD 176
KRAD 278  Imaging Modalities and Pathology*...................3
          Prerequisites: KRAD 279, KRAD 280, KRAD 281
          and concurrent
          enrollment in KRAD 282
KRAD 279  Radiographic Positioning III*.......................2
          Prerequisites: KRAD 176 and KRAD 178
          and concurrent enrollment in
          KRAD 280, KRAD 281 and KRAD 285
KRAD 280  Clinical Practice IV*...............................4
```

```
            Prerequisites: KRAD 162, KRAD 176 and KRAD 178,
            and concurrent
            enrollment in KRAD 279, KRAD 281 and KRAD 285
KRAD 281   Radiation Physics*..................................3
            Prerequisite: PHYS 162 and KRAD 171
KRAD 282   Clinical Practice V*................................4
            Prerequisites: KRAD 279, KRAD 280, KRAD 281 and
            KRAD 285
            concurrent enrollment in KRAD 278
KRAD 283   Final Seminar*......................................2
            Prerequisites: KRAD 174 and KRAD 279 and KRAD 280
KRAD 285   Special Procedures*.................................2
            Prerequisites: KRAD 170 and KRAD 171 and KRAD 178,
            and concurrent
            enrollment in KRAD 279 and KRAD 280 and KRAD 281
            TOTAL PROGRAM CREDIT HOURS..........................80
*Prerequisite/Corequisite required
```

# Rehabilitative Aide Certificate

The Rehabilitative Aide Certificate program is granted by Metropolitan Community College, but coordinated at JCCC.

The 32-hour rehabilitative aide course includes both classroom and laboratory instruction. The roles of the rehabilitative aide as a member of the health care team and in the aging process are emphasized. Students learn skills required to enhance the ability of elderly residents in long-term care. Skills required for residents with special needs are also learned. Student must have current CNA certification.

For enrollment information regarding this cooperative program, go to Cooperative Program Information.

(Major Code 3620; CIP Code 51.2602)

Health Occupations

## Certificate of Completion

### Required Course

```
AVHO 112   Rehabilitative Aide*................................2
            Prerequisite: Proof of current Kansas CNA
            certification
            TOTAL PROGRAM CREDIT HOURS..........................2
*Prerequisite/Corequisite required
```

# Surgical Technology Cert

The Surgical Technology Certificate program is granted by Metropolitan Community College, but coordinated at JCCC.

The surgical technology vocational certificate program leads to a certificate of proficiency and prepares students for entry-level jobs as operating room technicians.

JCCC offers the cooperative surgical vocational certificate program for Johnson County residents with MCC-Penn Valley Community College. You must be accepted as a student at JCCC and accepted into the program at MCC-Penn Valley Community College. Consult with a JCCC counselor for more information. Students must be a resident of Johnson County in order to receive in-state tuition rates.

Program courses and credit hours are subject to change at the certificate-granting institution. Contact MCC-Penn Valley Community College at 816-759-4231 for an application packet, which includes deadlines, program prerequisites, and admission requirements.

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

## Career Certificate

Certificate granted by Metropolitan Community College

### The following courses should be taken first at JCCC

```
BIOL 144   Human Anatomy and Physiology.........................5
AAC  130   Medical Terminology.................................3
```

### Specific Program Requirements-taken at MCC-Penn Valley

```
KST  100   Introduction to Surgical Technology.................2
KST  102   Introduction to Fundamentals I*.....................5
            Prerequisites:  The student must meet the entrance
            requirements and be accepted into the surgical
            technology program.
KST  103   Introduction to Fundamentals II*....................6
KST  105   Pharmacology for the Surgical Technologist*.........2
KST  106   Microbiology for the Surgical Technologist*.........3
KST  109   Surgical Procedures I*..............................8
KST  110   Surgical Procedures II*.............................8
KST  114   Surgical Procedures III*............................8
KST  111   Career Development for the Surgical Technologist*....2
            TOTAL PROGRAM CREDIT HOURS..........................52
*Prerequisite/Corequisite required
```

# General Basic HVAC Certificate

This vocational certificate is the recommended first step to employment in the Heating, Ventilation and Air Conditioning field. It is 10 credit hours of basic knowledge in HVAC. This certificate is the first completion point for students in the HVAC field and verifies that the student can demonstrate several basic HVAC skills.

(Major Code 3770; CIP Code 47.0201)

Heating, Ventilation, Air Cond. Technology

## Certificate of Completion

### Required Courses

```
HVAC 121   Basic Principles of HVAC*...........................4
            Prerequisite or corequisite: HVAC 123 or ELTE 123
HVAC 123   Electromechanical Systems...........................4
HVAC 150   Refrigerant Management and Certification............1
HVAC 155   Workplace Skills....................................1
            TOTAL PROGRAM CREDIT HOURS..........................10
*Prerequisite/Corequisite required
```

# General Basic HVAC Installation and Duct Fabrication Cert.

This vocational certificate provides the student with the fundamentals necessary to gain employment in the area of installation and duct fabrication in the heating and air conditioning field. It is 20 credit hours of basic knowledge in heating ventilation air conditioning, industrial safety, and sheet metal. This certificate is the beginning completion point for students in the HVAC field and verifies that the student can demonstrate several basic HVAC skills as they relate to installation and duct fabrication.

(Major Code 3780; CIP Code 47.0201)

Heating, Ventilation, Air Cond. Technology

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

**First Semester**

```
HVAC 121   Basic Principles of HVAC*...........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
HVAC 123   Electromechanical Systems...........................4
HVAC 150   Refrigerant Management and Certification............1
HVAC 155   Workplace Skills....................................1
           Total Semester Credit Hours........................10
```

**Second Semester**

```
INDT 125   Industrial Safety...................................3
HVAC 167   Sheet Metal Layout and Fabrication..................3
MATH 133   Technical Mathematics I*............................4
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Total Semester Credit Hours........................10
           TOTAL PROGRAM CREDIT HOURS.........................20
*Prerequisite/Corequisite required
```

# General Basic HVAC Maintenance Certificate

This vocational certificate provides the student with the fundamentals necessary to gain employment in the area of maintenance in the heating and air conditioning field. It is 23 credit hours of basic knowledge in heating ventilation air conditioning, industrial safety, electrical wiring and plumbing. This certificate is the beginning completion point for students in the HVAC field and verifies that the student can demonstrate several basic HVAC skills as they relate to building maintenance.

(Major Code 3790; CIP Code 47.0201)

Heating, Ventilation, Air Cond. Technology

## Career Certificate

**Suggested/Sample Course Sequence**

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

**First Semester**

```
HVAC 121   Basic Principles of HVAC*...........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
HVAC 123   Electromechanical Systems...........................4
HVAC 155   Workplace Skills....................................1
ELTE 125   Residential Wiring Methods*.........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
           Total Semester Credit Hours........................13
```

**Second Semeter**

```
HVAC 167   Sheet Metal Layout and Fabrication..................3
HVAC 146   Plumbing Systems Applications.......................3
INDT 125   Industrial Safety...................................3
HVAC 150   Refrigerant Management and Certification............1
           Total Semester Credit Hours........................10
           TOTAL PROGRAM CREDIT HOURS.........................23
*Prerequisite/Corequisite required
```

# General Basic HVAC Sales, Design and Estimating Cert.

This vocational certificate is the recommended first step to employment in the area of sales, design and estimating in the heating and air conditioning field. It is 20 credit hours of basic knowledge in HVAC with an emphasis on design and marketing. This certificate is a beginning completion point for students in

the HVAC field and verifies that the student can demonstrate several basic HVAC and selling skills.

(Major Code 3800; CIP Code 47.0201)

Heating, Ventilation, Air Cond. Technology

## Career Certificate

**Suggested/Sample Course Sequence**

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

**First Semester**

```
HVAC 121   Basic Principles of HVAC*...........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
HVAC 123   Electromechanical Systems...........................4
HVAC 150   Refrigerant Management and Certification............1
HVAC 155   Workplace Skills....................................1
           Total Semester Credit Hours........................10
```

**Second Semester**

```
ENGL 121   Composition I*......................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
HVAC 124   Equipment Selection and Duct Design.................4
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
MKT  134   Professional Selling................................3
           Total Semester Credit Hours........................10
           TOTAL PROGRAM CREDIT HOURS.........................20
*Prerequisite/Corequisite required
```

# HVAC Commercial Service Technician, A.A.S.

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.

If you select the commercial maintenance technician degree, you will learn the special emphasis is on energy conservation through computer management. The theory of operation as well as installation, service and repair of rooftop air conditioners, cooling towers, steam boilers and commercial systems air conditioning are part of the curriculum. In addition to the 31 core hours, the following courses are required for the A.A.S. degree, facilities maintenance technician option.

(Major Code 2870; CIP Code 47.0201)

Heating, Ventilation, Air Cond. Technology

## Associate of Applied Science Degree

**First Semester**

```
HVAC 121   Basic Principles of HVAC*...........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
HVAC 123   Electromechanical Systems...........................4
HVAC 143   Reading Blueprints and Ladder Diagrams..............2
HVAC 155   Workplace Skills....................................1
INDT 125   Industrial Safety...................................3
```

```
ENGL 121   Composition I*......................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
EMS  121   CPR I - Basic Life Support for Healthcare Provider...1
           Total Semester Credit Hours.........................18
```

**Second Semester**

```
HVAC 146   Plumbing Systems Applications.......................3
HVAC 150   Refrigerant Management and Certification............1
HVAC 167   Sheet Metal Layout and Fabrication..................3
HVAC 221   Commercial Systems: Air Conditioning*...............4
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
HVAC 231   HVAC Rooftop Units*.................................3
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
           Total Semester Credit Hours.........................14
```

**Third Semester**

```
MATH 133   Technical Mathematics I*............................4
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Social Science and/or Economic Elective.............3
HVAC 223   Commercial Systems: Heating*........................4
           Prerequisite: HVAC 123 or ELTE 123
ELTE 122   National Electrical Code I..........................4
CPCA 105   Introduction to Personal Computers: Windows.........1
           Total Semester Credit Hours.........................16
```

**Fourth Semester**

```
HVAC 229   Advanced Control Systems*...........................4
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
ELTE 205   Industrial Electrical Wiring*.......................4
           Prerequisite: ELTE 122 or ELTE 125 or ELTE 200
           Technical Elective..................................2
           Humanities Elective.................................3
           General Education Elective..........................3
           Total Semester Credit Hours.........................16
           TOTAL PROGRAM CREDIT HOURS..........................64
```

**Technical Electives**

```
HVAC 125   Energy Alternatives.................................2
HVAC 271   HVAC Internship*....................................3
           Prerequisite: Program facilitator approval
           Required
HVAC 291   Independent Study.................................1-7
ELTE 125   Residential Wiring Methods*.........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
```

**General Education Electives**

```
ENGL 123   Technical Writing I*................................3
           Prerequisite: ENGL 121
SPD  120   Interpersonal Communication.........................3
*Prerequisite/Corequisite required
```

# HVAC Commercial Service Technician Certificate

The postsecondary certificate program is designed to prepare you for the basic job skills needed to service and maintain heating and air conditioning equipment. Students who elect the facilities maintenance technician certificate option learn the theory of operation and how to service, repair and design rooftop air conditioners, cooling towers, steam boilers and commercial systems air conditioners. This knowledge is reinforced by working on actual equipment in the laboratory. Completion of this program will allow the student to seek employment as a commercial maintenance and service technician in the heating/air conditioning trade.

(Major Code 6250; CIP Code 47.0201)

Heating, Ventilation, Air Cond. Technology

# Career Certificate

**Suggested/Sample Course Sequence**

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

**Fall Semester**

```
ENGL 121   Composition I*......................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
HVAC 121   Basic Principles of HVAC*...........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
HVAC 123   Electromechanical Systems...........................4
MATH 115   Elementary Algebra*.................................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Total Semester Credit Hours.........................14
```

**Spring Semester**

```
HVAC 150   Refrigerant Management and Certification............1
HVAC 231   HVAC Rooftop Units*.................................3
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
HVAC 221   Commercial Systems: Air Conditioning*...............4
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
HVAC 155   Workplace Skills....................................1
HVAC 143   Reading Blueprints and Ladder Diagrams..............2
           Total Semester Credit Hours.........................11
```

**Fall Semester**

```
HVAC 229   Advanced Control Systems*...........................4
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
HVAC 167   Sheet Metal Layout and Fabrication..................3
HVAC 223   Commercial Systems: Heating*........................4
           Prerequisite: HVAC 123 or ELTE 123
INDT 125   Industrial Safety..................................3
           Total Semester Credit Hours.........................14
           TOTAL PROGRAM CREDIT HOURS..........................39
*Prerequisite/Corequisite required
```

# HVAC Installation Technician Certificate

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

(Major Code 6270; CIP Code 47.0201)

Heating, Ventilation, Air Cond. Technology

# Career Certificate

**Suggested/Sample Course Sequence**

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

**First Semester**

```
HVAC 121   Basic Principles of HVAC*...........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
HVAC 123   Electromechanical Systems...........................4
HVAC 167   Sheet Metal Layout and Fabrication..................3
HVAC 155   Workplace Skills....................................1
INDT 125   Industrial Safety..................................3
           Total Semester Credit Hours.........................15
```

**Second Semester**

```
HVAC 148  HVAC Installation and Start-up Procedures*...........3
          Prerequisites: HVAC 121 and either HVAC 123
          or ELTE 123
HVAC 146  Plumbing Systems Applications.......................3
HVAC 143  Reading Blueprints and Ladder Diagrams..............2
HVAC 124  Equipment Selection and Duct Design*................4
          Prerequisites: HVAC 121 and either HVAC 123
          or ELTE 123
HVAC 150  Refrigerant Management and Certification............1
          Total Semester Credit Hours........................13
          TOTAL PROGRAM CREDIT HOURS.........................28
*Prerequisite/Corequisite required
```

# HVAC Residential Service Technician, A.A.S.

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.

If you select the residential degree, you will learn the theory of operation as well as installation, duct design, service and repair of gas and electric furnaces, heat pumps and central air conditioners. In addition to the 31 core hours, the following courses are required for the A.A.S. degree, residential option.

(Major Code 2880; CIP Code 47.0201)

Heating, Ventilation, Air Cond. Technology

## Associate of Applied Science Degree

### First Semester

```
HVAC 121  Basic Principles of HVAC*...........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
HVAC 123  Electromechanical Systems...........................4
HVAC 143  Reading Blueprints and Ladder Diagrams..............2
HVAC 155  Workplace Skills....................................1
INDT 125  Industrial Safety...................................3
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
EMS  121  CPR I - Basic Life Support for Healthcare Provider...1
          Total Semester Credit Hours........................18
```

### Second Semester

```
HVAC 146  Plumbing Systems Applications.......................3
HVAC 150  Refrigerant Management and Certification............1
HVAC 137  Residential Systems: Air Conditioning*..............4
          Prerequisites: HVAC 121 and either HVAC 123
          or ELTE 123
HVAC 124  Equipment Selection and Duct Design*................4
          Prerequisites: HVAC 121 and either HVAC 123
          or ELTE 123
HVAC 167  Sheet Metal Layout and Fabrication..................3
          Total Semester Credit Hours........................15
```

### Third Semester

```
MATH 133  Technical Mathematics I*............................4
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Social Science and/or Economics Elective............3
HVAC 127  Residential Systems: Heating*.......................4
          Prerequisites: HVAC 121 and either HVAC 123
          or ELTE 123
HVAC 148  HVAC Installation and Start-up Procedures*..........3
          Prerequisites: HVAC 121 and either HVAC 123
          or ELTE 123
          Technical Elective..................................3
```

```
          Total Semester Credit Hours........................17
```

### Fourth Semester

```
HVAC 235  Residential Heat Pump Systems*......................4
          Prerequisites: HVAC 121 and either HVAC 123
          or ELTE 123
          Humanities Elective.................................3
          Technical Electives.................................4
          General Education Elective..........................3
          Total Semester Credit Hours........................14
          TOTAL PROGRAM CREDIT HOURS.........................64
```

### Technical Electives

```
AUTO 230  Automotive Heating and Air Conditioning*............3
          Prerequisite or corequisite: AUTO 125 or
          approval of program administrator
ELTE 122  National Electrical Code I..........................4
ELTE 125  Residential Wiring Methods*.........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
HVAC 125  Energy Alternatives.................................2
HVAC 221  Commercial Systems: Air Conditioning*...............4
          Prerequisites: HVAC 121 and either HVAC 123
          or ELTE 123
HVAC 223  Commercial Systems: Heating*........................4
          Prerequisite: HVAC 123 or ELTE 123
HVAC 231  HVAC Rooftop Units*.................................3
          Prerequisites: HVAC 121 and either HVAC 123
          or ELTE 123
HVAC 271  HVAC Internship*....................................3
          Prerequisite: Program facilitator approval
          Required
HVAC 291  Independent Study.................................1-7
```

### General Education Electives

```
ENGL 123  Technical Writing I*................................3
          Prerequisite: ENGL 121
SPD  120  Interpersonal Communication.........................3
*Prerequisite/Corequisite required
```

# HVAC Residential Service Technician Certificate

The postsecondary certificate program is designed to prepare you for the basic job skills needed to service residential heating and air conditioning equipment. Students who elect the residential service certificate option learn the theory of operation and how to service, repair and design gas furnaces, central air conditioners, heat pumps and rooftop air conditioning systems. This knowledge is reinforced by working on actual equipment in the laboratory. Completion of this program will allow the student to seek employment as a residential maintenance and service technician in the heating/air conditioning trade.

(Major Code 6260; CIP Code 47.0201)

Heating, Ventilation, Air Cond. Technology

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### Fall Semester

```
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
HVAC 121  Basic Principles of HVAC*...........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
HVAC 123  Electromechanical Systems...........................4
MATH 115  Elementary Algebra*.................................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Total Semester Credit Hours........................14
```

**Spring Semester**

```
HVAC 150   Refrigerant Management and Certification.............1
HVAC 124   Equipment Selection and Duct Design*.................4
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
HVAC 137   Residential Systems: Air Conditioning*..............4
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
HVAC 235   Residential Heat Pump Systems*......................4
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
           Total Semester Credit Hours........................13
```

**Fall Semester**

```
HVAC 167   Sheet Metal Layout and Fabrication..................3
HVAC 155   Workplace Skills....................................1
HVAC 127   Residential Systems: Heating*.......................4
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
           Technical Electives..............................3-4
           Total Semester Credit Hours.....................11-12
           TOTAL  PROGRAM CREDIT HOURS.....................38-39
```

**Technical Electives**

```
HVAC 125   Energy Alternatives.................................2
HVAC 143   Reading Blueprints and Ladder Diagrams..............2
HVAC 221   Commercial Systems: Air Conditioning*...............4
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
HVAC 223   Commercial Systems: Heating*........................4
           Prerequisite: HVAC 123 or ELTE 123
HVAC 231   HVAC Rooftop Units*.................................3
           Prerequisites: HVAC 121 and either HVAC 123
           or ELTE 123
HVAC 271   HVAC Internship*....................................3
           Prerequisite: Program facilitator approval
           Required
HVAC 291   Independent Study...................................1
CPCA 105   Introduction to Personal Computers: Windows.........1
INDT 125   Industrial Safety...................................3
*Prerequisite/Corequisite required
```

# Floral Design Entrepreneurship Certificate

This certificate is designed to prepare students to realize their entrepreneurial dream of opening their own business in the floral design industry. This certificate is designed to provide the student with basic skills in floral design and maintenance and small business development and management.

(Major Code 4240; CIP Code 01.0601)

Science Department

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

**First Semester**

```
ACCT 111   Small Business Accounting...........................3
           or
ACCT 121   Accounting I.......................................3
ENTR 120   Introduction to Entrepreneurship...................2
ENTR 180   Opportunity Analysis...............................2
HORT 160   Garden Center Operations...........................3
BUS  230   Marketing..........................................3
ITMD 121   Interior Design/Tech Prep..........................3
           Total Semester Credit Hours........................16
```

**Second Semester**

```
HORT 220   Herbaceous Plants..................................3
ITMD 127   Elements of Floral Design..........................1
ITMD 282   Interiors Internship I*............................1
           Prerequisite: ITMD 121 with a grade of C or higher
```

```
HORT 210   Concepts of Floral Design..........................3
ENTR 131   Financial Management for Small Business*...........2
           Prerequisite: ACCT 111 or ACCT 121
ENTR 220   Entrepreneurial Marketing*.........................2
           Prerequisite: BUS 230
ENTR 142   Fast Trac Business Plan............................3
           Total Semester Credit Hours........................15
           TOTAL PROGRAM CREDIT HOURS.........................31
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study.  These courses are NOT part of the certificate requirements.

```
HORT 115   Home Horticulture..................................2
HORT 201   Introduction to Horticultural Science..............4
HORT 205   Plant Propagation*.................................3
           Prerequisite: HORT 201 or permission of assistant
           dean
ENTR 160   Legal Issues for Small Business....................2
ENTR 195   Franchising*.......................................3
           Prerequisite: BUS 230
ENTR 225   Family Business....................................3
ENTR 240   Funding Acquisition for Entrepreneurs*.............2
           Prerequisite: ENTR 142
```

# Floriculture Certificate

The floriculture certificate program is designed to prepare students with the knowledge and job skills for employment in the Floriculture Industry. Upon completion of the floriculture certificate, students will possess the competencies to be successful at entry-level or higher positions in the Floriculture Industry.

Science Department

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

**First Semester**

```
FLR  130   Principles of Traditional Design...................3
FLR  150   Contemporary Design Styles.........................3
ACCT 111   Small Business Accounting..........................3
           Electives..........................................3
           Total Semester Credit Hours........................12
```

**Second Semester**

```
FLR  220   Wedding Design*....................................3
           Prerequisities: FLR 130 and FLR 150
FLR  200   Plants for Interior Design.........................3
FLR  250   Sympathy Flowers*..................................3
           Prerequisites: FLR 130 and FLR 150
           Electives........................................4-6
           Total Semester Credit Hours.....................13-15
```

**Third Semester**

```
FLR  270   Retail Flower Shop Operations*.....................3
           Prerequisites: FLR 200 and FLR 220 and FLR 250
           Total Semester Credit Hours.........................3
           TOTAL PROGRAM CREDIT HOURS......................28-30
*Prerequisite/Corequisite required
```

**List of Electives**

```
BUS  145   Small Business Management..........................3
BUS  230   Marketing..........................................3
ENTR 131   Financial Management for Small Business*...........2
           Prerequisite: ACCT 111 or ACCT 121
ENTR 160   Legal Issues for Small Business....................2
ENTR 220   Entrepreneurial Marketing*.........................2
           Prerequisite: BUS 230
MATH 120   Business Mathematics*..............................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
```

# Horticulture, A.A.S.

The horticulture degree program is designed to prepare students with the knowledge and job skills for employment in the greening industry. Upon completion of the associate of applied science degree, students will possess the competencies to be successful at entry-level or higher positions in landscape design and maintenance, greenhouse operations, chemical applicator lawn care, park attendants, plant science technicians, groundskeepers, landscape technicians, irrigation technicians and other related occupations.

Major Code 2150; CIP Code 01.0601

Science Department

## Associate of Applied Science

### First Semester

```
HORT 201  Introduction to Horticultural Science...............4
MATH 116  Intermediate Algebra or higher*.....................3
          Prerequisite: MATH 115 with a grade of "C" or higher
          or appropriate score on the math assessment test
ENGL 121  Composition I*.......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
HORT 214  Woody Plants I, Deciduous...........................3
BIOL 125  General Botany.......................................5
          Total Semester Credit Hours........................18
```

### Second Semester

```
HORT 140  Turfgrass I.........................................3
HORT 205  Plant Propagation*..................................3
          Prerequisite: HORT 201 or permission of assistant
          dean
HORT 215  Woody Plants II, Evergreens.........................3
          Social Science/Economics Elective..................3
          Humanities/Art Elective............................3
          Health and/or Physical Education Elective..........1
          Total Semester Credit Hours........................16
```

### Third Semester

```
HORT 220  Herbaceous Plants...................................3
HORT 235  Landscape Maintenance and Techniques................3
HORT 260  Horticulture Soils..................................3
          Electives........................................6-8
          Total Semester Credit Hours.....................15-17
```

### Fourth Semester

```
HORT 160  Garden Center Operations............................3
HORT 225  Plant Problems*.....................................3
          Prerequisites: HORT 214 and HORT 220 or permission of
          assistant dean
          Horticulture Electives.............................6
HORT 270  Horticulture Internship*............................3
          Prerequisite: Approval of assistant dean
          Total Semester Credit Hours........................15
          TOTAL PROGRAM CREDIT HOURS......................64-66
```

### Horticulture Electives

```
HORT 135  Landscape Design....................................3
HORT 210  Concepts of Floral Design...........................3
HORT 240  Turfgrass II........................................3
          Prerequisite: HORT 140
HORT 265  Landscape Construction..............................3
HORT 165  Arboriculture.......................................3
```

### List of Electives

```
BUS  140  Principles of Supervision...........................3
BUS  150  Business Communications*............................3
          Prerequisite: ENGL 121
FL   130  Elementary Spanish I................................5
*Prerequisite/Corequisite required
```

# Horticulture Certificate

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

The 29-credit-hour certificate granted by Johnson County Community College is a certificate program designed to prepare students for a career in the "greening industry." Upon completion of this certificate, students will possess the competencies to be successful at entry-level or higher positions in landscape design and maintenance, lawn care, garden centers and nurseries, wholesale greenhouse growers, and greenhouse operations and other related occupations.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 6180; CIP Code 01.0601)

Science Department

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
HORT 140  Turfgrass I.........................................3
HORT 214  Woody Plants I, Deciduous...........................3
HORT 220  Herbaceous Plants...................................3
          Elective (choose from list below)..................3
          Total Semester Credit Hours........................12
```

### Second Semester

```
HORT 215  Woody Plants II, Evergreens.........................3
HORT 225  Plant Problems*.....................................3
          Prerequisites: HORT 214 and HORT 220 or permission of
          assistant dean
HORT 135  Landscape Design....................................3
          Total Semester Credit Hours.........................9
```

### Third Semester

```
HORT 235  Landscape Maintenance and Techniques................3
HORT 150  Fruits, Vegetables and Herb Crops...................2
          Elective (choose from list below)..................3
          Total Semester Credit Hours.........................8
          TOTAL PROGRAM CREDIT HOURS.........................29
*Prerequisite/Corequisite required
```

### Electives

```
BUS  121  Introduction to Business............................3
BUS  145  Small Business Management...........................3
HORT 160  Garden Center Operations............................3
SPD  128  Business and Professional Speech....................3
```

# Horticulture Entrepreneurship Certificate

This certificate is designed to prepare students to open their own business in the "greening industry" businesses such as landscape design and maintenance,

lawn care, garden centers and nurseries, and wholesale greenhouse growers. This certificate is design to provide the student with basic skills in horticulture and small business development and management.

(Major Code 4270; CIP Code 01.0601)

Science Department

# Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/ professional responsibilities.

### First Semester

```
HORT 140   Turfgrass I.........................................3
HORT 214   Woody Plants I, Deciduous...........................3
HORT 220   Herbaceous Plants..................................3
HORT 135   Landscape Design...................................3
ENTR 120   Introduction to Entrepreneurship...................2
ENTR 180   Opportunity Analysis...............................2
           Total Semester Credit Hours.......................16
```

### Second Semester

```
HORT 215   Woody Plants II, Evergreens........................3
HORT 225   Plant Problems*....................................3
           Prerequisites: HORT 214 and HORT 220 or permission of
           assistant dean
HORT 235   Landscape Maintenance and Techniques...............3
HORT 150   Fruits, Vegetables and Herb Crops..................2
ENTR 142   Fast Trac Business Plan............................3
           Total Semester Credit Hours.......................14
           TOTAL PROGRAM CREDIT HOURS........................30
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study. These courses are NOT part of the certificate requirements.

```
HORT 115   Home Horticulture..................................2
HORT 160   Garden Center Operations...........................3
HORT 201   Introduction to Horticultural Science..............4
HORT 205   Plant Propagation*.................................3
           Prerequisite: HORT 201 or permission of assistant
           dean
HORT 210   Concepts of Floral Design*.........................3
HORT 255   Landscape Pest Control.............................3
HORT 260   Horticulture Soils.................................3
ENTR 160   Legal Issues for Small Business....................2
ENTR 220   Entrepreneurial Marketing*.........................2
           Prerequisite: BUS 230
ENTR 131   Financial Management for Small Business*...........2
           Prerequisite: ACCT 111 or ACCT 121
ENTR 195   Franchising*.......................................3
           Prerequisite: BUS 230
ENTR 225   Family Business....................................3
ENTR 240   Funding Acquisition for Entrepreneurs*.............2
           Prerequisite: ENTR 142
FL   130   Elementary Spanish I...............................5
```

# Landscape Technician Certificate

The 31-credit-hour certificate program is designed to prepare students for a career in landscape design and maintenance. Upon completion of this certificate, students will possess the competencies to be successful at entry-level or higher positions in landscape design and maintenance and other related occupations.

A full-time student can complete this certificate in a fall-spring sequence year.

(Major Code 6190; CIP Code 01.0605)

Science Department

# Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/ professional responsibilities.

### First Semester

```
HORT 201   Introduction to Horticultural Science..............4
HORT 214   Woody Plants I, Deciduous...........................3
HORT 140   Turfgrass I........................................3
           Total Semester Credit Hours.......................10
```

### Second Semester

```
HORT 220   Herbaceous Plants..................................3
HORT 205   Plant Propagation*.................................3
           Prerequisite: HORT 201 or permission of assistant
           dean
HORT 260   Horticulture Soils.................................3
           Total Semester Credit Hours........................9
```

### Third Semester

```
HORT 135   Landscape Design...................................3
HORT 225   Plant Problems*....................................3
           Prerequisites: HORT 214 and HORT 220 or permission of
           assistant dean
           Total Semester Credit Hours........................6
```

### Fourth Semester

```
HORT 235   Landscape Maintenance and Techniques...............3
HORT 265   Landscape Construction.............................3
           Total Semester Credit hours........................6
           TOTAL PROGRAM CREDIT HOURS........................31
*Prerequisite/Corequisite required
```

# Landscape Technician Entrepreneurship Certificate

This certificate is designed to prepare students to open their own business in the landscape design and maintenance industry. It will provide students with the basic skills in landscape design and maintenance and small business development and management. Upon completion, the student should be prepared to develop, grow and sustain their own landscape and maintenance business venture.

(Major Code 4280; CIP Code 01.0601)

Science Department

# Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/ professional responsibilities.

### First Semester

```
HORT 214   Woody Plants I, Deciduous...........................3
HORT 201   Introduction to Horticultural Science..............4
HORT 220   Herbaceous Plants..................................3
HORT 135   Landscape Design...................................3
ENTR 120   Introduction to Entrepreneurship...................2
ENTR 180   Opportunity Analysis...............................2
           Total Semester Credit Hours.......................17
```

### Second Semester

```
HORT 260   Horticulture Soils.................................3
```

```
HORT 225  Plant Problems*....................................3
          Prerequisites: HORT 214 and HORT 220 or permission of
          assistant dean
HORT 235  Landscape Maintenance and Techniques................3
HORT 265  Landscape Construction.............................3
ENTR 142  Fast Trac Business Plan............................3
          Total Semester Credit Hours.......................15
          TOTAL PROGRAM CREDIT HOURS........................32
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study. These courses are NOT part of the certificate requirements.

```
HORT 115  Home Horticulture..................................2
HORT 160  Garden Center Operations...........................3
HORT 205  Plant Propagation..................................3
          Prerequisite: HORT 201 or permission of assistant
          dean
HORT 210  Concepts of Floral Design..........................3
HORT 255  Landscape Pest Control.............................3
HORT 260  Horticulture Soils.................................3
ENTR 160  Legal Issues for Small Business....................2
ENTR 220  Entrepreneurial Marketing*.........................2
          Prerequisite: BUS 230
ENTR 131  Financial Management for Small Business*...........2
          Prerequisite: ACCT 111 or ACCT 121
ENTR 195  Franchising*.......................................3
          Prerequisite: BUS 230
ENTR 225  Family Business....................................3
ENTR 240  Funding Acquisition for Entrepreneurs*.............2
          Prerequisite: ENTR 142
FL   130  Elementary Spanish I...............................5
```

# Sustainable Agriculture Entrepreneurship Certificate

This certificate will provide educational opportunities that involve agriscience and agribusiness. It will focus on sustainable agriculture, market farming, the preparation of locally grown food, and entrepreneurship. Experiential learning will be emphasized by the offering of hands-on courses, numerous field trips, guest lectures, and the engagement with local farming and food communities.

Science Department

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### Fall Semester

```
HORT 245  Commercial Crop Production.........................3
HORT 272  Sustainable Agriculture Fall Practicum.............2
ENTR 120  Introduction to Entrepreneurship...................2
ENTR 180  Opportunity Analysis...............................2
          Total Semester Credit Hours........................9
```

### Spring Semester

```
HORT 260  Horticulture Soils.................................3
HORT 274  Sustainable Agriculture Spring Practicum...........2
ENTR 142  Fast Trac Business Plan............................3
HMGT 165  Food Industry Compliance & Safety..................3
          Total Semester Credit Hours.......................11
```

### Summer Semester

```
HORT 255  Landscape Pest Control.............................3
HORT 276  Sustainable Agriculture Summer Practicum...........2
HMGT 167  Local Food Production..............................3
          Total Semester Credit Hours........................8
          TOTAL PROGRAM CREDIT HOURS........................28
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study. These courses are NOT part of the certificate requirements.

```
HORT 201  Introduction to Horticultural Science..............4
HORT 205  Plant Propagation*.................................3
          Prerequisite: HORT 201 or permission of assistant
          dean
ENTR 160  Legal Issues for Small Business....................2
ENTR 220  Entrepreneurial Marketing*.........................2
          Prerequisite: BUS 230
ENTR 131  Financial Management for Small Business*...........2
          Prerequisite: ACCT 111 or ACCT 121
ENTR 225  Family Business....................................3
```

# Bed & Breakfast Entrepreneurship Certificate

This certificate program is designed to provide the student with the knowledge and skills they will need to open their own bed and breakfast. Students will learn the basic skills in hotel and lodging management, culinary arts and the business acumen necessary to operate their own entrepreneurial business venture.

(Major Code 4220; CIP Code 52.0904)

Hospitality Management

## Career Certificate

### Prerequisites for Required Courses

```
HMGT 120  Food Service Sanitation............................1
HMGT 121  Perspectives of Hospitality Management..............3
HMGT 123  Professional Cooking I*............................3
          Prerequisite or corequisite: HMGT 120
```

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
HMGT 132  Seminar in Housekeeping Operations..................3
HMGT 203  Hotel Sales and Marketing*.........................3
          Prerequisites: HMGT 121 and
          admission to the hospitality management program
HMGT 271  Seminar in Hospitality Management: Purchasing.......3
          Total Semester Credit Hours........................9
```

### Second Semester

```
HMGT 235  Seminar: Risk Management and Loss Prevention........3
HMGT 265  Front Office Management............................3
MATH 120  Business Mathematics*..............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
ENTR 180  Opportunity Analysis...............................2
          Total Semester Credit Hours.......................11
```

### Third Semester

```
HMGT 273  Hospitality Cost Accounting*.......................3
          Prerequisites: MATH 120 or higher and HMGT 121
HMGT 221  Design and Facilities Management*..................3
          Prerequisites: HMGT 123 and HMGT 271
ENTR 225  Family Business....................................3
ENTR 142  Fast Trac Business Plan............................3
          Total Semester Credit Hours.......................12
          TOTAL PROGRAM CREDIT HOURS........................32
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study. These courses are NOT part of the certificate requirements.

```
HMEC 151  Nutrition and Meal Planning........................3
HMGT 279  Beverage Control...................................3
FL   133  Basic Spanish for Hospitality Management...........2
ENTR 160  Legal Issues for Small Business....................2
ENTR 220  Entrepreneurial Marketing*.........................2
          Prerequisite: BUS 230
ENTR 240  Funding Acquisition for Entrepreneurs*.............2
```

```
Prerequisite: ENTR 142
```

# Catering Entrepreneurship Certificate

This certificate is designed to prepare students with the knowledge and skills necessary to open their own catering business. Students will learn the basic skills in culinary arts and business acumen necessary to operate their own entrepreneurial business venture.

(Major Code 4230; CIP Code 52.0904)

Hospitality Management

## Career Certificate

### Prerequisites for Required Courses

```
HMGT 120   Food Service Sanitation.............................1
HMGT 121   Perspectives of Hospitality Management..............3
```

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
HMGT 123   Professional Cooking I*.............................3
           Prerequisite or corequisite: HMGT 120
HMGT 150   Seminar: Food Service Sales and Marketing...........3
HMGT 250   Introduction to Catering...........................3
MATH 120   Business Mathematics*..............................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Total Semester Credit Hours........................12
```

### Second Semester

```
ENTR 120   Introduction to Entrepreneurship...................2
ENTR 180   Opportunity Analysis...............................2
ENTR 160   Legal Issues for Small Business....................2
HMGT 230   Professional Cooking II*...........................3
           Prerequisites: HMGT 120 and HMGT 123
HMGT 277   Seminar in Hospitality Management: Menu Planning*....3
           Prerequisite: HMGT 123
           Total Semester Credit Hours........................12
```

### Third Semester

```
HMGT 220   American Regional Cuisine*.........................3
           Prerequisite: HMGT 230
HMGT 273   Hospitality Cost Accounting*.......................3
           Prerequisites: MATH 120 or higher and HMGT 121
ENTR 142   Fast Trac Business Plan............................3
           Total Semester Credit Hours.........................9
           TOTAL PROGRAM CREDIT HOURS.........................33
*Prerequisite/Corequisite required
```

```
Students may be interested in taking additional courses, as
noted below, to complement their certificate study.  These
courses are NOT part of the certificate requirements.
```

```
HMEC 151   Nutrition and Meal Planning........................3
HMGT 279   Beverage Control...................................3
HMGT 271   Seminar in Hospitality Management: Purchasing......3
FL   133   Basic Spanish for Hospitality Management...........2
ENTR 195   Franchising*.......................................3
           Prerequisite: BUS 230
```

# Chef Apprenticeship, A.A.S.

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.

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.

The career program features formal course work 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 75 credit hours and leads to an associate of applied science degree.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 2440; CIP Code 12.0503)

Hospitality Management

## Associate of Applied Science Degree

### First Semester

```
HMGT 121   Perspectives of Hospitality Management..............3
HMGT 123   Professional Cooking I*............................3
           Prerequisite or corequisite: HMGT 120
MATH 120   Business Math or higher*...........................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
HMGT 120   Food Service Sanitation............................1
HMGT 281   Culinary Arts Practicum I*.........................2
           Prerequisite: Acceptance into the American Culinary
           Federation Chef Apprenticeship training program and
           hospitality management assistant dean's approval
           Total Semester Credit Hours........................12
```

### Second Semester

```
HMGT 273   Hospitality Cost Accounting*.......................3
           Prerequisites: MATH 120 or higher and HMGT 121
HMGT 230   Professional Cooking II*...........................3
           Prerequisites: HMGT 120 and HMGT 123
HMEC 151   Nutrition and Meal Planning........................3
CPCA       Computer Elective..................................1
HMGT 282   Culinary Arts Practicum II*........................2
           Prerequisite: HMGT 281
           Total Semester Credit Hours........................12
```

### Summer

```
ENGL 121   Composition I*.....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
SPD  120   Interpersonal Communication........................3
           or
SPD  121   Public Speaking....................................3
           or
SPD  125   Personal Communication.............................3
           Total Semester Credit Hours.........................6
```

### Third Semester

```
HMGT       Hospitality Program Elective.......................3
HMGT 271   Seminar in Hospitality Management: Purchasing......3
HMGT 220   American Regional Cuisine*.........................3
           Prerequisite: HMGT 230
HMGT 285   Culinary Arts Practicum III*.......................2
           Prerequisite: HMGT 282
           Total Semester Credit Hours........................11
```

### Fourth Semester

```
HMGT 226   Garde Manger*......................................3
           Prerequisite: HMGT 230
HMGT 223   Fundamentals of Baking.............................3
HMGT 277   Seminar in Hospitality Management: Menu Planning*....3
           Prerequisite: HMGT 123
HMGT 286   Culinary Arts Practicum IV*........................2
```

```
          Prerequisite: HMGT 285
          Total Semester Credit Hours.........................11
```

## Fifth Semester

```
HMGT 231  Advanced Food Preparation*.........................4
          Prerequisites: HMGT 230 and assistant dean's approval
HMGT 279  Beverage Control.......................................3
PSYC 121  Applied Psychology.....................................3
          or
PSYC 130  Introduction to Psychology.............................3
HMGT 287  Culinary Arts Practicum V*.............................2
          Prerequisite: HMGT 286
          Total Semester Credit Hours.........................12
```

## Sixth Semester

```
HMGT 128  Supervisory Management.................................3
HMGT 228  Advanced Hospitality Management*.......................3
          Prerequisite: assistant dean's approval
HMGT 288  Culinary Arts Practicum VI*............................2
          Prerequisites: HMGT 287 and assistant dean's approval
          and approval of hospitality management assistant dean
          Humanities Elective....................................3
          Total Semester Credit Hours.........................11
          TOTAL PROGRAM CREDIT HOURS..........................75


Hospitality Program Electives
HMGT 126  Food Management*.......................................4
          Prerequisites: HMGT 123 and  HGMT 230
          and HMGT 277 and
          admission to the hospitality management program
HMGT 130  Hospitality Law........................................3
HMGT 132  Seminar in Housekeeping Operations.....................3
HMGT 150  Seminar: Food Service Sales and Marketing..............3
HMGT 203  Hotel Sales and Marketing*.............................3
          Prerequisites: HMGT 121 and
          admission to the hospitality management program
HMGT 207  Hospitality Human Resource Management*.................3
          Prerequisite: HMGT 128
HMGT 221  Design and Facilities Management*......................3
          Prerequisites: HMGT 123 and HMGT 271
HMGT 240  Advanced Baking*.......................................4
          Prerequisites: HMGT 123 and HMGT 223
HMGT 248  Confectionery Arts.....................................3
HMGT 250  Introduction to Catering...............................3
HMGT 256  Casino Management......................................3
HMGT 265  Front Office Management................................3
HMGT 268  Hospitality Managerial Accounting*....................3
          Prerequisites: MATH 120 and HMGT 121 and HMGT 273
*Prerequisite/Corequisite required
```

# Food and Beverage Management, A.A.S.

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.

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 66-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.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 2550; CIP Code 12.0504)

Hospitality Management

# Associate of Applied Science Degree

## First Semester

```
HMGT 121  Perspectives of Hospitality Management................3
SPD  120  Interpersonal Communication............................3
          or
SPD  121  Public Speaking........................................3
          or
SPD  125  Personal Communication.................................3
MATH 120  Business Math or higher*...............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
CPCA      Computer Elective......................................1
ENGL 121  Composition I*.........................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
HMGT 120  Food Service Sanitation................................1
          Total Semester Credit Hours.........................14
```

## Second Semester

```
HMGT 128  Supervisory Management.................................3
HMGT 123  Professional Cooking I*................................3
          Prerequisite or corequisite: HMGT 120
HMGT 277  Seminar in Hospitality Management: Menu Planning*.....3
          Prerequisite: HMGT 123
HMGT 271  Seminar in Hospitality Management: Purchasing.........3
HMEC 151  Nutrition and Meal Planning............................3
          Total Semester Credit Hours.........................15
```

## Summer

```
PSYC 121  Applied Psychology.....................................3
          or
PSYC 130  Introduction to Psychology.............................3
          Humanities Requirement.................................3
          Total Semester Credit Hours..........................6
```

## Third Semester

```
HMGT 230  Professional Cooking II*...............................3
          Prerequisites: HMGT 120 and HMGT 123
HMGT 207  Hospitality Human Resource Management*.................3
          Prerequisite: HMGT 128
HMGT 279  Beverage Control.......................................3
HMGT 221  Design and Facilities Management*......................3
          Prerequisites: HMGT 123 and HMGT 271
HMGT 273  Hospitality Cost Accounting*...........................3
          Prerequisites: MATH 120 or higher and HMGT 121
          Total Semester Credit Hours.........................15
```

## Fourth Semester

```
HMGT 126  Food Management*.......................................4
          Prerequisites: HMGT 123 and  HGMT 230
          and HMGT 277 and
          admission to the hospitality management program
HMGT 228  Advanced Hospitality Management*.......................3
          Prerequisite: assistant dean's approval
HMGT      Hospitality Program Elective...........................3
HMGT 268  Hospitality Managerial Accounting*....................3
          Prerequisites: MATH 120 and HMGT 121 and HMGT 273
HMGT 150  Seminar: Food Service Sales and Marketing.............3
          Total Semester Credit Hours.........................16
          TOTAL PROGRAM CREDIT HOURS..........................66


Hospitality Program Electives
HMGT 130  Hospitality Law........................................3
HMGT 203  Hotel Sales and Marketing*.............................3
          Prerequisites: HMGT 121 and
          admission to the hospitality management program
HMGT 223  Fundamentals of Baking.................................3
HMGT 250  Introduction to Catering...............................3
HMGT 256  Casino Management......................................3
HMGT 275  Seminar in Hospitality Management: Internship*.......3
          Prerequisite: Admission to the hospitality management
          program
*Prerequisite/Corequisite required
```

# Food and Beverage Management Certificate

The food and beverage management certificate program is a one-year program that students can complete in two semesters. Designed to give students basic

skills hospitality industry employers are seeking for entry-level positions, the program includes an internship, which allows the student to gain actual experience with local employers.

(Major Code 4840; CIP Code 12.0504)

Hospitality Management

# Career Certificate

## First Semester

```
ENGL 121  Composition I*........................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
HMGT 120  Food Service Sanitation.............................1
HMGT 121  Perspectives of Hospitality Management..............3
HMGT 123  Professional Cooking I*.............................3
          Prerequisite or corequisite: HMGT 120
HMGT 128  Supervisory Management..............................3
MATH 120  Business Mathematics*...............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Total Semester Credit Hours.........................16
```

## Second Semester

```
HMGT 230  Professional Cooking II*............................3
          Prerequisites: HMGT 120 and HMGT 123
HMGT 126  Food Management*....................................4
          Prerequisites: HMGT 123 and  HGMT 230
          and HMGT 277 and
          admission to the hospitality management program
          NOTE:  HMGT 126 requires prerequisite override for
          the certificate only.
HMGT 271  Seminar in Hospitality Management: Purchasing.......3
HMGT 273  Hospitality Cost Accounting*........................3
          Prerequisites: MATH 120 or higher and HMGT 121
HMGT 275  Seminar in Hospitality Management: Internship*......3
          Prerequisite: Admission to the hospitality management
          program
          Total Semester Credit Hours.........................16
          TOTAL PROGRM CREDIT HOURS...........................32
*Prerequisite/Corequisite required
```

# Hospitality Entrepreneurship Certificate

The hospitality entrepreneurship certificate prepares students to open their own hospitality business. This certificate is designed to provide the student with basic skills in restaurant operation small business development and management.

(Major Code 4190; CIP Code 52.0901)

Hospitality Management

## Career Certificate

### Prerequisites for Required Courses

```
HMGT 123  Professional Cooking I*.............................3
          Prerequisite or corequisite: HMGT 120
BUS  230  Marketing..........................................3
```

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
HMGT 121  Perspectives of Hospitality Management..............3
HMGT 120  Food Service Sanitation.............................1
HMGT 128  Supervisory Management..............................3
MATH 120  Business Math or higher*............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
```

```
ENTR 120  Introduction to Entrepreneurship....................2
          Total Semester Credit Hours.........................12
```

### Second Semester

```
HMGT 277  Seminar in Hospitality Management: Menu Planning*....3
          Prerequisite: HMGT 123
ENTR 180  Opportunity Analysis...............................2
ENTR 195  Franchising*.......................................3
          Prerequisite: BUS 230
HMGT 230  Professional Cooking II*............................3
          Prerequisites: HMGT 120 and HMGT 123
          Total Semester Credit Hours.........................11
```

### Third Semester

```
HMGT 273  Hospitality Cost Accounting*........................3
          Prerequisite: MATH 120 or higher and HMGT 121
ENTR 160  Legal Issues for Small Business....................2
ENTR 220  Entrepreneurial Marketing*.........................2
          Prerequisite: BUS 230
ENTR 142  Fast Trac Business Plan............................3
          Total Semester Credit Hours.........................10
          TOTAL PROGRAM CREDIT HOURS..........................33
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study.  These courses are NOT part of the certificate requirements.

```
HMEC 151  Nutrition and Meal Planning.........................3
HMGT 279  Beverage Control...................................3
HMGT 271  Seminar in Hospitality Management: Purchasing.......3
HMGT 130  Hospitality Law....................................3
HMGT 250  Introduction to Catering...........................3
HMGT 203  Hotel Sales and Marketing*.........................3
          Prerequisites: HMGT 121 and
          admission to the hospitality management program
FL   133  Basic Spanish for Hospitality Management............2
```

# Hotel & Lodging Management, A.A.S.

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.

The JCCC hotel and lodging management program prepares the graduate to enter hotel and lodging management, usually as a trainee or department supervisor. Courses in supervisory management, hotel accounting, 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, and beverage control.

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

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 2510; CIP Code 52.0904)

Hospitality Management

## Associate of Applied Science

### First Semester

```
HMGT 121  Perspectives of Hospitality Management..............3
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
PSYC 121  Applied Psychology.................................3
          or
PSYC 130  Introduction to Psychology.........................3
HMGT 120  Food Service Sanitation............................1
HPER 200  First Aid and CPR..................................2
HMGT 132  Seminar in Housekeeping Operations.................3
```

```
                    Total Semester Credit Hours........................15
```

## Second Semester

```
MATH 120  Business Math or higher*..............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
HMGT 265  Front Office Management...............................3
HMGT 128  Supervisory Management................................3
HMGT 235  Seminar: Risk Management and Loss Prevention.........3
HMGT 123  Professional Cooking I*...............................3
          Prerequisite or corequisite: HMGT 120
          Total Semester Credit Hours........................15
```

## Summer

```
HMGT 275  Seminar in Hospitality Management: Internship*.......3
          Prerequisite: Admission to the hospitality management
          program
CPCA      Computer Elective.....................................1
          Total Semester Credit Hours.........................4
```

## Third Semester

```
SPD  120  Interpersonal Communication..........................3
          or
SPD  121  Public Speaking.......................................3
          or
SPD  125  Personal Communication...............................3
HMGT 230  Professional Cooking II*..............................3
          Prerequisites: HMGT 120 and HMGT 123
HMGT 279  Beverage Control......................................3
HMGT 203  Hotel Sales and Marketing*............................3
          Prerequisites: HMGT 121 and
          admission to the hospitality management program
HMGT 273  Hospitality Cost Accounting*..........................3
          Prerequisites: MATH 120 or higher and HMGT 121
          Total Semester Credit Hours........................15
```

## Fourth Semester

```
          Humanities Requirement...............................3
HMGT 228  Advanced Hospitality Management*.....................3
          Prerequisite: assistant dean's approval
HMGT      Hospitality Program Elective.........................3
HMGT 268  Hospitality Managerial Accounting*...................3
          Prerequisites: MATH 120 and HMGT 121 and HMGT 273
HMGT 207  Hospitality Human Resource Management*...............3
          Prerequisite: HMGT 128
          Total Semester Credit Hours........................15
          TOTAL PROGRAM CREDIT HOURS..........................64
```

```
Hospitality Program Electives
HMEC 151  Nutrition and Meal Planning..........................3
HMGT 126  Food Management*.....................................4
          Prerequisites: HMGT 123 and  HGMT 230
          and HMGT 277 and
          admission to the hospitality management program
HMGT 130  Hospitality Law......................................3
HMGT 221  Design and Facilities Management*....................3
          Prerequisites: HMGT 123 and HMGT 271
HMGT 223  Fundamentals of Baking...............................3
HMGT 250  Introduction to Catering.............................3
HMGT 256  Casino Management....................................3
HMGT 271  Seminar in Hospitality Management: Purchasing........3
HMGT 277  Seminar in Hospitality Management: Menu Planning*....3
          Prerequisite: HMGT 123
*Prerequisite/Corequisite required
```

# Pastry/Baking Certificate

The one-year pastry/baking certificate program is for students who are seeking employment as pastry cooks in pastry/bake shops, hotels, restaurants or other areas that produce pastry and baked products. Students may have an entrepreneurial interest for opening their own operation.

The program involves a total of 30 credits over two semesters with a maximum enrollment of 15 students. This is an open enrollment program beginning only during the fall semester. Current industry professionals may desire this program to upgrade their skills and increase their knowledge in this area of study.

Students must complete HMGT 120, Food Service Sanitation, and HMGT 123, Professional Cooking I, before enrolling in the program.

(Major Code 4350; CIP Code 12.0501)

Hospitality Management

# Career Certificate

### Prerequisites for Required Courses

All Students must complete the two prerequiite courses with a passing grade PRIOR to enrolling in the pastry program.

```
HMGT 120  Food Service Sanitation..............................1
HMGT 123  Professional Cooking I*...............................3
          Prerequisite or corequisite: HMGT 120
```

### Fall Semester Only

```
HMPB 155  Pastry Shop Production I*.............................4
          Prerequisites: HMGT 120 and HMGT 123
          Corequisites: HMPB 160 and HMPB 233 and HMPB 252
HMPB 160  Pastry Shop Principles I*.............................4
          Prerequisites: HMGT 120 and HMGT 123
          Corequisites: HMPB 155 and HMPB 233 and HMPB 252
HMPB 233  Patisserie*...........................................4
          Prerequisites: HMGT 120 and HMGT 123
          Corequisites: HMPB 155 and HMPB 160 and HMPB 252
HMPB 252  Pastry Shop Business Basics I*.......................3
          Prerequisites: HMGT 120 and HMGT 123
          Corequisites: HMPB 155 and HMPB 160 and HMPB 233
          Total Semester Credit Hours........................15
```

### Spring Semester Only

```
HMPB 255  Pastry Shop Production II*............................4
          Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and
          HMPB 252
          Corequisites: HMPB 260 and HMPB 257 and HMPB 252
HMPB 260  Pastry Shop Principles II*............................4
          Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and
          HMPB 252
          Corequisites: HMPB 255 and HMPB 257 and HMPB 262
HMPB 257  Sugar Basics*.........................................4
          Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and
          HMPB 252
          Corequisites: HMPB 255 and HMPB 260 and HMPB 262
HMPB 262  Pastry Shop Business Basics II*......................3
          Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and
          HMPB 252
          Corequisites: HMPB 255 and HMPB 260 and HMPB 257
          Total Semester Credit Hours........................15
          TOTAL PROGRAM CREDIT HOURS..........................30
*Prerequisite/Corequisite required
```

# Pastry/Baking Entrepreneurship Certificate

This certificate is designed to prepare students to open their own business, and to provide the student with basic skills in pastry/baking preparation and small business development and management.

The program involves two semesters of pastry/baking courses with a maximum enrollment of 15 students. This is an open enrollment program beginning only during the fall semester. Students must complete HMGT 120, Food Service Sanitation, and HMGT 123, Professional Cooking I, with a passing grade before enrolling in pastry/baking courses (HMPB). Current industry professionals may desire this program to upgrade their skills and increase their knowledge in this area of study.

(Major Code 4080; CIP Code 12.0501)

Hospitality Management

# Career Certificate

### Prerequisites for Required Courses

```
HMGT 120  Food Service Sanitation..............................1
HMGT 123  Professional Cooking I*...............................3
          Prerequisite or corequisite: HMGT 120
```

## Fall Semester

```
HMPB 155  Pastry Shop Production I*..........................4
          Prerequisites: HMGT 120 and HMGT 123
          Corequisites: HMPB 160 and HMPB 233 and HMPB 252
HMPB 160  Pastry Shop Principles I*..........................4
          Prerequisites: HMGT 120 and HMGT 123
          Corequisites: HMPB 155 and HMPB 233 and HMPB 252
HMPB 233  Patisserie*........................................4
          Prerequisites: HMGT 120 and HMGT 123
          Corequisites: HMPB 155 and HMPB 160 and HMPB 252
HMPB 252  Pastry Shop Business Basics I*.....................3
          Prerequisites: HMGT 120 and HMGT 123
          Corequisites: HMPB 155 and HMPB 160 and HMPB 233
ENTR 120  Introduction to Entrepreneurship...................2
ENTR 180  Opportunity Analysis...............................2
          Total Semester Credit Hours.......................19
```

## Spring Semester

```
HMPB 255  Pastry Shop Production II*.........................4
          Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and
          HMPB 252
          Corequisites: HMPB 260 and HMPB 257 and HMPB 252
HMPB 260  Pastry Shop Principles II*.........................4
          Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and
          HMPB 252
          Corequisites: HMPB 255 and HMPB 257 and HMPB 262
HMPB 257  Sugar Basics*......................................4
          Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and
          HMPB 252
          Corequisites: HMPB 255 and HMPB 260 and HMPB 262
HMPB 262  Pastry Shop Business Basics II*....................3
          Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and
          HMPB 252
          Corequisites: HMPB 255 and HMPB 260 and HMPB 257
ENTR 142  Fast Trac Business Plan............................3
          Total Semester Credit Hours.......................18
          TOTAL PROGRAM CREDIT HOURS........................37
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study. These courses are NOT part of the certificate requirements.

```
ENTR 160  Legal Issues for Small Business....................2
ENTR 195  Franchising........................................3
          Prerequisite: BUS 230
ENTR 220  Entrepreneurial Marketing..........................2
          Prerequisite: BUS 230
ENTR 131  Financial Management for Small Business*...........2
          Prerequisite: ACCT 111 or ACCT 121
```

# Industrial Maintenance, A.A.S.

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

(Major Code 2270; CIP Code 47.0303)

Electrical Technology Program

## Associate of Applied Science Degree

Note: MFAB 120-MFAB Tools and Equipment or MFAB 127-Welding Processes are prerequisites/corequisites to MFAB 121. Students who may have the skills needed for MFAB 120 or MFAB 127 may contact the career program facilitator for a waiver or may contact the Testing Center for prior learning credit.

### First Semester

```
DRAF 129  Interpreting Architectural Drawings................2
          or
MFAB 180  Blueprint and Symbols Reading for Welders..........2
          or
HVAC 143  Reading Blueprints and Ladder Diagrams.............2
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
```

```
INDT 125  Industrial Safety..................................3
HVAC 123  Electromechanical Systems..........................4
MATH 133  Technical Mathematics I*...........................4
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Total Semester Credit Hours.......................16
```

### Second Semester

```
CPCA 128  PC Applications: MS Office.........................3
ELTE 122  National Electrical Code I.........................4
ENGL 123  Technical Writing I*...............................3
          Prerequisite: ENGL 121
INDT 155  Workplace Skills...................................1
          Technical Electives...............................5
          Total Semester Credit Hours.......................16
```

### Third Semester

```
ECON 132  Survey of Economics................................3
MFAB 121  Intro to Shielded Metal Arc Welding I (SMAW I)*....4
          Prerequisite or corequisite: MFAB 120 or MFAB 127
          or
MFAB 127  Welding Processes..................................2
SPD  120  Interpersonal Communication........................3
          Related Electives.................................3
          Technical Electives..............................3-5
          Total Semester Credit Hours.......................16
```

### Fourth Semester

```
EMS  121  CPR I - Basic Life Support for Healthcare Provider...1
          Humanities Elective...............................3
          Related Electives.................................3
          Technical Electives...............................9
          Total Semester Credit Hours.......................16
          TOTAL PROGRAM CREDIT HOURS........................64
```

## Technical Electives

```
AUTO 165  Automotive Engine Repair*..........................4
          Prerequisite or corequisite: AUTO 125 or
          approval of the program administrator
AUTO 210  Advanced Engine Repair*............................3
          Prerequisite: AUTO 165
CET  105  Construction Methods...............................3
ELEC 120  Introduction to Electronics........................3
ELEC 133  Programmable Controllers...........................3
ELEC 165  Advanced Programmable Controllers*.................3
          Prerequisite: ELEC 133
ELTE 200  Commercial Wiring Methods*.........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
ELTE 205  Industrial Electrical Wiring*......................4
          Prerequisite: ELTE 122 or ELTE 125 or ELTE 200
ELTE 271  Electrical Internship I*...........................3
          Prerequisite: program facilitator approval
HVAC 150  Refrigerant Management and Certification...........1
HVAC 121  Basic Principles of HVAC*..........................4
          Prerequisite or corequisite: HVAC 123 or ELTE 123
HVAC 146  Plumbing Systems Applications......................3
HVAC 221  Commercial Systems: Air Conditioning*..............4
          Prerequisites: HVAC 121 and either HVAC 123
          or ELTE 123
HVAC 223  Commercial Systems: Heating*.......................4
          Prerequisite: HVAC 123 or ELTE 123
HVAC 271  HVAC Internship*...................................3
          Prerequisite: Program facilitator approval
          Required
MFAB 125  Advanced Gas and Arc Welding*......................4
          Prerequisite: MFAB 121
MFAB 170  Basic Machine Tool Processes.......................4
MFAB 240  Metallurgy.........................................2
MFAB 140  Maintenance Repair Welding*........................3
          Prerequisite: MFAB 121 or MFAB 130
MFAB 271  Metal Fabrication Internship*......................3
          Prerequisite: Program facilitator approval
```

## Related Electives

```
BUS  140  Principles of Supervision..........................3
BUS  141  Principles of Management...........................3
CET  129  Construction Management............................3
CET  140  Civil Engineering Materials*.......................3
          Corequisite: MATH 133
Note:  Must take concurrent with Math 133
```

```
CPCA 105  Introduction to Personal Computers: Windows........1
CPCA 121  Introduction to Project Management*................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test
CPCA 141  Internet I*........................................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or appropriate score on an assessment test
IT   200  Networking Technologies............................3
*Prerequisite/Corequisite required
```

# Industrial Maintenance Certificate

Industrial maintenance mechanics are employed in the die-casting, plastics, food processing, printing, precision metal and woodworking industries. The vocational certificate course work includes a broad curriculum of industrial electricity, welding, HVAC and blueprint reading. Emphasis will be hands-on training in the repairing and testing of equipment. This also allows students employed in an industrial maintenance position to broaden their skill areas and achieve a vocational certificate.

(Major Code 5210; CIP Code 47.0303)

Electrical Technology Program

## Career Certificate

Note: MFAB 120-MFAB Tools and Equipment or MFAB 127-Welding Processes are prerequisites/corequisites to MFAB 121. Students who may have the skills needed for MFAB 120 or MFAB 127 may contact the career program facilitator for a waiver or may contact the Testing Center for prior learning credit.

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
DRAF 129   Interpreting Architectural Drawings.................2
           or
MFAB 180   Blueprint and Symbols Reading for Welders..........2
           or
HVAC 143   Reading Blueprints and Ladder Diagrams.............2
ELTE 123   Electromechanical Systems..........................4
INDT 125   Industrial Safety..................................3
MFAB 121   Intro to Shielded Metal Arc Welding I (SMAW I)*....4
           Prerequisite or corequisite: MFAB 120 or MFAB 127
           or
MFAB 127   Welding Processes..................................2
           Total Semester Credit Hours....................11-13
```

### Second Semester

```
           Technical Electives............................11-13
           TOTAL PROGRAM CREDIT HOURS........................24
*Prerequisite/Corequisite required
```

### Technical Electives

```
ELEC 120   Introduction to Electronics........................3
ELEC 133   Programmable Controllers...........................3
ELEC 165   Advanced Programmable Controllers*.................3
           Prerequisite: ELEC 133
ELTE 122   National Electrical Code I.........................4
ELTE 200   Commercial Wiring Methods*.........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
ELTE 205   Industrial Electrical Wiring*......................4
           Prerequisite: ELTE 122 or ELTE 125 or ELTE 200
HVAC 121   Basic Principles of HVAC*..........................4
           Prerequisite or corequisite: HVAC 123 or ELTE 123
CET  105   Construction Methods...............................3
MFAB 125   Advanced Gas and Arc Welding*......................4
           Prerequisite:  MFAB 121
MFAB 140   Maintenance Repair Welding*........................3
           Prerequisite: MFAB 121 or MFAB 130
MFAB 170   Basic Machine Tool Processes.......................4
MFAB 240   Metallurgy.........................................2
INDT 155   Workplace Skills...................................1
```

# Information Technology, A.A.S.

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

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

(Major Code 2330; CIP Code 11.0901)

Information Technology

## Associate of Applied Science Degree

### First Semester

```
IT   205   Implementing Windows Client........................3
ELEC 126   Microcomputer A+ Preparation.......................4
ENGL 121   Composition I*.....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
           Technical Electives................................3
           Social Science and/or Economics Elective...........3
           Health and/or Physical Education Elective..........1
           Total Semester Credit Hours.......................17
```

### Second Semester

```
IT   221   Windows Server*....................................3
           Prerequisites: IT 200 and ELEC 126 and IT 205
IT   230   UNIX Fundamentals..................................3
IT   246   Introduction to Routers*...........................3
           Prerequisite: IT 200
MATH 171   College Algebra or higher*.........................3
           Prerequisite: MATH 116 with a grade of "C" or higher
           or MATH 134 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Note: Not available to students with credit in
           MATH 173
ENGL 122   Composition II*....................................3
           Prerequisite: ENGL 121
           or
ENGL 123   Technical Writing I*...............................3
           Prerequisite: ENGL 121
           Total Semester Credit Hours.......................15
```

### Third Semester

```
IT   225   Windows Active Directory Services*.................3
           Prerequisite: IT 221
IT   231   UNIX Administration*...............................3
           Prerequisite: IT 230
IT   247   Introduction to Wide-Area Networks*................3
           Prerequisite: IT 246
           Humanities Elective................................3
           Technical Electives................................3
           Total Semester Credit Hours.......................15
```

### Fourth Semester

```
IT   245   Network Infrastructure*............................3
           Prerequisite: IT 221
IT   251   Network Security Fundamentals*.....................4
           Prerequisite: IT 247
SPD  121   Public Speaking....................................3
           or
SPD  125   Personal Communication.............................3
           Technical Elective.................................7
           Total Semester Credit Hours.......................17
           TOTAL PROGRAM CREDIT HOURS........................64
```

### Technical Electives

```
CPCA 121   Introduction to Project Management*................1
           Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
           CIS 124 or an appropriate score on a waiver test
CIS  134   Programming Fundamentals...........................4
ELEC 150   Introduction to Telecommunications.................3
ELEC 185   LAN Cabling and Installation.......................3
ELEC 250   Microcomputer Maintenance*.........................3
           Prerequisite: ELEC 126
IT   200   Networking Technologies............................3
IT   203   Voice over IP Fundamentals*........................4
           Prerequisite: IT 200
IT   227   SQL Server Administration*.........................3
           Prerequisite: IT 221
IT   228   Exchange Server*...................................3
           Prerequisite: IT 225
IT   232   UNIX Networking and Security*......................4
           Prerequisite: IT 231
IT   249   Advanced Routing*..................................3
           Prerequisite: IT 247
```

```
IT   250  Networking Seminar*..................................3
          Prerequisite: IT 225 and IT 247
IT   252  Firewall Security*..................................4
          Prerequisite: IT 247
IT   253  Advanced Switching*................................3
          Prerequisite: IT 247
IT   254  Remote Access Networks*............................3
          Prerequisite: IT 247
IT   255  Wireless Security*.................................4
          Prerequisite: IT 247
IT   271  Information Technology Internship I*...............3
          Prerequisites: IT 210 or IT 221 or IT 230
          and approval of the assistant dean
IT   272  Information Technology Internship II*..............3
          Prerequisites: IT 271
          and approval of the assistant dean
*Prerequisite/Corequisite required
```

# Networking Administration: UNIX Certificate

This certificate is a 19-credit-hour program that students can complete in 2-3 semesters. The certificate will provide students with competencies necessary to install, troubleshoot and administer Unix systems in a networked environment.

(Major Code 7000; CIP Code 11.0901)

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
IT   200  Networking Technologies............................3
IT   230  UNIX Fundamentals..................................3
          Total Semester Credit Hours........................6
```

### Second Semester

```
IT   231  UNIX Administration*...............................3
          Prerequisite: IT 230
          Total Semester Credit Hours........................3
```

### Third Semester

```
IT   232  UNIX Networking and Security*......................4
          Prerequisite: IT 231
          Technical Electives................................6
          Total Semester Credit Hours.......................10
          TOTAL PROGRAM CREDIT HOURS........................19
```

### Technical Electives

```
IT   205  Implementing Windows Client........................3
IT   221  Windows Server*....................................3
          Prerequisites: IT 200 and ELEC 126 and IT 205
IT   225  Windows Active Directory Services*.................3
          Prerequisite: IT 221
IT   227  SQL Server Administration*.........................3
          Prerequisite: IT 221
IT   245  Network Infrastructure*............................3
          Prerequisite: IT 221
IT   247  Introduction to Wide-Area Networks*................3
          Prerequisite: IT 246
IT   250  Networking Seminar*................................3
          Prerequisite: IT 225 and IT 247
IT   251  Network Security Fundamentals*.....................4
          Prerequisite: IT 247
IT   252  Firewall Security*.................................4
          Prerequisite: IT 247
IT   255  Wireless Security*.................................4
          Prerequisite: IT 247
IT   271  Information Technology Internship I*...............3
          Prerequisites: IT 210 or IT 221 or IT 230
          and approval of the assistant dean
IT   272  Information Technology Internship II*..............3
          Prerequisites: IT 271
          and approval of the assistant dean
ELEC 185  LAN Cabling and Installation.......................3
*Prerequisite/Corequisite required
```

# Networking Administration: Windows Certificate

The networking administration: windows vocational certificate is a 28-credit-hour program that students can complete in four semesters. The program is designed to give students the hands-on skills needed to install, troubleshoot and administer a local area network with Windows operating system. Course work parallels the requirements for the Microsoft Certified Systems Associate (MCSA) certification exams.

(Major Code 5230; CIP Code 11.0901)

Information Technology

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
IT   200  Networking Technologies............................3
ELEC 126  Microcomputer A+ Preparation.......................4
          Total Semester Credit Hours........................7
```

### Second Semester

```
IT   205  Implementing Windows Client........................3
          Technical Elective.................................3
          Total Semester Credit Hours........................6
```

### Third Semester

```
IT   221  Windows Server*....................................3
          Prerequisites: IT 200 and ELEC 126 and IT 205
          Technical Elective.................................3
          Total Semester Credit Hours........................6
```

### Fourth Semester

```
IT   225  Windows Active Directory Services*.................3
          Prerequisite: IT 221
IT   245  Network Infrastructure*............................3
          Prerequisite: IT 221
          Technical Elective.................................3
          Total Semester Credit Hours........................9
          TOTAL PROGRAM CREDIT HOURS........................28
```

### Technical Electives

```
IT   227  SQL Server Administration*.........................3
          Prerequisite: IT 221
IT   228  Exchange Server*...................................3
          Prerequisite: IT 225
IT   230  UNIX Fundamentals..................................3
IT   231  UNIX Administration*...............................3
          Prerequisite: IT 230
IT   232  UNIX Networking and Security*......................4
          Prerequisite: IT 231
IT   246  Introduction to Routers*...........................3
          Prerequisite: IT 200
IT   247  Introduction to Wide-Area Networks*................3
          Prerequisite: IT 246
IT   249  Advanced Routing*..................................3
          Prerequisite: IT 200
IT   250  Networking Seminar*................................3
          Prerequisite: IT 225 and IT 247
IT   251  Network Security Fundamentals*.....................4
          Prerequisite: IT 247
IT   252  Firewall Security*.................................4
          Prerequisite: IT 247
IT   255  Wireless Security*.................................4
          Prerequisite: IT 247
IT   271  Information Technology Internship I*...............3
          Prerequisites: IT 210 or IT 221 or IT 230
          and approval of the assistant dean
IT   272  Information Technology Internship II*..............3
          Prerequisites: IT 271
          and approval of the assistant dean
```

# Network Connectivity Certificate

The network connectivity vocational certificate is a 13-credit-hour program that students can complete in three semesters. The certificate addresses the crucial area of Internet connection devices and provides necessary skills for students to be successful in the field. This certificate is supported and promoted by Cisco through its Networking Academy initiative.

(Major Code 7010; CIP Code 11.0901)

Information Technology

## Certificate of Completion

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
IT    200  Networking Technologies............................3
ELEC  126  Microcomputer A+ Preparation.......................4
           Total Semeter Credit Hours.........................7
```

### Second Semester

```
IT    246  Introduction to Routers*...........................3
           Prerequisite: IT 200
           Total Semester Credit Hours........................3
```

### Third Semster

```
IT    247  Introduction to Wide-Area Networks*................3
           Prerequisite: IT 246
           Total Semester Credit Hours........................3
           TOTAL PROGRAM CREDIT HOURS.........................13
```
*Prerequisite/Corequisite required

# Interactive Media, A.A.S.

The interactive media program provides instruction in the design and development process for different types of interactive media, acquiring and managing assets, the history and theory of communication forms, authoring for interactive media, screen design, interface design, and project management. This program is designed to build a common foundation of experience while allowing the student to select courses from the interactive media electives list as well as general electives that best serve his or her individual needs. Depending on individual choices and talents, students who complete the interactive media program should be prepared for employment in a variety of positions in the interactive media field. For more information and to see samples of student work, go to web.jccc.net/academic/cim

(Major Code 2410; CIP Code 11.0801)

Interactive Media

## Associate of Applied Science Degree

### Prerequisites for Required Courses

Note: Prior to beginning the program, the student must take the following prerequisites, or have taken the equivalent transfer courses, or have passed the waiver test (where applicable), or have obtained a waiver from the program administrator.

```
CDTP  135  Desktop Photo Manipulation I: Photoshop............1
CDTP  145  Desktop Illustration I: Illustrator...............1
CWEB  105  Introduction to Web Pages: Dreamweaver*...........1
           Prerequisite: CWEB 101
CWEB  130  Introduction to Flash*............................1
           Prerequisite: CPCA 161 or CWEB 105 or CWEB 106
```

### First Semester

```
ENGL  121  Composition I*....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
CIM   130  Interactive Media Concepts........................2
CIM   140  Interactive Media Assets*.........................4
           Prerequisites: CDTP 135 and CDTP 145 and CWEB 105
           and CWEB 130
           Prerequisite or corequisite: CIM 130
CIM   133  Screen Design*....................................4
           Prerequisite: CDTP 135
           Electives.........................................3
           Total Semester Credit Hours.......................16
```

### Second Semester

```
ENGL  140  Writing for Interactive Media*....................3
           Prerequisite: ENGL 121
CIM   154  Interactive Authoring I: Director*................4
           Prerequisite: CIM 130 and
           Prerequisite or corequisite: CIM 140
           or
CIM   156  Interactive Authoring I: Web*.....................4
           Prerequisite: CIM 130
           Prerequisite or corequisite: CIM 140
CIM   200  Interactive Communication Form*...................3
           Prerequisite or corequisite: CIM 130
           Humanities Elective...............................3
           Interactive Media Elective........................3
           Total Semester Credit Hours.......................16
```

### Third Semester

```
CIM   230  Interactive Media Development*....................4
           Prerequisite: CIM 154 or CIM 156 and
           Corequisite: CIM 250
CIM   250  Interface Design*.................................4
           Prerequisite: CIM 154 or CIM 156
           Corequisite: CIM 230
           Social Science and/or Economic Elective...........3
           Interactive Media Elective........................3
           Electives.........................................3
           Total Semester Credit Hours.......................17
```

### Fourth Semester

```
CIM   270  Interactive Media Project*........................4
           Prerequisites or corequisites: CIM 200 and CIM 230
           and CIM 250
CIM   273  Career Preparation*...............................4
           Prerequisites: CIM 230 and CIM 250 and
           Prerequisite or corequisite: CIM 270
           Science and/or Mathematics........................3
           Health and/or Physical Education..................1
           Electives.........................................3
           Total Semester Credit Hours.......................15
           TOTAL PROGRAM CREDIT HOURS........................64
```

### Interactive Media Elective List

```
ANI   120  Conceptual Art for Animation*.....................1
           Prerequisite: CDTP 135
ANI   145  Introduction to 3D Animation*.....................3
           Prerequisites: CDTP 135 and ANI 120
BUS   141  Principles of Management..........................3
CIM   135  Digital Imaging and Video*........................3
           Prerequisite: CDTP 135
           Recommended: PHOT 121

CIM   154  Interactive Authoring I: Director*................4
           Prerequisite: CIM 130 and
           Prerequisite or corequisite: CIM 140
           or
CIM   156  Interactive Authoring I: Web*.....................4
           Prerequisite: CIM 130
           Prerequisite or corequisite: CIM 140
Note: Whichever course not already taken as a requirement

CIM   235  Advanced Digital Video*...........................3
           Prerequisite: CIM 135
CIM   254  Interactive Authoring II: Director*...............4
           Prerequisite: CIM 154
CIS   134  Programming Fundamentals..........................4
CIS   162  Database Programming*.............................4
           Prerequisite: CIS 134 or the equivalent
ENGL  150  Digital Narratives*...............................3
```

```
                 Prerequisite: ENGL 121
MUS  156  MIDI Music Composition..............................3
SPD  120  Interpersonal Communication.........................3
SPD  121  Public Speaking.....................................3
SPD  125  Personal Communication..............................3
*Prerequisite/Corequisite required
```

# Multimedia Design Certificate

The multimedia design certificate provides instruction in the design and development process needed to deliver information and media, primarily via CD-ROM and DVD. This includes acquiring and managing assets (text, graphics, sound and video), the history and theory of communication forms, screen design, multimedia authoring, interface design and project management.

Students who complete the multimedia design certificate should be prepared for employment in a variety of positions within the interactive media field. Potential positions in multimedia design include writer/editor/researcher, graphics professional, photography/imaging/video professional, music/audio professional, programmer, information designer, interface designer and/or project manager. For more information and to see samples of student work, go to web.jccc.net/academic/cim

(Major Code 4480; CIP Code 11.0801)

Interactive Media

## Career Certificate

**Prerequisites for Required Courses**

```
Note: Prior to beginning the program, the student
must take the following prerequisites, or have taken the
equivalent transfer courses, or have passed the waiver
test (where applicable), or have obtained a waiver from the
program administrator.


CDTP 135  Desktop Photo Manipulation I: Photoshop.............1
CDTP 145  Desktop Illustration I: Illustrator.................1
CWEB 105  Introduction to Web Pages: Dreamweaver*.............1
          Prerequisite: CWEB 101
CWEB 130  Introduction to Flash*..............................1
          Prerequisite: CPCA 161 or CWEB 105 or CWEB 106
```

**Required Courses**

```
CIM  130  Interactive Media Concepts..........................2
CIM  140  Interactive Media Assets*...........................4
          Prerequisites: CDTP 135 and CDTP 145 and CWEB 105
          and CWEB 130
          Prerequisite or corequisite: CIM 130
CIM  133  Screen Design*......................................4
          Prerequisite: CDTP 135
CIM  154  Interactive Authoring I: Director*..................4
          Prerequisite: CIM 130 and
          Prerequisite or corequisite: CIM 140
CIM  200  Interactive Communication Form*.....................3
          Prerequisite or corequisite: CIM 130
CIM  230  Interactive Media Development*......................4
          Prerequisite: CIM 154 or CIM 156 and
          Corequisite: CIM 250
CIM  250  Interface Design*...................................4
          Prerequisite: CIM 154 or CIM 156
          Corequisite: CIM 230
CIM  270  Interactive Media Project*..........................4
          Prerequisites or corequisites: CIM 200 and CIM 230
          and CIM 250
          TOTAL PROGRAM CREDIT HOURS.........................29
*Prerequisite/Corequisite required
```

# Multimedia Design Entrepreneurship Certificate

This certificate is designed to prepare students to open their own business providing multimedia design services. This certificate is designed to provide the student with instruction in the design and development process needed to deliver information and media primarily via CD-ROM and DVD. This includes acquiring and managing assets (i.e., text, graphics, sound and video), the history and theory of communication forms, screen design, multimedia authoring, interface design, and project management. Additionally, the certificate provides the student instruction in small business development and management.

(Major Code 4070; CIP Code 11.0801)

Interactive Media

## Career Certificate

**Prerequisites for Required Courses**

```
Note: Prior to beginning the program, the student
must take the following prerequisites, or have taken the
equivalent transfer courses, or have passed the waiver test
(where applicable), or have obtained a waiver from the
program administrator.


CDTP 135  Desktop Photo Manipulation I: Photoshop.............1
CDTP 145  Desktop Illustration I: Illustrator.................1
CWEB 105  Introduction to Web Pages: Dreamweaver*.............1
          Prerequisite: CWEB 101
CWEB 130  Introduction to Flash*..............................1
          Prerequisite: CPCA 161 or CWEB 105 or CWEB 106
CIM  130  Interactive Media Concepts..........................2
CIM  140  Interactive Media Assets*...........................4
          Prerequisites: CDTP 135 and CDTP 145 and CWEB 105
          and CWEB 130
          Prerequisite or corequisite: CIM 130
```

**Required Courses**

```
CIM  133  Screen Design*......................................4
          Prerequisite: CDTP 135
CIM  154  Interactive Authoring I: Director*..................4
          Prerequisite: CIM 130 and
          Prerequisite or corequisite: CIM 140
ENTR 120  Introduction to Entrepreneurship....................2
ENTR 180  Opportunity Analysis................................2
CIM  200  Interactive Communication Form*.....................3
          Prerequisite or corequisite: CIM 130
CIM  230  Interactive Media Development*......................4
          Prerequisite: CIM 154 or CIM 156 and
          Corequisite: CIM 250
CIM  250  Interface Design*...................................4
          Prerequisite: CIM 154 or CIM 156
          Corequisite: CIM 230
CIM  270  Interactive Media Project*..........................4
          Prerequisites or corequisites: CIM 200 and CIM 230
          and CIM 250
ENTR 142  Fast Trac Business Plan.............................3
          TOTAL PROGRAM CREDIT HOURS.........................30
*Prerequisite/Corequisite required


Students may be interested in taking additional courses, as
noted below, to complement their certificate study.  These
courses are NOT part of the certificate requirements.


ENTR 220  Entrepreneurial Marketing*..........................2
          Prerequisite: BUS 230
ENTR 131  Financial Management for Small Business*.............2
          Prerequisite: ACCT 111 or ACCT 121
ENTR 160  Legal Issues for Small Business.....................2
ENTR 195  Franchising*........................................3
          Prerequisite: BUS 230
CIM  135  Digital Imaging and Video*..........................3
          Prerequisite: CDTP 135
          Recommended: PHOT 121
CIM  156  Interactive Authoring I: Web*.......................4
          Prerequisite: CIM 130
          Prerequisite or corequisite: CIM 140
CIM  235  Advanced Digital Video*.............................3
          Prerequisite: CIM 135
CIM  254  Interactive Authoring II: Director*.................4
          Prerequisite: CIM 154
CIS  162  Database Programming*...............................4
          Prerequisite: CIS 134 or the equivalent
MUS  156  MIDI Music Composition..............................3
```

# Web Design Certificate

The Web design certificate provides instruction in the design and development

process needed to deliver information and media primarily via the World Wide Web. This instruction includes acquiring and managing assets (text, graphics, sound and video), the history and theory of communication forms, screen design, multimedia authoring, interface design and project management.

Students who complete the Web design certificate should be prepared for employment in a variety of positions within the interactive media field. Potential positions in Web design include writer/editor/researcher, graphics professional, photography/imaging/video professional, music/audio professional, programmer, information designer, interface designer and/or project manager. For more information and to see samples of student work, go to web.jccc.net/academic/cim

(Major Code 4490; CIP Code 11.0801)

Interactive Media

# Career Certificate

### Prerequisites for Required Courses

Note: Prior to beginning the program, the student must take the following prerequisites, or have taken the equivalent transfer courses, or have passed the waiver test (where applicable), or have obtained a waiver from the program administrator.

```
CDTP 135  Desktop Photo Manipulation I: Photoshop.............1
CDTP 145  Desktop Illustration I: Illustrator..............1
CWEB 105  Introduction to Web Pages: Dreamweaver*.............1
          Prerequisite: CWEB 101
CWEB 130  Introduction to Flash*..............................1
          Prerequisite: CPCA 161 or CWEB 105 or CWEB 106
```

### Required Courses

```
CIM  130  Interactive Media Concepts.........................2
CIM  140  Interactive Media Assets*..........................4
          Prerequisites: CDTP 135 and CDTP 145 and CWEB 105
          and CWEB 130
          Prerequisite or corequisite: CIM 130
CIM  133  Screen Design*.....................................4
          Prerequisite: CDTP 135
CIM  156  Interactive Authoring I: Web*......................4
          Prerequisite: CIM 130
          Prerequisite or corequisite: CIM 140
CIM  200  Interactive Communication Form*....................3
          Prerequisite or corequisite: CIM 130
CIM  230  Interactive Media Development*.....................4
          Prerequisite: CIM 154 or CIM 156 and
          Corequisite: CIM 250
CIM  250  Interface Design*..................................4
          Prerequisite: CIM 154 or CIM 156
          Corequisite: CIM 230
CIM  270  Interactive Media Project*.........................4
          Prerequisites or corequisites: CIM 200 and CIM 230
          and CIM 250
          TOTAL PROGRAM CREDIT HOURS........................29
*Prerequisite/Corequisite required
```

---

# Web Design Entrepreneurship Certificate

This certificate is designed to prepare students to open their own business providing Web design services. It provides the student with instruction in the design and development process needed to deliver information and media, primarily via the World Wide Web. This includes acquiring and managing assets (i.e., text, graphics, sound and video), the history and theory of communication forms, screen design, multimedia authoring, interface design, and project management. Additionally, the certificate provides the student instruction in small business development and management.

(Major Code 4200; CIP Code 11.0801)

Interactive Media

# Career Certificate

### Prerequisites for Required Courses

Note: Prior to beginning the program, the student must take the following prerequisites, or have taken the equivalent transfer courses, or have passed the waiver test (where applicable), or have obtained a waiver from the program administrator.

```
CDTP 135  Desktop Photo Manipulation I: Photoshop.............1
CDTP 145  Desktop Illustration I: Illustrator..............1
CWEB 105  Introduction to Web Pages: Dreamweaver*.............1
          Prerequisite: CWEB 101
CWEB 130  Introduction to Flash*..............................1
          Prerequisite: CPCA 161 or CWEB 105 or CWEB 106
CIM  130  Interactive Media Concepts.........................2
CIM  140  Interactive Media Assets*..........................4
          Prerequisites: CDTP 135 and CDTP 145 and CWEB 105
          and CWEB 130
          Prerequisite or corequisite: CIM 130
```

### Required Courses

```
CIM  133  Screen Design*.....................................4
          Prerequisite: CDTP 135
CIM  156  Interactive Authoring I: Web*......................4
          Prerequisite: CIM 130
          Prerequisite or corequisite: CIM 140
ENTR 120  Introduction to Entrepreneurship...................2
ENTR 180  Opportunity Analysis...............................2
CIM  200  Interactive Communication Form*....................3
          Prerequisite or corequisite: CIM 130
CIM  230  Interactive Media Development*.....................4
          Prerequisite: CIM 154 or CIM 156 and
          Corequisite: CIM 250
CIM  250  Interface Design*..................................4
          Prerequisite: CIM 154 or CIM 156
          Corequisite: CIM 230
CIM  270  Interactive Media Project*.........................4
          Prerequisites or corequisites: CIM 200 and CIM 230
          and CIM 250
ENTR 142  Fast Trac Business Plan............................3
          TOTAL PROGRAM CREDIT HOURS........................30
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study. These courses are NOT part of the certificate requirements.

```
ENTR 220  Entrepreneurial Marketing*.........................2
          Prerequisite: BUS 230
ENTR 131  Financial Management for Small Business*...........2
          Prerequisite: ACCT 111 or ACCT 121
ENTR 160  Legal Issues for Small Business....................2
ENTR 195  Franchising*.......................................3
          Prerequisite: BUS 230
CIM  135  Digital Imaging and Video*.........................3
          Prerequisite: CDTP 135
          Recommended: PHOT 121
CIM  154  Interactive Authoring I: Director*.................4
          Prerequisite: CIM 130 and
          Prerequisite or corequisite: CIM 140
CIM  235  Advanced Digital Video*............................3
          Prerequisite: CIM 135
CIM  254  Interactive Authoring II: Director*................4
          Prerequisite: CIM 154
CIS  162  Database Programming*..............................4
          Prerequisite: CIS 134 or the equivalent
MUS  156  MIDI Music Composition.............................3
```

---

# Interior Design, A.A.S.

Seven options in JCCC's interior design program offer students opportunities to choose a career path from a wide variety of exciting fields. Three associate of applied science degree options -- interior design, interior merchandising and interior entrepreneurship -- offer design, retail and business proprietorship skills. Three certificate programs, the interior products sales certificate, interior design and merchandising entrepreneurship certificate and the interior design sales and marketing representative certificate, are available for students who need skills for immediate employment or who want a broader knowledge base for their current employment. The interior design advanced certificate offers classes needed to sit for the NCIDQ exam.

JCCC's program offers courses in interior materials and resources, professional selling, business management, manual and CAD drafting, and product

presentation, combined with a basic curriculum of business math, English and art history. Two required internships help develop technical, creative and business skills.

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

JCCC's interior design program is recognized by the National Kitchen and Bath Association as an NKBA Accredited program.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 2750; CIP Code 50.0408)

Interior Design

## Associate of Applied Science Degree

### First Semester

```
ITMD 121   Interior Design/Tech Prep...........................3
DRAF 164   Architectural Drafting/Residential Interior Design...3
ITMD 133   Furniture & Ornamentation/Antiquity to Renaissance...3
MATH 120   Business Math or higher*...........................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
ITMD 125   Interior Textiles..................................3
ENGL 121   Composition I*.....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
           Total Semester Credit Hours.......................18
```

### Second Semester

```
ITMD 123   Space Planning*....................................3
           Prerequisites: ITMD 121 with "C" or higher and
           DRAF 164 with a grade of "C" or higher or DRAF 261
           with "C" or higher
ITMD 129   Design Presentation*...............................3
           Prerequisites: ITMD 121 with a grade of "C" or higher
           and DRAF 164 with a grade of "C" or higher or DRAF
           261 with a grade of "C" or higher
ITMD 132   Materials and Resources............................3
MKT  134   Professional Selling...............................3
ITMD 231   Furniture & Ornamentation Renaissance to 20th Cent...3
BUS  150   Business Communications*...........................3
           Prerequisite: ENGL 121
           Total Semester Credit Hours.......................18
```

### Third Semester

```
DRAF 264   CAD:Interior Design*...............................3
           Prerequisites: ITMD 122 or
           ITMD 123 and ITMD 129 both with a grade of
           C or higher, or approval of the program assistant dean
ITMD 271   Budgeting and Estimating*..........................3
           Prerequisites: ITMD 121 with a grade of "C" or higher
           and ITMD 125 with a grade of "C" or higher and
           MATH 120 with a grade of "C" or higher
ITMD 282   Interiors Internship I*............................1
           Prerequisite: ITMD 121 with a grade of C or higher
ARTH 180   Art History: Ancient to Renaissance................3
ECON 132   Survey of Economics................................3
           or
ECON 230   Economics I........................................3
ITMD 213   Lighting Design and Planning*......................3
           Prerequisite: ITMD 121 with grade of "C" or higher
           or FASH 125
           Total Semester Credit Hours.......................16
```

### Fourth Semester

```
ITMD 221   Residential Design*................................3
           Prerequisites: DRAF 264 with a grade of "C" or higher
           and ITMD 123 with a grade of "C" or higher and
           ITMD 129 with a grade of "C" or higher or ITMD 122
           with a grade of "C" or higher
ITMD 273   Interiors Seminar: Practices and Procedures*.......2
           Prerequisite: ITMD 122 with a grade of "C" or higher
           or ITMD 123 with a grade of "C" or higher
ITMD 284   Interiors Internship II*...........................1
           Prerequisites: ITMD 121 with a grade of C or higher
           and ITMD 282 with a grade of C or higher
ITMD 140   Window Treatments*.................................1
           Prerequisites: ITMD 121 and ITMD 125 both with a
           grade of "C" or higher and
           Prerequisite or Corequisite: ITMD 271 or ITMD 275
           both with a grade of "C" or higher
ITMD 145   Upholstered Furniture*.............................1
           Prerequisites:  ITMD 121 and ITMD 125 both with a
           grade of "C" or higher and
           Prerequisite or corequisite:  ITMD 271 or
           ITMD 275 both with a grade of "C" or higher
ITMD 149   Casegoods*.........................................1
           Prerequisite: ITMD 121 with a grade of "C" or higher
ITMD 148   History of Asian Furniture and Design..............2
           Prequisite: Program Facilitator Approval
ITMD 150   Asian Rugs and Carpets.............................1
ITMD 180   Leadership in Design*..............................1
           Prerequisite: ITMD 123 with a grade of "C" or higher
ITMD 239   Capstone: Interior Design*.........................2
           Prerequisite: Program Facilitator Approval
           Health and/or Physical Education Elective...........1
           Total Semester Credit Hours.......................16
           TOTAL PROGRAM CREDIT HOURS........................68
*Prerequisite/Corequisite required
```

```
Students may be interested in taking additional courses, as
noted below, to complement their AAS degree study.  These
courses are NOT part of the degree requirements.

ITMD 127   Elements of Floral Design..........................1
ITMD 143   Accessory Fundamentals*............................1
           Prerequisite: ITMD 121 with a grade of "C" or higher
ITMD 175   Advanced Floral Design*............................1
           Prerequisite: ITMD 127
ITMD 189   Sustaining Design..................................1
ITMD 250   20th Century Designers.............................1
ITMD 295   Field Study: Design and Merchandising*.............3
           Prerequisites: ITMD 121
           and approval of the program facilitator
ITMD 296   Interior Design: the Orient........................3
*Prerequisite/Corequisite required
```

## Interior Design Advanced Certificate

This certificate is designed for students who wish to be certified or registered interior designers. Students must have completed the Interior Design AAS degree.

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

JCCC's interior design program is recognized by the National Kitchen and Bath Association as an NKBA Accredited program.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 4100; CIP Code 50.0408)

Interior Design

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
ITMD 225   Interior Textiles II*..............................3
           Prerequisite: ITMD 125 with a grade of "C" or higher
DRAF 230   Intermediate CAD: AutoCAD*.........................3
           Prerequisite: DRAF 130
           or approval of the program assistant dean
           or
ART  129   Design Color*......................................3
           Prerequisite or corequisite: CDTP 135
ITMD 223   Commercial Design*.................................3
           Prerequisite: DRAF 264 with a grade of "C"
           or higher
           Total Semester Credit Hours........................9
```

**Second Semester**

```
        Art Elective.......................................3
ITMD 219  Issues in Interior Design*.........................3
          Prerequisite: ITMD 221 with a grade of "C" or higher
          Interior Design Elective...........................3
ITMD 234  Kitchen and Bath: Planning and Design*.............3
          Prerequisites: DRAF 264 with a grade of "C" or higher
          and either
          ITMD 122 with a grade of "C" or higher or
          ITMD 123 with a grade of "C" or higher
          Total Semester Credit Hours.......................12
          TOTAL PROGRAM CREDIT HOURS........................21
*Prerequisite/Corequisite required
```

**Art/Art History electives**

```
ARTH 182  Art History: Renaissance to Modern.................3
ART  124  Design 2D*.........................................3
          Prerequisite or corequisite: CDTP 145
ART  127  Design 3D*.........................................3
          Prerequisite: ART 124
```

**Interior Design electives**

```
ITMD 127  Elements of Floral Design..........................1
ITMD 143  Accessory Fundamentals*............................1
          Prerequisite: ITMD 121 with a grade of "C" or higher
ITMD 175  Advanced Floral Design*............................1
          Prerequisite: ITMD 127
ITMD 250  20th Century Designers.............................1
ITMD 295  Field Study: Design and Merchandising*.............3
          Prerequisites: ITMD 121
          and approval of the program facilitator
ITMD 296  Interior Design: the Orient........................3
```

# Interior Design Retail Sales/Manufacturing Rep Certificate

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

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

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 6510; CIP Code 50.0408)

Interior Design

## Career Certificate

### Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
ITMD 121  Interior Design/Tech Prep..........................3
ITMD 125  Interior Textiles..................................3
ITMD 132  Materials and Resources............................3
MATH 120  Business Math or higher*...........................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
MKT  134  Professional Selling...............................3
FASH 135  Image Management...................................1
ITMD 282  Interiors Internship I*............................1
          Prerequisite: ITMD 121 with a grade of C or higher
          Total Semester Credit Hours.......................17
```

**Second Semester**

```
MKT  121  Retail Management..................................3
FASH 125  Visual Merchandising...............................3
ITMD 271  Budgeting and Estimating*..........................3
          Prerequisites: ITMD 121 with a grade of "C" or higher
          and ITMD 125 with a grade of "C" or higher and
          MATH 120 with a grade of "C" or higher
ITMD 284  Interiors Internship II*...........................1
          Prerequisites: ITMD 121 with a grade of C or higher
          and ITMD 282 with a grade of C or higher
ITMD      Elective...........................................3
          Total Semester Credit Hours.......................13
          TOTAL PROGRAM CREDIT HOURS........................30
*Prerequisite/Corequisite required
```

**List of ITMD Electives**

```
ITMD 127  Elements of Floral Design..........................1
ITMD 140  Window Treatments*.................................1
          Prerequisites: ITMD 121 and ITMD 125 both with a
          grade of "C" or higher and
          Prerequisite or Corequisite: ITMD 271 or ITMD 275
          both with a grade of "C" or higher
ITMD 143  Accessory Fundamentals*............................1
          Prerequisite: ITMD 121 with a grade of "C" or higher
ITMD 145  Upholstered Furniture*.............................1
          Prerequisites:  ITMD 121 and ITMD 125 both with a
          grade of "C" or higher and
          Prerequisite or corequisite:  ITMD 271 or
          ITMD 275 both with a grade of "C" or higher
ITMD 147  Lighting Basics*...................................1
          Prerequisite: ITMD 121 with a grade of "C" or higher
          or FASH 125
ITMD 149  Casegoods*.........................................1
          Prerequisite: ITMD 121 with a grade of "C" or higher
ITMD 213  Lighting Design and Planning*......................3
          Prerequisite: ITMD 121 with grade of "C" or higher
          or FASH 125
ITMD 225  Interior Textiles II*..............................3
          Prerequisite: ITMD 125 with a grade of "C" or higher
ITMD 231  Furniture & Ornamentation Renaissance to 20th Cent...3
ITMD 273  Interiors Seminar: Practices and Procedures*.........2
          Prerequisite: ITMD 122 with a grade of "C" or higher
          or ITMD 123 with a grade of "C" or higher
```

# Interior Design & Merchandising Entrep Certificate

The interior design and merchandising entrepreneurship certificate prepares students to open their own interior design or merchandising service or retail business. This certificate is designed to provide the student with basic skills in interior merchandising and design and the basic skills in small business development and management.

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

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 4210; CIP Code 50.0408)

Interior Design

## Career Certificate

### Prerequisites for Required Courses

```
MATH 120  Business Mathematics*..............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
DRAF 164  Architectural Drafting/Residential Interior Design...3
```

### Required Courses

```
ITMD 121  Interior Design/Tech Prep..........................3
ITMD 125  Interior Textiles..................................3
ITMD 132  Materials and Resources............................3
ENTR 120  Introduction to Entrepreneurship...................2
```

```
ENTR 180   Opportunity Analysis..................................2
ITMD 123   Space Planning*......................................3
           Prerequisites: ITMD 121 with "C" or higher and
           DRAF 164 with a grade of "C" or higher or DRAF 261
           with "C" or higher
ITMD 271   Budgeting and Estimating*............................3
           Prerequisites: ITMD 121 with a grade of "C" or higher
           and ITMD 125 with a grade of "C" or higher and
           MATH 120 with a grade of "C" or higher
ITMD 273   Interiors Seminar: Practices and Procedures*.........2
           Prerequisite: ITMD 122 with a grade of "C" or higher
           or ITMD 123 with a grade of "C" or higher
ENTR 160   Legal Issues for Small Business......................2
ENTR 142   Fast Trac Business Plan..............................3
ITMD 282   Interiors Internship I*..............................1
           Prerequisite: ITMD 121 with a grade of C or higher
```

### Choose 3 of the 5 one-credit hour courses

```
ITMD 127   Elements of Floral Design............................1
ITMD 175   Advanced Floral Design*..............................1
           Prerequisite: ITMD 127
ITMD 140   Window Treatments*...................................1
           Prerequisites: ITMD 121 and ITMD 125 both with a
           grade of "C" or higher and
           Prerequisite or Corequisite: ITMD 271 or ITMD 275
           both with a grade of "C" or higher
ITMD 145   Upholstered Furniture*...............................1
           Prerequisites:  ITMD 121 and ITMD 125 both with a
           grade of "C" or higher and
           Prerequisite or corequisite:  ITMD 271 or
           ITMD 275 both with a grade of "C" or higher
ITMD 147   Lighting Basics*.....................................1
           Prerequisite: ITMD 121 with a grade of "C" or higher
           or FASH 125
           TOTAL PROGRAM CREDIT HOURS...........................30
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study.  These courses are NOT part of the certificate requirements.

```
ENTR 195   Franchising*.........................................3
           Prerequisite: BUS 230
ENTR 220   Entrepreneurial Marketing*...........................2
           Prerequisite: BUS 230
ENTR 131   Financial Management for Small Business*.............2
           Prerequisite: ACCT 111 or ACCT 121
```

# Interior Entrepreneurship, A.A.S.

Seven options in JCCC's interior design program offer students opportunities to choose a career path from a wide variety of exciting fields. Three associate of applied science degree options -- interior design, interior merchandising and interior entrepreneurship--offer design, retail and business proprietorship skills. Three certificate programs, the interior products sales certificate, interior design and merchandising entrepreneurship certificate and the interior design sales and marketing representative certificate, are available for students who need skills for immediate employment or who want a broader knowledge base for their current employment. The interior design advanced certificate offers classes needed to sit for the NCIDQ exam.

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

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

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 2770; CIP Code 50.0408)

Interior Design

## Associate of Applied Science Degree

### First Semester

```
ITMD 121   Interior Design/Tech Prep............................3
ITMD 133   Furniture & Ornamentation/Antiquity to Renaissance...3
DRAF 164   Architectural Drafting/Residential Interior Design...3
MATH 120   Business Math or higher*.............................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
ITMD 125   Interior Textiles...................................3
ENGL 121   Composition I*......................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
           Total Semester Credit Hours.........................18
```

### Second Semester

```
ITMD 123   Space Planning*.....................................3
           Prerequisites: ITMD 121 with "C" or higher and
           DRAF 164 with a grade of "C" or higher or DRAF 261
           with "C" or higher
           Interiors Elective..................................3
ITMD 132   Materials and Resources.............................3
MKT 134    Professional Selling................................3
ITMD 231   Furniture & Ornamentation Renaissance to 20th Cent..3
BUS 150    Business Communications*............................3
           Prerequisite: ENGL 121
           Total Semester Credit Hours.........................18
```

### Third Semester

```
           Interiors Elective..................................3
ITMD 271   Budgeting and Estimating*...........................3
           Prerequisites: ITMD 121 with a grade of "C" or higher
           and ITMD 125 with a grade of "C" or higher and
           MATH 120 with a grade of "C" or higher
ITMD 282   Interiors Internship I*.............................1
           Prerequisite: ITMD 121 with a grade of C or higher
ARTH 180   Art History: Ancient to Renaissance.................3
ECON 132   Survey of Economics.................................3
           or
ECON 230   Economics I.........................................3
           Business/Marketing/Entrepreneurship
           Electives...........................................3
           Total Semester Credit Hours.........................16
```

### Fourth Semester

```
ITMD 273   Interiors Seminar: Practices and Procedures*........2
           Prerequisite: ITMD 122 with a grade of "C" or higher
           or ITMD 123 with a grade of "C" or higher
ITMD 284   Interiors Internship II*............................1
           Prerequisites: ITMD 121 with a grade of C or higher
           and ITMD 282 with a grade of C or higher
           Business/Marketing/Entrepreneurship
           Electives...........................................6
ITMD 237   Capstone: Merchandising and Entrepreneurship*.......2
           Prerequisite: Approval of program facilitator
ITMD 180   Leadership in Design*...............................1
           Prerequisite: ITMD 123 with a grade of "C" or higher
           Physical Education Elective.........................1
           Interiors Elective..................................3
           Total Semester Credit Hours.........................16
           TOTAL PROGRAM CREDIT HOURS..........................68
```

### Interiors Electives

```
ITMD 127   Elements of Floral Design...........................1
ITMD 140   Window Treatments*..................................1
           Prerequisites: ITMD 121 and ITMD 125 both with a
           grade of "C" or higher and
           Prerequisite or Corequisite: ITMD 271 or ITMD 275
           both with a grade of "C" or higher
ITMD 143   Accessory Fundamentals*.............................1
           Prerequisite: ITMD 121 with a grade of "C" or higher
ITMD 145   Upholstered Furniture*..............................1
           Prerequisites:  ITMD 121 and ITMD 125 both with a
           grade of "C" or higher and
           Prerequisite or corequisite:  ITMD 271 or
           ITMD 275 both with a grade of "C" or higher
ITMD 147   Lighting Basics*....................................1
           Prerequisite: ITMD 121 with a grade of "C" or higher
           or FASH 125
ITMD 148   History of Asian Furniture and Design...............2
           Prequisite: Program Facilitator Approval
ITMD 149   Casegoods*..........................................1
           Prerequisite: ITMD 121 with a grade of "C" or higher
ITMD 150   Asian Rugs and Carpets..............................1
ITMD 175   Advanced Floral Design*.............................1
           Prerequisite: ITMD 127
ITMD 213   Lighting Design and Planning*.......................3
           Prerequisite: ITMD 121 with grade of "C" or higher
           or FASH 125
ITMD 225   Interior Textiles II*...............................3
```

```
         Prerequisite: ITMD 125 with a grade of "C" or higher
ITMD 250  20th Century Designers...............................1
ITMD 295  Field Study: Design and Merchandising*..............3
         Prerequisites: ITMD 121
         and approval of the program facilitator
ITMD 296  Interior Design: the Orient.........................3
```

## Business/Marketing/Entrepreneurship Electives

```
ACCT 111  Small Business Accounting...........................3
         or
ACCT 121  Accounting I........................................3
BUS  230  Marketing...........................................3
MKT  121  Retail Management...................................3
ENTR 120  Introduction to Entrepreneurship....................2
ENTR 131  Financial Management for Small Business*............2
         Prerequisite: ACCT 111 or ACCT 121
ENTR 142  Fast Trac Business Plan.............................3
ENTR 160  Legal Issues for Small Business.....................2
ENTR 180  Opportunity Analysis................................2
*Prerequisite/Corequisite required
```

# Interior Merchandising, A.A.S.

Seven options in JCCC's interior design program offer students opportunities to choose a career path from a wide variety of exciting fields. Three associate of applied science degree options -- interior design, interior merchandising and interior entrepreneurship -- offer design, retail and business proprietorship skills. Three certificate programs, the interior products sales certificate, interior design and merchandising entrepreneurship certificate and the interior design sales and marketing representative certificate, are available for students who need skills for immediate employment or who want a broader knowledge base for their current employment. The interior design advanced certificate offers classes needed to sit for the NCIDQ exam.

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

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

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 2760; CIP Code 50.0408)

Interior Design

## Associate of Applied Science Degree

### First Semester

```
ITMD 121  Interior Design/Tech Prep...........................3
ITMD 133  Furniture & Ornamentation/Antiquity to Renaissance...3
DRAF 164  Architectural Drafting/Residential Interior Design...3
MATH 120  Business Math or higher*............................3
         Prerequisite: MATH 111 with a grade of "C" or higher
         or appropriate score on the math assessment test
ITMD 125  Interior Textiles...................................3
ENGL 121  Composition I*......................................3
         Prerequisite: ENGL 106 or appropriate placement
         test score or EAP 113 and EAP 117
         Total Semester Credit Hours........................18
```

### Second Semester

```
ITMD 123  Space Planning*.....................................3
         Prerequisites: ITMD 121 with "C" or higher and
         DRAF 164 with a grade of "C" or higher or DRAF 261
         with "C" or higher
         Interiors Elective..................................3
ITMD 132  Materials and Resources.............................3
MKT  134  Professional Selling................................3
ITMD 231  Furniture & Ornamentation Renaissance to 20th Cent...3
```

```
BUS  150  Business Communications*............................3
         Prerequisite: ENGL 121
         Total Semester Credit Hours........................18
```

### Third Semester

```
         Interiors Elective..................................3
ITMD 271  Budgeting and Estimating*...........................3
         Prerequisites: ITMD 121 with a grade of "C" or higher
         and ITMD 125 with a grade of "C" or higher and
         MATH 120 with a grade of "C" or higher
ITMD 282  Interiors Internship I*.............................1
         Prerequisite: ITMD 121 with a grade of C or higher
ARTH 180  Art History: Ancient to Renaissance.................3
ECON 132  Survey of Economics.................................3
         or
ECON 230  Economics I.........................................3
         Business/Marketing Elective.........................3
         Total Semester Credit Hours........................16
```

### Fourth Semester

```
         Interiors Elective..................................3
ITMD 273  Interiors Seminar: Practices and Procedures*........2
         Prerequisite: ITMD 122 with a grade of "C" or higher
         or ITMD 123 with a grade of "C" or higher
ITMD 284  Interiors Internship II*............................1
         Prerequisites: ITMD 121 with a grade of C or higher
         and ITMD 282 with a grade of C or higher
         Business/Marketing Elective.........................3
FASH 125  Visual Merchandising................................3
FASH 135  Image Management....................................1
         or
ITMD 180  Leadership in Design*...............................1
         Prerequisite: ITMD 123 with a grade of "C" or higher
ITMD 237  Capstone: Merchandising and Entrepreneurship*.......2
         Prerequisite: Approval of program facilitator
         Physical Education Elective.........................1
         Total Semester Credit Hours........................16
         TOTAL PROGRAM CREDIT HOURS.........................68
```

### Interior Electives

```
ITMD 127  Elements of Floral Design...........................1
ITMD 140  Window Treatments*..................................1
         Prerequisites: ITMD 121 and ITMD 125 both with a
         grade of "C" or higher and
         Prerequisite or Corequisite: ITMD 271 or ITMD 275
         both with a grade of "C" or higher
ITMD 143  Accessory Fundamentals*.............................1
         Prerequisite: ITMD 121 with a grade of "C" or higher
ITMD 145  Upholstered Furniture*..............................1
         Prerequisites:  ITMD 121 and ITMD 125 both with a
         grade of "C" or higher and
         Prerequisite or corequisite:  ITMD 271 or
         ITMD 275 both with a grade of "C" or higher
ITMD 147  Lighting Basics*....................................1
         Prerequisite: ITMD 121 with a grade of "C" or higher
         or FASH 125
ITMD 148  History of Asian Furniture and Design...............2
         Prequisite: Program Facilitator Approval
ITMD 149  Casegoods*..........................................1
         Prerequisite: ITMD 121 with a grade of "C" or higher
ITMD 150  Asian Rugs and Carpets..............................1
ITMD 175  Advanced Floral Design*.............................1
         Prerequisite: ITMD 127
ITMD 213  Lighting Design and Planning*.......................3
         Prerequisite: ITMD 121 with grade of "C" or higher
         or FASH 125
ITMD 225  Interior Textiles II*...............................3
         Prerequisite: ITMD 125 with a grade of "C" or higher
ITMD 250  20th Century Designers..............................1
ITMD 295  Field Study: Design and Merchandising*..............3
         Prerequisites: ITMD 121
         and approval of the program facilitator
ITMD 296  Interior Design: the Orient.........................3
```

### Business/Marketing Electives

```
BUS  145  Small Business Management...........................3
BUS  230  Marketing...........................................3
MKT  121  Retail Management...................................3
MKT  221  Sales Management*...................................3
         Prerequisite: MKT 134 or MKT 133
*Prerequisite/Corequisite required
```

# Interior Products Sales Representative Certificate

The interior products sales representative certificate is a 17-credit-hour

program designed for students employed in or seeking positions in the interior design retail market. The required courses are already included in the approved curriculum of the interior design program.

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

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 6500; CIP Code 50.0408)

Interior Design

# Career Certificate

## Suggested/Sample Course Sequence

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
ITMD 121  Interior Design/Tech Prep...........................3
ITMD 125  Interior Textiles...................................3
MATH 120  Business Math or higher*............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
MKT  134  Professional Selling................................3
          Total Semester Credit Hours........................12
```

### Second Semester

```
ITMD 132  Materials and Resources.............................3
FASH 135  Image Management....................................1
ITMD 282  Interiors Internship I*.............................1
          Prerequisite: ITMD 121 with a grade of C or higher
          Total Semester Credit Hours.........................5
          TOTAL PROGRAM CREDIT HOURS.........................17
*Prerequisite/Corequisite required
```

# Interpreter Training, A.A.S.

The employment outlook for sign language interpreters is promising. As the population grows, so does the need for 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 preparing students to provide entry-level interpretation and transliteration for the deaf, hard of hearing and non-deaf communities. During the last semester of the program, students participate in a practicum class in which they interpret under supervision in a variety of situations. Upon successful completion of this program, and a required capstone evaluation, students will earn an associate of applied science degree.

This is a selective admission program with limited enrollment. The deadline for fall semester applications is February 15th. If you are interested, contact the Admissions office for an application packet, which includes prerequisites, deadlines, admission requirements and academic criteria.

Students must earn a grade of "C" or higher in all coursework.

(Major Code 259A; CIP Code 16.1603)

Interpreter Training

# Associate of Applied Science Degree

## Prerequisites

```
ASL  120  Elementary American Sign Language I.................3
ASL  121  Elementary American Sign Language II*...............3
          Prerequisite: INTR 120 or ASL 120 or FL 180 with a
          grade of "C" or higher
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Total Prerequisite Credit Hours.....................9
Note: ENGL 121 must be passed with a 'B' or higher.
Note: ASL 120 and 121 must be passed with a 'C' or higher.
```

## General Education Requirements

```
ANTH 125  Cultural Anthropology...............................3
Note: ANTH 125 is required to meet the Social Science
and/or Economics Elective and must be taken before second
semester of the ITP.


SPD  120  Interpersonal Communication.........................3
Note: SPD 120 is required to meet the Communications
Elective and must be taken before the second semester of
the ITP.


          Health and/or Physical Educ Elect...................1
SPD  121  Public Speaking.....................................3
ENGL 122  Composition II*.....................................3
          Prerequisite: ENGL 121
          Science and/or Math Elective........................3
          Humanities Elective.................................3
          Total General Education Credit Hours...............19


Note:  It is highly recommended that all general
education requirements be taken prior to enrollment
in the program or during the summer.  However, AAC 150
should be taken in student's last semester due to
course/career relevancy.
```

### First Semester

```
INTR 122  Intermediate American Sign Language I*..............3
          Prerequisite: INTR 121 or ASL 121 or FL 181
          with a grade of "C" or higher and
          Corequisite: Students accepted in the interpreter
          training program must take corequisites of
          INTR 130 and INTR 126 and (INTR 147 or ASL 145) and
          (INTR 145 or ASL 145)
          all with a grade of "C" or higher
INTR 126  Classifiers in American Sign Language*..............2
          Prerequisites: INTR 121 or ASL 121 with
          grade of "C" or higher and acceptance in the
          interpreter training program
          Corequisites: (INTR 122 or ASL 122) and INTR 130 and
          (INTR 147 or ASL 147)
          and (INTR 145 or ASL 145)
INTR 130  Survey of the Interpreting Profession*..............3
          Prerequisites: INTR 121  or FL 181 or ASL 121
          with a grade of "C" or higher and
          acceptance in the interpreter training
          program
          Corequisites: (INTR 122 or ASL 122) and INTR 126 and
          (INTR 147 or ASL 147) and (INTR 145 or ASL 145)
          all with a grade of "C" or higher
INTR 147  Fingerspelling I*...................................2
          Prerequisite: INTR 121 or FL 181 or ASL 121
          with a grade of "C" or higher and
          Corequisites: For students accepted in the interpreter
          training program, enroll in:
          (INTR 122 or ASL 122) and INTR 126 and
          INTR 130 and (INTR 145 or ASL 145) all with a
          grade of "C" or higher
INTR 145  Introduction to the Deaf Community*.................3
          Prerequisite: Acceptance to interpreter training
          program and
          Prerequisite or corequisite: ANTH 125 and SPD 120 for
          Interpreter Training Program
          Corequisites for Interpreter Training Prog: INTR 122
          and INTR 126 and INTR 130 and INTR 147
          all with a grade of "C" or higher
          Note: Prerequisite or corequisite of INTR 120 or
          ASL 120 or FL 180
          required for students in the American Sign Language
          Studies Certificate
          Total Semester Credit Hours........................13
```

### Second Semester

```
INTR 123  Intermediate American Sign Language II*.............3
          Prerequisite: INTR 122 or ASL 122 or FL 270
          with a grade of "C" or higher and
```

```
           Corequisite: For students accepted in the interpreter
           training program: INTR 131 and INTR 135 and INTR 242
           and INTR 248 all with a grade of "C" or higher
INTR 131   Interpreting Preparation Skills*.....................2
           Prerequisites: INTR 130 with a grade of "C" or higher
           and acceptance into the
           interpreter training program
           Corequisites: INTR 123 and INTR 135
           and INTR 242 and INTR 248 all with a grade of "C" or
           higher
INTR 135   Intro to American Sign Language Linguistics*........3
           Prerequisite: INTR 122 or ASL 122 or FL 270
           with a grade of "C" or higher
           Corequisites: for students accepted in the interpreter
           training program enroll in:
           INTR 123 and INTR 242 and INTR 131
           and INTR 248 all with a grade of "C" or higher
INTR 242   Fingerspelling II*..................................2
           Prerequisite: INTR 142 with a grade of "C" or higher
           Corerequisites: INTR 123 and INTR 131 and INTR
           135 and INTR 248 all with a grade of "C" or higher
INTR 248   Deaf Community Ethnography*.........................3
           Prerequisite: INTR 145 or ASL 145
           with a grade of "C" or higher
           Corequisites: (INTR 123 or ASL 123) and INTR 131 and
           (INTR 135 or ASL 135) and INTR 242 all
           with a grade of "C" or higher
           Total Semester Credit Hours........................13
```

### Third Semester

```
INTR 181   Interpreting Practicum I*...........................1
           Prerequisite: INTR 130 with a grade of "C" or higher
           Corequisites: (INTR 145 or ASL 145) and INTR 223 and
           INTR 226 and INTR 250 all with a grade of "C" or higher
INTR 223   Advanced American Sign Language*....................3
           Prerequisite: INTR 123 or ASL 123 or
           FL 271 with a grade of "C" or higher
           Corequisites: INTR 250 and INTR 226 and
           INTR 181 all with a grade of "C" or higher
INTR 226   Specialized and Technical Vocabulary*..............2
           Prerequisite: INTR 123 or ASL 123 with a grade
           of "C" or higher
           Corequisites: INTR 181 and INTR 250 and
           INTR 223 all with a grade of "C" or higher
INTR 250   Interpreting I*....................................6
           Prerequisite: INTR 131 with a grade of "C" or higher
           Corequisites: INTR 181 and INTR 223 and INTR 226
           all with a grade of "C" or higher
           Total Semester Credit Hours........................12
```

### Fourth Semester

```
INTR 251   Interpreting II*...................................2
           Prerequisite: INTR 250 with a grade of "C" or higher
           Corequisites: INTR 262 and INTR 282 and AAC 150 all
           with a grade of "C" or higher
INTR 262   Seminar on Interpreting*...........................3
           Prerequisite: INTR 250 with a grade of "C" or higher
           Corequisites: INTR 251 and INTR 282 and AAC 150 all
           with a grade of "C" or higher
INTR 282   Interpreting Practicum II*.........................6
           Prerequisite: INTR 181 with a grade of "C" or higher
           Corequisites: INTR 251 and INTR 262 and AAC 150 all
           with a grade of "C" or higher
AAC  150   Job Search Skills..................................1
           Total Semester Credit Hours........................12
           TOTAL PROGRAM CREDIT HOURS.........................69
*Prerequisite/Corequisite required
```

# American Sign Language Studies Certificate

The American Sign Language (ASL) studies postsecondary certificate has been developed based on the need for professionals and community members to be skilled in ASL. This program is intended as supplementary and does not prepare the learner to work as an interpreter. MATH 115 or higher is required for the certificate program; students planning to apply for admission to the interpreter training program after receiving their certificates are advised that MATH 116 or higher and/or a science elective are required for the A.A.S. degree. Students should contact a counselor or the career program facilitator for advice concerning graduation requirements.

Students must earn a grade of "C" or higher in all ASL courses.

Please note: ASL 145, ASL 122 and ASL 147 are only offered in the fall semester; ASL 123, ASL 135 and ASL 150 are only offered in the spring semester.

(Major Code 6800; CIP Code 16.1603)

Interpreter Training

# Career Certificate

### First Semester

```
ASL  120   Elementary American Sign Language I.................3
ASL  145   Introduction to the Deaf Community*................3
           Prerequisites or Corequisite: INTR 120 or ASL 120 or
           FL 180 with
           a grade of "C" or higher
           Health/Physical Education Elective.................1
ENGL 121   Composition I*.....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
           Total Semester Credit Hours........................10
```

### Second Semester

```
ASL  121   Elementary American Sign Language II*...............3
           Prerequisite: INTR 120 or ASL 120 or FL 180 with a
           grade of "C" or higher
           Social Science or Economics Elective...............3
ENGL 122   Composition II*....................................3
           Prerequisite: ENGL 121
           Total Semester Credit Hours.........................9
```

### Third Semester

```
ASL  122   Intermediate American Sign Language I*.............3
           Prerequisites: INTR 121 or ASL 121 or FL 181
           with a grade of "C" or higher
ASL  147   Fingerspelling I*..................................2
           Prerequisites: INTR 121 or ASL 121 or FL 181.
           with a grade of "C" or higher
           Math Elective*.....................................3
           Total Semester Credit Hours.........................8
```

### Fourth Semester

```
ASL  123   Intermediate American Sign Language II*............3
           Prerequisites: INTR 122 or ASL 122 or FL 270
           with a grade of "C" or higher
ASL  135   Intro to American Sign Language Linguistics*........3
           Prerequisites: INTR 122 or ASL 122 or FL 270
           with a grade of "C" or higher
ASL  150   American Sign Language Literature*.................3
           Prerequisite: INTR 122 or ASL 122 with a grade of "C"
           or higher
           Total Semester Credit Hours.........................9
           TOTAL PROGRAM CREDIT HOURS.........................36
```

### Math Elective

```
MATH 115   Elementary Algebra*................................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
MATH 116   Intermediate Algebra*..............................3
           Prerequisite: MATH 115 with a grade of "C" or higher
           or appropriate score on the math assessment test
MATH 118   Geometry*..........................................3
           Prerequisite:  MATH 115 with a grade of "C" or higher
           or appropriate score on the math assessment test
MATH 120   Business Mathematics*..............................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
MATH 122   Mathematics in Our Culture*........................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
MATH 133   Technical Mathematics I*...........................4
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
MATH 134   Technical Mathematics II*..........................5
           Prerequisite: MATH 133 or an equivalent course
           with a grade of "C" or higher
MATH 165   Finite Mathematics*................................3
           Prerequisite: MATH 116 with a grade of "C" or higher
           or appropriate score on the math assessment test
MATH 172   Trigonometry*......................................3
           Prerequisite: MATH 171 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Note: Not available to students with credit in
           MATH 173
MATH 173   Precalculus*.......................................5
           Prerequisite: MATH 116 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Note: Not available for credit for students with
           credit in MATH 171 and/or MATH 172
MATH 175   Discrete Mathematics and its Applications*.........3
           Prerequisite: MATH 171 or MATH 173
           with a grade of "C" or higher
           or appropriate score on the math assessment test
```

```
MATH 181   Statistics*........................................3
           Prerequisite: MATH 171 or MATH 173 or an
           equivalent course with a grade of "C" or higher
           or appropriate score on the math assessment test
MATH 225   Mathematics as a Decision Making Tool*..............3
           Prerequisite: MATH 171 or MATH 173
           with a grade of "C" or higher
           or appropriate score on the math assessment test
MATH 231   Business and Applied Calculus I*....................3
           Prerequisite: MATH 171 or MATH 173
           with a grade of "C" or higher
           or appropriate score on the math assessment test
MATH 232   Business and Applied Calculus II*...................3
           Prerequisites: MATH 231 and either MATH 172 or
           MATH 173 with a grade of "C" or higher
           or appropriate score on the math assessment test
MATH 241   Calculus I*........................................5
           Prerequisite: MATH 172 or MATH 173
           or an equivalent course with a grade of "C" or higher
           or an appropriate score on an assessment test
MATH 242   Calculus II*.......................................5
           Prerequisite: MATH 237 or MATH 241
           or an equivalent course with a grade of "C" or higher
MATH 243   Calculus III*......................................5
           Prerequisite: MATH 242 with a grade of "C" or higher
           or an equivalent course with a grade of "C" or higher
MATH 244   Differential Equations*............................3
           Prerequisite: MATH 243
           or an equivalent course with a grade of "C" or higher
*Prerequisite/Corequisite required
```

# Health Care Interpreting Certificate

Health care interpreting (HCI) is designed to give bilingual (English and Spanish) students the awareness, knowledge and skills necessary to serve as entry-level interpreters and translators in health care settings, including hospitals, clinics, medical offices and similar environments. Program completers should be eligible for employment as salaried or on-call staff interpreters, or as self-employed freelance interpreters. Employment opportunities may also be available with professional interpreting and translating service companies. Although the emphasis of the program is medical interpreting, the skills gained could be applied to other interpreting and translating settings in the community, such as conference and escort interpreting and translation of written documents.

The health care interpreting program is a 20-credit hour vocational program leading to a certificate of completion. It is designed to be completed in three semesters, although there is enough flexibility in the curriculum to extend the time period for several additional semesters, if the student prefers a slower pace. The program is organized in a progression of courses leading the student from general concepts to increasingly complex skills and knowledge, culminating in a comprehensive skills exam and a professional practicum. It includes five courses developed specifically for the program plus two courses offered through other departments. Students must earn a grade of C or higher in each of the program's courses to continue in the program. The latter two courses, AAC 130, Medical Terminology, and HC 101, Introduction to Health Care Delivery, do not have prerequisites and could be taken at any time prior to completion of the program. Students must have all course work but the HC 101 course completed before beginning HCI 180, the medical interpreting practicum.

The HCI program is organized as part of the JCCC interpreter training program, although it has its own unique course prefix (HCI) and curriculum. Other courses in the interpreter training program emphasize deaf communication and sign language. HCI students should enroll only in courses with the HCI prefix, plus AAC 130 and HC 101.

Students must earn a grade of "C" or higher in all coursework and be able to demonstrate at least 85% accuracy in both English and Spanish while interpreting.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 4390; CIP Code 16.0103)

Interpreter Training

# Career Certificate

## Fall Semester

```
HCI 110   Introduction to Interpreting*.......................3
          Prerequisites: Interview and permission of the
          facilitator. Potential indicators of proficiency
          may be required.
HCI 120   Interpreting Skills I*..............................3
          Prerequisite or corequisite: HCI 110 with a grade
          of "C" or higher
          Total Semester Credit Hours.........................6
```

## Spring Semester

```
HCI 130   Interpreting Skills II*.............................3
          Prerequisites: HCI 110 with a grade of "C" or higher
          and HCI 120 with a grade of "C" or higher
HCI 140   Spanish Medical Interpreting*.......................3
          Prerequisite: HCI 120 with a grade of "C" or higher
          and Prerequisites or corequisites: HCI 130
          with a grade of "C" or higher and AAC 130
          with a grade of "C" or higher
AAC 130   Medical Terminology.................................3
          Total Semester Credit Hours.........................9
```

## Fall Semester

```
HCI 180   Medical Interpreting Practicum*.....................2
          Prerequisites: HCI 130 with a grade of "C" or higher
          and HCI 140 with a grade of "C" or higher and
          Prerequisite or corequisite: HC 101 with a grade
          of "C" or higher
HC  101   Introduction to Health Care Delivery................3
          Total Semester Credit Hours.........................5
          TOTAL PROGRAM CREDIT HOURS.........................20
*Prerequisite/Corequisite required
```

# Health Care Interpreting Entrepreneurship Certificate

This certificate is designed to prepare students to open their own business providing health care interpreting services. The certificate will provide the student with instruction in the national standards; professional roles and responsibilities of interpreters; common medical conditions, treatments, protocols and procedures; medical terminology in both English and Spanish; culture competence; code of ethics and professional standards of practice; and legal aspects of interpreting. Students will successfully complete a field practicum course and a comprehensive skills test. Prospective students must demonstrate fluency in both English and Spanish through an oral interview and other documentation as needed. Additionally, the certificate provides the student instruction in small business development and management.

Students must earn a grade of "C" or higher in all coursework and be able to demonstrate at least 85% accuracy in both English and Spanish while interpreting.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 4260; CIP Code 16.0103)

Interpreter Training

## Career Certificate

### Suggested/Sample Course Sequence

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The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

### First Semester

```
HCI 110   Introduction to Interpreting*.......................3
```

```
        Prerequisites: Interview and permission of the
        facilitator. Potential indicators of proficiency
        may be required.
HCI 120  Interpreting Skills I*.............................3
        Prerequisite or corequisite: HCI 110 with a grade
        of "C" or higher
AAC 130  Medical Terminology...............................3
ENTR 120 Introduction to Entrepreneurship..................2
ENTR 180 Opportunity Analysis..............................2
        Total Semester Credit Hours......................13
```

### Second Semester

```
HCI 130  Interpreting Skills II*............................3
        Prerequisites: HCI 110 with a grade of "C" or higher
        and HCI 120 with a grade of "C" or higher
HCI 140  Spanish Medical Interpreting*.....................3
        Prerequisite: HCI 120 with a grade of "C" or higher
        and Prerequisites or corequisites: HCI 130
        with a grade of "C" or higher and AAC 130
        with a grade of "C" or higher
HC  101  Introduction to Health Care Delivery..............3
HCI 180  Medical Interpreting Practicum*...................2
        Prerequisites: HCI 130 with a grade of "C" or higher
        and HCI 140 with a grade of "C" or higher and
        Prerequisite or corequisite: HC 101 with a grade
        of "C" or higher
ENTR 142 Fast Trac Business Plan...........................3
        Total Semester Credit Hours......................14
        TOTAL PROGRAM CREDIT HOURS.......................27
*Prerequisite/Corequisite required
```

```
Students may be interested in taking additional courses, as
noted below, to complement their certificate study.  These
courses are NOT part of the certificate requirements.

ENTR 220 Entrepreneurial Marketing*.........................2
        Prerequisite: BUS 230
ENTR 131 Financial Management for Small Business*...........2
        Prerequisite: ACCT 111 or ACCT 121
ENTR 160 Legal Issues for Small Business....................2
ENTR 195 Franchising*......................................3
        Prerequisite: BUS 230
```

# Land Surveying, A.A.S.

The Land Surveying, AAS degree program is granted by Metropolitan Community College, but coordinated at JCCC.

This program leads to an associate in applied science degree which provides students with the experience and knowledge they need to take the exam to become a land surveyor.

The JCCC land surveying program is offered to Johnson County residents in cooperation with MCC-Longview Community College. The support courses are held at JCCC. Program course and credit hours are subject to change because of the requirement changes at the degree-granting institution. It is the student's responsibility to check with a JCCC counselor or advisor before enrollment. Contact MCC-Longview Community College at 816-672-2510 for an application packet, which includes deadlines, program prerequisites and admission requirements.

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

## Associate of Applied Science Degree

```
Degree Granted by Metropolitan Community College
```

### General Education Requirements-must be taken at JCCC

```
ENGL 121 Composition I*....................................3
        Prerequisite: ENGL 106 or appropriate placement
        test score or EAP 113 and EAP 117
ENGL 122 Composition II*...................................3
        Prerequisite: ENGL 121
ENGL 123 Technical Writing I*..............................3
        Prerequisite: ENGL 121
SPD 121  Public Speaking...................................3
MATH 171 College Algebra*.................................3
```

```
        Prerequisite: MATH 116 with a grade of "C" or higher
        or MATH 134 with a grade of "C" or higher
        or appropriate score on the math assessment test
        Note: Not available to students with credit in
        MATH 173
        AND
MATH 172 Trigonometry*.....................................3
        Prerequisite: MATH 171 with a grade of "C" or higher
        or appropriate score on the math assessment test
        Note: Not available to students with credit in
        MATH 173
        OR
MATH 173 Precalculus*......................................5
        Prerequisite: MATH 116 with a grade of "C" or higher
        or appropriate score on the math assessment test
        Note: Not available for credit for students with
        credit in MATH 171 and/or MATH 172

        American Institutions (choose one from the following list):
HIST 140 U.S. History to 1877..............................3
        OR
HIST 141 U.S. History Since 1877...........................3
        OR
ECON 132 Survey of Economics...............................3
        OR
ECON 230 Economics I.......................................3
        OR
PHIL 143 Ethics............................................3
        OR
POLS 122 Political Science.................................3
        OR
POLS 124 American National Government......................3
        OR
POLS 126 State and Local Government........................3


GEOS 140 Physical Geography................................3
        AND
GEOS 141 Physical Geography Lab*...........................2
        Prerequisite or corequisite: GEOS 140 or the
        equivalent
        OR
ASTR 122 Astronomy.........................................4
        OR
MATH 181 Statistics*.......................................3
        Prerequisite: MATH 171 or MATH 173 or an
        equivalent course with a grade of "C" or higher
        or appropriate score on the math assessment test
```

### Specific Program Requirements-may be taken at JCCC

```
ENGR 180 Engineering Land Surveying I*.....................3
        Corequisite: MATH 134 or MATH 172
ENTR 142 Fast Trac Business Plan...........................3
        Total JCCC Credit Hours........................33-35
```

### Specific Program Requirements-taken at MCC-Longview

```
KSS 153   The Missouri Constitution........................1
KSRV 152  Engineering Graphics & CADD I*...................5
         Prerequisite: MATH test
KSRV 120  Introduction to Geographic Information Systems....3
KSRV 137  Subdivision Planning and Layout*.................3
         Prerequisites: ENGR 180 MCC's and DRAF 152
KSRV 235  Advanced Surveying*..............................3
         Prerequisite: ENGR 180
KSRV 236  Boundary Control & Legal Principles*.............3
         Prerequisite: ENGR 180
KSRV 237  Evidence and Procedures for Boundary Locations*..3
         Prerequisite: ENGR 180
KSRV 244  Fundamentals of GPS Surveying*...................3
         Prerequisite: ENGR 180
```

### Specific Program Requirements-taken at JCCC or MCC-Longview

```
Choose TWO courses from the following list:

ACCT 121 Accounting I......................................3
DRAF 230 Intermediate CAD: AutoCAD*........................3
        Prerequisite: DRAF 130
        or approval of the program assistant dean
        OR
KSRV 269 Computer Aided Design II*.........................4
        Prerequisites: DRAF 152 or 169 (MCC)
KSRV 220 GIS Database and Design*..........................3
        Prerequisite: KSRV 120
        Total MCC Credit Hours...........................30
        TOTAL PROGRAM CREDIT HOURS....................63-65
*Prerequisite/Corequisite required
```

# Land Surveying Certificate

The Land Surveying Certificate program is granted by Metropolitan Community College, but coordinated at JCCC.

This certificate prepares an individual to take the state-licensing exam to become a registered land surveyor with the state of Missouri.

The JCCC land surveying certificate is offered to Johnson County residents in cooperation with MCC-Longview Community College. The support courses are held at JCCC. Program course and credit hours are subject to change because of the requirement changes at the degree-granting institution. It is the student's responsibility to check with a JCCC counselor or advisor before enrollment. Contact MCC-Longview Community College at 816-672-2510 for an application packet, which includes deadlines, program prerequisites and admission requirements.

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

## Career Certificate

Certificate granted by Metropolitan Community College

### Specific Program Requirements-must be taken at JCCC

```
MATH 171   College Algebra*...................................3
           Prerequisite: MATH 116 with a grade of "C" or higher
           or MATH 134 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Note: Not available to students with credit in
           MATH 173
           AND
MATH 172   Trigonometry*......................................3
           Prerequisite: MATH 171 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Note: Not available to students with credit in
           MATH 173
           OR
MATH 173   Precalculus*.......................................5
           Prerequisite: MATH 116 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Note: Not available for credit for students with
           credit in MATH 171 and/or MATH 172
ENGR 180   Engineering Land Surveying I*......................3
           Corequisite: MATH 134 or MATH 172
```

### Specific Program Requirements-taken at MCC-Longview

```
KSRV 152   Engineering Graphics & CADD I*.....................5
           Prerequisite: MATH test
KSRV 137   Subdivision Planning and Layout*...................3
           Prerequisites: ENGR 180 MCC's and DRAF 152
KSRV 235   Advanced Surveying*................................3
           Prerequisite: ENGR 180
KSRV 236   Boundary Control & Legal Principles*...............3
           Prerequisite: ENGR 180
KSRV 237   Evidence and Procedures for Boundary Locations*....3
           Prerequisite: ENGR 180
           TOTAL PROGRAM CREDIT HOURS.....................26-29
*Prerequisite/Corequisite required
```

# Paralegal, A.A.

The expanding role of the paralegal in the delivery of legal services has created increased opportunities with private law firms, 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 although the number of jobs for trained paralegals is rising, competition for these positions is increasing. A minimum of 18 hours of legal specialty courses must be taken at Johnson County Community College.

PARALEGALS MAY NOT PROVIDE LEGAL SERVICE DIRECTLY TO THE PUBLIC, EXCEPT AS PERMITTED BY LAW.

The paralegal program at JCCC

- has a challenging curriculum
- requires that you possess excellent communication skills, analytical ability and a high level of motivation
- is approved by the American Bar Association
- is a selective admission program based on various academic and testing criteria

(Major Code 264A; CIP Code 22.0302)

Paralegal

## Associate of Arts Degree

```
Students graduating with an Associate of Arts degree or an
Associate of Science degree must complete an approved
cultural diversity course.  Some of these courses are able
to meet both a diversity requirement and a general education
requirement.


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


Suggested Order of Courses: Students may take any number of
courses each semester that will also allow them to fulfill
their other personal and professional responsibilities.
```

### First Semester

```
ENGL 121   Composition I*.....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
LAW  121   Introduction to Law................................3
LAW  123   Paralegal Professional Studies.....................1
LIBR 125   Introduction to Library Research...................1
SPD  120   Interpersonal Communication........................3
           or
SPD  121   Public Speaking....................................3
           or
SPD  125   Personal Communication.............................3
           Science and Mathematics Electives..................3
BOT  105   Keyboarding and Formatting I.......................3
           Total Semester Credit Hours.......................17
```

### Second Semester

```
Following admission to the paralegal program:

ENGL 122   Composition II*....................................3
           Prerequisite: ENGL 121
BOT  106   Intro to Business Computer Applications*...........3
           Prerequisite or corequisite: BOT 105
           Humanities Elective................................3
LAW  132   Civil Litigation*..................................3
           Prerequisites: Admission to the paralegal program or
           division administrator approval.
           Legal nurse consultant students - LAW 225 and
           LAW 121
           Social Science and/or Economics Electives..........3
           Paralegal Electives................................3
           Total Semester Credit Hours.......................18
```

### Third Semester

```
           Paralegal Electives................................6
           Health and/or Physical Education Elective..........1
           Humanities Elective................................3
           Science and Mathematics Elective...................3
LAW  131   Legal Research and Writing I*......................3
           Prerequisites: Admission to the paralegal program and
           BOT 106 or program administrator approval
           Total Semester Credit Hours.......................16
```

### Fourth Semester

```
LAW  271   Legal Ethics, Interviewing and Investigation*......3
           Prerequisite: Paralegal program students - LAW 132.
           legal nurse consultant students - LAW 132 or LAW 260
           Corequisite: Paralegal program students - LAW 205.
           Legal nurse consultant students: LAW 205 or LAW 250
           Paralegal Electives................................2
```

```
                   Science and Mathematics Electives....................3
                   Social Science and/or Economics Electives............3
LAW  205  Legal Research and Writing II*.......................3
          Prerequisite: LAW 131 or program administrator
          approval
LAW  223  Law Office Computing*.................................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program and completion of BOT 106
                   Total Semester Credit Hours....................17
                   TOTAL PROGRAM CREDIT HOURS.........................68
```

## Paralegal Electives

```
LAW  140  Alternative Dispute Resolution*.....................3
          Prerequisites: Legal nurse consultant students and
          paralegal program students - LAW 132
          and selective admission approval
LAW  142  Torts*..............................................3
          Prerequisites: Legal nurse consultant students and
          paralegal program students - LAW 132
          and selective admission approval
LAW  148  Criminal Litigation*................................3
          Prerequisite: Legal nurse consultant students and
          paralegal program students - LAW 132
LAW  152  Real Estate Law*....................................3
          Prerequisites: Paralegal program students -
          Admission to the paralegal program or division
          administrator approval. Legal nurse consultant
          students - LAW 225 and LAW 121
LAW  162  Family Law*.........................................3
          Prerequisites: Paralegal program students -
          admission to paralegal program
          or assistant dean's approval. Legal nurse
          consultant students - LAW 225 and LAW 121
LAW  171  Law Office Management*..............................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  212  Business Organizations*.............................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  226  Immigration Law*....................................3
          Prerequisites: Paralegal program students: admission
          to the paralegal program or program administrator
          approval . Legal nurse consultant students:
          LAW 225 and LAW 121
LAW  241  Wills, Trusts and Probate Administration*...........3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  245  Elder Law*..........................................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  247  Intellectual Property Law*..........................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  266  Employment Law*.....................................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 121 and LAW 225
LAW  268  Bankruptcy*.........................................2
          Prerequisite: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 121 or LAW 225
LAW  270  Administrative Law*.................................3
          Prerequisite: Admission to the legal nurse consultant
          program and LAW 225 and LAW 121
          or admission to the paralegal program
LAW  275  Paralegal Internship I*.............................1
          Prerequisite or Corequisite: Paralegal program
          students - LAW 271
LAW  276  Paralegal Internship II*............................1
          Prerequisite: LAW 275
*Prerequisite/Corequisite required
```

# Legal Nurse Consultant Certificate

A legal nurse consultant (LNC) is a registered nurse who possesses both medical and legal knowledge. The LNC assists members of the legal profession with medical malpractice, personal injury and workers' compensation cases. The LNC functions in two roles: a consulting expert and a testifying expert.

Prior to admission, you must have earned a registered nurse degree and have satisfied JCCC and American Bar Association general education requirements.

Students will have fulfilled these general education requirements if they have 18 hours of general education. LNC applicants must also possess a current state license to practice nursing and have completed 2,500 hours of clinical work as a registered nurse. A minimum of 18 hours of legal specialty courses must be taken at Johnson County Community College.

LEGAL NURSE CONSULTANTS MAY NOT PROVIDE LEGAL SERVICES DIRECTLY TO THE PUBLIC, EXCEPT AS PERMITTED BY LAW.

(Major Code 5450; CIP 22.0302)

Legal Nurse Consulting

# Career Certificate

## Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/ professional responsibilities.

### First Semester

```
LAW  225  Legal Nurse Consultant Profession*..................1
          Prerequisite: Admission to the legal nurse consultant
          program or assistant dean's approval
LAW  121  Introduction to Law.................................3
LIBR 125  Introduction to Library Research....................1
                   Total Semester Credit Hours.....................5
```

### Second Semester

```
LAW  250  Medicolegal Research and Writing*...................3
          Prerequisites: Admission to the legal nurse
          consultant program and LIBR 125
LAW  132  Civil Litigation*...................................3
          Prerequisites: Admission to the paralegal program or
          division administrator approval.
          Legal nurse consultant students - LAW 225 and
          LAW 121
LAW  270  Administrative Law*.................................3
          Prerequisite: Admission to the legal nurse consultant
          program and LAW 225 and LAW 121
          or admission to the paralegal program
LAW  271  Legal Ethics, Interviewing and Investigation*.......3
          Prerequisite: Paralegal program students - LAW 132.
          legal nurse consultant students - LAW 132 or LAW 260
          Corequisite: Paralegal program students - LAW 205.
          Legal nurse consultant students: LAW 205 or LAW 250
          LAW Electives......................................6
                   Total Semester Credit Hours....................18
                   TOTAL PROGRAM CREDIT HOURS.........................23
*Prerequisite/Corequisite required
```

### LAW Electives

```
LAW  140  Alternative Dispute Resolution*.....................3
          Prerequisites: Legal nurse consultant students and
          paralegal program students - LAW 132
          and selective admission approval
LAW  142  Torts*..............................................3
          Prerequisites: Legal nurse consultant students and
          paralegal program students - LAW 132
          and selective admission approval
LAW  148  Criminal Litigation*................................3
          Prerequisites: Legal nurse consultant students and
          paralegal program students - LAW 132
LAW  152  Real Estate Law*....................................3
          Prerequisites: Paralegal program students -
          Admission to the paralegal program or division
          administrator approval. Legal nurse consultant
          students - LAW 225 and LAW 121
LAW  162  Family Law*.........................................3
          Prerequisites: Paralegal program students -
          admission to paralegal program
          or assistant dean's approval. Legal nurse
          consultant students - LAW 225 and LAW 121
LAW  171  Law Office Management*..............................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  212  Business Organizations*.............................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  223  Law Office Computing*...............................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program and completion of BOT 106
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LAW 226 Immigration Law*....................................3
        Prerequisites: Paralegal program students: admission
        to the paralegal program or program administrator
        approval . Legal nurse consultant students:
        LAW 225 and LAW 121
LAW 241 Wills, Trusts and Probate Administration*...........3
        Prerequisites: Paralegal program students - admission
        to the paralegal program or division administrator
        approval. Legal nurse consultant students -
        LAW 225 and LAW 121
LAW 245 Elder Law*.........................................3
        Prerequisites: Paralegal program students - admission
        to the paralegal program or division administrator
        approval. Legal nurse consultant students -
        LAW 225 and LAW 121
LAW 247 Intellectual Property Law*.........................3
        Prerequisites: Paralegal program students - admission
        to the paralegal program or division administrator
        approval. Legal nurse consultant students -
        LAW 225 and LAW 121
LAW 266 Employment Law*....................................3
        Prerequisites: Paralegal program students - admission
        to the paralegal program or division administrator
        approval. Legal nurse consultant students -
        LAW 121 and LAW 225
        TOTAL PROGRAM CREDIT HOURS.........................23

# Legal Nurse Consultant Entrepreneurship Certificate

This certificate is designed to prepare students to open their own legal nurse consultant (LNC) service business providing two services to their clients: consulting testifying expertise. A legal nurse consultant 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.

This certificate is designed to provide the student with basic skills as a legal nurse consultant as well as small business development and management skills.

Prior to admission, you must have earned a registered nurse degree and have satisfied JCCC and American Bar Association general education requirements. Students will have fulfilled these general education requirements if they have 18 hours of general education credits. LNC applicants must also possess a current state license to practice nursing and have completed 2,500 hours of clinical work as a registered nurse. A minimum of 18 hours of legal specialty courses must be taken at Johnson County Community College.

LEGAL NURSE CONSULTANTS MAY NOT PROVIDE LEGAL SERVICES DIRECTLY TO THE PUBLIC, EXCEPT AS PERMITTED BY LAW.

(Major Code 4060; CIP Code 22.0302)

Paralegal

## Career Certificate

### First Semester

LAW 121 Introduction to Law...............................3
LAW 225 Legal Nurse Consultant Profession...................1
        Prerequisite: Admission to the legal nurse consultant
        program or assistant dean's approval
ENTR 120 Introduction to Entrepreneurship...................2
ENTR 142 Fast Trac Business Plan............................3
ENTR 180 Opportunity Analysis...............................2
         Total Semester Credit Hours.......................11

### Second Semester

LAW 250 Medicolegal Research and Writing*...................3
        Prerequisites: Admission to the legal nurse
        consultant program and LIBR 125
LAW 132 Civil Litigation*..................................3
        Prerequisites: Admission to the paralegal program or
        division administrator approval.
        Legal nurse consultant students - LAW 225 and
        LAW 121
LAW 270 Administrative Law*................................3
        Prerequisite: Admission to the legal nurse consultant
        program and LAW 225 and LAW 121
        or admission to the paralegal program

LAW 271 Legal Ethics, Interviewing and Investigation*........3
        Prerequisite: Paralegal program students - LAW 132.
        legal nurse consultant students - LAW 132 or LAW 260
        Corequisite: Paralegal program students - LAW 205.
        Legal nurse consultant students: LAW 205 or LAW 250
        LAW electives.....................................6
        Total Semester Credit Hours.......................18
        TOTAL PROGRAM CREDIT HOURS........................29
*Prerequisite/Corequisite required

## LAW Electives

Students are encouraged to choose additional LAW coursework which will enhance their ability to develop, grow, and sustain their Legal Nurse Consultant entrepreneurial business concept.

LAW 140 Alternative Dispute Resolution*....................3
        Prerequisites: Legal nurse consultant students and
        paralegal program students - LAW 132
        and selective admission approval
LAW 142 Torts*............................................3
        Prerequisites: Legal nurse consultant students and
        paralegal program students - LAW 132
        and selective admission approval
LAW 148 Criminal Litigation*..............................3
        Prerequisite: Legal nurse consultant students and
        paralegal program students - LAW 132
LAW 152 Real Estate Law*..................................3
        Prerequisites: Paralegal program students -
        Admission to the paralegal program or division
        administrator approval. Legal nurse consultant
        students - LAW 225 and LAW 121
LAW 162 Family Law*.......................................3
        Prerequisites: Paralegal program students -
        admission to paralegal program
        or assistant dean's approval. Legal nurse
        consultant students - LAW 225 and LAW 121
LAW 171 Law Office Management*............................3
        Prerequisites: Paralegal program students - admission
        to the paralegal program or division administrator
        approval. Legal nurse consultant students -
        LAW 225 and LAW 121
LAW 212 Business Organizations*...........................3
        Prerequisites: Paralegal program students - admission
        to the paralegal program or division administrator
        approval. Legal nurse consultant students -
        LAW 225 and LAW 121
LAW 223 Law Office Computing*.............................3
        Prerequisites: Paralegal program students - admission
        to the paralegal program and completion of BOT 106
LAW 226 Immigration Law*..................................3
        Prerequisites: Paralegal program students: admission
        to the paralegal program or program administrator
        approval . Legal nurse consultant students:
        LAW 225 and LAW 121
LAW 241 Wills, Trusts and Probate Administration*...........3
        Prerequisites: Paralegal program students - admission
        to the paralegal program or division administrator
        approval. Legal nurse consultant students -
        LAW 225 and LAW 121
LAW 245 Elder Law*........................................3
        Prerequisites: Paralegal program students - admission
        to the paralegal program or division administrator
        approval. Legal nurse consultant students -
        LAW 225 and LAW 121
LAW 247 Intellectual Property Law*........................3
        Prerequisites: Paralegal program students - admission
        to the paralegal program or division administrator
        approval. Legal nurse consultant students -
        LAW 225 and LAW 121
LAW 266 Employment Law*...................................3
        Prerequisites: Paralegal program students - admission
        to the paralegal program or division administrator
        approval. Legal nurse consultant students -
        LAW 121 and LAW 225

Students may be interested in taking additional courses, as noted below, to complement their certificate study. These courses are NOT part of the certificate requirements.

ENTR 160 Legal Issues for Small Business.....................2
ENTR 195 Franchising.......................................3
         Prerequisite: BUS 230

# Paralegal Certificate

You must have completed a two-year degree or a four-year degree and have satisfied JCCC and American Bar Association general education requirements prior to admission. Students will have fulfilled these general education requirements if they have 18 hours of general education credit, including Composition I and Introduction to Algebra or a higher math course.

The following courses must be completed with a minimum GPA of 2.0 prior to application for admission to the paralegal program. A minimum of 18 hours of legal specialty courses must be taken at Johnson County Community College.

LEGAL NURSE CONSULTANTS MAY NOT PROVIDE LEGAL SERVICES DIRECTLY TO THE PUBLIC, EXCEPT AS PERMITTED BY LAW.

(Major Code 489A; CIP Code 22.0302)

Paralegal

# Career Certificate

Suggested order of courses: Students may take any number of courses each semester that will also allow them to fulfill their other personal and professional responsibilities.

## Prerequisite for Required Course

BOT  105  Keyboarding and Formatting I.........................3

## First Semester

LAW  121  Introduction to Law.................................3
LAW  123  Paralegal Professional Studies.....................1
LIBR 125  Introduction to Library Research...................1
CPCA 128  PC Applications: MS Office.........................3
          or
CIS  124  Introduction to Computer Concepts and Applications...3
          or the following three:
CPCA 108  Word Processing I: MS Word*.........................1
          Prerequisites: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
          and
CPCA 110  Spreadsheets I: MS Excel*...........................1
          Prerequisite: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
          and
CPCA 114  Databases I: MS Access*............................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on a waiver test
          Total Semester Credit Hours........................8

## Second Semester

BOT  106  Intro to Business Computer Applications*............3
          Prerequisite or corequisite: BOT 105
LAW  132  Civil Litigation*..................................3
          Prerequisites: Admission to the paralegal program or
          division administrator approval.
          Legal nurse consultant students - LAW 225 and
          LAW 121
          Paralegal Electives................................7
          Total Semester Credit Hours.......................13

## Third Semester

LAW  131  Legal Research and Writing I*.......................3
          Prerequisites: Admission to the paralegal program and
          BOT 106 or program administrator approval
LAW  223  Law Office Computing*..............................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program and completion of BOT 106
          Paralegal Electives................................4
          Total Semester Credit Hours.......................10

## Fourth Semester

LAW  205  Legal Research and Writing II*......................3
          Prerequisite: LAW 131 or program administrator
          approval
LAW  271  Legal Ethics, Interviewing and Investigation*.......3
          Prerequisite: Paralegal program students - LAW 132.
          legal nurse consultant students - LAW 132 or LAW 260
          Corequisite: Paralegal program students - LAW 205.
          Legal nurse consultant students: LAW 205 or LAW 250
          Total Semester Credit Hours........................6
          TOTAL PROGRAM CREDIT HOURS.......................37

## Paralegal Electives

LAW  140  Alternative Dispute Resolution*.....................3
          Prerequisites: Legal nurse consultant students and
          paralegal program students - LAW 132
          and selective admission approval
LAW  142  Torts*.............................................3
          Prerequisites: Legal nurse consultant students and
          paralegal program students - LAW 132
          and selective admission approval
LAW  148  Criminal Litigation*...............................3
          Prerequisite: Legal nurse consultant students and
          paralegal program students - LAW 132
LAW  152  Real Estate Law*...................................3
          Prerequisites: Paralegal program students -
          Admission to the paralegal program or division
          administrator approval. Legal nurse consultant
          students - LAW 225 and LAW 121
LAW  162  Family Law*........................................3
          Prerequisites: Paralegal program students -
          admission to paralegal program
          or assistant dean's approval. Legal nurse
          consultant students - LAW 225 and LAW 121
LAW  171  Law Office Management*.............................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  212  Business Organizations*............................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  226  Immigration Law*...................................3
          Prerequisites: Paralegal program students: admission
          to the paralegal program or program administrator
          approval . Legal nurse consultant students:
          LAW 225 and LAW 121
LAW  241  Wills, Trusts and Probate Administration*...........3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  245  Elder Law*.........................................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  247  Intellectual Property Law*.........................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 225 and LAW 121
LAW  266  Employment Law*....................................3
          Prerequisites: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 121 and LAW 225
LAW  268  Bankruptcy*........................................2
          Prerequisite: Paralegal program students - admission
          to the paralegal program or division administrator
          approval. Legal nurse consultant students -
          LAW 121 or LAW 225
LAW  270  Administrative Law*................................3
          Prerequisite: Admission to the legal nurse consultant
          program and LAW 225 and LAW 121
          or admission to the paralegal program
LAW  275  Paralegal Internship I*............................1
          Prerequisite or Corequisite: Paralegal program
          students - LAW 271
LAW  276  Paralegal Internship II*...........................1
          Prerequisite: LAW 275
*Prerequisite/Corequisite required

# Marketing and Management, A.A.S.

Merchandising, marketing and management-related fields have recently experienced tremendous growth and expansion in Johnson County. Surveys indicate that few other areas offer greater opportunity to qualified people. In fact, employment of people in this field is expected to increase faster than the average for all occupations nationwide.

JCCC's marketing and management program prepares you for jobs in this field. Graduates of JCCC's program are ready for entry-level management or sales positions in retail, wholesale or manufacturing and marketing services.

Through marketing and management courses and in the case studies capstone course, you learn the latest in business trends. You also learn the importance of good customer service and the skills needed to deliver that service. The curriculum reflects current industry standards, including an emphasis on personal computer use, interpersonal communications and human relations.

Because all marketing and management students work at least 15 hours a week each semester in a store or business, you can apply what you learn in the classroom to your job. You also can take your work experiences back to the classroom for analysis and a greater understanding of the problems businesses face. You acquire basic merchandising information and learn how to work with people. By integrating coursework and on-the-job experience, you are

given the knowledge, skills and attitudes necessary to reach your career objectives.

(Major Code 2620; CIP Code 52.1401)

Marketing and Management

# Associate of Applied Science Degree

### First Semester

```
MKT  134  Professional Selling...............................3
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
MATH 120  Business Math or higher*...........................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
BUS  121  Introduction to Business...........................3
BUS  230  Marketing..........................................3
MKT  284  Marketing and Management Internship I...............1
          Total Semester Credit Hours.......................16
```

### Second Semester

```
ACCT 111  Small Business Accounting..........................3
          or
ACCT 121  Accounting I.......................................3
MKT  121  Retail Management..................................3
MKT  202  Consumer Behavior.................................3
BUS  150  Business Communications*..........................3
          Prerequisite: ENGL 121
BUS  141  Principles of Management...........................3
MKT  286  Marketing and Management Internship II*............1
          Prerequisite: MKT 284
          Total Semester Credit Hours.......................16
```

### Third Semester

```
MKT  234  Services Marketing*...............................3
          Corequisite: BUS 230
MKT  240  Advertising and Promotion.........................3
ECON 132  Survey of Economics...............................3
          or
ECON 230  Economics I.......................................3
HUM  122  Introduction to Humanities........................3
CIS  124  Introduction to Computer Concepts and Applications...3
          and
          CPCA/CDTP elective.................................1
Note: CPCA 105/106 will not meet this one hour requirement.

          or
          CPCA/CDTP electives...............................4
MKT  288  Marketing and Management Internship III*..........1
          Prerequisite: MKT 286
          Total Semester Credit Hours.......................17
```

### Fourth Semester

```
MKT  221  Sales Management*.................................3
          Prerequisite: MKT 134 or MKT 133
MKT  290  Capstone: Marketing and Management Case Studies*.....3
          Prerequisites: BUS 141 and BUS 230 and MKT 284 and
          MKT 286 or assistant dean's approval
BUS  261  Business Law I....................................3
HIST 141  U.S. History Since 1877...........................3
          Health and/or Physical Education Elective...........1
PHIL 138  Business Ethics...................................1
MKT  289  Marketing and Management Internship IV*...........1
          Prerequisite: MKT 288
          Total Semester Credit Hours.......................15
          TOTAL PROGRAM CREDIT HOURS........................64
*Prerequisite/Corequisite required
```

# Marketing Specialist Entrepreneurship Certificate

The marketing specialist entrepreneurship certificate prepares students to open their own service business providing marketing services to businesses. This certificate is designed to provide the student with basic skills in marketing as well as basic skills in small business development and management.

(Major Code 4250; CIP Code 52.1401)

Marketing and Management

# Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
BUS  230  Marketing..........................................3
MKT  134  Professional Selling...............................3
MKT  121  Retail Management..................................3
ACCT 111  Small Business Accounting..........................3
          or
ACCT 121  Accounting I.......................................3
ENTR 120  Introduction to Entrepreneurship...................2
ENTR 180  Opportunity Analysis...............................2
          Total Semester Credit Hours.......................16
```

### Second Semester

```
MKT  202  Consumer Behavior.................................3
MKT  240  Advertising and Promotion.........................3
ENTR 131  Financial Management for Small Business*..........2
          Prerequisite: ACCT 111 or ACCT 121
ENTR 220  Entrepreneurial Marketing*........................2
          Prerequisite: BUS 230
ENTR 142  Fast Trac Business Plan...........................3
MKT  284  Marketing and Management Internship I.............1
          Total Semester Credit Hours.......................14
          TOTAL PROGRAM CREDIT HOURS........................30
*Prerequisite/Corequisite required
```

Students may be interested in taking additional courses, as noted below, to complement their certificate study. These courses are NOT part of the certificate requirements.

```
ENTR 195  Franchising*......................................3
          Prerequisite: BUS 230
ENTR 160  Legal Issues for Small Business...................2
MKT  234  Services Marketing*...............................3
          Corequisite: BUS 230
```

# Retail Sales Representative Certificate

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

(Major Code 5260; CIP Code 52.1803)

Marketing and Management

# Career Certificate

### Required Courses

```
BUS  230  Marketing..........................................3
FASH 135  Image Management..................................1
MKT  121  Retail Management..................................3
MKT  134  Professional Selling..............................3
MKT  202  Consumer Behavior.................................3
MKT  234  Services Marketing*...............................3
          Corequisite: BUS 230
MKT  284  Marketing and Management Internship I.............1
          TOTAL PROGRAM CREDIT HOURS........................17
*Prerequisite/Corequisite required
```

All 17 credit hours in the retail sales representative certificate program apply to the 35-credit-hour sales and customer service certificate.

# Sales and Customer Relations Certificate

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

All of the 33 credit hours required for the sales and customer relations certificate apply toward JCCC's 64-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.

(Major Code 4920; CIP Code 52.1804)

Marketing and Management

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
MKT  134  Professional Selling...............................3
MKT  121  Retail Management..................................3
FASH 135  Image Management...................................1
MKT  202  Consumer Behavior..................................3
CIS  124  Introduction to Computer Concepts and Applications...3
          or
          CPCA/CDTP electives................................3
MKT  284  Marketing and Management Internship I...............1
          Total Semester Credit Hours.......................17
```

### Second Semester

```
BUS  150  Business Communications*...........................3
          Prerequisite: ENGL 121
MKT  221  Sales Management*..................................3
          Prerequisite: MKT 134 or MKT 133
MKT  234  Services Marketing*................................3
          Corequisite: BUS 230
BUS  230  Marketing.........................................3
MKT  240  Advertising and Promotion.........................3
MKT  286  Marketing and Management Internship II*............1
          Prerequisite: MKT 284
          Total Semester Credit Hours.......................16
          TOTAL PROGRAM CREDIT HOURS........................33
*Prerequisite/Corequisite required
```

# Supervision Management Certificate

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

(Major Code 5280; CIP Code 52.1401)

Marketing and Management

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
BUS  121  Introduction to Business...........................3
BUS  140  Principles of Supervision..........................3
BUS  141  Principles of Management...........................3
BUS  120  Management Attitudes and Motivation................3
          or
BUS  225  Human Relations....................................3
          Total Semester Credit Hours.......................15
```

### Second Semester

```
BUS  230  Marketing.........................................3
BUS  150  Business Communications*...........................3
          Prerequisite: ENGL 121
MKT  202  Consumer Behavior.................................3
MKT  234  Services Marketing*................................3
          Corequisite: BUS 230
MKT  284  Marketing and Management Internship I...............1
          Total Semester Credit Hours.......................13
          TOTAL PROGRAM CREDIT HOURS........................28
*Prerequisite/Corequisite required
```

# Teleservice Representative Certificate

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 64-credit-hour marketing and management associate of applied science degree.

(Major Code 5250; CIP Code 52.0411)

Marketing and Management

## Career Certificate

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
CIS  124  Introduction to Computer Concepts and Applications^...3
          and
          CPCA/CDTP elective.................................1
          or
          CPCA/CDTP electives................................4
Note: CPCA 105 and 106 do not meet requirements.

BUS  121  Introduction to Business...........................3
MATH 120  Business Mathematics*..............................3
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Total Semester Credit Hours.......................13
```

### Second Semester

```
BUS  230  Marketing.........................................3
BUS  150  Business Communications*...........................3
          Prerequisite: ENGL 121
BUS  123  Personal Finance..................................3
BOT  130  Office Systems Concepts...........................3
MKT  202  Consumer Behavior.................................3
MKT  284  Marketing and Management Internship I...............1
```

```
                    Total Semester Credit Hours.........................16
```

### Third Semester

```
MKT  140   Teleservice Communication Skills.....................3
MKT  234   Services Marketing*..................................3
           Corequisite: BUS 230
MKT  286   Marketing and Management Internship II*..............1
           Prerequisite: MKT 284
           Total Semester Credit Hours.........................7
           TOTAL PROGRAM CREDIT HOURS.........................36
*Prerequisite/Corequisite required
NOTE: ^Recommended for students who intend to transfer to a
baccalaureate degree program
```

# Teletrac Certificate

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

(Major Code 5270; CIP Code 52.0411)

Marketing and Management

## Certificate of Completion

### Required Courses

```
BUS  121   Introduction to Business.............................3
MKT  140   Teleservice Communication Skills.....................3
MKT  202   Consumer Behavior....................................3
MATH 120   Business Mathematics*................................3
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
BOT  101   Computerized Keyboarding**...........................1
MKT  284   Marketing and Management Internship I................1
           TOTAL PROGRAM CREDIT HOURS.........................14
*Prerequisite/Corequisite required
**Assessment test may be used to satisfy course requirement
```

# Metal Fabrication Technology, A.A.S.

The welding technology/metal fabrication is a safety-oriented program that provides students the opportunity to learn practical knowledge and skill competencies associated with welding, metal fabrication and related processes. The JCCC welding technology/metal fabrication curriculum is designed to prepare students for various phases and levels of occupational skills. The program also offers currently employed professional welders the opportunity to upgrade their skills by taking advanced welding courses. Day and evening classes are available. Opportunities for those who wish to become welders, cutters and machine operators should be good through the year 2015. The number of qualified (certified) welders graduating from technical schools and community colleges is expected to be in balance with the number of future job openings. Welding technology/metal fabrication offers the service of five welding instructors and two machine tool instructors. Three are American Society (AWS) Certified Welding Inspectors (CWIs) for the inspection and testing of welds. JCCC welding technology professors can customize welding and machine programs to provide course materials utilizing many processes, materials or welding positions that can meet a particular company's needs.

JCCC provides well-equipped laboratories that enable students to receive instruction in blueprint and symbol reading for welders. The welding technology program consists of individual welding processes that allow students time to master each. After students master the Introduction to Welding course, other welding processes can be selected to meet individual needs. They are oxyacetylene welding (OAW) and cutting (OFC), plasma arc cutting (PAC), shielded metal arc welding (SMAW), gas metal arc welding (GMAW), flux cored arc welding (FCAW), gas tungsten arc welding (GTAW), metallurgy

and allied processes. Basic machining includes hands-on training with milling machines, turning lathes, surface grinders, band saws and the use of hand tools. The program is accredited as an American Welding Society Participating Organization in the Training and Testing of Entry Level Welders and the National Center for Construction Education and Research (NCCER). 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 and/or the NCCER National Registry for Construction Workers.

A series of welder related certificates or completion and career certificates are offered, all leading toward the associate of applied science degree.

(Major Code 2460; CIP Code 48.0508)

Metal Fabrication (Welding) Technology

## Associate of Applied Science Degree

### First Semester

```
INDT 125   Industrial Safety....................................3
MFAB 121   Intro to Shielded Metal Arc Welding I (SMAW I)*......4
           Prerequisite or corequisite: MFAB 120 or MFAB 127
ENGL 121   Composition I*.......................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
MATH 133   Technical Mathematics I*.............................4
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
MFAB 127   Welding Processes....................................2
MFAB 180   Blueprint and Symbols Reading for Welders............2
           Total Semester Credit Hours........................18
```

### Second Semester

```
MFAB 125   Advanced Gas and Arc Welding*........................4
           Prerequisite:  MFAB 121
MFAB 240   Metallurgy...........................................2
MFAB 130   Introduction to Gas Metal Arc Welding I (GMAW I)*....4
           Prerequisite or corequisite: MFAB 120 or MFAB 127
ENGL 123   Technical Writing I*.................................3
           Prerequisite: ENGL 121
INDT 155   Workplace Skills.....................................1
           Social Science Elective..............................3
           Total Semester Credit Hours........................17
```

### Third Semester

```
MFAB 160   Gas Tungsten Arc Welding*............................4
           Prerequisite: MFAB 121 or MFAB 130
MFAB 260   Fabrication Practices I*.............................4
           Prerequisite: Metal Fabrication Combination Welder
           Certificates I and II or have earned the Metal
           Fabrication Vocational Certificate or equivalent
           advanced welder training course work to be approved
           by program administrator/facilitator
MFAB 152   Manufacturing Materials and Processes................3
HPER 200   First Aid and CPR....................................2
           Humanities Elective..................................3
           Total Semester Credit Hours........................16
```

### Fourth Semester

```
MFAB 170   Basic Machine Tool Processes.........................4
MFAB 230   Gas Metal Arc Welding II*............................4
           Prerequisite:  MFAB 130
MFAB 261   Fabrication Practices II*............................4
           Prerequisite: Metal Fabrication Welder Certificates I
           and II, or have earned the Metal Fabrication
           Vocational Certificate or equivalent
           advanced welders training coursework to be
           approved by program administrator/facilitator
           Related Electives....................................2
           Total Semester Credit Hours........................14
           TOTAL PROGRAM CREDIT HOURS.........................65
```

### Related Electives

```
AUTO 121   Small Engine Service.................................3
BUS  120   Management Attitudes and Motivation..................3
BUS  140   Principles of Supervision...........................3
BUS  145   Small Business Management...........................3
ENTR 142   Fast Trac Business Plan.............................3
CET  105   Construction Methods................................3
CIS  124   Introduction to Computer Concepts and Applications...3
ELEC 131   Introduction to Sensors and Actuators...............3
ELEC 133   Programmable Controllers............................3
HVAC 167   Sheet Metal Layout and Fabrication..................3
MATH 134   Technical Mathematics II*...........................5
```

```
              Prerequisite: MATH 133 or an equivalent course
              with a grade of "C" or higher
MFAB 140  Maintenance Repair Welding*..........................3
              Prerequisite: MFAB 121 or MFAB 130
MFAB 271  Metal Fabrication Internship*.......................3
              Prerequisite: Program facilitator approval
*Prerequisite/Corequisite required
```

# Metal Fabrication Technology Certificate

The welding/metal fabrication vocational certificate program teaches welding skills in the areas of shielded metal arc welding (SMAW), gas metal arc welding (GMAW), oxyacetylene welding (OAW) and cutting (OFC), plasma arc cutting (PAC), shielded metal arc welding (SMAW), gas metal arc welding (GMAW), and gas tungsten arc welding (GTAW). The students also will receive training in safety and basic blueprint reading. This should give the student the skills needed to successfully enter the field of welding.

(Major Code 4790; 48.0508)

Metal Fabrication (Welding) Technology

## Career Certificate

### Prerequisite/Corequisite for Required Courses

```
MFAB 120  MFAB Tools and Equipment............................2
              or
MFAB 127  Welding Processes..................................2
              or
              approval of career program facilitator
              or
              prior learning credit (contact the Testing Center)
```

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### First Semester

```
INDT 125  Industrial Safety..................................3
MFAB 180  Blueprint and Symbols Reading for Welders...........2
MFAB 121  Intro to Shielded Metal Arc Welding I (SMAW I)*......4
              Prerequisite or corequisite: MFAB 120 or MFAB 127
              Total Semester Credit Hours..........................9
```

### Second Semester

```
MFAB 125  Advanced Gas and Arc Welding*.......................4
              Prerequisite:  MFAB 121
              or
MFAB 140  Maintenance Repair Welding*.........................3
              Prerequisite: MFAB 121 or MFAB 130
MFAB 130  Introduction to Gas Metal Arc Welding I (GMAW I)*....4
              Prerequisite or corequisite: MFAB 120 or MFAB 127
MFAB 160  Gas Tungsten Arc Welding*...........................4
              Prerequisite: MFAB 121 or MFAB 130
              Total Semester Credit Hours.....................11-12
```

### Third Semester

```
MFAB 230  Gas Metal Arc Welding II*...........................4
              Prerequisite:  MFAB 130
INDT 155  Workplace Skills...................................1
              Total Semester Credit Hours..........................5
              TOTAL PROGRAM CREDIT HOURS.......................25-26
*Prerequisite/Corequisite required
```

# Combination Welder I Certificate

This certificate is the second step to the achievement of the MFAB A.A.S. degree. It is 11 college credit hours of general basic knowledge in welding.

The Combination Welder I certificate could be a completion point, for employment as a combination welder. This certificate verifies that the student has an understanding of several welding and cutting processes, and is entry level skilled with two basic welding processes, shielded metal arc welding (SMAW) and gas metal welding (GMAW). The student should have an understanding of basic metallurgy or welding symbols and blue print reading for welders.

Students are encouraged to pursue other welding certificates that will enhance their knowledge of welding and metal fabrication.

(Major Code 4600; CIP Code 48.0508)

Metal Fabrication (Welding) Technology

## Certificate of Completion

### Prerequisite/Corequisite for Required Courses

```
MFAB 120  MFAB Tools and Equipment............................2
              or
MFAB 127  Welding Processes..................................2
              or
              approval of career program facilitator
              or
              prior learning credit (contact the Testing Center)
```

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

### Required Courses

```
MFAB 121  Intro to Shielded Metal Arc Welding I (SMAW I)*......4
              Prerequisite or corequisite: MFAB 120 or MFAB 127
MFAB 130  Introduction to Gas Metal Arc Welding I (GMAW I)*....4
              Prerequisite or corequisite: MFAB 120 or MFAB 127
MFAB 240  Metallurgy........................................2
INDT 155  Workplace Skills...................................1
              TOTAL PROGRAM CREDIT HOURS.........................11
*Prerequisite/Corequisite required
```

# Combination Welder II Certificate

This certificate is the third step to achievement of the MFAB A.A.S. degree. It is 14 college credit hours of advanced welding knowledge.

Entry into this vocational certificate will depend on the applicant's past experience as a welder and on the prerequisites of course materials.

This certificate is a completion point if an advanced combination welder with entry level skills in several welding processes is needed. Both certificates, general basic welding and the combination welder I, must be completed before the combination welder II can be taken.

This certificate verifies that the student has entry level skills in at least four main welding processes, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding I (GMAW), Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding-S (GMAW-S) and aluminum wire and stainless steel. The student should have successfully completed work place skills. Blue print and symbol reading for welders and/or metallurgy.

(Major Code 4610; CIP Code 48.0508)

Metal Fabrication (Welding) Technology

## Certificate of Completion

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

**Required Courses**

```
MFAB 125  Advanced Gas and Arc Welding*.......................4
          Prerequisite:  MFAB 121
MFAB 160  Gas Tungsten Arc Welding*...........................4
          Prerequisite: MFAB 121 or MFAB 130
MFAB 180  Blueprint and Symbols Reading for Welders...........2
          or
MFAB 240  Metallurgy..........................................2
MFAB 230  Gas Metal Arc Welding II*...........................4
          Prerequisite:  MFAB 130
          TOTAL PROGRAM CREDIT HOURS.........................14
*Prerequisite/Corequisite required
```

# Combination Welder/Machinist I Certificate

This certificate is the fourth step to the achievement of the MFAB A.A.S. degree. It is 15 college credit hours with an emphasis on machine tool materials and processes.

Completion of this vocational certificate will depend on the applicants past experience as a welder, and/or machinist, and on the prerequisites of course materials and successfully completing the basic machine tool processes class.

The advanced combination welder/machinist provides entry level skills in several welding processes. Both certificates, general basic welding and combination welder I, must be completed before starting this certifficate. Combination Welder II is optional welding training and can be taken before or after this certificate is pursued.

This vocational certificate verifies that the student understands and has entry level skills with several basic machines and processes welding and cutting skills needed for entry level repair welding with multiple welding processes and machine tool skills.

The student should also have an understanding of metallurgy and blueprint and symbols for welders.

(Major Code 4620; CIP Code 48.0508)

Metal Fabrication (Welding) Technology

## Certificate of Completion

**Prerequisite/Corequisite for Required Courses**

```
MFAB 120  MFAB Tools and Equipment............................2
          or
MFAB 127  Welding Processes..................................2
          or
          approval of career program facilitator
          or
          prior learning credit (contact the Testing Center)
```

**Suggested/Sample Course Sequence**

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

**First Semester**

```
MFAB 121  Intro to Shielded Metal Arc Welding (SMAW I)*......4
          Prerequisite or corequisite: MFAB 120 or MFAB 127
          or
MFAB 130  Introduction to Gas Metal Arc Welding I (GMAW I)*....4
          Prerequisite or corequisite: MFAB 120 or MFAB 127
MFAB 152  Manufacturing Materials and Processes...............3
MFAB 170  Basic Machine Tool Processes........................4
INDT 155  Workplace Skills....................................1
          Total Semester Credit Hours........................12
```

**Second Semester**

```
MFAB 140  Maintenance Repair Welding*.........................3
          Prerequisite: MFAB 121 or MFAB 130
          Total Semester Credit Hours.........................3
          TOTAL PROGRAM CREDIT HOURS.........................15
```

# General Basic Welding Certificate

This certificate is the recommended first step to employment in the welding field. It is 9 college credit hours of general basic knowledge in welding.

The general basic welding certificate verifies that the student can demonstrate several welding and cutting processes. It is designed for automotive students, artists, hobby welders or students interested in exploring welding as a possible career.

(Major Code 4590; CIP Code 48.0508)

Metal Fabrication (Welding) Technology

## Certificate of Completion

**Required Courses**

```
MFAB 127  Welding Processes..................................2
MFAB 121  Intro to Shielded Metal Arc Welding I (SMAW I)*......4
          Prerequisite or corequisite: MFAB 120 or MFAB 127
          or
MFAB 130  Introduction to Gas Metal Arc Welding I (GMAW I)*....4
          Prerequisite or corequisite: MFAB 120 or MFAB 127
MFAB 180  Blueprint and Symbols Reading for Welders...........2
          or
MFAB 240  Metallurgy..........................................2
INDT 155  Workplace Skills....................................1
          TOTAL PROGRAM CREDIT HOURS..........................9
*Prerequisite/Corequisite required
```

# Introduction to Manufacturing Certificate

This certificate exposes the students to the manufacturing industry. Topics covered include manufacturing equipment, processes, materials and safety.

Major Code 4320

Metal Fabrication (Welding) Technology

## Certificate of Completion

**Suggested/Sample Course Sequence**

```
The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.
```

**Required Courses**

```
MFAB 120  MFAB Tools and Equipment............................2
MFAB 152  Manufacturing Materials and Processes...............3
INDT 125  Industrial Safety...................................3
CPCA 105  Introduction to Personal Computers: Windows.........1
INDT 155  Workplace Skills....................................1
MFAB 271  Metal Fabrication Internship*.......................3
          Prerequisite: Program facilitator approval
          TOTAL PROGRAM CREDIT HOURS.........................13
```

# Welder Fabricator Advanced Certificate

This certificate is the capstone for the MFAB program. It will allow all previous certificate completers along with current degree seeking students to

continue their education as a professional metal fabricator-certified welder, and American Welding Society (AWS) certified welder. Coursework will focus on modern welding fabrication techniques and practices used in the manufacturing and installation of structural steel, piping systems, tank and vessel systems, and miscellaneous welded mechanical items. Students will work in teams as workers do on the job. All teams will work from discipline specific drawings to manufacture and assemble a mock building section using acquired skills. Fabrication Practices I focuses on structural steel and Fabrication Practices II focuses on tanks and vessels.

Completers with this certificate may elect to test to the AWS Entry Level I and Level II Welder program and the National Center for Construction Education and Research (NCCER) accreditation and national registry.

(Major Code: 4990; CIP Code 48.0508)

Metal Fabrication (Welding) Technology

# Career Certificate

### Prerequisite

Students must have completed MFAB Combination
Welder certificates I & II or have earned the MFAB career
certificate or equivalent advanced welder training course
work to be approved by program administrator/facilitator.

### Suggested/Sample Course Sequence

The sequence taken by the student may vary depending
on prerequisites, course availability, and personal/
professional responsibilities.

### First Semester

```
MFAB 260  Fabrication Practices I*............................4
          Prerequisite: Metal Fabrication Combination Welder
          Certificates I and II or have earned the Metal
          Fabrication Vocational Certificate or equivalent
          advanced welder training course work to be approved
          by program administrator/facilitator
HVAC 167  Sheet Metal Layout and Fabrication..................3
CET  105  Construction Methods................................3
          Total Semester Credit Hours.......................10
```

### Second Semester

```
INDT 125  Industrial Safety...................................3
MFAB 261  Fabrication Practices II*...........................4
          Prerequisite: Metal Fabrication Welder Certificates I
          and II, or have earned the Metal Fabrication
          Vocational Certificate or equivalent
          advanced welders training coursework to be
          approved by program administrator/facilitator
          Total Semester Credit Hours........................7
          TOTAL PROGRAM CREDIT HOURS........................17
*Prerequisite/Corequesite required
```

---

# Nursing - Registered Nurse, A.A.S.

Nursing is a rewarding and challenging career with an optimistic employment future. JCCC's registered nurse program is fully accredited by the National League for Nursing Accrediting Commission and Kansas State Board of Nursing. It is designed with the assistance of a community advisory committee composed of men and women who work in the nursing health care fields and are aware of the requirements for a successful nursing career. Our faculty are well qualified and experienced in the practice and teaching of nursing.

Students receive clinical practice in a variety of settings, including hospitals, long-term care facilities and clinics. Experiences are offered in maternal child nursing, pediatric nursing, operating room nursing, medical-surgical nursing, mental health nursing and gerontology.

A registered nurse with an associate's degree is a skilled health care provider who administers nursing care directly to patients and their families in a variety of settings. The job outlook is very positive. Employment of registered nurses

is expected to grow faster than the average for all occupations.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

Students will be assessed fees for content mastery and assessment exams. These fees will be collected each semester as part of the tuition and fee structure and are non-refundable.

(Major Code 235A; CIP Code 51.1601)

Nursing

# Associate of Applied Science Degree

Note: Kansas CNA certification is required for
application to the nursing program.

### Prerequisites: Prior to enrolling in NURS 124

```
CHEM 122  Principles of Chemistry.............................5
MATH 116  Intermediate Algebra or Higher*....................3
          Prerequisite: MATH 115 with a grade of "C" or higher
          or appropriate score on the math assessment test
          Total Semester Credit Hours........................8
```

### First Semester

```
BIOL 144  Human Anatomy and Physiology........................5
          or
BIOL 140  Human Anatomy......................................4
          AND
BIOL 225  Human Physiology*..................................4
          Prerequisites: CHEM 122 and either BIOL 140
          or BIOL 144
PSYC 130  Introduction to Psychology..........................3
NURS 124  Foundations of Nursing*.............................9
          Prerequisites: Admission to the Nursing Program and
          current certification in Kansas as
          Certified Nursing Assistant (CNA) and
          Cardiopulmonary Resuscitation Certification (CPR)
          for Health Care Providers and CHEM 122 and MATH 116
          or higher level MATH course and
          corequisite: BIOL 144 and PSYC 130
          Total Semester Credit Hours....................17-20
```

### Second Semester

```
          Communications Elective............................3
PSYC 218  Human Development*..................................3
          Prerequisite: PSYC 130
NURS 126  Nursing Care of the Adult: Health Alterations*......9
          Prerequisites: BIOL 144 and PSYC 130 and NURS 124
          and prerequisite or corequisite: PSYC 218
          Total Semester Credit Hours.......................15
```

### Summer

```
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Total Semester Credit Hours........................3
```

### Third Semester

```
NURS 228  Nursing Care of the Childbearing Family*............5
          Prerequisites: ENGL 121 and PSYC 218 and NURS 126
          Corequisites: BIOL 230 and either SOC 122 or SOC 125
          and NURS 230
NURS 230  Nursing Care of Children*...........................5
          Prerequisites: ENGL 121 and PSYC 218 and NURS 126
          Corequisites: BIOL 230 and SOC 122 or SOC 125 and
          NURS 228
SOC  122  Introduction to Sociology...........................3
          or
SOC  125  Social Problems.....................................3
BIOL 230  Microbiology*.......................................3
          Prerequisite: CHEM 122 or
          one year of high school chemistry
          Total Semester Credit Hours.......................16
```

### Fourth Semester

```
NURS 232  Complex Patient Care Management*....................9
          Prerequisites: NURS 228 and NURS 230
          Humanities Elective................................3
          Health and/or Physical Education Elective..........1
          Total Semester Credit Hours.......................13
```

```
        TOTAL PROGRAM CREDIT HOURS.......................72-75
*Prerequisite/Corequisite required
```

---

# PN to RN Transition, A.A.S

The LPN to RN bridge program provides those licensed practical nurses wanting to become registered nurses the opportunity to do so. Admission to the program is based on academic criteria.

All licensed practical nurses making application must have completed required general education courses before being accepted.

Following successful completion of the summer transition courses, students are admitted to the third semester of the program. At least 10 openings are available each year. Successful completion of the third and fourth semesters of the program allows the graduate to apply to take the national licensing examination for RNs. The application deadline is Jan. 15.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 235A; CIP Code 51.1601)

Nursing

## Associate of Applied Science Degree

```
Note: LPN to RN Transition
Students must successfully complete NURS 136 and
NURS 228 and NURS 230 before advanced standing credits
for NURS 124 and NURS 126 will be granted.
```

### Prerequisite: Prior to enrolling in NURS 228 and NURS 230

```
BIOL 144   Human Anatomy and Physiology.........................5
CHEM 122   Principles of Chemistry..............................5
ENGL 121   Composition I*.......................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
PSYC 130   Introduction to Psychology...........................3
PSYC 218   Human Development*...................................3
           Prerequisite: PSYC 130
           Communications Elective..............................3
MATH 116   Intermediate Algebra or Higher*.....................3
           Prerequisite: MATH 115 with a grade of "C" or higher
           or appropriate score on the math assessment test
           Total Prerequisite Credit Hours.....................25
```

### Summer

```
NURS 136   LPN-RN Transition Course*............................6
           Prerequisites: Completion of LPN program, Current
           Cardiopulmonary Resuscitation Certificate (CPR) for
           Health Care Providers and CHEM 122 and MATH 116 or
           higher and either BIOL 144 or BIOL 140
           and BIOL 225 and ENGL 121 and
           PSYC 130 and PSYC 218
Note: NURS 136 is not added into the total program hours.

           Total Semester Credit Hours.........................6
```

### Third Semester

```
NURS 228   Nursing Care of the Childbearing Family*.............5
           Prerequisites: ENGL 121 and PSYC 218 and NURS 126
           Corequisites: BIOL 230 and either SOC 122 or SOC 125
           and NURS 230
NURS 230   Nursing Care of Children*............................5
           Prerequisites: ENGL 121 and PSYC 218 and NURS 126
           Corequisites: BIOL 230 and SOC 122 or SOC 125 and
           NURS 228
SOC  122   Introduction to Sociology............................3
           or
SOC  125   Social Problems......................................3
BIOL 230   Microbiology*........................................3
           Prerequisite: CHEM 122 or
           one year of high school chemistry
           Total Semester Credit Hours.........................16
```

### Fourth Semester

```
NURS 232   Complex Patient Care Management*.....................9
           Prerequisites: NURS 228 and NURS 230
           Humanities Elective..................................3
           Health and/or Physical Education Elective...........1
           Total Semester Credit Hours.........................13
           TOTAL PROGRAM CREDIT HOURS.........................72
*Prerequisite/Corequisite required
```

```
Note: Total Program Hours include 18 hours APL
for NURS 124/126
```

---

# Practical Nursing Day Certificate

The health care industry needs informed, skilled and dependable workers to complete the care team. The licensed practical nurse assists registered nurses and physicians in caring for physically or mentally ill clients. In the long-term care setting and home health, the LPN may supervise other nursing care personnel.

Practical nursing offers employment in many health care settings. Long-term care, physicians' offices, home care, hospitals and clinics provide opportunity for the practical nurse to administer care to a variety of clients. Job outlook for the Kansas City area is good, with an average starting salary of $35,152-$37,400.

Upon successful completion of the program, graduates are eligible to apply to take the Practical Nursing Licensing exam. After completing the practical nursing program, LPNs may continue their education to become a registered nurse.

The program, which can be completed in 10 months, provides approximately 1,100 hours of instruction. This includes classroom and clinical laboratory experiences in many areas of nursing. The application deadline is March 15, 2009 for the August 2009 start date. Admission to this program requires successful completion of several prerequisites.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 366A; CIP Code 51.1613)

Health Occupations

## Career Certificate

```
New Requirement Beginning FALL 2009--
All students will be required to take PSYC 218-Human
Development before the second semester.  Students
accepted into the program beginning Fall 2009 may
take PSYC 218 during the first semester.
```

### Prerequisite for Required Courses

```
Kansas CNA certificate & admission to PN program
BIOL 144   Human Anatomy and Physiology.........................5
PSYC 130   Introduction to Psychology...........................3
MATH 111   Fundamentals of Mathematics*........................3
           Prerequisite: Appropriate score on the math
           assessment test
```

### Fall Semester

```
AVPN 115   Nursing I*..........................................22
           Prerequisites: CNA certification
           and BIOL 144 and PSYC 130 and MATH 111
           and admission to the practical nursing program
```

### Spring Semester

```
AVPN 117   Nursing II*.........................................22
           Prerequisite:  AVPN 115
           TOTAL PROGRAM CREDIT HOURS.........................44
*Prerequisite/Corequisite required
```

# Practical Nursing Evening Weekend Certificate

The health care industry needs informed, skilled and dependable workers to complete the care team. The licensed practical nurse assists registered nurses and physicians in caring for physically or mentally ill clients. In the long-term care setting and home health, the LPN may supervise other nursing care personnel.

Practical nursing offers employment in many health care settings. Long-term care, physicians' offices, home care, hospitals and clinics provide opportunity for the practical nurse to administer care to a variety of clients. Job outlook for the Kansas City area is good, with an average starting salary of $35,152-$37,400.

Upon successful completion of the program, graduates are eligible to apply to take the Practical Nursing Licensing exam. After completing the practical nursing program, LPNs may continue their education to become a registered nurse.

The program, which can be completed in 18 months, provides approximately 1,100 hours of instruction. This includes classroom and clinical laboratory experiences in many areas of nursing. Classes begin in August or January depending on the 18 month cycle. Application deadlines are as follows: March 15, 2009 for August 2009 start date and October 1, 2010 for the January 2011 start date. Admission to this program requires successful completion of several prerequisites.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 368A; CIP Code 51.1613)

Health Occupations

## Career Certificate

```
New Requirement Beginning FALL 2009--
All students will be required to take PSYC 218-Human
Development before the second semester.  Students
accepted into the program beginning Fall 2009 may
take PSYC 218 during the first semester.
```

### Prerequisites for Required Courses

```
Kansas CNA certificate & admission to PN program
BIOL 144   Human Anatomy and Physiology.......................5
PSYC 130   Introduction to Psychology..........................3
MATH 111   Fundamentals of Mathematics*........................3
           Prerequisite: Appropriate score on the math
           assessment test
```

### Fall Semester

```
AVPN 115   Nursing I*.........................................22
           Prerequisites: CNA certification
           and BIOL 144 and PSYC 130 and MATH 111
           and admission to the practical nursing program
```

### Spring Semester

```
AVPN 117   Nursing II*........................................22
           Prerequisite:  AVPN 115
           TOTAL PROGRAM CREDIT HOURS.........................44
*Prerequisite/Corequisite required
```

# Polysomnography/Sleep Technology, A.A.S.

Polysomnographic technologists perform sleep diagnostics working in conjunction with physicians to provide comprehensive clinical evaluations that are required for diagnosis of sleep disorders. By applying non-invasive monitoring equipment, the technologist simultaneously monitors EEG (electroencephalography), EOG (electro-occulography), EMG (electromyography), ECG (electrocardiography), multiple breathing variables and blood oxygen and carbon dioxide levels during sleep. Interpretive knowledge is required to provide sufficient monitoring diligence to recording parameters and the clinical events observed during sleep. Technologists provide supportive services related to the ongoing treatment of sleep related problems. The professional realm of this support includes guidance on the use of devices for the treatment of breathing problems during sleep and helping individuals develop sleeping habits that promote good sleep hygiene. PSG technologists are employed in Sleep Disorders Centers and Labs, which may be located in medical centers, hospitals, or clinic/office settings.

Application for program accreditation will be made to the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Graduates of the program will enter the field as Polysomnographic Technicians and be prepared to sit the national exam given by the Board of Registered Polysomnographic Technologists (BRPT) to gain the Registered Polysomnographic Technologist (RPSGT) credential.

This is a selective admission program with limited enrollment. Prospective students are encouraged to visit the program Web site at http://www.jccc.net/sleeptechnology or to contact JCCC program personnel for additional information and application materials at 913-469-7655.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

(Major Code 236A; CIP Code 51.0999)

## Associate of Applied Science Degree

```
Prior to beginning professional courses
MATH 116   Intermediate Algebra or higher*....................3
           Prerequisite: MATH 115 with a grade of "C" or higher
           or appropriate score on the math assessment test
CHEM 122   Principles of Chemistry............................5
BIOL 144   Human Anatomy and Physiology.......................5
           or
BIOL 140   Human Anatomy......................................4
           and
BIOL 225   Human Physiology*..................................4
           Prerequisites: CHEM 122 and either BIOL 140
           or BIOL 144
           Total Semester Credit Hours....................13-16
```

### First Semester

```
ENGL 121   Composition I*.....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
AAC  130   Medical Terminology................................3
           or
           satisfactory completion of a health related degree or
           certificate
EMS  121   CPR I - Basic Life Support for Healthcare Provider...1
           or
           current AHA BLS Health Care Provider Certification AND
           Health and/or Physical Education Elective............1
PSG  125   Introduction to Sleep Medicine*....................4
           Prerequisite: Admission to the polysmonography
           program Corequisite: Current AHA BLS Health Care
           Provider Certification
PSG  130   Physiology of Sleep Medicine*......................3
           Prerequisite: Admission to the polysomnography
           Total Semester Credit Hours....................11-14
```

**Second Semester**

```
PSG  140  Sleep Disorders*...................................4
          Prerequisites: PSG 125 with a grade of "C" or higher
          and PSG 130 with a grade of "C" or higher and
          Corequisite: Current AHA BLS for Health Care
PSG  145  Sleep Study Instrumentation*.......................4
          Prerequisites: PSG 125 with a grade of "C" or higher
          and PSG 130 with a grade of "C" or higher
PSG  150  Polysomnography I*.................................4
          Prerequisites: PSG 125 with a grade of "C" or higher
          and PSG 130 with a grade of "C" or higher and
          Prerequisites or Corequisites: PSG 145 with a grade
          of "C" or higher and PSG 140 with a grade of "C" or
          Communications Elective...........................3
          Total Semester Credit Hours......................15
```

**Third Semester**

```
PSG  245  Polysomnography Clinical I*........................6
          Prerequisites: PSG 140 with a grade of "C" or higher
          and PSG 145 with a grade of "C" or higher and
          PSG 150 with a grade of "C" or higher and
          Corequisites: Current AHA BLS Health Care Provider
          Certification
PSG  250  Polysomnography II*................................4
          Prerequisite: PSG 150 with a grade of "C" or higher
          Social Science/Economics Elective.................3
          Total Semester Credit Hours......................13
```

**Fourth Semester**

```
PSG  255  Polysomnography Clinical II*.......................6
          Prerequisites: PSG 245 with a grade of "C" or higher
          and PSG 250 with a grade of "C" or higher and
          Corequisites: Current AHA BLS Health Care Provider
          Certification
PSG  265  Polysomnography Capstone*..........................3
          Prerequisite or Corequisite: PSG 255 with a grade of
          "C" or higher
          Humanities/Art Elective...........................3
          Total Semster Credit Hours.......................12
          TOTAL PROGRAM CREDIT HOURS....................64-70
*Prerequisite/Corequisite required
```

# Professional Paraeducator Program, A.A.

The Professional Paraeducator Program is designed to recruit, educate and place well-qualified personnel who will function as effective partners to students, teachers, administrators and parents.

(Major Code 2390; CIP Code 13.1501)

## Associate of Arts

```
Students graduating with an Associate of Arts degree or an
Associate of Science degree must complete an approved
cultural diversity course.  Some of these courses are able
to meet both a diversity requirement and a general education
requirement.
```

**First Semester**

```
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
EDUC 121  Introduction to Teaching*..........................3
          Note: For possible future elementary/secondary
          educators
PSYC 130  Introduction to Psychology.........................3
          Humanities Elective...............................3
          Science course with Lab.........................4-5
          Total Semester Credit Hours...................16-17
```

**Second Semester**

```
ENGL 122  Composition II*....................................3
          Prerequisite: ENGL 121
EDUC 220  Survey of the Exceptional Child....................3
PSYC 218  Human Development*.................................3
          Prerequisite: PSYC 130
MATH 171  College Algebra or higher*.........................3
          Prerequisite: MATH 116 with a grade of "C" or higher
          or MATH 134 with a grade of "C" or higher
```

```
          or appropriate score on the math assessment test
          Note: Not available to students with credit in
          MATH 173
          Social Science/Economics Elective.................3
          PSYC Elective.....................................3
          (Note: Any PSYC course will meet this
          requirement not already required in program.)
          Total Semester Credit Hours......................18
```

**Third Semester**

```
EDUC 243  Issues and Skills for Paraeducators................3
PSYC 225  Educational Psychology*............................3
          Prerequisite: PSYC 130
          Education Elective................................3
          Humanities Elective...............................3
          Science and/or Mathematics Elective*..............3
          Total Semester Credit Hours......................15
```

**Fourth Semester**

```
EDUC 235  Parenting*.........................................2
          Prerequisite or corequisite:  PSYC 215 or PSYC 218 or
          EDUC 270
PSYC 215  Child Development*.................................3
          Prerequisite: PSYC 130
EDUC 246  Multicultural Issues in Education..................2
          Communications Elective...........................3
          Social Science/Economics Elective.................3
          Health and/or Physical Education Elective.........2
          (Recommend HPER 200-First Aid and CPR)
          Total Semester Credit Hours......................15
          TOTAL PROGRAM CREDIT HOURS....................64-65
```

**Education Electives**

```
EDUC 210  Creative Experiences for Young Children*...........3
          Prerequisites:  EDUC 130 and one of the following:
          PSYC 215 or PSYC 218 or EDUC 270
EDUC 240  School-Age Programs and Curriculum I*..............3
          Prerequisite: EDUC 130
EDUC 245  School-Age Programs and Curriculum II*.............3
          Prerequisite: EDUC 240
EDUC 250  Child Health, Safety and Nutrition*................3
```

```
*Prerequisite/Corequisite required
```

# Railroad Electronics, A.A.S.

The associate of applied science in railroad electronics degree program is a restricted access program for those students enrolled in the railroad electronics certificate program who wish to progress to a degree. The certificate program has been an active program on the JCCC campus since 1993, with a total enrollment to date of almost 400 students.

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

Electronics technology influences almost every aspect of modern life. Skilled electronics technicians are needed to support growth in the railroad industry. These technicians must be able to fabricate, test, install, operate and maintain highly technical systems, such as communications systems networks, medical delivery systems, computers and computer networks, and industrial process control systems. The program focuses on the underlying principles of electronic devices used extensively in railroad signaling, circuit analysis and digital electronics and will provide a broad systems view of electronics.

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

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

For information visit the National Academy of Railroad Sciences

(Major Code 2820; CIP Code 49.0299)

## Associate of Applied Science Degree

### First Semester

```
RREL 180  Introduction to Railroad Electronics*................1
          Prerequisites: Approval of the railroad training
          administrator and the JCCC program assistant dean
RREL 181  Circuit Analysis DC/AC*............................6
          Prerequisites: RREL 180 and the approval of the
          railroad training administrator and the
          JCCC program assistant dean
ENGL 121  Composition I*....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Science and/or Mathematics Elective*..............3
          Elective..........................................3
          Total Semester Credit Hours......................16
```

### Second Semester

```
RREL 182  Semiconductor Devices and Circuits*...............6
          Prerequisites: RREL 181 and the
          approval of the railroad training administrator
          and the JCCC program assistant dean
RREL 183  Digital Techniques*...............................6
          Prerequisites: RREL 182
          and approval of the railroad training administrator
          and the JCCC program assistant dean
          Humanities Elective...............................3
          Total Semester Credit Hours......................15
```

### Third Semester

```
RREL 284  Electronic Communications*........................6
          Prerequisites: RREL 183
          and approval of the railroad training director
          and the JCCC program assistant dean
          Social Science/Economics Elective.................3
          Technical Electives...............................6
          Total Semester Credit Hours......................15
```

### Fourth Semester

```
RREL 285  Microprocessor Techniques*........................6
          Prerequisites: RREL 183
          and approval of the railroad training director
          and the JCCC program assistant dean
RREL 286  Applied Microprocessors*..........................2
          Prerequisites: RREL 285
          and approval of the railroad training director
          and the JCCC program assistant dean
          Health and/or Physical Education Elective.........1
          Communications Elective...........................3
          Technical Electives...............................6
          Total Semester Credit Hours......................18
          TOTAL PROGRAM CREDIT HOURS.......................64
```

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

### Technical Electives

```
ASTR 120  Fundamentals of Astronomy.........................3
AUTO 121  Small Engine Service..............................3
AUTO 122  Introduction to Automotive Glass..................3
AUTO 125  Introduction to Automotive Shop Practices.........3
BOT  101  Computerized Keyboarding..........................1
BOT  103  Business English..................................3
BOT  105  Keyboarding and Formatting I......................3
BOT  115  Electronic Calculators............................1
BOT  150  Records Management................................3
CET  105  Construction Methods..............................3
CET  120  Engineered Plumbing Systems I.....................3
CET  122  Engineered Plumbing Systems II....................3
CET  129  Construction Management...........................3
CPCA 105  Introduction to Personal Computers: Windows.......1
CPCA 106  Introduction to Personal Computers: Macintosh.....1
CPCA 128  PC Applications: MS Office........................3
CIS  124  Introduction to Computer Concepts and Applications.3
CIS  134  Programming Fundamentals..........................4
DRAF 120  Introduction to Drafting..........................2
DRAF 123  Interpreting Machine Drawings*....................2
          Prerequisite or corequisite: DRAF 120
          or approval of the program assistant dean
DRAF 129  Interpreting Architectural Drawings...............2
DRAF 132  Introduction to AutoCAD LT........................3
DRAF 140  Topics in CAD I...................................3
DRAF 238  Architectural Drafting*...........................3
          Prerequisites: DRAF 129 and
```

```
          DRAF 230
ELEC 120  Introduction to Electronics.......................3
ELEC 126  Microcomputer A+ Preparation......................4
ELEC 125  Digital Electronics I.............................4
ELEC 131  Introduction to Sensors and Actuators.............3
ELEC 133  Programmable Controllers..........................3
ELEC 150  Introduction to Telecommunications................3
ELEC 185  LAN Cabling and Installation......................3
ENGR 121  Engineering Orientation...........................2
GEOS 130  General Geology...................................5
GEOS 140  Physical Geography................................3
GEOS 145  World Regional Geography..........................3
HVAC 125  Energy Alternatives...............................3
HVAC 143  Reading Blueprints and Ladder Diagrams............2
HVAC 146  Plumbing Systems Applications.....................3
HVAC 150  Refrigerant Management and Certification..........3
HVAC 155  Workplace Skills..................................1
HVAC 167  Sheet Metal Layout and Fabrication................3
INDT 125  Industrial Safety.................................3
INDT 140  Quality Improvement Using SPC.....................2
INDT 155  Workplace Skills..................................1
IT   200  Networking Technologies...........................3
IT   205  Implementing Windows Client.......................3
MFAB 121  Intro to Shielded Metal Arc Welding I (SMAW I)*...4
          Prerequisite or corequisite: MFAB 120 or MFAB 127
MFAB 152  Manufacturing Materials and Processes.............3
MFAB 170  Basic Machine Tool Processes......................4
MFAB 180  Blueprint and Symbols Reading for Welders.........2
MFAB 240  Metallurgy........................................2
RRT  120  History of Railroading............................3
RRT  121  Railroad Technical Careers........................3
RRT  150  Railroad Operations...............................3
RRT  165  Railroad Safety, Quality and Environment..........3
*Prerequisite/Corequisite required
```

# Railroad Electronics 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 BNSF training director and JCCC division administrator.

For information visit the National Academy of Railroad Sciences

(Major Code 4540; CIP Code 49.0299)

## Career Certificate

### Required Courses

```
RREL 180  Introduction to Railroad Electronics*................1
          Prerequisites: Approval of the railroad training
          administrator and the JCCC program assistant dean
RREL 181  Circuit Analysis DC/AC*..............................6
          Prerequisites: RREL 180 and the approval of the
          railroad training administrator and the
          JCCC program assistant dean
RREL 182  Semiconductor Devices and Circuits*..................6
          Prerequisites: RREL 181 and the
          approval of the railroad training administrator
          and the JCCC program assistant dean
RREL 183  Digital Techniques*..................................6
          Prerequisites: RREL 182
          and approval of the railroad training administrator
          and the JCCC program assistant dean
RREL 284  Electronic Communications*...........................6
          Prerequisites: RREL 183
          and approval of the railroad training director
          and the JCCC program assistant dean
RREL 285  Microprocessor Techniques*...........................6
          Prerequisites: RREL 183
          and approval of the railroad training director
          and the JCCC program assistant dean
RREL 286  Applied Microprocessors*.............................2
          Prerequisites: RREL 285
          and approval of the railroad training director
          and the JCCC program assistant dean
          TOTAL PROGRAM CREDIT HOURS..........................33
*Prerequisite/Corequisite required
```

# Railroad Carman Welding Certificate

JCCC's railroad industrial technology certificate program is OPEN ONLY TO BNSF RAILWAY EMPLOYEES.

Enrollment is subject to the approval of the BNSF Railway training director and JCCC division administrator.

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 corded arc welding. Students should also be able to complete qualification tests according to industry standards.

(Major Code 4560; CIP Code 49.0299)

Railroad Welder Training Program

## Certificate of Completion

### Required Courses

```
RRIT 127   Welding Processes*...................................2
           Prerequisites: Approval of the BNSF training director
           and the JCCC program assistant dean
RRIT 140   Structural Quality SMAW*............................3
           Prerequisites: RRIT 127
           or approval of the BNSF training director
           and the JCCC program assistant dean
RRIT 141   Structural Quality GMAW*............................3
           Prerequisites: RRIT 127
           or approval of the BNSF training director
           and the JCCC program assistant dean
           TOTAL PROGRAM CREDIT HOURS..........................8
*Prerequisite/Corequisite required
```

# Railroad Machinist Welding Certificate

JCCC's railroad industrial technology certificate program is OPEN ONLY TO BNSF RAILWAY EMPLOYEES.

Enrollment is subject to the approval of the BNSF Railway training director and JCCC division administrator.

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 complete qualification tests according to industry standards.

(Major Code 4570; CIP Code 49.0299)

Railroad Welder Training Program

## Certificate of Completion

### Required Courses

```
RRIT 127   Welding Processes*...................................2
           Prerequisites: Approval of the BNSF training director
           and the JCCC program assistant dean
RRIT 140   Structural Quality SMAW*............................3
           Prerequisites: RRIT 127
           or approval of the BNSF training director
           and the JCCC program assistant dean
           TOTAL PROGRAM CREDIT HOURS..........................5
*Prerequisite/Corequisite required
```

# Railroad Structural Welding Certificate

JCCC's railroad industrial technology certificate program is OPEN ONLY TO BNSF RAILWAY EMPLOYEES.

Enrollment is subject to the approval of the BNSF Railway training director and JCCC division administrator.

This certificate is designed to address the training needs for railway structural welders. Upon successful completion of this program, you should be able to demonstrate safe operating 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.

(Major Code 4530; CIP Code 49.0299)

Railroad Welder Training Program

## Certificate of Completion

### Required Courses

```
RRIT 122   Elements of Welding*...............................3
           Prerequisites: Approval of the BNSF manager of
           track and roadway maintenance training
           and the JCCC program assistant dean
RRIT 123   Basic Welding*.....................................3
           Prerequisites: RRIT 122 or approval of the BNSF
           manager of engineering and maintenance training
           and the JCCC program assistant dean
RRIT 137   Structural Welding SMAW*...........................3
           Prerequisites: RRIT 123 and approval of the BNSF
           manager of engineering and maintenance training
           and the JCCC program assistant dean
RRIT 138   Structural Welding FCAW*...........................3
           Prerequisites: RRIT 137 and approval of the BNSF
           manager of engineering and maintenance training
           and the JCCC program assistant dean
RRIT 139   Structural Welding Pipe*...........................3
           Prerequisites: RRIT 137 and approval of the BNSF
           manager of engineering and maintenance training
           and the JCCC program assistant dean

                or

RRIT 142   Structural Pile Welding............................3
           Prerequisites: RRIT 137 and RRIT 138
           and approval of the BNSF manager of engineering and
           maintenance training
           and the JCCC program assistant dean
           TOTAL CREDIT HOURS.................................15
*Prerequisite/Corequisite required
```

# Railroad Track Welding Certificate

Enrollment is subject to the approval of the BNSF Railway training director and JCCC division administrator.

This certificate is designed to provide a concentrated program for industry-specific training in track maintenance and repairs. Upon successful completion of this 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.

(Major Code 4520; CIP Code 49.0299)

Railroad Welder Training Program

## Certificate of Completion

### Required Courses

```
RRIT 122   Elements of Welding*...............................3
           Prerequisites: Approval of the BNSF manager of
           track and roadway maintenance training
```

```
                  and the JCCC program assistant dean
RRIT 123  Basic Welding*.............................3
          Prerequisites: RRIT 122 or approval of the BNSF
          manager of engineering and maintenance training
          and the JCCC program assistant dean
RRIT 132  Thermite Welding*..........................3
          Prerequisites: Approval of the BNSF manager of
          engineering and maintenance training
          and the JCCC program assistant dean
RRIT 136  Rail and Switch Point Repair Welding*......3
          Prerequisites: RRIT 123 and approval of the BNSF
          manager of engineering and maintenance training
          and the JCCC program assistant dean
RRIT 145  Frog Welding*..............................3
          Prerequisites: RRIT 123
          and approval of the BNSF manager of engineering and
          maintenance training
          and the JCCC program assistant dean
          TOTAL CREDIT HOURS.........................15
*Prerequisite/Corequisite required
```

# Railroad Operations - Conductor Option, A.A.S.

Conductors are responsible for supervising over-the-road operation of freight trains and are in demand throughout the railroad industry. They may choose career paths leading to locomotive engineer service or railroad management. The final phase of this program consists of six weeks of full-time training provided in cooperation with the National Academy of Railroad Sciences on the campus of JCCC.

For information visit the National Academy of Railroad Sciences

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 2810; CIP Code 49.0299)

## Associate of Applied Science Degree

### First Semester

```
CPCA 105  Introduction to Personal Computers: Windows..........1
CPCA 108  Word Processing I: MS Word*..........................1
          Prerequisites: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
CPCA 110  Spreadsheets I: MS Excel*............................1
          Prerequisite: CPCA 105 or CPCA 106 or CIS 124
          or CPCA 128 or appropriate score on a waiver test
ENGL 121  Composition I*.......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
MATH 133  Technical Mathematics I*.............................4
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
PHIL 124  Logic and Critical Thinking..........................3
RRT  120  History of Railroading...............................3
          Total Semester Credit Hours.........................16
```

### Second Semester

```
ENGL 123  Technical Writing I*................................3
          Prerequisite: ENGL 121
MATH 134  Technical Mathematics II*...........................5
          Prerequisite: MATH 133 or an equivalent course
          with a grade of "C" or higher
PHYS 133  Applied Physics*....................................5
          Prerequisite: MATH 133 or higher
RRT  121  Railroad Technical Careers..........................3
          Health and/or Physical Education Elective...........1
          Total Semester Credit Hours.........................17
```

### Third Semester

```
BUS  121  Introduction to Business............................3
ECON 132  Survey of Economics.................................3
          or
ECON 230  Economics I.........................................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 Semester Credit Hours.........................16
```

### Fourth Semester

```
RRTC 123  Introduction to Conductor Service*...................4
          Prerequisite: Admission to the JCCC railroad
          operations program, conductor option
RRTC 175  Conductor Mechanical Operation*......................2
          Prerequisites: Admission to the JCCC railroad
          operations program, conductor option, and successful
          completion of RRTC 123 with a grade of "C" or higher
RRTC 261  Conductor Service*...................................2
          Prerequisite: Admission to the JCCC railroad
          operations program, conductor option, and successful
          completion of RRTC 175 with a grade of "C" or higher
RRTC 263  General Code of Operating Rules*.....................4
          Prerequisite: Admission to the JCCC railroad
          operations program, conductor option, and successful
          completion of RRTC 261 with a grade of "C" or higher
RRTC 267  Conductor Field Application*.........................4
          Prerequisite: Admission to the JCCC railroad
          operations program, conductor option, and successful
          completion of RRTC 263 with a grade of "C" or higher
          Total Semester Credit Hours.........................16
          TOTAL PROGRAM CREDIT HOURS..........................65
*Prerequisite/Corequisite required
```

# Locomotive Electrical Certificate

This 12 hour Locomotive-Electrical Vocational Certificate program is designed to introduce the student to the basic electrical theory and concepts related to locomotive electrical systems, including the operation, maintenance, and troubleshooting of EMD Low Horsepower locomotive electrical systems. Also, it includes the basic operation, maintenance, repair requirements and trouble shooting of EMD diesel engines and support systems, and the GE Dash 8/9 locomotive systems.

For information visit the National Academy of Railroad Sciences

Major Code 4370

## Certificate of Completion

### First Semester

```
RRTM 142  Locomotive Electricity*.............................3
          Prerequisite: Approval of the railroad training
          administrator and the JCCC program assistant
          dean
RRTM 143  Low Horsepower Electrical*..........................3
          Prerequisite: Approval of the railroad training
          administrator and the JCCC program
          assistant dean
RRTM 144  EMD Basic Electrical*...............................3
          Prerequisite: Approval of the railroad training
          administrator and the JCCC program
          assistant dean
RRTM 145  GE Dash 8/9 Electrical Systems*.....................3
          Prerequisite: Approval of the railroad training
          administrator and the JCCC program
          assistant dean
          TOTAL PROGRAM CREDIT HOURS..........................12
```

# Locomotive Mechanical Certificate

This 12 hour Locomotive-Mechanical Vocational Certificate program is designed to introduce the student to the basic operation, maintenance, repair requirements and trouble shooting for EMD and GE diesel engines and support systems, as well as, 26L and 30 ACDW locomotive air brake systems. Also covered are applicable sections of Federal Railway Administration (FRA) and Department of Transportation (DOT) Regulations, industry (American Association of Railroads), and company (BNSF Railway) procedures.

For information visit the National Academy of Railroad Sciences

Major Code 4380

## Certificate of Completion

### First Semester

```
RRTM 135   Basic EMD Mechanical*................................3
           Prerequisite: Approval of the railroad training
           administrator and the JCCC program assistant
           dean
RRTM 136   Basic GE Mechanical*................................3
           Prerequisite: Approval of the railroad training
           administrator and the JCCC program assistant
           dean
RRTM 137   Locomotive Air Brake*...............................3
           Prerequisite: Approval of the railroad training
           administrator and the JCCC program assistant
           dean
RRTM 138   Locomotive FRA*.....................................3
           Prerequisite: Approval of the railroad training
           administrator and the JCCC program assistant
           dean
           TOTAL PROGRAM CREDIT HOURS.........................12
```

# Railroad Freight Car Certificate

This nine hour Freight Car vocational certificate program is designed to provide the student training in the inspection, testing, and repair of freight cars. This is accomplished in accordance with established federal (Federal Railroad Administration), industry (American Association or Railroads), and company (Burlington Northern Santa Fe Railway) procedures, in a safe and professional manner.

For information visit the National Academy of Railroad Sciences

Major Code 4360

## Certificate of Completion

### First Semester

```
RRTM 130   Freight Car Yard Inspection*........................3
           Prerequisites: Approval of the railroad training
           administrator and the JCCC program assistant
           dean
RRTM 131   Railroad Car Repair Track Inspector*...............3
           Prerequisites: RRTM 130 and approval of the railroad
           training administrator and the JCCC program assistant
           dean
RRIT 122   Elements of Welding*................................3
           Prerequisites: Approval of the BNSF manager of
           track and roadway maintenance training
           and the JCCC program assistant dean
           TOTAL PROGRAM CREDIT HOURS..........................9
```

# Railroad Conductor Certificate

The 16-credit hour railroad conductor certificate program prepares students for an exciting and well-paying career as a railroad conductor. 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 workforce.

For information visit the National Academy of Railroad Sciences

(Major Code 4410; CIP Code 49.0299)

## Career Certificate

### Required Courses

```
RRTC 123   Introduction to Conductor Service*.................4
           Prerequisite: Admission to the JCCC railroad
           operations program, conductor option
RRTC 175   Conductor Mechanical Operation*....................2
           Prerequisites: Admission to the JCCC railroad
           operations program, conductor option, and successful
           completion of RRTC 123 with a grade of "C" or higher
```

```
RRTC 261   Conductor Service*.................................2
           Prerequisite: Admission to the JCCC railroad
           operations program, conductor option, and successful
           completion of RRTC 175 with a grade of "C" or higher
RRTC 263   General Code of Operating Rules*...................4
           Prerequisite: Admission to the JCCC railroad
           operations program, conductor option, and successful
           completion of RRTC 261 with a grade of "C" or higher
RRTC 267   Conductor Field Application*.......................4
           Prerequisite: Admission to the JCCC railroad
           operations program, conductor option, and successful
           completion of RRTC 263 with a grade of "C" or higher
           TOTAL PROGRAM CREDIT HOURS........................16
```

# Railroad Operations - General Option, A.A.S.

JCCC's associate's degree program in railroad operations can prepare you for an exciting and well-paying career. The more than 500 companies that make up the U.S. railroad industry provide the country's freight and passenger transportation service on a network of some 300,000 route-miles of track. Railroads employ a substantial workforce to service, maintain and manage this extensive transportation network. JCCC's program offers five options. The general option requires 66 credit hours, the conductor option 65 credit hours, the mechanical option 65 credit hours and the maintenance of way welding option 65 credit hours.

In general, 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.

For information visit the National Academy of Railroad Sciences

(Major Code 2800; CIP Code 49.0299)

## Associate of Applied Science Degree

### First Semester

```
CPCA 105   Introduction to Personal Computers: Windows.........1
CPCA 108   Word Processing I: MS Word*........................1
           Prerequisites: CPCA 105 or CPCA 106 or CIS 124
           or CPCA 128 or appropriate score on a waiver test
CPCA 110   Spreadsheets I: MS Excel*..........................1
           Prerequisite: CPCA 105 or CPCA 106 or CIS 124
           or CPCA 128 or appropriate score on a waiver test
ENGL 121   Composition I*.....................................3
           Prerequisite: ENGL 106 or appropriate placement
           test score or EAP 113 and EAP 117
MATH 133   Technical Mathematics I*...........................4
           Prerequisite: MATH 111 with a grade of "C" or higher
           or appropriate score on the math assessment test
PHIL 124   Logic and Critical Thinking........................3
RRT  120   History of Railroading.............................3
           Total Semester Credit Hours.......................16
```

### Second Semester

```
ENGL 123   Technical Writing I*...............................3
           Prerequisite: ENGL 121
MATH 134   Technical Mathematics II*..........................5
           Prerequisite: MATH 133 or an equivalent course
           with a grade of "C" or higher
PHYS 133   Applied Physics*...................................5
           Prerequisite: MATH 133 or higher
RRT  121   Railroad Technical Careers.........................3
           Health and/or Physical Education Elective..........1
           Total Semester Credit Hours.......................17
```

### Third Semester

```
BUS  121   Introduction to Business...........................3
ECON 132   Survey of Economics................................3
             or
ECON 230   Economics I........................................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 Semester Credit Hours.........................16
```

## Fourth Semester

```
INDT  140   Quality Improvement Using SPC.......................2
            Business/Related Electives..........................6
            Technical/Related Electives.........................9
            Total Semester Credit Hours.........................17
            TOTAL PROGRAM CREDIT HOURS..........................66
```

## 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   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
            Prerequisite: ENGL 123
BOT   101   Computerized Keyboarding............................1
```

## Technical/Related Electives

```
AUTO  125   Introduction to Automotive Shop Practices...........3
AUTO  165   Automotive Engine Repair*...........................4
            Prerequisite or corequisite: AUTO 125 or
            approval of the program administrator
CET   105   Construction Methods................................3
CET   129   Construction Management.............................3
CPCA  138   Windows for Microcomputers*.........................1
            Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
            CIS 124 or an appropriate score on an
            assessment test
DRAF  123   Interpreting Machine Drawings*......................2
            Prerequisite or corequisite: DRAF 120
            or approval of the program assistant dean
DRAF  129   Interpreting Architectural Drawings.................2
ELEC  120   Introduction to Electronics.........................3
ELEC  126   Microcomputer A+ Preparation........................4
ELEC  133   Programmable Controllers............................3
ELEC  150   Introduction to Telecommunications..................3
ENGR  180   Engineering Land Surveying I*.......................3
            Corequisite: MATH 134 or MATH 172
GEOS  140   Physical Geography..................................3
GEOS  141   Physical Geography Lab*.............................2
            Prerequisite or corequisite: GEOS 140 or the
            equivalent
HVAC  123   Electromechanical Systems...........................4
INDT  125   Industrial Safety...................................3
MFAB  121   Intro to Shielded Metal Arc Welding I (SMAW I)*.....4
            Prerequisite or corequisite: MFAB 120 or MFAB 127
MFAB  130   Introduction to Gas Metal Arc Welding I (GMAW I)*...4
            Prerequisite or corequisite: MFAB 120 or MFAB 127
MFAB  152   Manufacturing Materials and Processes...............3
MFAB  240   Metallurgy..........................................2
*Prerequisite/Corequisite required
```

# Railroad Operations - Mechanical Option, A.A.S.

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.

For information visit the National Academy of Railroad Sciences

(Major Code 2840; CIP Code 49.0299)

## Associate of Applied Science Degree

```
Note: MFAB 120-MFAB Tools and Equipment or MFAB 127-Welding
Processes are prerequisites/corequisites to MFAB 121.
Students who may have the skills needed for MFAB 120 or
MFAB 127 may contact the career program  facilitator for a
waiver or may contact the Testing Center for prior
learning credit.
```

## First Semester

```
CPCA  105   Introduction to Personal Computers: Windows.........1
CPCA  108   Word Processing I: MS Word*.........................1
            Prerequisites: CPCA 105 or CPCA 106 or CIS 124
            or CPCA 128 or appropriate score on a waiver test
CPCA  110   Spreadsheets I: MS Excel*...........................1
            Prerequisite: CPCA 105 or CPCA 106 or CIS 124
            or CPCA 128 or appropriate score on a waiver test
ENGL  121   Composition I*......................................3
            Prerequisite: ENGL 106 or appropriate placement
            test score or EAP 113 and EAP 117
MATH  133   Technical Mathematics I*............................4
            Prerequisite: MATH 111 with a grade of "C" or higher
            or appropriate score on the math assessment test
PHIL  124   Logic and Critical Thinking.........................3
RRT   120   History of Railroading..............................3
            Total Semester Credit Hours.........................16
```

## Second Semester

```
ENGL  123   Technical Writing I*................................3
            Prerequisite: ENGL 121
MATH  134   Technical Mathematics II*...........................5
            Prerequisite: MATH 133 or an equivalent course
            with a grade of "C" or higher
PHYS  133   Applied Physics*....................................5
            Prerequisite: MATH 133 or higher
RRT   121   Railroad Technical Careers..........................3
            Health and/or Physical Education Elective...........1
            Total Semester Credit Hours.........................17
```

## Third Semester

```
BUS   121   Introduction to Business............................3
ECON  132   Survey of Economics.................................3
            or
ECON  230   Economics I.........................................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 Semester Credit Hours.........................16
```

## Fourth Semester

```
RRIT  122   Elements of Welding*................................3
            Prerequisites: Approval of the BNSF manager of
            track and roadway maintenance training
            and the JCCC program assistant dean
            or
MFAB  121   Intro to Shielded Metal Arc Welding I (SMAW I)*.....4
            Prerequisite or corequisite: MFAB 120 or MFAB 127
RRIT  123   Basic Welding*......................................3
            Prerequisites: RRIT 122 or approval of the BNSF
            manager of engineering and maintenance training
            and the JCCC program assistant dean
RRTM  124   Orientation to the Railroad Mechanical Craft*.......2
            Prerequisite: Admission to the JCCC railroad
            operations program, mechanical option
RRTM  170   Railroad Mechanical Safety and Health*..............2
            Prerequisites: Admission to the JCCC's railroad
            operations program, mechanical option, and completion
            of RRTM 124 with a grade of "C" or higher
RRTM  251   Locomotive Diesel Engine Fundamentals*..............2
            Prerequisites: Admission to the JCCC railroad
            operations program, mechanical option, and completion
            of RRTM 124 and RRTM 170 with a grade of "C" or higher
RRTM  253   Freight Car Fundamentals*...........................2
            Prerequisites: Admission to the JCCC's railroad
            operations program, mechanical option, and completion
            of RRTM 124 and RRTM 170 with a grade of "C" or higher
RRTM  254   Basic Locomotive Electricity and Electronics*.......2
            Prerequisites: Admission to the JCCC's railroad
            operations program, mechanical option and completion
            of RRTM 124 and RRTM 170 with a grade of "C" or higher
            Total Semester Credit Hours.........................16
            TOTAL PROGRAM CREDIT HOURS..........................65
*Prerequisite/Corequisite required
```

# Railroad Operations - Welding Option, A.A.S.

Maintenance of way welding involves maintenance and repair of rail and track components. The final phase of this program consists of course work provided in cooperation with the National Academy of Railroad Sciences. Selective admission to the program is based on various criteria. Interested students should meet with a JCCC counselor as early as possible.

For information visit the National Academy of Railroad Sciences

(Major Code 2850; CIP Code 49.0299)

## Associate of Applied Science Degree

### First Semester

```
CPCA 105  Introduction to Personal Computers: Windows..........1
ENGL 121  Composition I*.....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
MATH 133  Technical Mathematics I*...........................4
          Prerequisite: MATH 111 with a grade of "C" or higher
          or appropriate score on the math assessment test
PHIL 124  Logic and Critical Thinking........................3
RRT  120  History of Railroading.............................3
          Total Semester Credit Hours.......................14
```

### Second Semester

```
ENGL 123  Technical Writing I*...............................3
          Prerequisite: ENGL 121
INDT 125  Industrial Safety..................................3
PHYS 133  Applied Physics*...................................5
          Prerequisite: MATH 133 or higher
RRT  121  Railroad Technical Careers.........................3
          Health and/or Physical Education Elective..........1
          Total Semester Credit Hours.......................15
```

### Third Semester

```
          Technical/Related Elective.........................3
ECON 132  Survey of Economics................................3
          or
ECON 230  Economics I........................................3
RRT  150  Railroad Operations................................3
RRT  165  Railroad Safety, Quality and Environment...........3
SPD  125  Personal Communication.............................3
          Total Semester Credit Hours.......................15
```

### Fourth Semester

```
RRIT 122  Elements of Welding*...............................3
          Prerequisites: Approval of the BNSF manager of
          track and roadway maintenance training
          and the JCCC program assistant dean
RRIT 123  Basic Welding*.....................................3
          Prerequisites: RRIT 122 or approval of the BNSF
          manager of engineering and maintenance training
          and the JCCC program assistant dean
RRIT 132  Thermite Welding*..................................3
          Prerequisites: Approval of the BNSF manager of
          engineering and maintenance training
          and the JCCC program assistant dean
RRIT 136  Rail and Switch Point Repair Welding*..............3
          Prerequisites: RRIT 123 and approval of the BNSF
          manager of engineering and maintenance training
          and the JCCC program assistant dean
RRIT 145  Frog Welding*......................................3
          Prerequisites: RRIT 123
          and approval of the BNSF manager of engineering and
          maintenance training
          and the JCCC program assistant dean
RRIT 271  Railroad Welding Internship*.......................6
          Prerequisites: Admission to the JCCC railroad program,
          welding option, and successful completion of
          RRIT 122 and RRIT 123 and RRIT 136 and RRIT 145 and
          RRIT 132 with a grade of "C" or higher
          Total Semester Credit Hours.......................21
          TOTAL PROGRAM CREDIT HOURS........................65
```

### Technical/Related Electives

```
AUTO 125  Introduction to Automotive Shop Practices..........3
AUTO 165  Automotive Engine Repair*..........................4
          Prerequisite or corequisite: AUTO 125 or
          approval of the program administrator
CET  105  Construction Methods...............................3
CET  129  Construction Management............................3
CPCA 138  Windows for Microcomputers*........................1
          Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or
          CIS 124 or an appropriate score on an
          assessment test
DRAF 123  Interpreting Machine Drawings*.....................2
          Prerequisite or corequisite: DRAF 120
          or approval of the program assistant dean
DRAF 129  Interpreting Architectural Drawings................2
ELEC 120  Introduction to Electronics........................3
ELEC 126  Microcomputer A+ Preparation.......................4
ELEC 133  Programmable Controllers...........................3
ELEC 150  Introduction to Telecommunications.................3
GEOS 140  Physical Geography.................................3
GEOS 141  Physical Geography Lab*............................2
```

```
          Prerequisite or corequisite: GEOS 140 or the
          equivalent
HVAC 123  Electromechanical Systems..........................4
MFAB 130  Introduction to Gas Metal Arc Welding I (GMAW I)*..4
          Prerequisite or corequisite: MFAB 120 or MFAB 127
MFAB 152  Manufacturing Materials and Processes..............3
MFAB 240  Metallurgy.........................................2
*Prerequisite/Corequisite required
```

# Respiratory Care, A.A.S.

The respiratory therapist is involved in a variety of lifesaving and life-supporting situations. Respiratory therapists treat patients ranging in age from newborns to senior citizens in the prevention, treatment, management and rehabilitation of lung problems. Employment is typically in hospitals but is available in several other health delivery venues. The health care needs of an aging population will play a role in the future of respiratory care.

JCCC's associate of applied science program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP http://www.caahep.org ) in collaboration with the Committee on Accreditation for Respiratory Care (CoARC http://coarc.com ). Graduates are eligible to take the National Board for Respiratory Care examinations for both the certified (CRT) and registered (RRT) respiratory therapist.

Certain courses within this program require a professional liability insurance fee. Students will be notified via their JCCC student e-mail account if they are required to pay a $16 fee. The dollar amount for fees is subject to change.

This is a selective admission program with limited enrollment. Prospective students are encouraged to visit the program Web site at http://www.jccc.net/respiratorycare or to contact JCCC program personnel for additional information and application materials at 913-469-2583.

Note: Metropolitan Community College students should seek specific counsel from the JCCC program personnel for the appropriate course plan and numbers.

Metropolitan Community College students should refer to Cooperative Program Information.

(Major Code 237A; CIP Code 51.0908)

## Associate of Applied Science Degree

### Summer

```
          Social Science/Economics Elective..................3
ENGL 121  Composition I*^....................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
          Total Semester Credit Hours........................6
```

### First Semester

```
BIOL 140  Human Anatomy^.....................................4
MATH 116  Intermediate Algebra*^.............................3
          Prerequisite: MATH 115 with a grade of "C" or higher
          or appropriate score on the math assessment test
Note: MATH 116 or MATH 171 or higher

CHEM 122  Principles of Chemistry^...........................5
          Humanities/Art Elective............................3
          Total Semester Credit Hours.......................15
```

### Second Semester

```
BIOL 225  Human Physiology*^.................................4
          Prerequisites: CHEM 122 and either BIOL 140
          or BIOL 144
BIOL 230  Microbiology*^.....................................3
          Prerequisite: CHEM 122 or
          one year of high school chemistry
BIOL 231  Microbiology Lab...................................2
          BIOL 231 students must be currently enrolled in
          BIOL 230 or have successfully completed BIOL 230
          within the last three years.
Note: BIOL 231 is optional but strongly suggested.
```

```
EMS  121  CPR I - Basic Life Support for Healthcare Provider...1
HC   101  Introduction to Health Care Delivery**...............3
          Communications Elective.............................3
          Total Semester Credit Hours......................11-16
```

Note: ^Indicates prerequisite courses that must be completed before the clinic-year.  Electives not completed by the clinic-year will delay credentialing eligibility.

Note: **HC 101 is not a required course for the degree but is strongly encouraged.  See the program application packet for details on how this course may be used to meet clinic-year eligibility requirements.

### Summer (clinic-year)

```
RC  125  Beginning Principles of Respiratory Care*............4
         Prerequisite: Admission to the respiratory care
         program
RC  130  Respiratory Care Equipment*..........................4
         Prerequisite: Admission to the respiratory care
         program
RC  135  Cardiopulmonary Medicine I*..........................1
         Prerequisite: Admission to the respiratory care
         program
         (Current BCLS for Health Care Provider required)
         Total Semester Credit Hours..........................9
```

### Third Semester

```
RC  220  Cardiopulmonary Physiology*..........................2
         Prerequisite: Successful completion of the summer
         Prerequisite: Successful completion of the summer
         sequence of respiratory care courses
         sequence of respiratory care courses
RC  230  Clinical Topics and Procedures I*....................4
         Prerequisite: Successful completion of the summer
         sequence of respiratory care courses
RC  235  Cardiopulmonary Medicine II*.........................2
         Prerequisite: Successful completion of the summer
         sequence of respiratory care courses
RC  240  Cardiopulmonary Pharmacology*........................2
         Prerequisite: Successful completion of the summer
         sequence of respiratory care courses
RC  271  Clinical Practice I*.................................6
         Prerequisite: Successful completion of the summer
         sequence of respiratory care courses
         Total Semester Credit Hours.........................16
```

### Fourth Semester

```
RC  231  Clinical Topics and Procedures II*...................4
         Prerequisite: Successful completion of the fall
         sequence of respiratory care courses
RC  233  Respiratory Care of Children*........................2
         Prerequisite: RC 230
RC  236  Cardiopulmonary Medicine III*........................2
         Prerequisite: Successful completion of the fall
         sequence of respiratory care courses
RC  272  Clinical Practice II*................................6
         Prerequisite: Successful completion of the fall
         sequence of respiratory care courses
         Total Semester Credit Hours.........................14
         TOTAL PROGRAM CREDIT HOURS.......................71-73
         WITH HC ELECTIVE COURSE..........................74-76
*Prerequisite/Corequisite required
```

# Veterinary Technology, A.A.S.

The Veterinary Technology, AAS degree program is granted by Metropolitan Community College, but coordinated at JCCC.

A degree in veterinary technology provides opportunities for employment with small and large animal veterinary clinics, emergency/referral hospitals, animal control agencies, biomedical research companies, zoos, pharmaceutical companies, and pet food companies.

The program features supervised intensive clinical study under the direction of a licensed veterinarian and is fully accredited by the American Veterinary Medical Association. Students study sanitation, animal care, equine medicine, laboratory animal medicine, food animal medicine, clinical diagnostic procedures, radiology, dentistry and surgical technology.

JCCC's veterinary technology program is offered to Johnson County residents in cooperation with MCC-Maple Woods Community College. You must be

accepted as a student at JCCC and accepted into the program at MCC-Maple Woods Community College. Consult with a JCCC counselor for more information.

Program courses and credit hours are subject to change because of requirement changes at the degree-granting institution. Contact MCC-Maple Woods Community College at 816-437-3235 or www.mcckc.edu/vettech for an application packet, which includes deadlines, program prerequisites, admission requirements and performance standards.

Note: Johnson County Community College students should seek specific counsel from the MCC program personnel for the appropriate course plan and numbers.

Johnson County Community College students should refer to Cooperative Program Information.

## Associate of Applied Science Degree

Degree granted by Metropolitan Community College

### General Education Requirements-must be taken at JCCC

```
ENGL 121  Composition I*......................................3
          Prerequisite: ENGL 106 or appropriate placement
          test score or EAP 113 and EAP 117
SPD  121  Public Speaking.....................................3
          General Education Electives.......................3-5
          Note: ENGL 122-Composition II is highly recommended.
```

### American Institutions

```
HIST 140  U.S. History to 1877................................3
          or
HIST 141  U.S. History Since 1877............................3
          or
POLS 122  Political Science..................................3
          or
POLS 124  American National Government.......................3
          or
POLS 126  State and Local Government.........................3
```

### Specific Program Requirements-must be taken at JCCC

```
BIOL 127  General Zoology.....................................5
BIOL 230  Microbiology*......................................3
          Prerequisite: CHEM 122 or
          one year of high school chemistry
BIOL 231  Microbiology Lab*..................................2
          BIOL 231 students must be currently enrolled in
          BIOL 230 or have successfully completed BIOL 230
          within the last three years.
CHEM 122  Principles of Chemistry............................5
CPCA 128  PC Applications: MS Office.........................3
```

### Specific Program Requirements-taken at MCC-Maplewoods

```
KSS  153  The Missouri Constitution...........................1
KSAH 108  Clinical Mathematics for Veterinary Technicians......1
          Prerequisites: Admission into the Veterinary
          Technician Program
KSAH 100  Introduction to Veterinary Technology...............2
KSAH 101  Principles of Animal Science I......................3
KSAH 110  Principles of Animal Science II*....................3
          Prerequisite: KSAH 101
KSAH 111  Sanitation and Animal Care..........................2
KSAH 200  Veterinary Hospital Technology I*...................3
          Prerequisites: KSAH 101 and KSAH 110
KSAH 201  Clinical Pathology Techniques I.....................4
KSAH 202  Veterinary Anatomy*.................................5
          Prerequisite: BIOL 101 (Maple Woods) or BIOL 127 and
          KSAH 101 and 110
KSAH 203  Laboratory Animal Technology*.......................2
          Prerequisites: KSAH 101, KSAH 110 and KSAH 201
KSAH 209  Equine Medicine and Management*.....................3
          Prerequisite: KSAH 212
KSAH 210  Veterinary Hospital Technology II*..................3
          Prerequisite: KSAH 200
KSAH 211  Clinical Pathology Techniques II*...................5
          Prerequisite: KSAH 201
KSAH 212  Large Animal Technology*............................4
          Prerequisites: KSAH 101 and KSAH 110
KSAH 213  Radiology and Electronic Procedures.................2
KSAH 214  Veterinary Technician Internship*...................6
          Prerequisite: Two semesters of first-year veterinary
          technology courses
          TOTAL PROGRAM CREDIT HOURS.......................79-81
*Prerequisite/Corequisite required
```

**General Education Electives**

```
ART  180  ..................................................
ART  182  ..................................................
ART  184  ..................................................
ANTH 125  Cultural Anthropology...............................3
ANTH 126  Physical Anthropology...............................3
ANTH 130  World Cultures......................................3
ECON 132  Survey of Economics.................................3
ECON 230  Economics I.........................................3
ECON 231  Economics II........................................3
ENGL 130  Introduction to Literature*.........................3
          Prerequisite: ENGL 121
ENGL 230  Introduction to Fiction*............................3
          Prerequisite: ENGL 122
FL   130  Elementary Spanish I................................5
FL   131  Elementary Spanish II*..............................5
          Prerequisite: FL 130 with a grade of C or higher
          or two years of high school Spanish;
          or the appropriate score on the placement test
FL   140  Elementary French I.................................5
FL   141  Elementary French II*...............................5
          Prerequisite: FL 140 or one year of high school French
FL   180  Elementary American Sign Language I..................3
FL   181  Elementary American Sign Language II*................3
          Prerequisite: FL 180 or INTR 120 with a grade of "C"
          or higher
HIST 125  Western Civilization: Readings and Discussion I......3
HIST 126  Western Civilization: Readings and Discussion II.....3
HUM  122  Introduction to Humanities..........................3
MUS  121  Introduction to Music Listening.....................3
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
POLS 132  Introduction to Comparative Government..............3
POLS 135  International Relations..............................3
PSYC 121  Applied Psychology..................................3
PSYC 130  Introduction to Psychology..........................3
SOC  122  Introduction to Sociology...........................3
SOC  125  Social Problems.....................................3
SOC  131  Marriage and the Family.............................3
SPD  120  Interpersonal Communication.........................3
```

# Credit Course Descriptions

The following course offerings at JCCC are listed alphabetically by subject area. Clicking on the subject in which you are interested will give you a list of all courses that fall under that subject and a course description (including credit hour value) for each of those courses. If you then click on a particular course (ANTH 125, for example), you will be directed to a copy of the course outline, which includes the objectives and competencies covered in the course.

## - A -

**Academic Achievement Center (AAC)**

**Accounting (ACCT)**

**Administration of Justice (ADMJ)**

**American Sign Language (ASL)**

**Animation (ANI)**

**Anthropology (ANTH)**

**Architecture (ARCH)**

**Art (ART)**

**Art History (ARTH)**

**Astronomy (ASTR)**

**Automotive Technology (AUTO)**

## - B -

**Biology (BIOL)**

**Biotechnology (BIOT)**

**Business (BUS)**

**Business Logistics Management (KSCL)**

**Business Office Technology (BOT)**

## - C -

**Chemistry (CHEM)**

**Civil Engineering Technology (CET)**

**Computer Desktop Publishing (CDTP)**

**Computer Digital Image Editing (CDIE)**

**Computer Forensics (CFOR)**

**Computer Information Systems (CIS)**

**Computer Personal Computer App (CPCA)**

**Computer Science (CS)**

**Computer Web (CWEB)**

**Cosmetology (AVCO)**

## - D -

**Dental Assisting (KDA)**

**Dental Hygiene (DHYG)**

**Drafting/CAD/AutoCAD (DRAF)**

**– E –**

**Economics (ECON)**

**Education and Early Childhood (EDUC)**

**Electrical Technology (ELTE)**

**Electronics (ELEC)**

**Emergency Medical Science/MICT (EMS)**

**Engineering (ENGR)**

**English (ENGL)**

**English for Academic Purposes (EAP)**

**Entrepreneurship (ENTR)**

**– F –**

**Fashion Merchandising/Design (FASH)**

**Fire Services Administration (FIRE)**

**Floriculture (FLR)**

**Foreign Language (FL)**

**– G –**

**Game Development (GAME)**

**Geographic Information Systems (KEOG)**

**Geoscience (GEOS)**

**Graphic Design (GDES)**

**– H –**

**Health Care (HC)**

**Health Care Interpreting (HCI)**

**Health Information Technology (KMRT)**

**Health Occupations (AVHO)**

**Heating,Vent.,Air Conditioning (HVAC)**

**History (HIST)**

**Home Economics (HMEC)**

**Honors Program (HON)**

**Horticulture (HORT)**

**Hospitality Management (HMGT)**

**Hospitality Mgt Pastry Baking (HMPB)**

**Humanities (HUM)**

**– I –**

**Industrial Technology (INDT)**

**Information Technology (IT)**

**Interactive Media (CIM)**

**Interior Design (ITMD)**

**Interpreter Training (INTR)**

**– J –**

**Journalism/Media Communication (JOUR)**

**– L –**

**Land Surveying (KSRV)**

**Leadership (LEAD)**

**Learning Communities (LCOM)**

**Learning Strategies (LS)**

**Legal Studies (LAW)**

**Library (LIBR)**

**– M –**

**Marketing Management (MKT)**

**Mathematics (MATH)**

**Metal Fabrication and Welding (MFAB)**

**Music (MUS)**

**– N –**

**Nursing (NURS)**

**– O –**

**Occupational Therapy Assistant (KOT)**

## - P -

**Philosophy (PHIL)**

**Photography (PHOT)**

**Physical Ed, Health & Rec (HPER)**

**Physical Science (PSCI)**

**Physical Therapist Assistant (KPT)**

**Physics (PHYS)**

**Political Science (POLS)**

**Polysomnography/Sleep Tech (PSG)**

**Power Plant Technology (PPT)**

**Practical Nursing (AVPN)**

**Psychology (PSYC)**

## - R -

**Radiologic Technology (KRAD)**

**Railroad Conductor (RRTC)**

**Railroad Dispatcher (RRTD)**

**Railroad Electronics (RREL)**

**Railroad Industrial Technology (RRIT)**

**Railroad Maintenance of Way (RRMW)**

**Railroad Operations (RRT)**

**Railroad Operations-Mechanical (RRTM)**

**Railroad Work Equipment (RRWE)**

**Reading (RDG)**

**Religion (REL)**

**Respiratory Care (RC)**

## - S -

**Sociology (SOC)**

**Speech/Debate (SPD)**

**Surgical Technology (KST)**

## - T -

**Theater (THEA)**

## - V -

**Veterinary Technology (KSAH)**

## - W -

**Women and Gender Studies (WGS)**

---

# Academic Achievement Center (AAC)

**AAC 100**

**Study Skills** (1 CR)

This self-instructional course is designed to improve students' ability to study efficiently. Based on the results of a study skills survey administered during the student's initial visit to the center, an individualized program is established. Using instructional material provided by the A.A.C., students will master a variety of concepts, including time management, goal setting, textbook reading, note taking from textbook and from lecture, stress management, test taking and using college resources. An Academic Achievement Center instructor is available to work with the student to establish specific instructional goals, administer tests, and provide individualized instruction as it is needed to complete the student's program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

**AAC 101**

**Study Skills Mini-Course** (1 CR)

This class is designed to improve students' ability to study efficiently. The focus is an array of skills the college student needs, i.e., test-taking skills and note-taking skills, using a textbook, critical reading and memory recall, and effective listening and classroom strategies. Also covered are services the college offers to facilitate the learning experience for the college student, i.e., the Writing Center, the Math Resource Center, the Academic Achievement Center, the Student Success Center and the Billington Library. The format includes reading, discussion and application activities. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

**AAC 102**

**Basic Spelling** (3 CR)

This self-instructional course is for students who wish to improve their spelling ability but who have not been successful in the traditional spelling program. This course provides a highly structured approach to spelling improvement through mastery of morphographs (units of meaning) and guidelines for combining morphographs. A limited number of spelling rules are taught in the course. This course is ideal for students for whom English is a second language. An Academic Achievement Center instructor is available to work with students to establish specific goals, administer tests, and provide individualized instruction as needed to complete the students' program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations

that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

## AAC 103

**Advanced Spelling** (1 CR)

This self-instructional course is for students who need to learn or review the basic spelling concepts and to improve their level of spelling mastery. Based on the results of a pretest administered during the student's initial visit, an individualized program is established. Using instructional material provided by the AAC, students will master a variety of concepts, including the final-e rule, the doubling rule, the y-to-i rule, forming the plurals and using possessives. In addition, students will monitor misspellings that occur in their own writing and will master the correct spelling of those words. A post-test will be administered at the end of the program to measure progress. An Academic Achievement Center instructor is available to work with students to establish specific instructional goals, administer tests and provide individualized instruction as needed to complete the students' program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

## AAC 104

**Reading Comprehension** (1 CR)

This self-instructional course is designed for students who wish to improve their understanding of written language. A pretest is administered to determine a baseline reading comprehension level. An individualized program of study will be developed for each student, which includes both instructional and practice material provided by the A.A.C. Textbooks, computer software and handouts are some of the materials used in this course. This course does not fulfill degree requirements. Students learn techniques for increasing reading comprehension, which include previewing, questioning, careful reading with note taking, reciting and reviewing. An Academic Achievement Center instructor is available to work with students to establish specific goals, administer tests and provide individualized instruction as needed to complete the student's program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

## AAC 105

**Reading Rate** (1 CR)

This self-instructional course is designed for students who demonstrate strong comprehension skills and wish to improve the rate at which they process written language. Students learn techniques for increasing reading rate and for improving skimming and scanning levels. A pretest will be administered to determine a baseline reading efficiency rate. An individualized program of study will be developed for each student, which includes both instructional and practice material provided by the A.A.C. Textbooks, computer software and handouts are some of the materials used in this course. An Academic Achievement Center instructor is available to work with students to establish specific instructional goals, administer tests and provide individualized instruction as needed to complete each student's program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

## AAC 106

**Vocabulary Development** (1 CR)

This self-instructional course is designed for college students who wish to expand both their receptive and expressive vocabulary levels. College students are expected to be able to recognize and use vocabularies specific to specialized and changing contents, i.e., data processing, sociology and business. A vocabulary placement test will be administered to determine a starting level. Instructional material provided by the A.A.C. includes Latin and Greek derivatives, specialized vocabulary, stated and implied meanings as well as the process of acquisition (context clues, etymology and derivatives). An Academic Achievement Center instructor is available to work with the student to establish specific instructional goals, administer tests and provide individualized instruction as needed to complete the student's program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

## AAC 112

**Basic Math Review** (1 CR)

This self-instructional course is designed for students who need to learn or review basic mathematical concepts. Based on the results of a pretest administered during the student's initial visit to the Center, an individualized program is established. While one student may begin the program with multiplication facts, another may begin with solving proportions or equations. Instructional material is provided by the A.A.C. An Academic Achievement Center instructor is available to work with the student to establish specific instructional goals, administer tests and to provide individualized instruction as needed to complete the student's program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $35.

## AAC 113

**Algebra Preparation** (1 CR)

This self-instructional course is designed for students who possess basic math skills and want to learn basic concepts in algebra. Based on the results of a pretest administered during the student's initial visit to the center, an individualized program is established. Using instructional material provided by the A.A.C., students will master a variety of concepts, including the terminology of mathematics and algebra, simplifying open expressions, solving algebraic equations and other concepts. An Academic Achievement Center instructor will be available to work with the student to establish specific instructional goals, administer tests and provide individualized instruction as needed to complete the student's program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

## AAC 114

**Chemistry Preparation** (1 CR)

This self-instructional course is designed for students who need to learn or review the basic chemistry concepts. Based on the results of a pretest administered during the student's initial visit to the center, an individualized program is established. Using instructional material provided by the A.A.C., students will master a variety of concepts, including chemical symbols and formulas, valences, chemical equations, the metric system, units and dimensions, temperature, numbers in exponent form, significant figures, electrical charges, acids, bases, salts and solubility. An Academic Achievement Center instructor is available to work with the student to establish specific instructional goals, administer tests and provide individualized instruction needed to complete the student's program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

## AAC 115

**College Skills Development** (1 CR)

This course is designed to improve student self-awareness and institutional awareness. Focus is on strengthening the student's ability to use campus resources and services, as well as improving self-awareness in terms of

communication skills, aptitudes, interests, values pertaining to career/life decisions, and self-advocacy. This course does not fulfill degree requirements.

## AAC 120

**Individualized Study** (1 CR)

This self-instructional course is designed for students who want to improve in any of the following A.A.C. areas: study skills, reading comprehension, reading rate, vocabulary improvement, advanced spelling, basic math, algebra preparation or chemistry preparation. Once the area of study has been determined, a pretest will be administered by the instructor and a program of study will be developed using materials provided by the A.A.C. An Academic Achievement Center instructor is available to work with students to establish specific goals, administer tests, and to provide individualized instruction needed to complete the student's program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

## AAC 121

**Individualized Study** (2 CR)

This self-instructional course is designed for students who want to improve in one or two of the following A.A.C. areas: study skills, reading comprehension, reading rate, vocabulary improvement, advanced spelling, basic math, algebra preparation or chemistry preparation. Once the areas of study have been determined, a pretest will be administered by the instructor in each of these areas, and a program of study will be developed using materials provided by the A.A.C. An Academic Achievement Center instructor is available to work with students to establish specific goals, administer tests, and to provide individualized instruction needed to complete the student's program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

## AAC 122

**Individualized Study** (3 CR)

This self-instructional course is designed for students who want to improve in two or three of the following A.A.C. areas: study skills, reading comprehension, reading rate, vocabulary improvement, advanced spelling, basic math, algebra preparation or chemistry preparation. Once the areas of study have been determined, a pretest will be administered by the instructor in each of these areas, and a program of study will be developed using materials provided by the A.A.C. An Academic Achievement Center instructor is available to work with students to establish specific goals, administer tests, and to provide individualized instruction needed to complete the student's program. This course does not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

## AAC 130

**Medical Terminology** (3 CR)

This self-instructional course is designed for the student who wants to learn a systematic format for acquiring a medical vocabulary. The course begins with a study of suffixes and prefixes common to most of the body systems and guidelines for combining word parts and forming plurals. This is followed by a study of each body system and oncological terminology. Any student who is planning a career in any facet of the health care industry will find this course beneficial. An Academic Achievement Center instructor is available to work with students to establish specific goals, administer tests and provide individualized instruction as needed to complete the student's program.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $30.

## AAC 135

**Career and Life Planning** (3 CR)

This course helps students make decisions about their college majors, careers and other life goals. It emphasizes career research as a tool for making current career decisions and meeting changes in the future workplace. Students learn a systematic approach for making career and life decisions based on their personalities, interest, skills and values.

## AAC 150

**Job Search Skills** (1 CR)

This class presents the skills students need to conduct an effective job search, including locating job leads, writing resumes, employment interviewing and job correspondence. Additionally, students will explore the importance of adapting to changes in the workplace to ensure their job survival and success. The class consists of lectures, activities, discussion and exercises in the career planning and job search process.

# Accounting (ACCT)

## ACCT 109

**Basics of Income Taxes** (1 CR)

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 keep records that will provide appropriate information for use in preparing federal income tax. The student should also be able to prepare the basic individual federal income tax return. 1 hr. lecture/wk., 16 contact hours.

## ACCT 111

**Small Business Accounting** (3 CR)

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 121

**Accounting I** (3 CR)

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** (3 CR)

*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** (3 CR)

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** (3 CR)

*Prerequisite: ACCT 121 or ACCT 111*

Upon successful completion of this course, a student will be able to use the microcomputer to create a chart of accounts, accounts receivable and payable subsidiary ledgers, transaction journals, general ledgers, financial statements, reports and forecasts. 3 hrs./wk.

## ACCT 140

**Computerized Accounting Problems** (3 CR)

*Prerequisite or corequisite: ACCT 122*

The course will teach students how to use spreadsheet and database software to set up and solve accounting problems. 3 hrs/wk.

## ACCT 215

**Accounting for Nonprofit Organizations** (3 CR)

*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 describe the primary funds and accounting groups, assist in the budget process, and practice variances among the major nonprofit organizations according to their authoritative pronouncements. 3 hrs./wk.

## ACCT 221

**Cost Accounting** (3 CR)

*Prerequisite: ACCT 122*

Upon completion of this course, the student should be able to develop and use accounting information to plan and control operations, value inventory, determine income in a manufacturing environment, and evaluate subsequent results. 3 hrs./wk.

## ACCT 222

**Managerial Accounting** (3 CR)

*Prerequisite: ACCT 122*

Upon completion of this course, the student should be able to develop and use accounting information as an instrument of management control. Students will recognize needed information, determine where it can be obtained and decide how this information can be used by managers to plan, control and make decisions. Material covered includes financial statement analysis, cost application and budgeting reports management. 3 hrs./wk.

## ACCT 231

**Intermediate Accounting I** (3 CR)

*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.

## ACCT 232

**Intermediate Accounting II** (3 CR)

*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.

## ACCT 240

**Fraud Examination** (3 CR)

*Prerequisite: ACCT 121 and ACCT 122 and ACCT 222*

This course teaches the principles involved in the detection and prevention of fraud as it pertains to financial matters. The course will explore the vast body of knowledge gained by accounting practitioners and will utilize critical thinking to apply these factors to the prevention of financial statement and employee fraud. Upon completion of this course, the student should be able to describe how and why fraud is committed, to use creative ways to detect and prevent fraudulent conduct, and to understand how allegations of fraud should be investigated and resolved. 3 hrs. lecture/wk.

## ACCT 278

**Accounting Internship** (1 CR)

*Prerequisites: ACCT 121 plus 12 additional ACCT hours beyond ACCT 121 and Assistant Dean's Approval*

The student will be able to gain work experience in an approved training station under instructional supervision in an accounting or an accounting-related occupation. This internship is designed to give students the opportunity to apply the skills they have acquired in accounting specialty courses. The internship will require an average of 12 hours of job training per week by arrangement.

## ACCT 285

**Accounting Capstone** (3 CR)

*Prerequisites: ACCT 121 and ACCT 122 plus 15 hours of accounting courses and Assistant Dean's Approval*

This course is designed as a capstone experience before entering the workplace. Students will maintain a complete set of books and related financial statements both manually and electronically through an accounting cycle. Students will use previously prepared financial statements to make informed judgments and solve problems, identify and apply ethical positions and effectively communicate this information to others both orally and in writing.

# Administration of Justice (ADMJ)

## ADMJ 121

**Introduction to Administration of Justice** (3 CR)

This course provides a detailed description of the components of the American criminal justice system: police, courts and corrections. Students utilize critical thinking skills to discern the balance between individual rights and public order as it pertains to the criminal justice process. Students demonstrate knowledge of criminal justice processes through examinations, assigned papers and reports. Additionally, students are required to participate in field and classroom experiences designed to explore the various career opportunities within the criminal justice system. 3 hrs. lecture/wk.

## ADMJ 124

**Criminal Justice and Corrections** (3 CR)

This course will explore the correctional system and trace the evolution of criminal sanctions from early English common law to the present. An

examination of local, state, and federal correctional systems will provide an overview of society's response to criminal behavior. Students will be introduced to a detailed examination of jails, prisons, and community corrections. 3 hrs. lecture/ wk.

## ADMJ 127

**Criminology** (3 CR)

This class will explore various explanations for criminal behavior including choice, biosocial, psychological, social structure and social process theories. Society's responses to crime will also be examined. 3 hrs. lecture/wk. ADMJ 127 and SOC 127 are the same course. Do not enroll in both.

## ADMJ 130

**Crime Prevention** (3 CR)

Topics of special interest include the techniques public service agencies use to operate crime-prevention programs and provide technically accurate, cost-effective security recommendations to the community. 3 hrs. lecture/wk.

## ADMJ 133

**Juvenile Delinquency** (3 CR)

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. lecture/wk.

## ADMJ 140

**Constitutional Case Law** (3 CR)

Constitutional Case Law is an exploration of those provisions of the U.S. Constitution that impact the way in which the criminal justice system operates. Students will learn through discussion of important U.S. Supreme Court cases that have shaped the way the Constitution is interpreted followed by analysis of hypothetical fact patters that require the student to apply the knowledge they have gained. 3 hrs. lecture/wk.

## ADMJ 141

**Criminal Law** (3 CR)

*Prerequisite: ADMJ 121 or LAW 121*

After taking this course, the student will be able to state the two basic elements necessary for any crime and the philosophy behind these two elements. After a detailed exploration of common law crimes and selected Kansas and Missouri statutes, the student will be able to classify common law crimes and state the difference between a felony and a misdemeanor. The student will understand the significance of the separation of powers doctrine and its application to criminal law and the constant interplay of the U.S. Constitution in criminal law. 3 hrs. lecture/wk.

## ADMJ 143

**Crime Analysis** (3 CR)

Students will learn crime profiling skills and specialized techniques of conducting research, analyzing data and producing crime analysis products. Students will survey existing computer applications and learn practical use and evaluation of these applications. Students will become familiar with the common written reports, charts and graphs used to describe crime analysis products. Students will survey the variety of customers served by crime analysts and the integral part crime analysis plays within the community. 3 hrs. lecture/wk.

## ADMJ 145

**Fundamentals Private Security** (3 CR)

In addition to understanding the general field of private security, the student will be able to differentiate between the security needs of industry, private business, government and selected educational institutions. 3 hrs. lecture/wk.

## ADMJ 146

**Retail Security** (3 CR)

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. lecture/wk.

## ADMJ 148

**Family Violence/Sexual Abuse** (3 CR)

A description and causal analysis of the different physical, psychological, and sexual abuse acts that may occur within the primary family unit will be provided in this course. The study will include possible causative factors; psychological and social effects on the various family members; psychological, social and legal implications; treatments; and the relationship between abuse and crime. 3 hrs. lecture/wk.

## ADMJ 154

**Fundamentals of Criminal Investigation** (3 CR)

*Prerequisite: ADMJ 124*

This course is designed to give fundamental information that serves as an overview of the entire field as well as a solid foundation for specialized course work. The course focuses on investigation of property crimes, homicide investigation, crimes against children and sex-related offenses. 3 hrs. lecture/wk.

## ADMJ 170

**Introduction to Substance Use and Abuse** (3 CR)

This course explores the relationship between drugs and crime. Students will become familiar with the effects of drugs on the body. Interventions for individuals harmfully involved with drug use will be explored. Local and federal laws regulating substance use will also be examined. 3 hrs. lecture/wk.

## ADMJ 180

**Correctional Casework** (3 CR)

This course helps prepare students for positions in correctional agencies. Students will learn how parole officers, probation officers, facility based caseworkers and para-professional treatment providers perform their roles. Students will review casework in the classroom for all types of offenders, including adults and juveniles in facility and community-based environments. 3 hrs. lecture/wk.

## ADMJ 201

**Police Interrogation** (3 CR)

*Prerequisite: Suggested course: ENGL 121*

This class will assist students in developing the specific verbal and written communication skills used in the criminal justice field. Emphasis will be placed on the development of interviewing, interrogation, and report writing skills. Course content will focus on interviewing victims, witnesses and suspects and utilizing the information to write accurate and complete narrative reports. 3 hrs. lecture/wk.

## ADMJ 220

**Writing for Criminal Justice** (1 CR)

*Prerequisites: ENGL 121 and ENGL 122*

Writing for Criminal Justice is designed to complement the Administration of Justice program by emphasizing the types of writing required in a criminal

justice career. Students are required to gather pertinent information and then record that information by writing a variety of report narratives representative of those prepared by individuals working in a profession within the criminal justice system. Students document criminal incidents depicted in videotaped scenarios as well as participate in active information gathering during incidents simulated in class. 1 hr. lecture/wk.

### ADMJ 221

**Introduction to Forensics** (3 CR)

This course provides an overview of forensic science by focusing on the current technologies police rely on to apprehend criminal perpetrators and to link them through trace evidence to crime scenes. Emphasis is on crime scene investigation, physical evidence, organic and inorganic analysis, forensic toxicology and use of DNA in investigations. 3 hrs. lecture/wk.

### ADMJ 224

**Introduction to Terrorism** (3 CR)

This course defines and describes for students and current police officers the following terms: terrorism, current terrorist organizations, which includes their history, their personnel and their capacity to threaten the security and interests of the United States. Within this context, students learn how law enforcement officials can predict patterns of terrorist activities. The course focuses especially on law enforcement's methods for combating terrorism within multiple arenas, including deterrence, detection, prevention, and swift response. The course further addresses the challenges facing law enforcement and intelligence agencies in developing a coordinated response to terrorism. 3 hrs. lecture/wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

### ADMJ 230

**Criminal Behavior** (3 CR)

*Prerequisite: PSYC 130*

This course explores the relationship between psychology, criminal behavior, and the criminal justice system. The foundation of the course will be a detailed examination of the various theories used to explain the causation of criminal behavior. Special emphasis will be placed on exploring how this understanding is applied in various settings within the criminal justice system; including police departments, the courts, and corrections. 3 hrs. lecture/wk.

### ADMJ 235

**Community Based Corrections** (3 CR)

This course is a comprehensive examination of community based corrections. The history of probation and parole is discussed as a foundation for the expanded coverage of correctional services offered in the community. Emphasis is given to modern correctional paradigms including diversion, intermediate sanctions and restorative justice. Practical field experience will broaden the students? understanding of this population and successful best practices of existing federal, state and county agencies will be examined. 3 hrs. lecture/wk.

### ADMJ 265

**Advanced Police Training**

*Prerequisite: Selective Admissions - open only to currently employed full-time police officers attending the Police Academy under sponsorship of a law enforcement agency*

This course consists of 60 clock hours of law enforcement training provided in addition to the 540 hours required by the Kansas Minimum Standards Training Act for recruits attending the Police Academy. While the required 600-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 280

**Criminal Justice and the Public** (3 CR)

*Prerequisites: ADMJ 121 and ADMJ 124 and ADMJ 127 and ADMJ 220 and at least five (5) additional credit hours of Administration of Justice course work*

This capstone course for Administration of Justice majors assists students in preparing for a career in the field of criminal justice or an advanced program of study. The course is designed to integrate knowledge and skills acquired from prior ADMJ coursework. Additionally, students study concepts of ethics and professionalism as they relate to criminal justice professionals and the communities they serve. 3 hrs. lecture/wk.

### ADMJ 281

**Readings in Police Science** (3 CR)

*Prerequisite: 15 credit hours in ADMJ courses*

The class will consist of selected readings in police science on topics such as police administration, criminal investigation, criminology, corrections, juvenile problems and evidence. By arrangement.

### ADMJ 285

**Administration of Justice Internship** (3 CR)

*Prerequisites: Fifteen credit hours in ADMJ courses or program facilitator approval and a grade point average of 2.0 or higher*

Students augment their academic course work with an internship in an appropriate setting under instructional supervision. Internship projects are cooperative efforts between appropriate federal, state or local criminal justice agencies or not-for-profit organizations, and college staff and students. Internships give students the opportunity to participate in the real-world application of their academic studies. In addition, this synthesis of classroom study with practical experience provides students with skills and insights useful in selecting a career in the field of criminal justice. The student spends the equivalent of 12 hours per week for 14 weeks performing internship duties over the course of the semester or a total of 168 hours.

# American Sign Language (ASL)

### ASL 120

**Elementary American Sign Language I** (3 CR)

This class will focus on the development of beginning American Sign Language communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. A minimum grade of "C" is required to continue in the ASL program. 1 hr. lecture 4 hrs instructional lecture-lab/wk. ASL 120 and FL 180 are the same course. Do not enroll in both.

### ASL 121

**Elementary American Sign Language II** (3 CR)

*Prerequisite: INTR 120 or ASL 120 or FL 180 with a grade of "C" or higher*

This course will focus on continued development of elementary American Sign Language skills beyond those taught in Elementary ASL I. Students will work on developing communication competencies, concentrating on comprehension and production skills. Information about the linguistic and cultural features will be included in the context of language learning experiences. 1 hr. lecture and 4 hrs. instructional lecture-lab/wk. ASL 121 and FL 181 are the same course. Do not enroll in both.

### ASL 122

**Intermediate American Sign Language I** (3 CR)

*Prerequisites: INTR 121 or ASL 121 or FL 181 with a grade of "C" or higher*

This course will focus on the development of intermediate American Sign Language communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. 6 hrs. lecture-lab/wk. The daytime sections only are open to students in the interpreter training program. INTR 122, FL 270 and ASL 122 are the same courses; only enroll in one. <u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### ASL 123

**Intermediate American Sign Language II** (3 CR)

*Prerequisites: INTR 122 or ASL 122 or FL 270 with a grade of "C" or higher*

The course will continue study of intermediate American Sign Language. It is designed to develop further intermediate communication skills in American Sign Language. Information about the linguistic and cultural features will be included in the context of language learning experiences. 6 hrs. integrated lecture-lab/ wk. The daytime sections are open only to students in the interpreter training program. INTR 123, FL 271 and ASL 123 are the same courses; only enroll in one. <u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### ASL 135

**Intro to American Sign Language Linguistics** (3 CR)

*Prerequisites: INTR 122 or ASL 122 or FL 270 with a grade of "C" or higher*

This course introduces students to the structural and grammatical principles of ASL. Students will explore concepts of equivalency between English and ASL 3 hrs. lecture/wk. The daytime sections are open only to students in the interpreter training program. INTR 135 and ASL 135 are the same course; do not enroll in both. <u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

### ASL 145

**Introduction to the Deaf Community** (3 CR)

*Prerequisites or Corequisite: INTR 120 or ASL 120 or FL 180 with a grade of "C" or higher*

This course will prepare students to develop and recognize the diversity within the Deaf Community, significant events and figures in Deaf History, and basic norms and values of Deaf Culture. Students will examine and compare Deaf Culture and hearing culture in America. The daytime sections are open only to students in the interpreter training program. 3 hrs./wk. INTR 145 and ASL 145 are the same course; do not enroll in both. <u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

### ASL 147

**Fingerspelling I** (2 CR)

*Prerequisites: INTR 121 or ASL 121 or FL 181. with a grade of "C" or higher*

Students will work on developing beginning expressive and receptive fingerspelling skills based on word recognition principles. 1 hr. lecture, 2 hrs. lab/wk. The daytime sections are open only to students in the interpreter training program. INTR 147 and ASL 147 are the same course; do not enroll in both.

### ASL 150

**American Sign Language Literature** (3 CR)

*Prerequisite: INTR 122 or ASL 122 with a grade of "C" or higher*

This course will provide introduction, discussion, and demonstration of literature in American Sign Language (ASL). The literature involves ASL Poetry, ASL Storytelling/Narratives, Deaf Humor, Deaf Folklore and other genres that have been passed on from one generation to another by culturally deaf people. Students will receive, analyze and retell a variety of ASL literature. 3 hrs. lecture/wk. INTR 150 and ASL 150 are the same course; do not enroll in both.

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# Animation (ANI)

### ANI 120

**Conceptual Art for Animation** (1 CR)

*Prerequisite: CDTP 135*

In this basic concept art course designed specifically for the game artist, graphic artist and animator, students will study basic and advanced drawing elements and principles. Students will produce conceptual artwork used in animation, graphic arts and gaming, including realistic and cartoon character design, landscape environments, architecture, and vehicles. 2 hr. integrated lecture-studio/wk. <u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### ANI 145

**Introduction to 3D Animation** (3 CR)

*Prerequisites: CDTP 135 and ANI 120*

This introductory course will provide a historical background and general design and production issues for 3D animation and game art creation. The details of modeling dimensional objects and environments and a range of simple to complex rendering techniques will be covered. Issues associated with telling a story through moving pictures such as screenplay writing, storyboarding and techniques for bringing an animated character to life will be explored. 6 hrs. integrated lecture-studio/wk. <u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### ANI 245

**Character Animation** (3 CR)

*Prerequisite: ANI 145*

Students will continue to refine their skills in a variety of character animation media. The computer and cutting edge software has become an increasingly important tool in creating character animatics, 2D and 3D character animations. More principles and elements of character animation will be introduced to create more realistic, believable and engaging stories. Continued focus on the importance of plot, character development, key principles of animation and artistic skill will push students into realms of endless creativity and imagination. 6 hrs. integrated lecture-studio/wk. <u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### ANI 250

**Game Art Assets** (3 CR)

*Prerequisite: ANI 145*

This course provides an introduction to making game art assets and animations for next generation games. Students create gaming models of characters, land and air based vehicles, weapons, ammunition, health items, armor, power-ups and other model assets used in game play. Students create textures, light assets,

and export them into an existing game. 6 hrs. integrated lecture-studio/wk.

**ANI 255**

**Advanced Animation and Effects** (3 CR)

*Prerequisite: ANI 245*

The Advanced Animation and Effects course exposes students to various Hollywood style effects, from viscous liquid to open ocean effects. Through hands-on tutorials students will simulate and render a variety of visual effects including fire, explosions, smoke, steam, lightning, rain, snow storms and tornados. These are just a few of the many limitless possibilities that are required by today's demanding visual effects companies. The students will also explore compositing, combining CG (computer generated) and live video together to create stunning imagery. 6 hrs. integrated lecture-studio/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

**ANI 260**

**Animation Capstone** (3 CR)

*Prerequisite: ANI 255*

In this course, the student will use all the knowledge attained in previous core animation courses and develop a finished 1-2 minute independent movie following a predetermined animation production process and schedule. Students will develop a portfolio including an auto-run DVD or VHS tape, and a hard copy portfolio including illustrations of characters, model sheets, storyboards, props, environments, textures and final rendered scenes created for the movie. 6 hrs. integrated lecture-studio/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

**ANI 272**

**Animation Internship** (1 CR)

*Prerequisite: Facilitator approval required*

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 interactive media program. Student interns will be required to complete a minimum of 180 hours of on-the-job training. ANI 272 and CIM 272 are the same course; do not enroll in both.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

**ANI 273**

**Career Preparation** (4 CR)

*Prerequisite or corequisite: ANI 260*

This course will provide interactive media majors instruction in the presentation of his or her work in a digital portfolio format of professional quality. A printed and written resume will be produced. Self-promotion, networking, job searches and interview skills will also be covered. 3 hrs. lecture, 2 hrs. lab/wk. ANI 273 is the same course as CIM 273; do not enroll in both. This course is taught in the spring semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

# Anthropology (ANTH)

**ANTH 125**

**Cultural Anthropology** (3 CR)

This introductory course will employ various anthropological theories, perspectives, and methodologies to critically and comparatively examine an array of cultural and social topics as they relate to selected Western and Non-Western cultures and societies. 3 hrs./wk.

**ANTH 126**

**Physical Anthropology** (3 CR)

This course is an introduction to selected concepts and principles important to an understanding of evolutionary forces and their influence on the physiology and behavior of humans. The importance of the scientific method will be explored. Awareness of humans and their place in nature will be achieved by examining basic genetics, micro- and macroevolution, primate ecology and behavior, the paleoanthropological evidence for human evolution, and modern human adaptation and variation. 3 hrs./wk.

**ANTH 130**

**World Cultures** (3 CR)

This introductory course will utilize an ethnographic approach to introduce students to various cultural and social practices of Westernized and non-Westernized cultures and societies from around the world. This course will examine a wide range of topics including economic production, religion, world view, kinship patterns and political and economic institutions. 3 hrs./wk.

**ANTH 134**

**Native Americans** (3 CR)

This ethnographic course will introduce students to the indigenous peoples and First Nations of North, Central and South America, with particular attention being paid to North America. This course will focus on selected First Nations cultures and societies to examine a wide range of topics including arts, oral traditions, religions, and Indian-White relations. 3 hrs. lecture/wk.

**ANTH 135**

**American Indian Artistic Tradition** (3 CR)

This course introduces students to many art forms of the various American Indian nations of the United States, Canada, and Mexico. Mediums to be explored include traditional and contemporary visual art, traditional and contemporary music and dance, oral tradition, and film. In addition, social, political, economic, and legal influences on art will be discussed. Lectures, discussions, readings, and films will be utilized to accomplish this. 3 hrs. lecture/wk.

**ANTH 142**

**World Prehistory** (3 CR)

This course is an introduction to the variety and continuity of the prehistoric human past. Through the archaeological record we will consider the evolution of humans, the transition of foraging to farming economies, the rise of complex societies, secondary state formation, and the collapse of complex societies. 3 hrs. lecture/wk.

**ANTH 144**

**Archaeology** (3 CR)

This course is an introduction to the basic concepts, methods, and findings in archaeology. The historical origins of the discipline and modern approaches to understanding the past will be presented. The course will describe the range of archaeological evidence and techniques for locating, analyzing, and interpreting these remains. 3 hrs. lecture/wk.

**ANTH 150**

**People and Cultures of Mesoamerica** (3 CR)

This course is a survey of Mesoamerican cultural beliefs, traditions, and practices from the prehistoric era to the present day. Through the archaeological, historical, and ethnographic record we will adopt an anthropological perspective on the global, national, regional, and local forces on everyday life in Mesoamerica. 3 hrs.lecture/wk.

**ANTH 205**

**Archaeological Field Methods** (5 CR)

This course is a practicum of archaeological field methods and techniques. The fundamental principles of archaeological research will be considered. Students will create and implement their own research design in the context of on-going investigations. Emphasis will be placed on practicing the essential skills needed to conduct archaeological research. 160 integrated lecture lab hrs./semester

# Architecture (ARCH)

**ARCH 120**

**Introduction to Architecture** (3 CR)

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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50 to $100.

**ARCH 123**

**Architectural Principles** (3 CR)

*Prerequisite: ARCH 120*

This course will elaborate on the concepts first presented in introduction to architecture. General focus will be on the modern profession and architects dealing with past, present and emerging ideas as they relate to physical and social context including landscaping, buildings and cities. Unifying themes will be presented of formal architectural principles in relation to modernism and the impact on design, the site, landscaping, and site planning issues. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $30.

**ARCH 127**

**Introduction to Architectural Graphics** (4 CR)

This course is designed to build a conceptual and manual foundation for professional architectural education. Students will learn to apply a variety of media and drawing systems such as freehand drawing, architectural lettering and equipment usage. Students will also learn applied geometry including line, tone, texture and utilizing sun, shade and shadows. Multi-view, paraline, axonometric and oblique drawings will be taught and students will build models related to architectural forms. Emphasis will be on learning to think in spatial terms while introducing professional, conceptual and visual vocabulary. Graphic presentation skills will be developed using standard graphic conventions, basic computer skills, and basic material investigations. 8 hrs. integrated lecture, studio/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $125 to $200.

**ARCH 131**

**Architectural Graphics** (3 CR)

*Prerequisite: ARCH 127 or ARCH 130*

This course builds upon the conceptual and manual skills acquired in Introduction to Architectural Graphics. 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $300.

**ARCH 140**

**Architectural Design** (3 CR)

*Prerequisite: ARCH 127 or 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $300.

**ARCH 240**

**Architectural History: Ancient to Middle Ages** (3 CR)

This course will trace the development of the built environment from Antiquity to the Middle Ages and explore pre-Columbian and Islamic architecture. Emphasis will be placed on how materials, technological advances and natural environment influence architecture. The shaping of architecture through cultural forces will be stressed. Fundamental design principles and analyses of the built form will also be covered. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $25 to $100.

**ARCH 241**

**Architectural History: Renaissance to Enlightenment** (3 CR)

This course will investigate the architecture of the Renaissance, Baroque and Enlightenment periods. A brief exploration into non-Western architecture will also be presented. The focus of this course will be on the principles of design, cultural forces and concept of the built environment within its historical context. The work of prominent architects from each period will be highlighted and analyzed. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $25 to $50.

# Art (ART)

**ART 124**

**Design 2D** (3 CR)

*Prerequisite or corequisite: CDTP 145*

This is an introductory study of the principles of visual perception, two-dimensional space organization and the visual elements of line, shape, texture and space. Concepts, materials and processes necessary to an understanding of two-dimensional form are explored using traditional and digital tools and techniques. Working knowledge of Adobe Illustrator is required. 6 hrs. lecture

and studio/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## ART 127

**Design 3D** (3 CR)

*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. lecture and studio/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## ART 129

**Design Color** (3 CR)

*Prerequisite or corequisite: CDTP 135*

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. Working knowledge of Adobe Photoshop is required. 6 hrs. lecture and studio/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## ART 130

**Drawing I** (3 CR)

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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## ART 131

**Drawing II** (3 CR)

*Prerequisite: ART 130*

This course involves intermediate problems in drawing with emphasis on individual expression based on historical as well as contemporary concerns and approaches in art. Students will work from models, still-life, and conceptual presentations. A variety of media will be explored. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## ART 135

**Painting I** (3 CR)

This course is an introduction to the basic elements of painting. Students will learn basic painting skills, color properties, color mixing, color relationships, applications and proper use of tools and equipment. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## ART 136

**Painting II** (3 CR)

*Prerequisite: ART 135*

This course involves intermediate problems in painting with emphasis on individual expression based on historical as well as contemporary concerns and approaches in art. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## ART 138

**Digital Imaging for Artists** (3 CR)

This course is an introduction to the use of the computer as a medium for making fine art. The course will emphasize developing the student's skill in making expressive visual statements using computer technology. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## ART 142

**Ceramics I** (3 CR)

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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $250.

## ART 143

**Ceramics II** (3 CR)

*Prerequisite: ART 142*

This course covers more advanced methods and studio practices in creative ceramic wheel expression and glaze formation. Emphasis is on development of a sense of thrown form and creative decoration or optional creative non-wheel ceramic form development. The course focuses on advanced ceramic form production, aesthetic issues, investigative study and practice. Clay, glaze and firing techniques are investigated in depth. The student acquires a repertoire of studio skills, a deeper awareness of ceramic history and articulated criteria of judgment. Individual interpretation and conceptual development are expected. The study of aesthetics of ceramic form is undertaken. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $250.

## ART 145

**Sculpture I** (3 CR)

Students will explore and study natural and synthetic sculptural forms as they create work using traditional or contemporary media and techniques. Assignments require work in limestone, clay, wax, bronze, aluminum and steel, and involve carving, modeling and building up. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50 to $200.

## ART 146

**Sculpture II** (3 CR)

*Prerequisite: ART 145*

This continuation of ART 145 will focus on advanced methods and techniques with emphasis on materials, forms and the student's selection of an individual direction with individual material choices. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and

textbooks. $50 to $200.

## ART 148

**Metal and Silversmithing I** (3 CR)

This course is a basic introduction to the terms, tools and techniques involved in creating jewelry and other wearables as they relate to the human figure. Casting, fabrication and construction will be explored. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50 to $200.

## ART 149

**Metal and Silversmithing II** (3 CR)

*Prerequisite: ART 148*

Students will study advanced casting and construction techniques. Projects should show a higher degree of design and function. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50 to $200.

## ART 172

**Watercolor Painting** (3 CR)

This course is an introduction to transparent water media with emphasis on learning fundamental painting skills, the visual elements, composition, visual perception and an awareness of personal expression. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## ART 231

**Life Drawing I** (3 CR)

*Prerequisite: ART 130*

This course is an introduction to the basic elements of drawing for students wanting a concentration in drawing the human figure. Students will acquire basic competence in developing drawings involving the human form. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## ART 232

**Life Drawing II** (3 CR)

*Prerequisite: ART 231*

This course is an intermediate investigation of drawing from the human form. This class is for students wanting to concentrate on figure drawing beyond Life Drawing I. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## ART 235

**Studio Workshop I** (3 CR)

*Prerequisite: ART 131 or ART 136*

This course involves advanced problems in painting (or drawing) with emphasis on individual expression based on historical as well as contemporary concerns and approaches in art. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## ART 236

**Studio Workshop II** (3 CR)

*Prerequisite: ART 235*

This course involves advanced problems in painting (or drawing), above and beyond those experienced in Workshop I, with emphasis on individual expression. 6 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## ART 244

**Ceramics Workshop I** (3 CR)

*Prerequisites: ART 143 and permission of the assistant dean*

Students will have the opportunity to pursue advanced individual research under the direction of the instructor. Emphasis is on creative expression and development of technical skills as well as the further pursuit of technical studies that have relevance for emerging personal specializations. Students will conduct a personal program of study on one aesthetic issue that emerges as personally significant and present the outcomes in an appropriate and acceptable manner at the close of the semester. Students should initiate and pursue studies in directions that inform and further their individual professional and creative growth, which leads to invention, innovation and refinement of their personal semester work, as agreed upon with the instructor. This course enables further pursuit of technical studies that have relevance for these emerging personal specializations. Skill refinement, three-dimensional imagination, with increased creative expression and creative product generation are anticipated. 6 hrs. lecture, lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $250.

# Art History (ARTH)

## ARTH 180

**Art History: Ancient to Renaissance** (3 CR)

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.

## ARTH 182

**Art History: Renaissance to Modern** (3 CR)

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. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## ARTH 184

**Art History: Twentieth Century** (3 CR)

This course introduces the student to the arts and ideas of Western Europe and the United States from the late 19th century to the present. The course will examine the aesthetic elements that mark the styles of major movements in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their

various cultural and historical contexts. 3 hrs. lecture/wk.

### ARTH 186

**Art History: Introduction to Asian Art** (3 CR)

This course will acquaint students with the arts and ideas that arose in India, China and Japan from the prehistoric to the early modern periods. The course will examine the aesthetic elements that mark the styles of major periods in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs. lecture/wk.

### ARTH 188

**History of Photography** (3 CR)

This course provides an introduction to the history of photography. Students will examine the aesthetic and technological evolution of photography as an art form, as a visual tool for and influence upon other artistic disciplines, and as a statement of perceived reality. The course will examine the elements that distinguish various aesthetic movements, the styles of major periods and the influences of individual photographers. Attention will be paid to the relationship between photographic imagery and various cultural and historical contexts. Recommended prior course is PHOT 121. 3 hrs. lecture/wk.

# Astronomy (ASTR)

### ASTR 120

**Fundamentals of Astronomy** (3 CR)

This course is a study of the universe from the earth, moon and planets to the stars and the most distant galaxies. Topics include black holes, quasars, and the origin of the universe and the possibility of life on other planets. Current astronomical discoveries are discussed in class as they occur. Access to astronomical Web sites is available to students in this course. 3 hrs. lecture/wk.

### ASTR 122

**Astronomy** (4 CR)

This course is a study of the universe from the earth, moon, and planets to the stars and the most distant galaxies. Topics include black holes, quasars, and the origin of the universe and the possibility of life on other planets. Current astronomical discoveries are discussed in class as they occur. Access to astronomical Web sites is available to students in this course. 3 hrs. lecture, 2 hrs. lab/wk., 5 nighttime telescope sessions are required.

# Automotive Technology (AUTO)

### AUTO 120

**Basic Automobile Operation and Maintenance** (3 CR)

This is a beginning level class for non-automotive majors, designed to introduce students to the basic function, operation and care of modern automobiles. Upon completion they should be able to discuss safe operation of a passenger car in everyday circumstances in including emergency situations. Students should be able to locate and understand information regarding repair and maintenance of modern automobiles. Safe practices while using basic hand tools, chemicals and jacks will be included in this course. After determining fair market costs and economic feasibility students will be able to determine whether to repair or replace an automobile. Students should be able to decide whether to attempt repairs themselves or to have them performed by a professional. Also, the basic costs of insuring and operating an automobile will be discussed. 3 hrs. lecture/wk.

### AUTO 121

**Small Engine Service** (3 CR)

Upon successful completion of this course, the student should be able to compare and contrast operating principles of two-stroke and four-stroke cycle engines. The student should be able to describe lubricating, cooling, fuel and governor systems; troubleshoot engine problems; inspect engine components; and service the fuel, cooling and exhaust systems. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $40 to $300.

### AUTO 122

**Introduction to Automotive Glass** (3 CR)

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, and 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, 1 1/2 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $40 to $300.

### AUTO 123

**Motorcycle Maintenance and Repair** (2 CR)

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-stroke 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $40 to $300.

### AUTO 125

**Introduction to Automotive Shop Practices** (3 CR)

This is a beginning course that is appropriate for both the automotive major and other interested students. Upon successful completion of this course, the student should be able to develop shop safety habits and become proficient in tire, battery, cooling system, lubrication service and minor electrical diagnosis. This course is an introductory course required for all students in the Automotive Technology program. Emphasis will be placed on learning basic skills needed to enter advanced automotive classes. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $40 to $300.

### AUTO 128

**Automotive Parts Specialist** (2 CR)

Upon successful completion of this course, the student should be able to demonstrate good communication and basic math skills. Ordering and maintaining correct inventory, as well as displaying and selling automotive parts for a fair profit, will be studied. Lectures will be supported by parts specialists in the industry. 2 hrs. lecture/wk.

### AUTO 130

**Diesel Fundamentals** (2 CR)

*Prerequisite or corequisite: AUTO 125*

Upon successful completion of this course, the student should be able to identify diesel engine components and parts and troubleshoot and service all external components with emphasis on glow plugs, injectors and injector pumps. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 3 hrs. lab/wk. This course is taught in the spring semester.

### AUTO 163

**Automotive Steering and Suspension** (3 CR)

*Prerequisite or corequisite: AUTO 125 or approval of program facilitator*

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. This course is taught in the fall semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $40 to $300.

### AUTO 165

**Automotive Engine Repair** (4 CR)

*Prerequisite or corequisite: AUTO 125 or approval of the program administrator*

Upon successful completion of this course, the student should be able to demonstrate an understanding of the four-stroke cycle internal combustion engine. Students should be able to diagnose and repair cylinder heads and cylinder block assemblies to include lubrication and cooling systems. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 6 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $1500.

### AUTO 167

**Automotive Brake Systems** (2 CR)

*Prerequisite or corequisite: AUTO 125 or approval of program administrator*

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. This course is taught in the spring semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $300.

### AUTO 168

**Automotive Manual Drivetrain and Axles** (3 CR)

*Prerequisite or corequisite: AUTO 125 or approval of program administrator*

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. 2 hr. lecture, 3 hrs. lab/wk. This course is taught in the spring semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $300.

### AUTO 201

**ASE Certification Seminar** (1 CR)

This course will prepare students to take any of the eight basic National Institute for Automotive Service Excellence (ASE) automotive certification tests. 1 hr. lecture/wk.

### AUTO 206

**Automotive Retailing Sales** (3 CR)

*Prerequisite: MKT 133 or MKT 134*

Upon successful completion of this course, the student should be able to demonstrate the skills necessary for competency in automotive retailing. Student awareness and understanding will be directed toward an introduction to automotive retailing, past, present and future; professionalism in sales; the components of sales transactions; a structured sales program and product knowledge; customer satisfaction and follow-up; building a clientele; and success through self-improvement. 3 hrs. lecture/wk.

### AUTO 210

**Advanced Engine Repair** (3 CR)

*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. This course is taught in the fall semester
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $3000.

### AUTO 230

**Automotive Heating and Air Conditioning** (3 CR)

*Prerequisite or corequisite: AUTO 125 or approval of program administrator*

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. This course is taught in the spring semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $300.

### AUTO 234

**Automotive Electrical Systems** (4 CR)

*Prerequisite or corequisite: AUTO 125 or approval of program administrator*

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. This course is taught in the fall semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $300.

**AUTO 250**

**Automatic Transmissions and Transaxles** (4 CR)

*Prerequisite or corequisite: AUTO 125 or approval of program administrator*

Upon completion of this course, the student should be able to diagnose, service and repair various automatic transmissions and automatic transaxles, including computer-controlled systems. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/ or equipment. 3 hrs. lecture/demonstration, 3 hrs. lab/wk. This course is taught in the fall semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $300.

**AUTO 254**

**Automotive Engine Performance** (5 CR)

*Prerequisites or corequisites: AUTO 165 and AUTO 234*

Upon successful completion of this course, the student should be able to describe the operation of engine management systems to include: fuel systems, ignition systems, and emission control systems. The student should be able to diagnose and repair all drive ability and emission control 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. This course is taught in the fall semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $300.

**AUTO 260**

**Automotive Service Management** (3 CR)

*Prerequisite: 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. This course is taught in the spring semester.

**AUTO 261**

**Automotive Service Techniques** (3 CR)

*Prerequisite: 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 workloads. 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. This course is taught in the spring semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $40 to $300.

**AUTO 271**

**Automotive Technology Internship** (3 CR)

*Prerequisite: Program facilitator approval required*

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

# Biology (BIOL)

**BIOL 110**

**Nutrition for Life** (2 CR)

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** (3 CR)

Natural History of Kansas describes 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 the plants and animals of Kansas. The course will consider how the physical and biological environment relates to past and present human resource uses. 3 hrs. lecture/wk. Two 7-hr. Saturday labs required.

**BIOL 122**

**Principles of Biology** (3 CR)

This course is an introduction to selected concepts and principles important to an understanding of how biological systems operate. The importance of scientific methods and processes will be explored. Biological organization will be studied by examining the chemical, cellular, organismal and ecological properties that are unique to life. The diversity and unity of life will be explained in terms of classical and molecular genetics. 3 hrs./wk. BIOL 122 students see Memory Strategies classes on pg.? - Optional Enrollment. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

**BIOL 123**

**Principles of Biology Lab** (1 CR)

*Prerequisite or corequisite: BIOL 122 or consent of the assistant dean*

This introductory lab examines basic biological concepts by focusing on the structures and functions of plants and animals. 2 hrs./wk. BIOL 123 students must be currently enrolled in BIOL 122 or have successfully completed BIOL 122 within the last three years.

**BIOL 124**

**Oceanus: Essentials of Oceanography** (3 CR)

This course for beginning students focuses on the marine environment as a unique feature of the planet earth and investigates areas of intense scientific and public concern: the pervasiveness of the ocean and its effect on the earth's weather, its stunning physical size and diversity of contained life forms, its contributions to the physical and historical development of man, its impact on geopolitical and economic matters, and the impact of oceanic pollutants and the potential exploitation of marine resources. 3 hrs. lecture/wk.

**BIOL 125**

**General Botany** (5 CR)

This is a survey of the life, growth and structure of plants. Divisions of the plant kingdom will be presented with emphasis on life cycles, anatomy, physiology and ecology of major groups. Students will do microscopic and macroscopic analysis of the major division. 3 hrs. lecture, 4 hrs. lab/wk.

## BIOL 127

**General Zoology** (5 CR)

This is a survey of the life, structure, and growth of animals. Students will concentrate on identifying animals by their structural characteristics and looking at the role adaptation plays in anatomical and physiological features. Students will do dissections and microscopic analysis of the major phyla. 3 hrs. lecture, 4 hrs. lab/wk.

## BIOL 130

**Environmental Science** (3 CR)

Environmental Science seeks to describe problems and solutions associated with human use of natural resources. Students will study the major physical and biological processes that govern the complex interactions in natural ecosystems. Major course topics include human population growth, resource use and pollution. Practical solutions aimed at sustainability will be identified and examined. This is an introductory, nonscience-major survey course. 3 hrs./wk. BIOL 131 students must be currently enrolled in BIOL 130 or have successfully completed BIOL 130 within the last three years. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## BIOL 131

**Environmental Science Lab** (1 CR)

*Prerequisite or corequisite: BIOL 130*

In this lab, students will learn ecological principles that are necessary for understanding and solving environmental problems. Students will sample the local environment for various types of environmental pollution, conduct lab projects and computer simulations, and attend field trips. Field trips may include a visit to a local wastewater treatment plant, a stream ecosystem and a prairie ecosystem. 2 hrs.lab/wk. plus up to three field trips. BIOL 131 students must be currently enrolled in BIOL 130 or have successfully completed BIOL 130 within the last three years.

## BIOL 135

**Principles of Cell and Molecular Biology** (4 CR)

This is an integrated lecture and laboratory course for biology majors and students planning to take additional courses in biology. Subjects covered include basic biochemistry, cell structure and function, cellular metabolism, Mendelian and molecular genetics, natural selection and evolution, cell physiology and development of plants and animals from the single-celled stage to the embryonic stage. 3 hrs. lecture, 2 hrs. lab/wk.

## BIOL 140

**Human Anatomy** (4 CR)

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. The Open Anatomy Lab, 311 CLB, is available for students enrolled in Human Anatomy and Human Anatomy and Physiology classes at JCCC. Contact your professor, check the schedule outside of 311 CLB or call 913-469-8500, ext. 4124, for hours. A current student ID is required for using the Open Anatomy Lab.

## BIOL 144

**Human Anatomy and Physiology** (5 CR)

This course provides basic knowledge on human structures and their function. Students will study the relationship of structures to function in the organ systems of the human body. Emphasis will be on the identification of the anatomical features and their functions. This course is integrated lecture and laboratory. 3 hrs. lecture, 4 hrs. lab/wk. The Open Anatomy Lab, 311 CLB, is available for students enrolled in Human Anatomy and Human Anatomy and Physiology classes at JCCC. Contact your professor, check the schedule outside of 311 CLB or call 913-469-8500, ext. 4124, for hours. A current

student ID is required for using the Open Anatomy Lab.

## BIOL 145

**Human Anatomy and Physiology Dissection** (1 CR)

*Prerequisites: BIOL 144 and Assistant Dean's Approval*

Students will dissect the cat and study the relationship of structures to function in the organ systems of the cat. In this laboratory course, they will also dissect the cow kidney, heart, brain and eye. Students will compare and contrast these structures and functions with the organ systems of the human body. 2 hrs. lab/wk. Students enrolling in BIOL 145 should have completed BIOL 140 or BIOL 144 and have the approval of the assistant dean.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $35.

## BIOL 150

**Biology of Organisms** (5 CR)

*Prerequisite: BIOL 135 or consent of the assistant dean*

This is a survey of the five kingdoms of life. Monera, fungi, protista, plant and animal kingdoms will be presented, with emphasis on life cycles, anatomy, physiology and ecology of the major groups. 4 hrs. lecture, 3 hrs. lab/wk.

## BIOL 155

**Introduction to Bioethics** (3 CR)

*Prerequisite: BIOL 122 or BIOL 135 or equivalent, or permission of the assistant dean*

This course is an introductory course in ethics with an emphasis on the ethical content raised by the discipline of biology. The student will examine the major ethical theories, including deontology, act utilitarianism, rule utilitarianism, along with select others. Study of the theories will enable the analysis of case studies involving such issues as human populations problems, reproductive technologies, genetic engineering of humans and other organisms, stem cells and their use, beginning/ending of life, the human genome project, environmental impact of humans, cloning, medical and non-medical genetic interventions, and biological ethics. 3 hrs. lecture/wk.

## BIOL 205

**General Genetics** (4 CR)

*Prerequisite: BIOL 122 or BIOL 135 or the equivalent introductory college-level course. All prerequisites require a grade of "C" or higher*

This introductory course emphasizes human heredity using concepts from classical and modern genetics. Themes of advancing technologies and bioethical issues are interwoven in the basic background fabric of the course. 3 hrs. lecture, 2 hrs. lab/wk.

## BIOL 225

**Human Physiology** (4 CR)

*Prerequisites: CHEM 122 and either BIOL 140 or BIOL 144*

This is an introduction to the dynamic functions of the human organism from the chemical and molecular mechanisms that sustain cellular processes through the control systems responsible for homeostasis and the influence of these systems on the cellular function of organ and systems operation. Laboratory investigation using selected biochemical and physiological preparations allows correlation of theory with experimental observations. 3 hrs. lecture, 3 hrs. lab/wk.

## BIOL 227

**Human Pathophysiology** (4 CR)

*Prerequisite: BIOL 144 or BIOL 225*

This introduction to the physiology of disease covers common disorders of the body from the cellular to the systemic level. Topics include causes, symptoms, diagnostic tests and treatments of disease. 4 hrs. lecture/wk.

### BIOL 230

**Microbiology** (3 CR)

*Prerequisite: CHEM 122 or one year of high school chemistry*

This is a general introductory course in microbiology. It provides a background in many areas of microbiology with an emphasis on medical aspects. The structure, physiology, antimicrobial agents, immunology and host-parasite relationship of microorganisms will be studied, with an emphasis on bacteria. 3 hrs./wk.

### BIOL 231

**Microbiology Lab** (2 CR)

*BIOL 231 students must be currently enrolled in BIOL 230 or have successfully completed BIOL 230 within the last three years.*

Students will learn aseptic techniques and apply them in the isolation of pure cultures of bacteria. Students will also perform various staining techniques and chemical tests to identify these bacteria. The response of bacteria to changes in environmental conditions will also be examined. Various life stages of medically important parasites will also be observed. 4 hrs./wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $35.

### BIOL 235

**General Nutrition** (3 CR)

*Prerequisites: CHEM 122 and BIOL 144 or CHEM 122 and BIOL 140 and BIOL 225*

This introductory course provides a basic knowledge of human nutrition. Students will learn the sources and functions of the various nutrients. They will also explore the interaction of diet, disease prevention and treatment. Through the use of a computerized nutrition program, students will analyze their diets for nutritional deficiencies and excesses. 3 hrs. lecture/wk.

### BIOL 240

**General Pharmacology** (3 CR)

*Prerequisite: BIOL 225*

This course provides a basic understanding of the science of drugs-how they work and what they do. Students will study various drug concepts including mechanism of action, pharmacologic class, pharmaco-kinetics, pharmacodynamics and clinical implications. 3 hrs. lecture/wk. Spring.

### BIOL 250

**Ecology** (4 CR)

*Prerequisites: BIOL 122 and BIOL 123 or BIOL 130 and BIOL 131 or equivalent courses or consent of the assistant dean*

Major topics in this course will include population dynamics, competition, predation, mutualism, community structure, ecological succession, energy flow, nutrient cycling, and biogeography. Students will also review the major features of terrestrial, freshwater, and marine ecosystems. Field and laboratory experiments will introduce students to several different habitat types; various techniques commonly used in ecology; and engage students in collecting, analyzing and evaluating ecological data. Lab reports emphasize critical evaluation of ecological concepts and data and effective scientific communication. 3 hrs. lecture, 3 hrs. lab/wk.

# Biotechnology (BIOT)

### BIOT 160

**Introduction to Biotechnology** (2 CR)

*Prerequisites: CHEM 122 and prerequisite or corequisite BIOL 135 or CHEM 124 and CHEM 125 and prerequisite or corequisite: BIOL 135 All prerequisites and corequisites require a grade of "C" or higher*

This course is an introduction to biotechnology, including career exploration, history and applications of DNA/RNA technology, molecular biology, and bioethics. Topics include cloning, DNA, antibodies, gene therapy, plant biotechnology, the human genome project, DNA fingerprinting, genetic testing, diverse products made through biotechnology, and the ethical implications of this technology. The course is intended for those interested in pursuing a career in an industrial, academic, or biomedical research laboratory. 2 hrs. lecture/wk.

### BIOT 165

**Laboratory Safety** (1 CR)

*Prerequisite: CHEM 122 and prerequisite or corequisite BIOL 135 or CHEM 124 and CHEM 125 and prerequisite or corequisite BIOL 135 All prerequisites and corequisites require a grade of "C" or higher*

This course will emphasize laboratory safety and procedures. Additionally, regulations that govern the biotechnology laboratory will be discussed. Biological, chemical and radiation safety will all be handled through lectures, videotapes, demonstrations and field trips. There will also be exposure to good manufacturing practices (GMP), quality assurance and control procedures (QA/QC), and OSHA and FDA regulations. 1 hr. lecture/wk.

### BIOT 230

**Microbiology for Biotechnology** (5 CR)

*Prerequisites: BIOL 135 and BIOT 160 and BIOT 165 All prerequisites require a grade of "C" or higher*

This is an introductory course in microbiology for biotechnology students. It provides a background in many areas of microbiology with an emphasis on molecular aspects and applications for biotechnology. Industrial and food microbiology will also be examined. The structure, physiology, antimicrobial agents, immunology and host-parasite relationship of microorganisms will also be studied, with an emphasis on bacteria. Students will learn aseptic techniques and apply them in the isolation, growth and maintenance of pure cultures of bacteria. Students will also perform various molecular and genetic techniques as well as chemical tests to identify these bacteria. The growth phases of bacteria and response of bacteria to changes in environmental conditions will be examined. 3 hrs lecture, 4 hrs lab /wk.

### BIOT 260

**Biotechnology Methods** (5 CR)

*Prerequisites: Either BIOT 160 or BIOL 160 and either BIOT 165 or BIOL 165 and Prerequisite or corequisite: BIOL 230. All prerequisites and corequisites require a grade of "C" or higher*

This course is an introduction to the theory and laboratory techniques in molecular biology, protein biochemistry and immunology with an emphasis on gene expression and regulation, recombinant DNA, RNA transcription, and protein translation. Laboratory emphasis will be on molecular biological techniques utilized in modern research and industrial laboratories. Techniques include growth and maintenance of E. coli, gene cloning, DNA and protein electrophoresis protein purification and enzymatic and immunology assays. Lecture and laboratory exercises on the principles and practices of initiation, cultivation, maintenance, preservation of cell culture lines and applications will also be covered. 6 hrs. lab/wk.

**BIOT 265**

**Biotechnology Internship** (4 CR)

*Prerequisites: BIOT 260 and either BIOT 160 or BIOL 160 and either BIOT 165 or BIOL 165 and assistant dean's approval*

The internship will provide advanced students the opportunity to develop job and career-related skills while in a work setting. Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The work will be developed cooperatively with academic, industrial and private institutional biotechnology laboratories. 20 lab hrs./wk.

# Business (BUS)

**BUS 120**

**Management Attitudes and Motivation** (3 CR)

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** (3 CR)

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** (3 CR)

Upon successful completion of this course, the student should be able to define the role of a consumer in the economy; develop a basic financial plan; apply budgeting procedures in a daily and monthly spending plan; calculate principal and interest; define the types of consumer credit; identify the types of housing mortgages; and explain the important considerations in buying, selling and renting. In addition, the student should be able to calculate individual insurance needs in the areas of life insurance, health insurance, property and liability insurance, automobile insurance and other types of special insurance and be able to explain employee and retirement benefits, including tax-sheltered plans. 3 hrs./wk.

**BUS 140**

**Principles of Supervision** (3 CR)

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** (3 CR)

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** (3 CR)

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.

**BUS 150**

**Business Communications** (3 CR)

*Prerequisite: ENGL 121*

Upon successful completion of this course, the student should be able to explain the role of communication in the business environment and identify the most effective methods for creating, sending and receiving messages. In addition, the student should be able to use effective oral and written communication skills in business; write and evaluate business documents, including letters, memos, and reports using the principles of correct style, organization and format; and prepare an effective oral business presentation. 3 hrs./wk.

**BUS 215**

**Savings and Investments** (3 CR)

Upon successful completion of this course, the student should be able to define, analyze and evaluate types of savings instruments and other investments. In addition, the student should be able to determine which instruments are desirable for a personal financial plan. The student should also be able to demonstrate an understanding of basic financial-planning concepts and tax-planning procedures. 3 hrs./wk.

**BUS 225**

**Human Relations** (3 CR)

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** (3 CR)

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 230 is the same course as MKT 230; do not enroll in both.

**BUS 235**

**Introduction to International Business** (3 CR)

This course is designed to introduce the student to the global economy. Differences in political, economic and cultural forces within countries will be analyzed and national competitiveness assessed. Cross-border trade and investment and the global monetary system will be introduced and analyzed. Competition and a firm's international business strategy in the global marketplace will be examined. Ethical issues in international business will also be discussed. 3 hrs./wk.

**BUS 240**

**Legal Environment of International Business** (3 CR)

*Prerequisites: BUS 235 and BUS 261 and BUS 263*

This course provides an introduction to the legal aspects of contracts for international sale of goods. Topics include multinational enterprises, sovereignty, international finance, international transportation, international marketing, protection of intellectual property, international dispute resolution, negotiation and diplomacy. 3 hrs. lecture/wk.

**BUS 243**

**Human Resource Management** (3 CR)

Upon successful completion of this course, the student should be able to state the principles of human resource management; describe the human resource function as an integral part of management; differentiate between roles of the personnel and line manager in the management of human resources; define and evaluate strategic planning, recruitment, selection and training; define the primary methods of human resource development; employ methods of employer appraisal; and state the major components and coverages of the Equal Employment Opportunity Act and other personnel/human resource-related laws. 3 hrs./wk.

**BUS 261**

**Business Law I** (3 CR)

This course is designed to introduce the students to the American legal system. Principles of legal ethics in business will be introduced. Principles of common law of contracts will be discussed. Sections of Uniform Commercial Code as applied to the law of sales and law of negotiable instruments will be introduced. 3 hrs./wk.

**BUS 263**

**Business Law II** (3 CR)

*Prerequisite: BUS 261*

A continuation of Business Law I, this course will introduce the student to the principles of Uniform Commercial Code as applied to secured transactions. The law of bankruptcy, principles of agency and business organizations such as partnerships, limited partnerships, joint ventures, corporations, and sole proprietorships will be discussed. Principles of real property, personal property, bailments, estate and trusts will be introduced. 3 hrs./wk.

# Business Logistics Management (KSCL)

**KSCL 210**

**Logistics Management** (3 CR)

Logistics management is an integrated systems approach involving a variety of environments within a global marketplace. The course explores the logistic system from inbound movement of material and freight into the organization through physical distribution of the completed product to the consumer. Hands-on applications, activities and simulations. IAW Council of Logistics Management's guidelines will be emphasized. 3 hrs. lecture/wk. Course taught at MCC-Blue River Community College, 20301 East 78 Highway, Independence, MO. Students should contact the Blue River coordinator of supply chain logistics about the class meeting times and beginning and ending dates of classes. Call 816-220-6532.

**KSCL 211**

**Operations Management** (3 CR)

This course covers the central role and importance of the operations function in both service and product organizations. Strategy, design, scheduling, materials handling, inventory, production, MRP and distribution are covered. 3 hrs. lecture/wk. Course taught at MCC-Blue River Community College, 20301 East 78 Highway, Independence, MO. Students should contact the Blue River coordinator of supply chain logistics about the class meeting times and beginning and ending dates of classes. Call 816-220-6532.

**KSCL 212**

**Transportation Operations and Management** (3 CR)

This course covers the significance of an integrated, well-organized transportation system to a market-driven economy. The development of the transportation system of the United States from both historic and economic perspectives is included. 3 hrs. lecture/wk. Course taught at MCC-Blue River Community College, 20301 East 78 Highway, Independence, MO. Students should contact the Blue River coordinator of supply chain logistics about the class meeting times and beginning and ending dates of classes. Call 816-220-6532.

**KSCL 213**

**Warehousing and Distribution Centers** (3 CR)

This is an integrated systems approach involving a variety of environments within a global marketplace. The course covers the organization and operations of warehouses and distribution centers. The major components are warehousing and distribution center paradigms, system design, locations, technology and financial dimensions. 3 hrs. lecture/wk. Course taught at MCC-Blue River Community College, 20301 East 78 Highway, Independence, MO. Students should contact the Blue River coordinator of supply chain logistics about the class meeting times and beginning and ending dates of classes. Call 816-220-6532.

# Business Office Technology (BOT)

**BOT 101**

**Computerized Keyboarding** (1 CR)

Upon successful completion of this course, the student should be able to operate a computer keyboard by touch to enter data with speed and accuracy. 1 hr./wk.

**BOT 103**

**Business English** (3 CR)

Upon successful completion of this course, the student should be able to demonstrate the basic rules of English, develop correct sentence structure and use accurate English grammar and mechanics when writing documents. Students also will be able to proofread written work using standard proofreading symbols. 3 hrs. lecture/wk.

**BOT 105**

**Keyboarding and Formatting I** (3 CR)

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. Microsoft Word will be used in this class to complete and format documents. 3 hrs./wk.

**BOT 106**

**Intro to Business Computer Applications** (3 CR)

*Prerequisite or corequisite: BOT 105*

Upon successful completion of this course, the student should be able to use

the beginning features of an operating system and word processing, spreadsheet, database management, presentation graphics, and e-mail programs to prepare and manage documents simulating legal, medical and general business office applications. Proficiency will also be attained in selecting appropriate applications to use and to integrate all of the business computer application programs to complete projects. Document formatting and proofreading will also be introduced. Hands-on, practical projects will be performed to reinforce the concepts taught. 3 hrs. lecture/wk.

### BOT 110

**Skillbuilding I** (1 CR)

*Prerequisite: BOT 105*

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. Students attempting to take the short-term classes BOT 110 Skillbuilding I and BOT 118 Skillbuilding II in the same semester, should contact Kathy at 913-469-8500 ext 3145, and provide their student ID number and the CRN for the specific BOT 118 section

### BOT 115

**Electronic Calculators** (1 CR)

Upon successful completion of this course, the student should be able to review basic arithmetic, operate the electronic calculator by touch to build speed and accuracy, use basic calculator functions and operating controls, and solve business application problems. 1 hr./wk.

### BOT 118

**Skillbuilding II** (1 CR)

*Prerequisite: BOT 110*

Upon successful completion of this course, the student should further develop speed and accuracy. The student should be able to improve keyboard skills through diagnostic evaluation and by completing individualized drills and activities. 1 hr. lecture/wk. Students attempting to take the short-term classes BOT 110 Skillbuilding I and BOT 118 Skillbuilding II in the same semester, should contact Kathy at 913-469-8500 ext 3145, and provide their student ID number and the CRN for the specific BOT 118 section

### BOT 122

**Medical Keyboarding** (1 CR)

*Prerequisite: BOT 105*

Upon successful completion of this course, the student should be able to develop keyboarding speed and accuracy in medical formats. The student should also be able to improve keyboard skills by completing drills and activities pertaining to the transcription of medical reports. 1 hr. lecture/wk.

### BOT 125

**Document Formatting** (1 CR)

*Prerequisite: BOT 155*

Upon successful completion of this course, the student should be able to type business letters with special features, memorandums, reports, tables and a variety of administrative documents. The student should also be able to use Microsoft Word to complete these activities. 1 hr./wk.

### BOT 130

**Office Systems Concepts** (3 CR)

Upon successful completion of this course, the student should be able to understand and apply technological factors of contemporary office systems. Implementation of office automation concepts will be examined as they relate to people, technology and organizations. These concepts will be applied to organizational and strategic planning to enhance productivity in the office. 3 hrs./wk.

### BOT 150

**Records Management** (3 CR)

Methods for developing and controlling an office records management program will be discussed. Selection of equipment for active and inactive records will be covered, along with procedures for document, card and special records; microrecords; mechanized and automated records; and records storage, retention and transfer. Upon successful completion of this course, the student should be able to file documents using alphabetic, subject, consecutive numeric, terminal digit numeric and geographic filing systems using requisition charge out and transfer procedures. The student should be able to create a computer database for records management; enter, modify and delete records; print reports; and determine disposition of records filed alphabetically, numerically, by subject and geographically. The course will cover the identification of evaluation methods and standards for both staff and programs in a records management department. 3 hrs./wk.

### BOT 155

**Word Processing Application I** (2 CR)

*Prerequisites: BOT 105 and BOT 106*

Upon successful completion of this course, the student should be able to demonstrate skill in creating, saving, opening, closing, printing and editing documents. The student should be able to use beginning and intermediate features of Microsoft Word. The student should be able to demonstrate file maintenance procedures. 2 hrs. lecture/demonstration/wk.

### BOT 160

**Legal Transcription** (3 CR)

*Prerequisite: BOT 155*

Upon successful completion of this course, the student should be able to demonstrate skill in spelling, defining, pronouncing and using legal terms in proper context. The student should also be able to use legal reference resources and transcribe legal documents from dictation using proper formatting rules. 3 hrs./wk.

### BOT 165

**Medical Transcription** (3 CR)

*Prerequisites: AAC 130 and BOT 155*

Upon successful completion of this course, the student should be able to transcribe medical reports using proper formats and transcription rules. These reports concern in-patients with a specific medical problem. Reports include history and physical examinations, radiology reports, operative reports, pathology reports, requests for consultation, death summaries, discharge summaries and autopsy reports. Students should be able to spell, define, pronounce and use medical terms in proper context and be able to use medical reference books. 3 hrs./wk.

### BOT 170

**Medical Coding and Billing** (3 CR)

*Prerequisite: AAC 130*

This course is designed to give the student an overview of the medical insurance billing process. This includes becoming acquainted with ICD-9, HCPCS and CPT procedural coding systems as well as Blue Cross/Blue Shield, Medicaid, Medicare and Champus/Champva programs. Students will be given hands-on coding advice for optimal insurance reimbursement. 3 hrs. lecture/wk.

### BOT 180

**Business Spreadsheet Applications** (1 CR)

*Prerequisite: BOT 106*

Upon successful completion of this course, the student should be able to demonstrate competencies in using advanced formatting techniques, advanced features and advanced functions of Microsoft Excel. The following topics will be covered: working with templates, workbooks and lists; using Excel's analysis tools; managing and auditing worksheets; collaborating with workgroups; creating and editing macros; and importing and exporting data. 1 hr. lecture/wk.

### BOT 185

**Business Database Applications** (1 CR)

*Prerequisite: BOT 106*

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 Microsoft Access rather than a spreadsheet; build tables that can be related to each other in order to eliminate data entry duplication; customize forms and reports; create basic and advance queries; and define relational integrity between tables. The student should also be able to create basic and advanced queries with single and multiple tables using Boolean logic. The student should be able to identify and implement methods of troubleshooting and explain ways of getting additional help. 1 hr. lecture/wk.

### BOT 205

**Professional Image Development** (1 CR)

Upon successful completion of this course, the student should be able to develop work habits and self-management skills that will affect performance on the job by reducing stress, conflict and miscommunication. 1 hr. lecture/wk.

### BOT 220

**Pharmacology Terminology** (2 CR)

*Prerequisite: AAC 130 This course is offered in the spring semester only.*

Upon successful completion of this course, the student should be able to use pharmacological terminology in an appropriate context. This course includes an investigation of medication actions, dosage forms, routes of administration and uses. The course emphasizes the terminology necessary for transcription of medical reports. This course is taught in the spring semester. 2 hrs. lecture/wk.

### BOT 255

**Word Processing Applications II** (2 CR)

*Prerequisite: BOT 155*

Upon successful completion of this course, the student should be able to demonstrate word processing skills using such features as macros, styles, tables of contents and indexes, graphics, master and subdocuments, and other advanced features of Microsoft Word. 2 hrs. lecture-demonstration/wk.

### BOT 260

**Desktop Publishing for the Office** (3 CR)

*Prerequisite: BOT 155*

Upon successful completion of this course, the student should be able to use desktop publishing skills using Microsoft Publisher to produce publications such as fliers, newsletters, brochures, operating manuals, price lists and bulletins. 3 hrs. lecture/demonstration/wk.

### BOT 265

**Computerized Office Applications** (3 CR)

*Prerequisites: BOT 106 and also CPCA 141 and BOT 255 and BOT 130 (This capstone course should be taken near the end of the degree or certificate program) This course is offered in the spring semester only.*

Upon successful completion of this course, the student will be able to use the basic features of word processing, database, spreadsheet and presentation applications. The student will also use advanced features to complete simulated office applications and to perform multitasking projects. This course is taught in the spring semester. 3 hrs./wk.

### BOT 270

**Advanced Medical Transcription** (3 CR)

*Prerequisite: BOT 165*

Upon successful completion of this course, the student will develop medical transcription skills with emphasis on additional speed and accuracy. Students will apply language skills, decision-making skills and "common- sense" skills during the transcription process. Students will become familiar with the medical transcription profession, employment opportunities, the important role of the medical transcriptionist in the health care team, and personal attributes, knowledge and skills required to produce error-free documents according to the employer's and AAMT standards. 3 hrs. lecture/wk.

### BOT 275

**Office Internship I** (1 CR)

*Prerequisite: Admission to the business office technology program. This course should be taken near the end of the BOT degree or certificate program.*

The student should be able to gain work experience in an approved training station under instructional supervision in Administrative Assistant, Medical, Legal, or Certificate Programs. The course will provide practical experience in the use of skills acquired in Business Office Technology specialty courses. The internship will require a minimum of 185 hours of job training.

### BOT 280

**Office Internship II** (1 CR)

*Prerequisite: BOT 275*

The student should be able to gain work experience in an approved training station under instructional supervision in Administrative Assistant, Medical, Legal, or Certificate Programs. The course will provide practical experience using skills acquired in Business Office Technology courses. The internship will require a minimum of 185 hours per semester job training.

# Chemistry (CHEM)

### CHEM 120

**Chemistry in Society** (4 CR)

This course is designed for non-science majors who seek an understanding of the concepts of chemistry. Historical foundations of chemistry, applications to society and daily life, controversies of contemporary concern and current research topics are explored. Inquiry-based laboratory experiments will illustrate chemical principles. 3 hrs. lecture, 2 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $60.

### CHEM 122

**Principles of Chemistry** (5 CR)

This course is an introduction to the fundamentals of chemistry, with emphasis on general concepts of inorganic chemistry and sufficient study of organic chemistry to introduce the student to biochemistry. The student will learn basic

definitions and theories of chemistry, solve numerical problems related to chemical principles and apply chemical concepts in laboratory work. 4 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $60.

### CHEM 124

**General Chemistry I Lecture** (4 CR)

*Prerequisite or corequisite: MATH 171 or assessment test and Corequisite: CHEM 125*

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. lecture/wk.

### CHEM 125

**General Chemistry I Lab** (1 CR)

*Prerequisite or Corequisite: CHEM 124 Students who withdraw from GENERAL CHEMISTRY I LECTURE must also withdraw from the corresponding laboratory GENERAL CHEMSITRY I LABORATORY Students may not withdraw from the laboratory course GENERAL CHEMISTRY I LABORATORY without withdrawing from CHEMISTRY I LECTURE.*

Experiments of a qualitative and quantitative nature that support topics from General Chemistry I Lecture will be carried out. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $60.

### CHEM 131

**General Chemistry II Lecture** (4 CR)

*Prerequisites: CHEM 124 and CHEM 125 and Corequisite: CHEM 132*

Chemistry 131 is the second semester of a two-semester course in general chemistry in which the student will develop a working knowledge of some of the fundamental concepts and quantitative relationships involved in the study of chemical reactivity. Topics include solutions, chemical kinetics, chemical equilibrium, acid-base chemistry, chemical thermodynamics, electrochemistry, and nuclear chemistry. 4 hrs./wk. CHEM 131 students are required to enroll concurrently in CHEM 132.

### CHEM 132

**General Chemistry II Lab** (1 CR)

*Prerequisites: CHEM 124 and CHEM 125 and Corequisite: CHEM 131 Students who withdraw from GENERAL CHEMISTRY II LECTURE must also withdraw from the corresponding laboratory GENERAL CHEMISTRY II LABORATORY. Students may not withdraw from the laboratory course GENERAL CHEMISTRY II LABORATORY without withdrawing from CHEMISTRY II LECTURE.*

The laboratory consists of qualitative and quantitative experiments designed to parallel and support General Chemistry II Lecture. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $60.

### CHEM 140

**Principles of Organic & Biological Chemistry** (5 CR)

*Prerequisites: BIOL 135 and CHEM 122 or permission of the assistant dean*

This course covers nomenclature, theory and applications of basic organic chemistry and biochemistry in the area of carbohydrates, lipids, proteins and enzymes. The lab activities reinforce the topics presented in the lecture. 4 hrs. lecture, 3 hrs. lab/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $80.

### CHEM 220

**Organic Chemistry I** (5 CR)

*Prerequisites: CHEM 131 and CHEM 132*

Organic Chemistry I is an introduction to the theories and principles of the chemistry carbon compounds. The student will develop an understanding of organic chemistry, which will be useful in the studies of chemistry and related fields such as medicine, engineering and pharmacy. The laboratory is supportive in nature, with a strong emphasis on developing laboratory techniques. Representative compounds will be prepared and used to introduce the student to instrumental analysis. 3 hrs. lecture, 6 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $80.

### CHEM 221

**Organic Chemistry II** (5 CR)

*Prerequisite: CHEM 220*

Organic Chemistry II is a continuation of Organic Chemistry I, the nomenclature, principles and theories of organic chemistry, with emphasis on electronic theories and reaction mechanisms. Laboratory is supportive in nature with emphasis on developing laboratory techniques and preparation of representative compounds. Organic Chemistry II completes the study of organic chemistry designed to prepare the student for continued work in chemistry and related fields. 3 hrs. lecture, 6 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $80.

### CHEM 250

**Biochemistry** (4 CR)

*Prerequisites: CHEM 131 and CHEM 132 and 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** (2 CR)

*Prerequisites: CHEM 131 and CHEM 132 and CHEM 140 or CHEM 220 Corequisite: CHEM 250*

The laboratory will consist of qualitative and quantitative experiments using biological molecules. Particular emphasis upon biochemistry laboratory techniques, including chromatography and spectroscopy, will be used. 3 hrs. lab, 1 hr. recitation/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $60.

# Civil Engineering Technology (CET)

### CET 105

**Construction Methods** (3 CR)

This course introduces the student to the terms, methods, procedures, sequences of operation, and types of construction and planning in civil and building construction. This course is typically offered the first half of each

semester. 3 hrs./wk.

### CET 120

**Engineered Plumbing Systems I** (3 CR)

Upon successful completion of this course, the student should be able to use codes and engineering principles and design engineering practices to analyze and design basic plumbing systems. Topics covered include codes, materials, hangers, supports, and expansion and contraction. Plumbing systems covered include fuel gas, domestic water and soil waste/vent. The student should also be able to interpret drawings related to plumbing technology. 3 hrs. lecture/wk.

### CET 122

**Engineered Plumbing Systems II** (3 CR)

Upon successful completion of this course, the student should be able to describe storm water, industrial wastes, compressed air and irrigation and fire sprinkler systems. Topics include water treatment, noise control, decorative pools, pumps, estimating, specifications and field inspection. 3 hrs. lecture/wk.

### CET 125

**Construction Specifications** (2 CR)

*Prerequisite or corequisite: 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 129

**Construction Management** (3 CR)

This course is intended for students interested in learning management principles for construction projects. Upon successful completion of this course, the student should be able to perform many processes associated with construction projects and complete forms typically used in project management. Topics include contract documents, scheduling, job costs and management issues. Project management software will be used to schedule and track project resources and progress. 2 hrs. lecture, 3 hrs. lab/wk.

### CET 133

**Concrete Testing** (2 CR)

This course covers the principles of making and testing concrete. The emphasis will be on allowing concrete to reach the highest level of durability through proper mix design, placing and finishing techniques, and curing methods. This course will help prepare the student for ACI National Certification exam. 1.5 hrs. lecture, 1 hrs. lab/wk.

### CET 140

**Civil Engineering Materials** (3 CR)

*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. This course is typically offered in the spring semester. 2 hrs. lecture, 3 hrs. lab/wk.

### CET 150

**Construction Safety** (3 CR)

This course introduces the student to construction safety policies, procedures, and standards. Topics include safety theories and concepts, OSHA (Occupational Safety and Health Administration) construction standards for safety and health, and safety application on the job site. Special emphasis is placed on those areas that are the most hazardous, using OSHA standards as a guide. Upon successful completion of the course, the student will receive the 30-hour OSHA Construction Safety Completion certificate. 3 hr. lecture/wk.

### CET 211

**Technical Statics and Design** (3 CR)

*Prerequisite: MATH 134 or MATH 172 or MATH 173 or MATH 241*

Upon successful completion of this course, the student should be able to evaluate and design force systems in equilibrium. Topics include truss analysis, stress and strain, shear, loading conditions, steel member selection, and connection design. Computer applications are included. This course is typically offered in the fall semester. 3 hrs. lecture/wk.

### CET 227

**Construction Cost Estimating** (3 CR)

*Prerequisites: CET 105 and CET 125 or permission of program administrator and Prerequisite or corequisite: DRAF 129 or permission of program administrator*

This course adds to the student's knowledge of the construction process by covering the principles of construction estimating. Topics include estimating quantities of material using reference books, tables and the Construction Specifications Institute (C.S.I.) format and preparing estimating reports. Students will use industry-standard software for construction estimating. The student needs a basic knowledge of spreadsheet software to be successful in this course. This course is typically taught on campus in the fall and online in the spring. 2 hrs. lecture & 3 hrs lab/wk.

### CET 270

**Fluid Mechanics** (3 CR)

*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 hydrology. The student should also be able to solve practical problems related to engineering technology. Computer applications will be included. This course is typically offered in the spring semester. 3 hrs. lecture/wk.

# Computer Desktop Publishing (CDTP)

### CDTP 135

**Desktop Photo Manipulation I: Photoshop** (1 CR)

In this career-related short course, students will manipulate digital photographs and images using a variety of basic techniques on either the Macintosh or PC computer platform. Students will apply techniques to correct, repair, retouch, create selections, and work with layers on a variety of digital photographs and images, including basic scanning techniques. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $15 to $20.

### CDTP 140

**Desktop Publishing I: InDesign** (1 CR)

In this career-related course, students will create page layout documents using a variety of basic techniques on either the Macintosh or PC computer platform. Students will produce text material with complex tabs and indents and style attributes. Upon successful completion of the course, students will also be able to group and distribute multiple elements and demonstrate a basic proficiency with drawing tools, multiple document work, drop caps, text rotation, locking

items and threading text blocks. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $15 to $90.

### CDTP 145

**Desktop Illustration I: Illustrator** (1 CR)

In this career-related course, students will create basic computer-generated illustrations using a variety of techniques on either the Macintosh or Windows PC computer platform. Students will draw simple paths and shapes, create layers, import graphics and add typographic elements in rows and columns with runarounds, baseline shifts and conversion to outlines. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $15 to $90.

### CDTP 155

**Desktop Photo Manipulation II: Photoshop** (1 CR)

*Prerequisite: CDTP 135*

In this career-related short course, students will manipulate digital photographs and images using a variety of introductory to intermediate techniques on either the Macintosh or PC computer platform. Students will apply techniques to edit masks and channels, process and enhance multiple image file formats, group and apply adjustments to layers, automate common tasks, create composite images, learn and apply intermediate scanning techniques, and apply multiple creative and adjustment filters on a variety of digital photographs and images. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CDTP 160

**Desktop Publishing II: InDesign** (1 CR)

*Prerequisite: CDTP 140*

In this career-related course, students will create intermediate-level page layout documents using a variety of techniques on either the Macintosh or PC computer platform. Students will learn how to work with type styles, threads, columns, special characters, hanging indents, vertical spacing and tables as well as exploring PDF files. Students will also be able to master several aspects of working with graphic images: placing images, linking, clipping paths, libraries, grids, Bezier drawing, compound paths and reflections. Finally, students will work with advanced framing techniques to nest frames within shapes. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $15 to $90.

### CDTP 165

**Desktop Illustration II: Illustrator** (1 CR)

*Prerequisite: CDTP 145*

In this career-related course, students will create intermediate-level computer-generated illustrations using a variety of techniques on either the Macintosh or PC computer platform. Students will trace an object, create complex gradients with custom blends, create complex objects receding toward a vanishing point, and create an orthogonal projection to simulate depth. 1 hr. lecture /wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $15 to $90.

### CDTP 168

**Desktop Publishing III: InDesign** (1 CR)

*Prerequisite: CDTP 160*

In this career-related course, students will create advanced-level page layout documents using a variety of techniques on either the Macintosh or PC computer platform. Students will learn how to work with advanced color specifications, transparency blending modes, long document organization, and brochure layout production art. 1 hr. lecture/wk.

### CDTP 175

**Desktop Photo Manipulation III: Photoshop** (1 CR)

*Prerequisite: CDTP 155*

In this career-related short course, students will manipulate digital photographs and images using a variety of beginning, intermediate and advanced techniques on either the Macintosh or PC computer platform. Students will apply techniques to create and design typographic elements, use vector drawing techniques, prepare images for print, optimize images for web output, and use a digital photo preparation workflow on a variety of digital photographs and images, including scanned images. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CDTP 180

**Photoshop for the Web: Photoshop** (1 CR)

*Prerequisite: CDTP 155*

This course is designed to explore the preparation of digital photographs and images for the Web using a variety of techniques and tools. Optimizing images for the Web, creating Web graphics using slices and rollovers, and creating animated images for the Web will be covered. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $15 to $90.

### CDTP 185

**Desktop Illustration III: Illustrator** (1 CR)

*Prerequisite: CDTP 165*

In this career-related course, students will create advanced computer-generated illustrations using a variety of techniques on either the Macintosh or PC computer platform. Students will create charts, autotrace scanned images, fill objects with various pen-and-ink filter effects and create an image map for the Web. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $15 to $90.

# Computer Digital Image Editing (CDIE)

### CDIE 145

**Digital Image Editing I** (3 CR)

*Prerequisites: CPCA 105 or CPCA 106 or CIS 124 or CPCA 128 or an appropriate score on an assessment test*

This course is designed to present the skills and provide the hands-on experience required for digital image production and manipulation using the industry-standard Adobe Photoshop for both Macintosh and Windows OS users. Topics covered include: image correction, repair and adjustment; composite images; raster and vector graphics and type; print and screen graphical file formats; basic color management; layer, channel and mask manipulation; Web graphic preparation; editing 3D and motion-based content; image analysis; actions and other presets; and filters. In this course, students will complete several complex original Photoshop documents that demonstrate skills to effectively scan images, restore and repair photographs; correct image

tone and color, optimize the quality of onscreen and printed materials and study the topics covered on the Adobe Photoshop certified expert exam in Adobe Photoshop (ACE). 3 credit hours lecture, discussion, demonstration per week.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

# Computer Forensics (CFOR)

### CFOR 150

**Introduction to Computer Forensics** (3 CR)

*Prerequisites: CIS 134 and CPCA 139 and assistant dean's approval*

In this course, students are introduced to computer forensics and incident response essentials. This course shows the student how to collect and analyze the digital evidence left behind in a digital crime scene. Computer forensics, the newest branch of computer security, focuses on the aftermath of a computer security incident. The goal of computer forensics is to conduct a structured investigation to determine exactly what happened and who was responsible and to perform the investigation in such a way that the results are useful in a criminal proceeding and to lay the foundation for further study of computer forensics. 3 hrs. lecture/wk.

### CFOR 180

**File Structure & Residual Artifacts** (3 CR)

*Prerequisite: CFOR 150*

This course provides the basic understanding of how computers 'see' data and manage its storage. While covering physical device concepts, students will learn the boot process of a computer. The FAT file system will then be described in terms of system areas created during the format process, the File Allocation Table and its function and detailed information regarding saving files and directories - to include a full breakdown of directory entries. In addition, concepts of clusters and file slack space will be covered and led into how to identify the affects of deleting files and forensic issues surrounding their recovery. The students will learn how to use hardware and software write protection tools to create duplicate images of hard disk drives, USB thumb drives and other alternate media. Mastery of technical knowledge will be combined with problem-solving skills to aid students in developing creative and adaptive responses to future changes in technology. This course meets for two hours of lecture and two hours of laboratory each week. 2 hrs. lecture 2 hrs. lab/wk.

# Computer Information Systems (CIS)

### CIS 124

**Introduction to Computer Concepts and Applications** (3 CR)

In this introductory, nontechnical computer course, students study computing concepts, terminology, issues and uses. Extensive hands-on experience with the microcomputer is provided using business applications and the operating system to reinforce the concepts. 3 hrs. lecture/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $15.

### CIS 134

**Programming Fundamentals** (4 CR)

At the completion of this course, the student should be able to use the elementary concepts of computers, including several number systems. In addition, students will design, develop and write modular programs on a

microcomputer in a structured programming language using standard structured concepts. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### CIS 138

**Visual Basic .Net** (4 CR)

*Prerequisite: CIS 134*

Upon successful completion of this course, students should be able to describe the Visual Basic programming environment, identifying the controls and objects available for creating .NET applications. Students should be able to define the basic terminology used by Visual Basic. They will create forms, draw the controls for each form, design menu bars, set form and control properties, write event and general procedures, and test and debug their applications. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### CIS 162

**Database Programming** (4 CR)

*Prerequisite: CIS 134 or the equivalent*

This course covers the use of an interactive environment and programming language to create, maintain and manipulate databases using Access as the RDBMS. The use of a command-level database programming language to customize business systems and selectively retrieve information using single or multiple database tables also will be studied. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### CIS 201

**Introduction to Information Systems** (3 CR)

*Prerequisite: ACCT 121*

This course is an introduction to the use of computers in management, concepts of computer software, hardware, and systems analysis. Applications will include electronic spreadsheets, database management software, graphics and presentation tools, and other special purpose tools. Word processing tools will be used for most graded assignments. Programming will be studied in the context of spreadsheet macros. 3 hrs. lecture/wk.

### CIS 204

**UNIX Operating System** (3 CR)

*Prerequisites: CS 200 or CS 205 or CS 201 and CPCA 139*

This course will cover the concepts and principles of the multi-user, multi-tasking UNIX operating system. Students will complete projects in UNIX ranging from using simple commands to writing shell scripts automating repetitive tasks. 3 hrs. lecture/wk.

### CIS 206

**Programming in PERL** (4 CR)

*Prerequisites: CS 200 or CS 205 or CS 201 and CPCA 139*

This course is an in-depth introduction to the Perl scripting language. Students successfully finishing the course should be familiar with the most common operations and language idioms used in Perl programs and should be able to produce useful Perl scripts. In addition, students will have been introduced to the more powerful and rich elements of the language. Lectures and lab projects will cover the many features of the Perl language. 3 hrs. lecture, 1.5 hrs. lab/wk.

### CIS 223

**Law Office Computing** (3 CR)

*Prerequisites: Paralegal program students - admission to the paralegal program and either CIS 124 or CPCA 128 or three hours of CPCA 108 and CPCA 110 and CPCA 114*

Upon successful completion of this course, the student should be able to

evaluate and use legal software to perform customary law office procedures including computer litigation support, drafting and editing of specific legal documents, document and file management, time-keeping and billing, docket control, and forms generation. This course is only open to LAW students. 3 hrs. lecture/wk. CIS 223 and LAW 223 are the same course.

## CIS 235

### Object-Oriented Programming Using C++ (4 CR)

*Prerequisite: CS 200 using C++*

This course is intended to prepare students to apply the object-oriented programming paradigm to solve typical business problems. The student should work with container classes such as Linked Lists, Trees, Stacks and Queues as tools in their program solutions. Students will be building application-oriented objects using the concepts of inheritance, function overloading and polymorphism. Students will also apply techniques of dynamic memory to build arrays and objects that can adjust memory requirements at run time. Students will be exploring the object-oriented and I/O capabilities as well as the string processing capabilities of the object-oriented language. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

## CIS 238

### Visual Basic Intermediate Topics (4 CR)

*Prerequisite: CIS 138*

Upon successful completion of this course, students should be able to write and test a Visual Basic program that uses the ADO.NET to access a local database. They will identify the commands necessary to open, display and maintain the database. They will correctly use Visual Basic keystroke events to edit and control input to the database. Students will use the Try Catch Error trapping structures to create robust projects. Students will generalize code for reuse. They will create a .Net component to coordinate a TextBox and ListBox that can be deployed from the ToolBox. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

## CIS 240

### Advanced Topics in JAVA I (4 CR)

*Prerequisite: CS 250 or CIS 235 or CS 255*

At the completion of this course, the student should be able to create Java applications and applets appropriate for implementation on the Internet and World Wide Web. The student will complete projects using Java's built-in features. The course will include graphics, graphical user interfaces, exception handling, multi-threading and interactive media. 3 hrs. lecture, 2 hrs. lab/wk.

## CIS 242

### Introduction to System Design and Analysis (3 CR)

*Prerequisite: CIS 138 or CS 200 or CS 201 or CS205*

Students will study the basic philosophy and techniques of developing and using business information systems. The emphasis will be on the human involvement necessary in systems design and implementation. The course will address the use of specific technical approaches available in information processing. 3 hrs. lecture/wk.

## CIS 243

### Object-Oriented Analysis and Design (4 CR)

*Prerequisite: One programming course using an object-oriented programming language or equivalent experience*

This course includes information and materials that will introduce the student to an object-oriented analysis and design methodology suitable for designing systems that can be implemented in any object-oriented programming language. Experience in using specific techniques and tools will be gained through the completion of real-world projects. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

## CIS 244

### Advanced Topics in C# I (4 CR)

*Prerequisite: CS 250 or CIS 235 or CS 255*

At the completion of this course, the student should be able to create C# applications appropriate for implementation on the .NET platform. The student will complete projects using C#'s built-in features. The course will include graphics, graphical user interfaces, exception handling, multi-threading and database access. 3 hrs. lecture and 1.5 hrs lab/wk.

## CIS 254

### UNIX System Administration (4 CR)

*Prerequisite: CIS 204*

This course is designed to present the skills and provide the hands-on experience required to be a Unix system and Web administrator. Typical system administration duties to be covered include installation, backup, restoration and routine maintenance, including adding/removing users, managing system resources, monitoring and optimizing system activity, and automating activities. Typical Web administration duties to be covered include installation and management of a relational database management system, installation and management of a Web server and an FTP server, kernel recompiling relevant to Web technology, and audio/video streaming. 3 hrs. lecture, 2 hrs. lab/wk.

## CIS 258

### Operating Systems (3 CR)

*Prerequisite: CIS 138 or CIS 162 or CS 200 or CS 201 or CS 205*

The basic concepts and principles of a digital computer operating system will be explained. Also explored through a study of a typical digital computer operating system will be the relationships between hardware and software. 3 hrs. lecture/wk.

## CIS 260

### Database Management (4 CR)

*Prerequisite: CS 250 or CS 255 or CIS 235 or CIS 238 or CIS 248*

Characteristics and objectives of database management systems (DBMS) versus traditional file management systems are discussed. Topics include relational, hierarchical and network models; data modeling using entity-relational model: normalization to avoid modification anomalies; and operational considerations of a relational database. Students will create and use a relational DBMS (currently Oracle) and a Standard Structured Query Language (SQL). SQL*Plus and embedded SQL will be used in programs. 3 hrs. lecture, 2 hrs. lab/wk.

## CIS 262

### Project Management (3 CR)

*Prerequisite: CIS 242*

This course will prepare students to effectively manage projects, with a focus on information systems (IS) projects. Topics include project management terminology, project manager roles, project success factors, integration, scope, time, cost, quality, human resources, communications, risk, professional responsibility and procurement management. Using case studies, students will plan, schedule, execute and control projects, modifying their timelines and resource allocations as required. 3 hrs. lecture/wk.

## CIS 264

### Application Development and Programming (4 CR)

*Prerequisites: CIS 242 and either CIS 260 or CIS 162 Prerequisites or Corequisites: CIS 238 or CIS 253 or CIS 269 or CIS 240 and CIS 262*

This course is designed for students to apply the foundations of systems

analysis and design, database design and programming to a significant information system. Students should work within a team to analyze a problem, develop and present a proposed information system solution, build a demonstrable prototype of the system and develop a significant portion of the system. Students should also develop a project schedule and present progress information to the class. Students should also develop job search skills and both written and oral communication skills. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### CIS 269

**GUI Programming** (4 CR)

*Prerequisites: CIS 235 or CS 250*

Upon completion of this course, students should be able to demonstrate applications in the graphical user interface (GUI) programming language and use the appropriate GUI library. Techniques of object-oriented programming developed in CIS 235 will be applied to problems involving user interaction. The common user access (CUA) standards of GUI programming will be used throughout the course. The message queue and ordered linked lists objects used in CIS 235 will be applied to problems involving user selection and updating information in a database. Students will make extensive use of the application framework for the GUI environment provided by the GUI language compiler. It is strongly recommended that students be familiar with common user programs that run under the chosen operating system (Windows, OS/2, X-Windows) before taking this course. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

### CIS 270

**Information Systems Internship** (3 CR)

*Prerequisites: CS 250 or CS 255 or CIS 235 or CIS 238 or CIS 248 and program facilitator approval*

Students will work in an approved training situation under instructional supervision. The internship is designed to give the student the opportunity to use the skills learned in information systems courses. Fifteen hours on-the-job training per week will be the usual workload for the student.

### CIS 275

**Web-Enabled Database Programming** (4 CR)

*Prerequisites: CS 200 or CS 201 or CS 205 or CIS 162 and either CPCA 139 or CIS 204 and either CPCA 161 or CPCA 158*

At the completion of this course, the student should be able to create dynamic Web pages containing information accessed from a database for implementation on the Internet and World Wide Web. The student will complete projects using Dynamic HTML and a scripting language that can interface with a database. The course will include graphics, graphical user interfaces, exception handling, database and interactive media. 3 hrs. lecture, 2 hrs. lab/wk.

### CIS 277

**Active Server Pages.Net** (4 CR)

*Prerequisites: CS 200 or CS 201 or CS 205 or CIS 162 and either CPCA 139 or CIS 204 and either CPCA 161 or CPCA 158*

At the completion of this course, the student should be able to create dynamic Web pages containing information accessed from a database for implementation on the Internet and World Wide Web. The student will complete projects using ASP.Net objects, dynamic HTML and a scripting language that can interface with a database. The course will include graphics, graphical user interfaces, exception handling, database and interactive media. 3 hrs. lecture, 2 hrs. lab/wk.

### CIS 279

**Enterprise GUI Programming in C++** (4 CR)

*Prerequisite: CIS 243 and CIS 269 and CIS 260*

Students will learn advanced programming techniques for Windows, including enterprise software tools, advanced user-interface techniques, multimedia, ActiveX and Internet programming. The course project provides students with real-world development experience covering analysis, design and implementation of a large-scale development project using an object-oriented software development methodology, version control technique, advanced testing techniques, defect-tracking and technical documentation. 3 hrs. lecture, 2 hrs. lab/wk.

### CIS 280

**Advanced Topics in JAVA II** (4 CR)

*Prerequisite: CIS 240*

At the completion of this course, the student should be able to create Java applications and applets that link to databases and provide the security and advanced GUI features appropriate for implementation on the Internet and World Wide Web. The student will complete projects using Java's built-in features. The course will include techniques for graphics optimization, building components for graphical user interfaces, client-server database connections in Java, handling security managers, building JAR files, using Java's remote objects and linking to other applications. 3 hrs. lecture, 2 hrs. lab/wk.

# Computer Personal Computer App (CPCA)

### CPCA 105

**Introduction to Personal Computers: Windows** (1 CR)

This introductory course is designed to give the beginning computer user an overview of the personal computer. The student will gain confidence in basic computer skills and concepts through a hands-on approach while becoming familiar with a microcomputer and its primary uses. Topics include computer software, hardware and terminology; an introduction to microcomputer operating systems; and the graphical user interface. 1 hr. lecture /wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CPCA 106

**Introduction to Personal Computers: Macintosh** (1 CR)

This introductory course is designed to give the beginning computer user an overview of the Macintosh personal computer. The student will gain confidence in basic computer skills and concepts through a hands-on approach while becoming familiar with a Macintosh computer and its primary uses. Topics include computer software, hardware and terminology; as well as an introduction to the Macintosh operating system, word processing, drawing, spreadsheets and database management. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CPCA 108

**Word Processing I: MS Word** (1 CR)

*Prerequisites: CPCA 105 or CPCA 106 or CIS 124 or CPCA 128 or appropriate score on a waiver test*

Students will learn concepts and use of word processing software on the personal computer. Concepts covered will include creating, saving, printing and editing word processing files; searching and replacing text; creating headers and footers; inserting and resizing graphic images; setting up tables; creating and applying styles; and creating mail merge letters. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and

textbooks. $10 to $20.

## CPCA 110

**Spreadsheets I: MS Excel** (1 CR)

*Prerequisite: CPCA 105 or CPCA 106 or CIS 124 or CPCA 128 or appropriate score on a waiver test*

Students will learn concepts and uses of spreadsheet software on the personal computer. Business decision-making worksheet models will be created and modified by entering labels, functions and formulas. Various formatting techniques will be applied to enhance the appearance of printed worksheets. Students will also learn to display the worksheet data graphically with the charting capabilities of the software. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CPCA 111

**Spreadsheets II: MS Excel** (1 CR)

*Prerequisite: CPCA 110 or CPCA 128*

This course is a continuation of CPCA 110, Spreadsheets on the Microcomputer I, and will provide the student with 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CPCA 114

**Databases I: MS Access** (1 CR)

*Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or appropriate score on a waiver test*

This course provides an introduction to the concepts and real-world applications of microcomputer relational database software. Foundational database competencies, including building tables, defining fields, relating tables, entering and editing data, filtering, and sorting will be covered. Students will query the database to select, calculate and summarize information. Students will build and customize forms and reports. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CPCA 115

**Databases II: MS Access** (2 CR)

*Prerequisite: CPCA 114*

Upon completion of this course, the student should be able to design and define a relational database; create custom forms and reports for data entry, updating and presentation; and build the necessary queries to support these objects. The student should be able to transfer data into and out of the database from various file formats; use database software to develop Web pages and hyperlinks; and manipulate the data and database with introductory macro, query language and programming skills. The course contains a capstone project in which the student uses all the skills learned to create a working database for a client based on a real-world situation. 2 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CPCA 117

**Databases III: MS Access** (1 CR)

*Prerequisite: CPCA 115*

Upon successful completion of this course, the student should be able to analyze an existing database solution that is not working properly, import the data into Access and use action queries and SQL to normalize the database into an effective rational database. A case study emphasis will cover different database design and documentation issues. Students will also build complex forms and reports using Visual Basic for Applications programming code. 1 hr. lecture /wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CPCA 118

**Groupware: Outlook** (1 CR)

*Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on a waiver test*

This course provides an introduction to the concepts and applications of today's robust email systems. Students will use tha application to compose, send and receive e-mail; post and organize discussion messages; manage calendars, appointments, tasks, to-do lists; use contact management features; and work with instant messaging. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CPCA 121

**Introduction to Project Management** (1 CR)

*Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on a waiver test*

Upon completion of this course, the student should be able to effectively manage projects using project management software. Students will learn about project management goals and terminology, create a project schedule and use project management methodologies and tools such as the Gantt chart, critical path method (CPM) and program evaluation review technique (PERT) chart to update a project and communicate project progress to others. Students will use other project management techniques such as applying resources, leveling overallocations, evaluating constraints and analyzing planned versus projected schedule and budget variables. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CPCA 122

**Assistive Technology** (1 CR)

This introductory course is designed to give the student with or without disabilities an overview of the personal and the adaptive hardware and software available. The student will gain confidence in basic computer skills and concepts through a hands-on approach while becoming familiar with the adaptive software and hardware available on the campus. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CPCA 123

**E-Presentation: MS PowerPoint** (1 CR)

*Prerequisite: CPCA 105 or CPCA 106 or CIS 124 or CPCA 128 or an appropriate score on a waiver test*

Upon completion of this course, students should be able to organize and produce an effective on-computer or slide-generated presentation, complete with printed speaker notes and handouts plus overhead transparencies, using the basic features of a presentation graphics program. Students will use master pages, template files, text formatting, color schemes, various drawing tools, the automated outline feature and animation dissolve sequence and incorporate

photographs. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CPCA 125

**Word Processing II: MS Word** (1 CR)

*Prerequisite: CPCA 108*

This is a continuation of CPCA 108, Word Processing on Micros I. After completing this course, students should be able to use advanced concepts and applications of word processing software. The applications will include importing graphics, creating reports, newsletters, footnotes and endnotes, styles, columns, templates, macros, creating a Web page, on-screen forms, and linking and embedding an object. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CPCA 128

**PC Applications: MS Office** (3 CR)

Upon successful completion of this course, the student should be able to use Windows to create and organize files and folders and perform essential file management procedures such as copying, moving, deleting and renaming files and folders. An in-depth proficiency will also be attained with the use of word processing, spreadsheet, presentation graphics and Internet browser applications. Hands-on, practical projects will be performed to reinforce the concepts taught. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CPCA 134

**Managing Your Macintosh** (1 CR)

*Prerequisite: CPCA 106 or an appropriate score on an assessment test*

In this career-related course, students will be introduced through lecture material and hands-on practical projects to the essential concepts of file organization, utility software installation and use, font management and backup techniques. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CPCA 138

**Windows for Microcomputers** (1 CR)

*Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on an assessment test*

At the completion of this course, the student will be able to discuss the components of the Windows desktop, use the Windows Help system, create and organize a folder system on a disk, perform file management commands, customize the Windows desktop environment, use the Search tool to locate files and folders, and perform file backup and disk maintenance procedures. The student will also be able to use performance monitoring tools, add hardware and software to the system, and use basic MS DOS directory and file management commands.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CPCA 139

**UNIX** (1 CR)

*Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or assessment test*

This course will introduce students to the major commands of the Unix operating system. E-mail, the VI editor and Telnet will be covered. Basic file and disk management projects will be completed in this course. 1 hr. lecture/wk.

### CPCA 141

**Internet I** (1 CR)

*Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or appropriate score on an assessment test*

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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CPCA 151

**Internet II** (1 CR)

*Prerequisite: CPCA 141 or an appropriate score on an assessment test*

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, and create a Web page. Additionally the course will cover basic LINUX commands and publish a Web page to a Web server. 1 hr. lecture/wk.

### CPCA 158

**Internet Application and Utilities** (3 CR)

*Prerequisite: CPCA 141 or an appropriate score on an assessment test*

This course will introduce the student to the commands and techniques required to effectively access the resources of the Internet. Windows and non-Windows applications will be used to locate, retrieve and disseminate essential information. This course will cover the techniques required to create and publish World Wide Web pages using HTML. 3 hrs. lecture-demonstration/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CPCA 161

**Introduction to Web Pages using HTML** (1 CR)

*Prerequisite: CPCA 151 or an appropriate score on an assessment test*

This course will cover the commands and techniques required to create and publish World Wide Web pages using HyperText Markup Language. Topics covered will include basic text layout, background colors, formatting, ordered and unordered lists, tables, frames that include graphic images in a page and linking to other Web pages. 1 hr./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

# Computer Science (CS)

### CS 180

**Introduction to Artificial Intelligence** (3 CR)

*Prerequisite: CIS 145 or CIS 148 or CIS 150 or CS 200*

Upon successful completion of this course, students should be able to understand simple computer programs illustrating introductory concepts in

artificial intelligence, define terms and application areas in the field and describe knowledge representation and problem-resolution techniques used in artificial intelligence. 3 hrs. lecture/wk.

## CS 200

**Concepts of Programming Algorithms Using C++** (4 CR)

*Prerequisite: CIS 134 or ENGR 171 or equivalent experience*

This course emphasizes programming methodology and problem solving. Algorithm design and development, data abstraction, good programming style, testing and debugging will be presented. An appropriate block-structured high-level programming language will be studied and used to implement algorithms. 3 hrs. lecture, 2 hrs. lab by arrangement/wk. Four-credit-hour CS courses have two hours of open lab per week.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

## CS 201

**Concepts of Programming Algorithms using C#** (4 CR)

*Prerequisite: CIS 134 or ENGR 171 or equivalent experience*

This course emphasizes programming methodology and problem-solving using C#. Algorithm design and development, data abstraction, good programming style, testing and debugging will be presented. 3 hrs. lecture, 1.5 hrs. lab/wk. Four credit hours CS courses have two hours of open lab per week.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

## CS 205

**Concepts of Programming Algorithms using JAVA** (4 CR)

*Prerequisite: CIS 134 or ENGR 171 or equivalent experience*

This course emphasizes programming methodology and problem-solving using Java. Algorithm design and development, data abstraction, good programming style, testing and debugging will be presented. 3 hrs. lecture, 1.5 hrs. lab/wk. Four-credit-hour CS courses have two hours of open lab per week.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

## CS 210

**Discrete Structures I** (3 CR)

*Prerequisites: MATH 171 or both MATH 116 and CIS 134 or appropriate math assessment scores*

Upon successful completion of this course, the student should be able to use fundamental discrete mathematics as it relates to computers and computer applications. The student will be exposed to a variety of discrete mathematical topics. The course will include fundamental mathematical principles, combinatorial analysis, mathematical reasoning, graphs and trees, and Boolean logic circuits. 3 hrs. lecture/wk.

## CS 211

**Discrete Structures II** (3 CR)

*Prerequisite: CS 210*

Upon successful completion of this course, the student should be able to use fundamental discrete mathematics as it relates to computers and computer applications. The student will experiment with a variety of discrete mathematical topics. The course will include fundamental mathematical principles, combinatorial analysis, mathematical reasoning, graphs and trees, and Boolean logic circuits. 3 hrs. lecture/wk.

## CS 250

**Basic Data Structures using C++** (4 CR)

*Prerequisite: CS 200 Prerequisite or 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 implemented in projects using object-oriented methodology. Students will write programs using the concepts covered in the lecture. 3 hrs. lecture, 2 hrs. lab/wk. Four-credit-hour CS courses have two hours of open lab per week.

## CS 255

**Basic Data Structures using JAVA** (4 CR)

*Prerequisite: CS 205*

This course will cover advanced programming topics using Java. Files, recursion, data structures and large program organization will be implemented in projects using object-oriented methodology. Students will write programs using queues, stacks, lists and other concepts covered in the lecture. 3 hrs. lecture, 1.5 hrs. lab/wk. Four-credit-hour CS courses have two hours of open lab per week.

# Computer Web (CWEB)

## CWEB 101

**Introduction to the Web using Internet Explorer** (1 CR)

*Prerequisites: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or appropriate score on an assessment test*

This course will introduce the student to commands and techniques required to effectively use the resources of the World Wide Web. Topics to be covered will include how to browse, search and retrieve information on the Internet using Internet Explorer, how to create and manage "favorites", how to protect computers from viruses, how to send and receive electronic mail, and how to create a basic home page. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 105

**Introduction to Web Pages: Dreamweaver** (1 CR)

*Prerequisite: CWEB 101*

This course will cover the commands and techniques required to create and revise Web pages using Dreamweaver. Topics to be covered will include basic text layout, viewing and identifying basic HTML tags, creating a site map, formatting a Web page, applying background color, inserting images and sounds, creating ordered and unordered lists, inserting files, and creating links on Web pages. 1 hr. lecture/wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 106

**Introduction to Microsoft FrontPage** (1 CR)

*Prerequisite: CWEB 101*

This course will cover the commands and techniques required to create and revise World Wide Web pages using Microsoft FrontPage. Topics to be covered will include basic text layout, viewing and identifying basic HTML tags, formatting a Web page, inserting background color, adding pictures and sounds, creating ordered and unordered lists, inserting files and creating links

to other Web pages. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 107

**Web Tools: Microsoft Office** (1 CR)

*Prerequisites: CWEB 101 and CPCA 110 or CPCA 114*

Upon successful completion of this course, the student should be able to create static and dynamic Web-based documents, Excel spreadsheets, PowerPoint presentations and Access databases. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 111

**Intermed Web Concepts/Techniques using Explorer** (1 CR)

*Prerequisite: CWEB 101*

This course is a continuation of CWEB 101, Introduction to the Web using IE, and will cover intermediate commands and techniques required to use various Web-based tools and programs. Topics to be covered will include using complex search strategies; finding people, businesses and e-mail addresses on the Web; accessing and using Newsgroups; joining and leaving mailing lists; using a Web-based chat facility; locating and downloading freeware and shareware programs; and identifying online backup and storage options. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 115

**Intermediate Web Pages: Dreamweaver** (1 CR)

*Prerequisite: CWEB 105*

This course will cover intermediate-level commands and techniques required to create and enhance a Web page using Dreamweaver. Topics to be covered will include tracing images, layers, converting layers to tables, custom tables, cascading style sheets, templates and libraries, and publishing a Web site. 1 hr. lecture/wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 116

**Intermediate Microsoft FrontPage** (1 CR)

*Prerequisite: CWEB 106*

This course is a continuation of CWEB 106, Introduction Web Pages: FrontPage, and will cover intermediate-level commands and techniques required to create and enhance a FrontPage Web site. Topics to be covered will include shared borders and themes, publishing a Web site, new Web site creation on a Web server, database integration and using office components and styles. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 120

**Internet Applications: Fireworks I** (1 CR)

*Prerequisite: CPCA 105 or CPCA 106 or waiver test scores*

This course is an introduction to the fundamentals, tools and techniques of Web imaging using Macromedia Fireworks. Students will gain an

understanding how to import, manipulate, optimize and animate Web graphics. Students will combine graphics with HTML and JavaScript creating image slices, navigation menus and hotspots. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 125

**Introduction to Dynamic Web Pages: Dreamweaver** (1 CR)

*Prerequisites: CWEB 115 and CPCA 114*

This course explores the Dreamweaver database environment and dynamic site concepts. Students will learn how to create, sort and display recordset content in a Web page. Students will create search applications, allowing movement between master and detail record pages, and to display the results of database searches. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 130

**Introduction to Flash** (1 CR)

*Prerequisite: CPCA 161 or CWEB 105 or CWEB 106*

This course will cover the commands and techniques available to add Flash content to Web pages and CD-ROMs. Topics covered will include using drawing tools, manipulating text with text tools, adding and modifying sound, creating animation and publishing work. This class will be taught in a classroom with both Macintosh and Windows computers. 1 hr. lecture/wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 136

**Introduction to PHP** (1 CR)

*Prerequisites: CWEB 101 and CPCA 114*

This course covers the commands and techniques available to add functionality to Web pages using PHP (Hypertext Preprocessor). Students will build client-side PHP scripts with variables, functions, expressions, methods, and events to validate forms and enhance Web page functionality. The basics of server-side scripting are introduced. 1 hr. integrated lecture/lab wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 140

**Intermediate Flash** (1 CR)

*Prerequisite: CWEB 130*

This course will build on the fundamental skills learned in CWEB 130, Introduction to Flash. Topics will include complex animation techniques; interactivity with simple frame actions; and interactivity using objects such as buttons, hot spots and movie clips. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## CWEB 146

**PHP with MySQL** (1 CR)

*Prerequisite: CWEB 136*

This course covers the commands and techniques required to connect a Web page to a relational database using PHP (Hypertext Preprocessor) and MySQL

(database management system). Students define and build a relational database using MySQL, then use PHP scripts as well as SQL in a Web page to connect to the database to edit, delete, and enter records. 1 hr. integrated lecture lab/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CWEB 150

**Advanced Flash** (1 CR)

*Prerequisite: CWEB 140*

This course will build on the skills learned in CWEB 131, Intermediate Flash. Students will do projects to control movie clips, sound, external data, multiple timelines and text fields. Some ActionScripting will be introduced. 1 hr. lecture/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CWEB 160

**Introduction to JavaScript** (1 CR)

*Prerequisite: CWEB 105 or CWEB 106 or CPCA 161*

This course will cover the commands and techniques available to add functionality to Web pages using JavaScript. Topics to be covered include integrating JavaScript into an HTML file, creating pop-up windows, adding scrolling messages, validating forms and enhancing the use of image and form objects. 1 hr. lecture/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CWEB 165

**Introduction to Adobe Acrobat** (1 CR)

This course will introduce students to the Adobe Acrobat software program. Students will be presented with the basics of Adobe Acrobat and will be shown how to create and edit PDF files using Acrobat and Distiller. Topics will include how to gather Web page content for off-line viewing and how to use JavaScript inside a PDF document to make it interactive. Projects will include how to add navigation, multimedia elements and data forms to PDF files. 1 hr. lecture/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CWEB 170

**Intermediate JavaScript** (1 CR)

*Prerequisite: CWEB 160*

This course builds on the skills learned in CWEB 160, Introduction to Web Scripting: JavaScript. Students will learn to use JavaScript in their Web pages to build menus and navigational structures. They will also learn to use intermediate techniques for cookie manipulation and storage. Complex use of operators (Bitwise, Assignment, Comparison, Arithmetic and Boolean) will be explained. 1 hr. lecture/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CWEB 180

**E-Commerce Using JavaScript** (1 CR)

*Prerequisite: CWEB 170*

This course builds on the skills learned in CWEB 160, Introduction to Web Scripting: JavaScript, and CWEB 161, Intermediate JavaScript. The student

will build a complete e-commerce site that will support online ordering and payment with JavaScript. 1 hr. lecture/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CWEB 190

**ActionScript for Flash** (1 CR)

*Prerequisite: CWEB 150*

This course will teach the basic skills needed to use ActionScripts in Flash movies. Students will build interactivity into their movies using ActionScript. They will also manipulate data and control Flash objects such as movie clips. ActionScript logic and functions will be explained. 1 hr. lecture/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CWEB 200

**Podcasting I** (3 CR)

*Prerequisite: CWEB 101*

Podcasting is a web-based broadcast medium. Audio files (most commonly in MP3 format) are made available online in a way that allows software to automatically detect the availability of new files (generally through RSS [Really Simple Syndication]), and download the files for listening at the user's convenience. This course will cover how to create sound, use the appropriate software, develop a show, distribute a podcast, and build an audience. Students will begin by learning the basics of blogging and develop their blogs into audio and/or video podcasts. More advanced topics include audio editing, podcasting on the go, and videocasting. 3 hrs. lecture/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $35.

### CWEB 205

**Search Engine Optimization** (1 CR)

*Prerequisites: CWEB 105 or CWEB 106*

This course will cover how to optimize a Website to maximize search engine ranking. Upon completion of the course students will be able to identify and implement effective Web site designs and strategies for search engine optimization. 1 hr. lecture/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CWEB 230

**Introductory E-Commerce Applications** (1 CR)

*Prerequisite: CWEB 101 or CPCA 141*

This course will introduce students to e-commerce in a software-driven, hands-on way. It will use software tools to discuss and explore a variety of e-commerce activities. Students will examine an extensive list of e-commerce sites, such as those that support purchasing, delivery, support, auction, business-to-business, virtual community and Web-portal business goals. They will examine e-commerce stores that incorporate advertising, marketing, branding, and business efficiency goals. They will explore how to populate a store catalog, create site-wide navigation links and publish a store. 1 hr. lecture/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### CWEB 240

**Intermediate E-Commerce Applications** (1 CR)

*Prerequisite: CWEB 230*

This course will use software tools such as Internet Explorer and Netscape Communicator to discuss and explore a variety of intermediate e-commerce activities. For example, students will examine e-commerce security issues, such as cookies, privacy risks and property threats, including copyright issues, viruses, security policies, encryption, digital signatures and transaction integrity. Students will study electronic payment systems, including script, electronic checks, credit card purchases, electronic wallets, smart cards and electronic cash. Students will explore international and legal issues, such as language and custom barriers, laws and regulations, and tax considerations. They will also explore ethical issues, such as trust and defamation issues. Finally, they will explore careers in electronic commerce. 1 hr. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

# Cosmetology (AVCO)

### AVCO 102

**Nail Technology** (17 CR)

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. In-state tuition and fees $700.00 total. Out-of-state tuition and fees $2,870 total. Beginning summer 2009, the in-state tuition and fees will total $816 and the out-of-state tuition and fees will total $3,315. 350 contact hrs. For enrollment and tuition information, call 913-469-8500 ext. 2390. The credit reflected in this course is for transcript reporting, recording and transfer only. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $145 to $150.

### AVCO 110

**Introduction to Cosmetology** (21 CR)

*Prerequisite: Selective Admission Approval*

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 500 contact hours are in the basic lab and the classroom without client contact. The in-state tuition and fees total $1,058, and the out-of-state tuition and fees total $4,145. 500 contact hrs. For enrollment and tuition information, call 913-469-8500 ext. 2390. The credit reflected in this course is for transcript reporting, recording and transfer only. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $28 to $38.

### AVCO 112

**Clinical Cosmetology** (12 CR)

*Prerequisite: Selective Admission Approval*

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. In-state tuition and fees $955 total. Out-of-state tuition and fees $4,055 total. 500 contact hrs. For enrollment and tuition information, call 913-469-8500, ext.2390 The credit reflected in this course is for transcript reporting, recording and transfer only. Enrollment in certain courses may

require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.

### AVCO 114

**Advanced Cosmetology** (12 CR)

*Prerequisites: AVCO 110 with a min grade of "C" or higher and selective admission approval*

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. In-state tuition and fees $955 total. Out-of-state tuition and fees $4,055 total. 500 contact hrs. For enrollment and tuition information, call 913-469-8500, ext. 2390. The credit reflected in this course is for transcript reporting, recording and transfer only. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $159.

### AVCO 115

**Cosmetology with Nail Technology License** (12 CR)

*Prerequisites: AVCO 110 and current Kansas nail technology license*

This course provides continuing skill instruction in shampooing, cutting, shaping, curling and coloring hair, as well as skin care and nail technology. Included is an introduction to client relations skills and sales promotion techniques. Instruction includes classroom and salon. Current Kansas Nail Technology license required. In-state tuition and fees $631. Out-of-state tuition and fees $2615. lecture hrs, 30 lab hrs, 205 clinical hrs. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.

### AVCO 116

**Cosmetology with Esthetics License** (12 CR)

*Prerequisites: AVCO 110 and current Kansas esthetics license*

This course provides continuing skill instruction in shampooing, cutting, shaping, curling and coloring, as well as skin care and nail technology. Included is an introduction to client relations skills and sales promotion techniques. Instruction includes classroom and salon. Current Kansas Esthetics license required. In-state tuition and fees $685. Out-of-state tuition and fees $2855. 85 hrs. lecture, 30 lab, 235 clinical. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.

### AVCO 118

**Esthetics** (26 CR)

*Prerequisite: selective admission approval*

This course provides skill instruction in skin care. Topics include sanitation, skin sciences, waxing, skin treatments, makeup and business practices. This course prepares the student for the Kansas State Board of Cosmetology esthetician examination. In-state tuition and fees $1,241 total. Out-of-state tuition and fees $5,271 total. Beginning summer 2009, the in-state tuition and fees will total $1,348, and the out-of-state fees and tuition will total $5,170. 650 contact hrs. For enrollment and tuition information, call 913-469-8500 ext. 2390. The credit reflected in this course is for transcript reporting, recording and transfer only. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and

textbooks. $174 to $190.

## AVCO 212

**Cosmetology Instructor Training** (9 CR)

*Prerequisites: Current Kansas Cosmetology and Esthetics or Nail Technology License. Minimum of one year of practice in trained area and selective admission approval*

This 300 contact hour course is design to meet the educational requirements for licensure by Kansas Board of Cosmetology for instructors in the cosmetology sciences. Students will attend 40 hours of lecture and participate in 260 hours of observation, clinic supervision, and classroom teaching. Topics covered include instructor characteristics, student motivation, methods and evaluation. In-state tuition $540 total. Out-of-state tuition $2,400 total. 300 contact hrs. For enrollment information call 913-469-8500 ext. 2390. The credit reflected in this course is for transcript reporting, recording and transfer only. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $75.

## AVCO 218

**Advanced Esthetics Training** (6 CR)

*Prerequisite: Must possess current esthetics license granted by the Kansas Board of Cosmetology, a current cosmetology license, or the minimum of 500 hours of esthetics training from another institution.*

This 100-contact-hour course is designed to meet the education requirements for licensure by the Missouri Board of Cosmetology for estheticians in the cosmetology sciences and meet the needs of students who desire exposure to advanced esthetics techniques. Students will attend 44 hours of lecture/demonstration, practice 48 hours of integrated lecture/clinical, and participate in eight hours of community service. Topics covered include body treatments, theory on the day spa, airbrush makeup, microdermabrasion and manual lymphatic drainage. In-state tuition is $1,100. Out-of-state tuition is $1,720. 100 contact hrs. For enrollment information, call 913-469-8500 ext. 2390. The credit reflected in this course is for transcript reporting, recording and transfer only. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $15.

# Dental Assisting (KDA)

## KDA 100

**Introduction to Dental Assisting** (1 CR)

This course is a prerequisite for admission to the dental assisting program. Dental terminology, roles of dental assistant and scope of dentistry. 1 hr. lecture/wk. Course taught at Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting and beginning and ending dates of classes. Call 816- 759-4000.

## KDA 101

**Body Structure and Function** (2 CR)

*Prerequisite: Admission to dental assisting program*

Admission to dental assisting program is required. Basic anatomy and physiology for the dental assistant. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City,

MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting and beginning and ending dates of classes. Call 816-759-4000.

## KDA 102

**Head & Neck Anatomy** (2 CR)

*Prerequisite: Admission to the dental assisting program*

Admission to dental assisting program is required. Utilizes a systems approach to the gross anatomy of the head and neck with emphasis on the maxilla and mandible and oral tissues, neuromuscular and circulatory function, supporting structures and the temporomandibular joint also study of oral embryology and histology. 1.5 hr lecture and 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting and beginning and ending dates of classes. Call 816-759-4000.

## KDA 103

**Dental Anatomy** (2 CR)

Admission to dental assisting program is required. Introduces to students a detailed study of crown and root morphology of both primary and permanent dentition. Eruption Schedule and Numbering System. 4 hrs. lab/wk. Course taught at Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting and beginning and ending dates of classes. Call 816-759-4000.

## KDA 104

**Dental Emergencies & Pharmacology** (1 CR)

Admission to dental assisting program is required. An overview of emergencies common to the dental office setting. Students will gain knowledge in emergency drugs, allergic reactions and drug related emergencies. Also emphasized are specific medical conditions related to treatment, management of medical emergencies, pharmacology related to dental. 1 hr. lecture/wk. Course taught at Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting and beginning and ending dates of classes. Call 816-759-4000.

## KDA 105

**Dental Materials I** (2 CR)

Admission to dental assisting program is required. Basic knowledge and manipulation of waxes, temporary crowns, custom trays, alginate materials, impression materials, bite registration materials, cements, varnishes, bases and liners. 2 hr. lecture, 4 hrs. lab/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KDA 108

**Oral Microbiology & Infection Control** (2 CR)

Admission to dental assisting program is required. An overview of microbiological aspects of health and disease with emphasis on sterile process and disinfection techniques. 1 hr lecture, 2 hrs. lab/wk. Course taught at Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KDA 110

**Chairside Assisting I** (5 CR)

Admission to dental assisting program is required. Dental terminology and responsibilities of the dental assistant in the dental operatory to include patient

preparation and utilization of rubber dam, matrix, anesthetics, fluoride, wedge, amalgam and composite procedure and coronal polishing techniques. 3 hrs. lecture, 4 hrs. lab/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KDA 115

**Dental Radiology I** (4 CR)

*Prerequisite: KDA 102*

Admission to dental assisting program is required. Radiography history, characteristics of radiation production, film composition, x-radiation terminology, effects of radiation exposure, and protection. Exposing, processing, and mounting of radiographs taken on a radiographic manikin. 3 hr. lecture, 2 hrs. lab/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KDA 125

**Clinical Experience I** (2 CR)

*Prerequisite: Admission to the Dental Assisting Program and completion of CPR for healthcare workers.*

Admission to dental assisting program is required. Clinical experience in operative and preventive dental procedures utilizing four-handed dentistry in the clinic at the University of Missouri-Kansas City School of Dentistry. 6 hrs. clinic/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KDA 205

**Dental Materials II** (3 CR)

*Prerequisite: KDA 105*

Advanced manipulation of dental cements, amalgam, esthetic restoratives (composites), alginate and gypsum products, sealants and various impressions materials. 6 hrs. lab/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KDA 210

**Chairside Assisting II** (5 CR)

*Prerequisite: KDA 110*

Specialty area of dentistry to include orthodontics, periodontics, prosthodontics, oral surgery, endodontics, pediatric dentistry and geriatric dentistry. Includes procedures, instruments and current concepts of assisting in these areas. 1 hr. lecture, 8 hrs. lab/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KDA 215

**Dental Radiology II** (2 CR)

*Prerequisite: KDA 115*

Radiographic techniques, procedures and infection control emphasized. Practical experience in exposing, processing, and mounting radiographs taken on patients at the University of Missouri-Kansas City School of Dentistry and in private practice offices (general and specialty). 4 hrs. lab/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental

assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KDA 225

**Dental Office Management** (2 CR)

*Prerequisite: Enrollment in the Dental Assisting Program*

Admission to the dental assisting program is required. Principles of business management in the dental office. Control of the appointment book, filing, financial management, insurance forms, supply inventory and recall systems by conventional and computerized methods. Dental computer applications and use. Hands-on experience in private practice offices and/or clinic KDA 250. 1 hr. lecture, 2 hrs. lab/ wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KDA 230

**Oral Pathology** (1 CR)

*Prerequisites: KDA 108 and KDA 110*

An overview of diseases of the human body, including basic cell tissues, with specific emphasis on diseases of the face and mouth. 2 hrs. lab/wk. Course taught at Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes.

### KDA 250

**Clinical Experience II** (4 CR)

*Prerequisite: KDA 125*

Advanced clinical experience in the front office, at chairside, in radiographic and laboratory assisting techniques in general and in specialty dental offices and clinics. 16 hrs. clinic/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KDA 260

**Dental Assisting Seminar** (2 CR)

*Prerequisite: KDA 125*

Preparation for the Dental Assisting National Board Examination (DANB) and for successful employment. Clarification of prior material by discussion and dialogue between students and instructors. Preparation of personal resume and job applications. Demonstrate interview techniques. 2 hr. lecture/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KDA 270

**Expanded Functions in Restorative Dentistry** (1 CR)

*Prequisite: Student must meet one of the following: 1) Certified dental or orthodontic assistant through the Dental Assisting National Board, Inc. 2) Graduate of an ADA-accredited dental assisting or dental hygiene program 3) Completion of KDA 106 Basic Dental Techniques and successful completion of Basic Skills Mastery Exam given by the Missouri Dental Association*

Dental restorative materials with emphasis on placing and carving amalgam and composite restorations and palliative care of dental emergencies. 2 hrs. lab/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and

beginning and ending dates of classes. Call 816-759-4000.

### KDA 271

**Expanded Functions in Orthodontics**

*Prerequisite: Student must meet one of the following: 1) Certified dental or orthodontic assistant through the Dental Assisting National Board, Inc. 2) Graduate of an ADA-accredited dental assisting or Dental hygiene program 3) Completion of KDA 106 Basic Dental Techniques and successful completion of Basic Skills Mastery Exame given by the Missouri Dental Assistants Association*

Orthodontic procedures with emphasis on impressions, bending archwires, placement and removal of orthodontic bands and brackets, and palliative care of orthodontic emergencies. .5 credit hour, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KDA 272

**Expanded Functions in Periodontics**

*Prerequisite: Student must meet one of the following: 1) Certified dental or orthodontic assistant through the Dental Assisting National Board, Inc. 2) Graduate of an ADA-accredited dental assisting or dental hygiene program 3) Completion of KDA Basic Dental Techniques and successful completion of Basic Skills Mastery Exam given by the Missouri Dental Assistants Association*

Periodontal procedures with emphasis on air-brasive coronal polishing and placement of periodontal dressings. Credit hours .5. 1hr. lab/wk. Course taught at MCC-Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KDA 273

**Expanded Functions in Prosthetic Dentistry** (1 CR)

*Prequisite: Student must meet one of the following: 1) Certified dental or orthodontic assistant through the Dental Assisting National Board, Inc. 2) Graduate of an ADA-accredited dental assisting or dental hygiene program 3) Completion of KDA 106 Basic Dental Techniques and successful completion of Basic Skills Mastery Exam given by the Missouri Dental Assistants Association*

Prosthodontic procedures with emphasis on prosthodontic impression techniques, cementation of dental appliances, extra-oral adjustment of fixed and removable prostheses, placement of soft-tissue liners. 2 hrs. lab/wk. Course taught at Penn Valley Community College, 3201 Southwest Trafficway, Kansas City, MO. Students should contact the Penn Valley coordinator of dental assisting about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

# Dental Hygiene (DHYG)

### DHYG 121

**Clinical Dental Hygiene I: Pre-Clinic** (5 CR)

*Prerequisites: Admission to the Dental Hygiene Program, a minimum 2.0 GPA in curriculum courses and CHEM 122 and ENGL 121 and BIOL 140 and PSYC 130 and BIOL 230 Corequisites: DHYG 125 and DHYG 138 Prerequisite or corequisite: DHYG 135 and SOC 122*

This course will includes information and techniques relating to the history, development, current status and future of the profession of dental hygiene. Students will be introduced to fundamental dental hygiene services, instrumentation, patient assessment, preventive treatment, transmissible diseases, exposure barriers and infection control. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 2 hrs. lecture, 13 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $3300 to $3350.

### DHYG 125

**Developmental Dentistry** (2 CR)

*Prerequisites: Admission to Dental Hygiene Program and CHEM 122 and ENGL 121 and BIOL 140 and PSYC 130 and BIOL 230 and Corequisites: DHYG 121 and DHYG 138 and Prerequisites or corequisites: SOC 122 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** (2 CR)

*Prerequisites: CHEM 122 and ENGL 121 and PSYC 130 and BIOL 140 and BIOL 230 and Prerequisite or corequisite: SOC 122 Corequisites: DHYG 121 and DHYG 125 and DHYG 138*

This course is designed to provide students with a knowledge base of the science and physical properties of dental materials. Through laboratory exercises, students will have hands-on experience with dental materials used in dental hygiene and dentistry while applying their knowledge of dental material sciences. 1 hr. lecture, 2 hrs. lab/wk.

### DHYG 138

**Head and Neck Anatomy** (2 CR)

*Prerequisites: BIOL 230 and CHEM 122 and ENGL 121 and PSYC 130 and BIOL 140 and admission to the Dental Hygiene Program and Prerequisites or corequisites: SOC 122 and DHYG 135 Corequisites: DHYG 121 and DHYG 125*

This course is designed to provide dental hygiene students with the basic anatomical foundations to support clinical course work. Topics to be covered include embryonic development of the head and neck, along with identification of the bones in the skull. Muscles of the head and neck will be identified along with their functions, insertion and origins. The vascular, lymphatic and nervous systems of the head and neck will be discussed along with the anatomical basis of the spread of infection. 3 hrs. lecture and lab/wk.

### DHYG 140

**Clinical Dental Hygiene II** (4 CR)

*Prerequisite: DHYG 121 Corequisites: DHYG 142 and DHYG 146 and DHYG 148 and prerequisites or corequisites: BIOL 225 and DHYG 135*

The course will include clinical application of dental hygiene techniques and instrumentation, oral health products, patient motivation and educational techniques, preventive strategies including use of an intraoral clinic camera and an introduction to selected dental specialties. Students will be prepared for medical and dental emergencies, which may be encountered in various practice settings. An introduction to the dental hygiene process (ADPIE) and working with special-needs patient populations will be provided. 2 hrs. lecture & 8 hrs. clinic/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $25 to $35.

### DHYG 142

**Dental Radiology** (2 CR)

*Prerequisites: DHYG 121 Corequisites: DHYG 140 and DHYG 146 and DHYG 148 and Prerequisites or corequisites: BIOL 225 and DHYG 135*

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** (3 CR)

*Prerequisite: DHYG 121 Corequisites: DHYG 140 and DHYG 142 and DHYG 148 Prerequisites or Corequisites: BIOL 225 and DHYG 135*

This course will include recognition of the etiology and clinical signs and symptoms of periodontal diseases. The inflammatory process, treatment planning and nonsurgical therapy are discussed. 3 hrs. lecture/wk.

### DHYG 148

**Dental Health Education** (2 CR)

*Prerequisite: DHYG 121 Corequisites: DHYG 140 and DHYG 142 and DHYG 146 Prerequisites or Corequisites: BIOL 225 and DHYG 135*

Students will study health and apply educational methods for individuals and groups, with special emphasis on behavior modification, compliance, communication and motivation. Exercises in the research process and evaluation research articles are included. 1 hr. lecture, 2 hrs. lab/wk

### DHYG 221

**Clinical Dental Hygiene III** (6 CR)

*Prerequisites: DHYG 140 and BIOL 235 Corequisites: DHYG 225 and DHYG 230 and DHYG 240*

Students will continue development in the areas of patient management, preventive dental hygiene treatment and proficiency in clinical techniques through practical application. Current advances in dental hygiene services will also be introduced. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 2 hrs. lecture, 16 hrs. clinic/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $250 to $275.

### DHYG 225

**Pathology** (3 CR)

*Prerequisites: DHYG 140 and BIOL 235 Corequisites: DHYG 221 and 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. Basic pathological processes of oral conditions, their etiologies and treatments will be discussed. 3 hrs. lecture/wk.

### DHYG 230

**Dental Therapeutics** (3 CR)

*Prerequisites: DHYG 140 and BIOL 235 Corequisites: DHYG 221 and 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** (2 CR)

*Prerequisites: DHYG 140 and BIOL 235 Corequisites: DHYG 221 and 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** (1 CR)

*Prerequisite: DHYG 221 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** (6 CR)

*Prerequisite: DHYG 221 Corequisite: DHYG 245*

This course will offer continued development of proficiency in clinical techniques and current procedural practices of the dental hygienist with emphasis on self-evaluation. Topics will include ethics, jurisprudence, office management, current dental hygiene issues and preparation for board exams. 2 hrs. lecture, 16 hrs. clinic/wk., 1 hr. board review for first 8 wks.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $125.

# Drafting/CAD/AutoCAD (DRAF)

### DRAF 120

**Introduction to Drafting** (2 CR)

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. Drafting classes that have additional lab have either the time and room listed or TBA (to be announced) with the room number listed.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $45 to $60.

### DRAF 123

**Interpreting Machine Drawings** (2 CR)

*Prerequisite or corequisite: DRAF 120 or approval of the program assistant dean*

This course is a required course in the computer-aided drafting and design technology program. Upon successful completion of this course, students should be able to interpret graphics used to fabricate, assemble, maintain and operate the equipment and products of industry. General detail and assembly prints will be evaluated for title block information, general notes, dimensioning, tolerance specification and symbology. Specialized drawings will include cams, gears, numerical control, plastics, sheet metal and instrumentation. 2 hrs. lecture/wk.

### DRAF 129

**Interpreting Architectural Drawings** (2 CR)

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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $5 to $10.

## DRAF 130

**Introduction to CAD Concepts - AutoCAD: 2008** (3 CR)

*Prerequisite: DRAF 120 or approval of the program assistant dean*

This course provides a basic knowledge of AutoCAD. 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. Drafting classes that have additional lab have either the time and room listed or TBA (to be announced) with the room number listed.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $15.

## DRAF 132

**Introduction to AutoCAD LT** (3 CR)

This course provides a basic knowledge of computer-aided drafting (CAD). Students will learn basic AutoCAD LT commands and the use of CAD equipment, including input/output devices as drafting tools. The latest version of AutoCAD LT, student version, will be used to cover topics including creating and setting up a drawing, using blocks and wblocks, editing a drawing, saving completed drawings, developing template drawings, printing from paper space, dimensioning, layering, drawing defaults and hatching. This course is for beginning AutoCAD users. 2 hrs. lecture, 3 hrs. lab/wk.

## DRAF 135

**Graphic Analysis** (3 CR)

*Prerequisites: DRAF 120 and DRAF 130 or approval of the program assistant dean*

This course expands on introductory knowledge in drafting and CAD. Upon successful completion of this course, the student should be able to solve descriptive geometry problems, locate intersections of geometric shapes and produce developments of geometric shapes. Most assignments in this course will be completed using AutoCAD software. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $15.

## DRAF 140

**Topics in CAD I** (2 CR)

This course provides training for a specific design application software. Students will learn software commands and terminology. Students will be provided with in-depth coverage of the selected software and be given hands-on experience. Emphasis will be placed on the application of software to industry projects. 2 hrs. lecture, lab/wk.

## DRAF 164

**Architectural Drafting/Residential Interior Design** (3 CR)

Upon completion of this course the student should be able to interpret residential drawings, draft architectural drawings and use industry references.

Drawings studied include floor plans, elevations, sections, details and schedules. In addition to lab assignments, students will draft on coldpress board, vellum and plastic film. This course is required in the Interior Design, Interior Entrepreneurship and Interior Merchandising AAS programs. 2 hrs. lecture, 3 hrs. lab/wk
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $140 to $160.

## DRAF 222

**Mechanical Drafting** (3 CR)

*Prerequisites: DRAF 123 and DRAF 230 Prerequisite and/or corequisite: MATH 134*

Students successfully completing this course should be able to draw details and assembly views of mechanical parts. The types of parts discussed in this class include castings, sheet metal pieces, jigs and fixtures, and gauges. Important concepts include dimensioning, form and position tolerancing, coordinate tolerancing, and calculations related to material allowances and manufacturing. Project assignments will be completed using computer-aided drafting software. This course is typically taught in the fall semester. 2 hrs lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $40.

## DRAF 225

**Civil Drafting** (3 CR)

*Prerequisite: DRAF 230 or ENGR 131 Corequisite: MATH 134*

Upon successful completion of this course, the student should 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, topographic maps and property maps. The student will use CAD in drawing projects. This course is typically taught in the spring semester. 2 hrs. lecture, 3 hrs. lab/wk.

## DRAF 228

**Industrial Design Applications** (3 CR)

*Prerequisites: CET 211 and DRAF 222 and DRAF 250 and DRAF 252*

This course examines industrial systems. Topics include interdisciplinary considerations of manufacturing processes, machine elements, electrical controls and structural design. Systems will include pumping systems or material handling systems. Team project/protocol will be used to develop graphic, ISO and ANSI-approved solutions. Job books and journals for a project are required from all students. This course is typically taught in the spring semester. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50 to $75.

## DRAF 230

**Intermediate CAD: AutoCAD** (3 CR)

*Prerequisite: DRAF 130 or approval of the program assistant dean*

This course provides an increased knowledge of autoCAD 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and

textbooks. $5 to $10.

## DRAF 231

**CAD 3-D** (3 CR)

*Prerequisite: DRAF 230*

In this course students will explore the use of computer-aided drafting and design software for the construction of three-dimensional computer models. Emphasis will be on using 3-D software to produce multiple-view drawings. Visualization commands and techniques will be discussed and developed. Topics will include view commands and wire-frame and surface construction, as well as solid modeling. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $5 to $10.

## DRAF 232

**CAD Applications Workstation Environment** (2 CR)

*Prerequisite: DRAF 230 or approval of the program assistant dean*

This course provides instruction for customizing the CAD workstation and handling files in a network environment. Students will receive instruction in software commands and terminology and be provided with in-depth coverage of customizing the CAD environment and managing CAD data files in a production environment. Emphasis will be on hands-on application of the covered topics. 2 hrs. lecture, lab/wk.

## DRAF 233

**CAD Administration** (2 CR)

This course covers topics necessary for an individual to manage a CAD department in a production environment. Topics include managing CAD data, selecting types of equipment/software and establishing drafting policies and procedures. Also discussed are personnel issues for CAD employees/employers. 2 hrs. lecture/wk.

## DRAF 238

**Architectural Drafting** (3 CR)

*Prerequisites: DRAF 129 and DRAF 230*

This course is an introduction to the production of architectural drawings for residential and commercial construction. Upon successful completion of this course, the student will be able to draw floor plans, sections, elevations, dimensions and schedules and use industry standards. Projects will be completed using CAD software. This course is typically taught in the spring semester. 2 hrs. lecture, 3 hrs. lab/wk.

## DRAF 240

**Introduction to AutoLISP** (2 CR)

*Prerequisite: DRAF 230*

This course covers techniques for automation of AutoCAD drafting procedures through the use of the AutoLISP programming language. The scope of this course will include basic AutoLISP functions, creation of AutoLISP expressions and program files. It covers basic techniques and concepts needed to begin using AutoLISP effectively. 1 1/2 hrs. lecture, 1 hr. lab/wk.

## DRAF 242

**Topics in CAD II** (2 CR)

*Prerequisite: DRAF 230 or approval of the program assistant dean*

This course provides training for a specific CAD-related software. Students will learn software commands and terminology. Students will be provided with in-depth coverage of the selected software and be given hands-on experience. Emphasis will be on the application of the selected software to industry

projects. 2 hrs. lecture, lab/wk. Drafting classes that have additional lab have either the time and room listed or TBA (to be announced) with the room number listed.

## DRAF 243

**Architectural Desktop: Revit** (2 CR)

*Prerequisite: DRAF 230 or ENGR 131 or approval of the program assistant dean*

This course introduces the student to the Architectural Desktop software used by many architectural and engineering design firms. Topics include software commands, project setup and the design process. Emphasis will be placed on the hands-on application of software to industrial projects. It is recommended that students have previous architectural design knowledge or have taken DRAF 238, Architectural Drafting. 2 hrs. lecture and lab/wk.

## DRAF 244

**Land Development Desktop/CIVIL 3D** (2 CR)

*Prerequisite: DRAF 230 or ENGR 131 or approval of the program assistant dean*

This course introduces the student to the Land Development Desktop software used by many land planning, civil engineering and surveying firms. Topics include software commands, project setup and the design process. Emphasis will be placed on the hands-on application of the software to industrial projects. It is recommended that students have previous civil engineering design knowledge or have taken DRAF 225, Civil Drafting. 2 hrs. lecture and lab/wk.

## DRAF 245

**Mechanical Desktop: Inventor** (2 CR)

*Prerequisite: DRAF 230 or ENGR 131 or approval of the program assistant dean*

This course introduced the student to the Mechanical Desktop software used by many industrial and mechanical design firms. Topics include software commands, project setup and the design process. Emphasis will be placed on the hands-on application of the software to industrial projects. It is recommended that students have previous mechanical engineering design knowledge or have taken DRAF 222, Mechanical Drafting. 2 hrs. lecture and lab/wk.

## DRAF 250

**Electrical Drafting** (3 CR)

*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. This course is typically taught in the fall semester. 2 hrs. lecture, 3 hrs. lab/wk.

## DRAF 252

**Structural Drafting** (3 CR)

*Prerequisite: DRAF 230 or ENGR 131 Corequisite: MATH 134*

Upon successful completion of this course, the student should be able to produce structural drawings and details of steel, concrete and wood structures for manufacturing, construction, engineering and architectural firms. Project work will be done using CAD. This course is typically taught in the spring semester. 2 hrs. lecture, 3 hrs. lab./wk.

**DRAF 264**

**CAD:Interior Design** (3 CR)

*Prerequisites: ITMD 122 or ITMD 123 and ITMD 129 both with a grade of C or higher, or approval of the program assistant dean*

This course is an introduction to the use of computer-aided drafting (CAD) as used in the interior design field. Upon successful completion of this course, the student should be able to draw floor plans and elevations of interiors using a computer-aided drafting system. AutoCAD LT software will be used. 2 hrs. lecture, 3 hrs. lab/wk. Drafting classes that have additional lab have either the time and room listed or TBA (to be announced) with the room number listed. Note: Prerequisites ITMD 123 and ITMD 129 require a grade of "C" or higher. <u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $15.

**DRAF 266**

**Graphic Communications II for Interior Design** (3 CR)

*Prerequisite: DRAF 261*

Upon successful completion of this course, the student should be able to draft three-dimensional representations of interior spaces, furniture, window treatments and decorative accessories. One-point and two-point perspective drawing, isometric drawing and perspective grids are covered. Student will draft in pencil on vellum and ink on mylar. 2. hrs. lecture, 3 hrs. lab/wk.

**DRAF 271**

**Drafting Internship I** (3 CR)

*Prerequisite: assistant dean's 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 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. 15 hrs. min./wk. Drafting classes that have additional lab have either the time and room listed or TBA (to be announced) with the room number listed.

**DRAF 272**

**Drafting Internship II** (3 CR)

*Prerequisites: DRAF 271 and assistant dean's 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 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.15 hrs. min./wk. Drafting classes that have additional lab have either the time and room listed or TBA (to be announced) with the room number listed.

# Economics (ECON)

**ECON 132**

**Survey of Economics** (3 CR)

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 consequences of the differing business units in the economy, as well as the functioning of the labor market and how national income is distributed. The course is primarily for students who desire a one-semester, nontechnical overview of the basic components of macroeconomic and microeconomic theory and the functioning of the United States economy. 3 hrs. lecture/wk.

**ECON 230**

**Economics I** (3 CR)

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** (3 CR)

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 and Early Childhood (EDUC)

**EDUC 121**

**Introduction to Teaching** (3 CR)

*Note: For possible future elementary/secondary educators*

Teaching concepts and practices as they apply to today's elementary and secondary schools will be introduced. Topics will include the roles and responsibilities of the teacher, various modes of instruction, specialized areas in teaching, and professional requirements and concerns. Twenty hours of observation in a school setting are required. 3 hrs./wk.

**EDUC 130**

**Foundations of Early Childhood Education** (3 CR)

This introductory survey course is designed to provide students with current information on topics relevant to employment in early childhood programs. The course explores the historical and philosophical roots of early childhood education, general principles in child development, the teacher's role, values and ethics in early childhood education, curriculum design, and classroom management. Twenty hours of observation in a group childcare setting are required. Enrollment in certain courses may require a professional liability fee of $16.00. 3 hrs. lecture/wk.

**EDUC 131**

**Early Childhood Curriculum I** (3 CR)

*Prerequisite or corequisite: EDUC 130*

This methods course is designed for students who are, or will be, working in an early childhood education setting and parents or others who desire to develop an intellectually challenging environment for young children. The focus of the course is curriculum areas that deal with language and physical development. 3 hrs. lecture/wk.

**EDUC 205**

**Concepts in Early Childhood Education** (3 CR)

*Prerequisite or corequisite: EDUC 130 for certificate only*

This course will provide early childhood care and education professionals, and those aspiring to the profession, with the opportunity to apply early childhood education experience and continuing professional education to college credit. Students will gain and apply knowledge in many aspects of teaching young children in child-care and educational settings. The student will spend seven hours a week (105 clock hours total) in a supervised practical experience at the Hiersteiner Child Developments Center at JCCC and will complete 1.5 CEUs in early childhood education. Credit for prior experience may be substituted for completing this course. The program facilitator must assess the documents (i.e., CDA) provided by the student and/or arrange and evaluate the practical experience before offering credit for this course. Completion of an application for this credit is required and may be obtained from the program facilitator. For certificate only. 3 hrs. lecture/wk.

## EDUC 210

**Creative Experiences for Young Children** (3 CR)

*Prerequisites: EDUC 130 and one of the following: PSYC 215 or PSYC 218 or EDUC 270*

This course is a study of constructing and maintaining an environment for young children that fosters aesthetic sensitivity and creativity. The course includes the young child's developmental stages in art, music, movement, language, and creative and dramatic play; methods and materials that nourish developmentally appropriate creative experiences and support an inclusive, anti-bias curriculum; integration of creative experiences in the whole curriculum; the use of technology; and helping families understand the creative experience. 3 hrs. lecture/wk.

## EDUC 215

**Young Children with Special Needs** (3 CR)

This course is a study of creating and maintaining a developmentally appropriate inclusive environment for young children with special needs. The course includes the history of education and care for young children with special needs, federal and state legislation, types of differing abilities, developmental stages and capabilities of all young children, an inclusive approach to early education, and curriculum development for young children with special needs. Health, safety and nutrition; screening and assessment; interaction techniques; the role of the educator specific to the child's special needs; partnering with the family, other disciplines and community; and advocating for children are presented. The laboratory will include demonstration of the subject matter. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 2 hrs. lecture, 3 hrs. lab/wk.

## EDUC 220

**Survey of the Exceptional Child** (3 CR)

This course is an overview of the field of special education geared to those who are preparing to work with students with special needs. The course provides fundamental information on the identification and exceptionality, laws and legal cases affecting the delivery of services to individuals with exceptionalities and the principles of effective educational approaches for each exceptionality. Categories of exceptionality presented include learning disabilities, mental retardation, behavior disorders, gifted and talented, communication disorders, autism, traumatic brain injury, physical disabilities, sensory impairments, other health impairments and multiple and severe disabilities. 3 hrs./ wk.

## EDUC 225

**Infant and Toddler Education and Care** (3 CR)

*Prerequisite: EDUC 130*

This course is a study of creating and maintaining a developmentally appropriate environment for infants and toddlers. The course will include 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. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 2 hrs. lecture, 3 hrs. lab/wk.

## EDUC 231

**Early Childhood Curriculum II** (3 CR)

*Prerequisite: EDUC 131*

This methods course is designed for students who are, or will be, working in an early childhood education setting and parents or 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. lecture/wk.

## EDUC 235

**Parenting** (2 CR)

*Prerequisite or corequisite: PSYC 215 or PSYC 218 or EDUC 270*

This course is a study of effective parenting. The course is designed for teachers of young children and parents and guardians who desire to provide an environment that reflects sensitivity to the unique needs of the individual child and family. Topics covered during the course are the history of child-rearing methods, an overview of child development, types of families, parent/guardian fears and concerns, purposes of child behavior, and effective communication techniques. Problem prevention and resolution, nurturing self-esteem in children and building effective, collaborative relationships between teachers and families are also covered. 2 hrs. lecture/wk.

## EDUC 240

**School-Age Programs and Curriculum I** (3 CR)

*Prerequisite: EDUC 130*

This methods course is designed for students who are, or will be, working in an early childhood education setting and parents and caregivers who desire to develop an intellectually challenging environment for school age children. The focus of the course is on curriculum areas for the school-aged child and extended day and summer programs. 3 hrs. lecture/wk.

## EDUC 243

**Issues and Skills for Paraeducators** (3 CR)

Students will explore the issues, skills and challenges specific to working as a paraeducator. In particular, students will be introduced to the issues relating to the inclusion of students with special needs into the mainstream educational environment. Students will review and practice those skills necessary to being an effective member of an instructional team, including collaboration, problem solving, decision making, team building and parent outreach. 3 hrs./wk.

## EDUC 245

**School-Age Programs and Curriculum II** (3 CR)

*Prerequisite: EDUC 240*

The student will study the creation and maintenance of a developmentally appropriate environment for school-age children in extended school day and summer programs. The student will acquire the skills and characteristics of effective educators. The student will explore types of programs and how to plan, implement and evaluate these programs. Also, staff supervision and development, record keeping, relevant state regulations and laws will be discussed. Collaboration with family and community, public relations and contributing to the profession will be studied. The lab will include demonstration of the subject matter. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.

2 hrs. lecture, 1 hrs. lab/wk.

### EDUC 246

**Multicultural Issues in Education** (2 CR)

In this course students will explore the changing demographics of students in public schools. The course will also explore the ways in which a student's culture can affect the student's learning style, communication skill and behavior. The course will also describe strategies that take into account cultural differences, values and child-rearing practices when educators seek to create a safe and accepting environment for all students. 2 hrs. lecture/wk.

### EDUC 250

**Child Health, Safety and Nutrition** (3 CR)

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** (3 CR)

*Prerequisite: EDUC 130 and 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. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 2 hrs. lecture, 3 hrs. lab/wk.

### EDUC 270

**Early Childhood Development** (3 CR)

This course is a comprehensive account of human development from conception though age 8. 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 Program** (3 CR)

This course is a study of the organization and administration of early childhood programs. The topics include the skills and characteristics of effective administrators; types of programs; planning, implementing and evaluating programs; policy development; staff supervision and development; finances and budget; record keeping; relevant state regulations and laws; developing, equipping and maintaining a facility; organizing a developmentally appropriate environment; collaboration with family and community; public relations; and contributing to the profession. The lab will include demonstration of the subject matter. 2 hrs. lecture, 3 hrs. lab/wk.

### EDUC 283

**Prof. Competencies: Early Childhood Education** (1 CR)

*Prerequisite: Program Facilitator Approval*

This course focuses on the conduct and responsibilities of the early childhood

professional. Topics include early childhood education codes, laws and regulations; child development; experience planning and curriculum development; observation and guidance of young children; authentic assessment; responsibilities to the young child's family, to the community, and to the teaching profession; employability skills; self-assessment; and job seeking skills. Completion of this course is required to obtain the One Year Post-Secondary Certificate in Early Childhood Education. 1hr. lecture/wk.

### EDUC 284

**Seminar: Early Childhood Education** (3 CR)

*Prerequisite: Program Facilitator Approval Corequisite: EDUC 285*

The course will focus on conduct and responsibilities of the intern; early childhood codes, laws and regulations; child development; activity planning and curriculum development; observation and guidance of young children; authentic assessment; responsibilities to the young child's family and community and to the teaching profession; employability skills; self-assessment; and job-seeking skills. The student's practical application of information in the internship will be discussed, and a portfolio will be developed. 3 hrs. lecture/wk.

### EDUC 285

**Student Teaching: Early Childhood Education** (3 CR)

*Prerequisite: Program Facilitator Approval Corequisite: EDUC 284*

This supervised field experience in early childhood education is designed for students to apply their knowledge of teaching young children. The student will be participating in curriculum design and presentation; observing and interacting with young children; providing for the health, safety and nutrition of young children; managing the program setting; and working with families and the community. A self-assessment and a professional development plan are completed. The student will spend 20 hours a week (320 clock hours total) in at least two different early childhood settings, serving children of two different ages. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.

### EDUC 290

**Leadership in Early Childhood Education** (3 CR)

*Prerequisite: Program Facilitator Approval*

The student will study how early childhood education program directors lead programs and create quality environments for children, families and staff. The leadership topics include: leadership styles; developing mission statements, program philosophies, procedures, manuals and handbooks; assessing and planning for program improvements; recruiting and retaining qualified early childhood teachers; creating professional growth opportunities; developing effective staff meetings; implementing a shared decision making process; utilizing conflict resolution strategies; and developing partnerships with families and community agencies. 3 hrs. lecture/wk.

# Electrical Technology (ELTE)

### ELTE 122

**National Electrical Code I** (4 CR)

This is an introductory course on the use and interpretation of the current National Electrical Code. Students should develop a working knowledge of the code that will permit them to apply it to everyday applications. Upon successful completion of this course, the student should be able to use the code to design service entrances, feeders and branch circuits and discern between wiring methods used in difference occupancies. 4 hrs. lecture /wk.

### ELTE 123

**Electromechanical Systems** (4 CR)

Upon successful completion of this course, the student should be able to identify electrical components and their relationships to the various repair and troubleshooting techniques. The materials in this course will prove useful to service technicians whose background in electricity is limited. The course includes material from basic electrical theory to troubleshooting complex electrical circuits. This course will provide practice in the application of electrical theory as well as in the interconnection of components of heating and cooling systems. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. This is a beginning course in electrical theory that is required for HVAC, electrical and power plant technology but is appropriate for all interested students. Common components found in the HVAC industry are used to develop these skills. 3 hrs. lecture, 3 hrs. lab/wk.

### ELTE 125

**Residential Wiring Methods** (4 CR)

*Prerequisite or corequisite: HVAC 123 or ELTE 123*

This is an introductory course on residential wiring methods that includes practical application and hands-on experience in implementing the code requirements. Upon successful completion of this course, the student should acquire the necessary skills to wire a residence to meet the minimum requirements as set forth in the current 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $125 to $300.

### ELTE 200

**Commercial Wiring Methods** (4 CR)

*Prerequisite or corequisite: HVAC 123 or ELTE 123*

This course covers commercial wiring methods. Upon successful completion of this course, the student should be able to read commercial blueprints and apply the current 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $125 to $300.

### ELTE 202

**Electrical Estimating** (3 CR)

*Prerequisites: ELTE 122 and ELTE 125 or ELTE 200 or permission from program facilitator*

Upon successful completion of this course, the student should be able to manually and electronically (using industry standard computer software) develop an electrical estimate for a residential and commercial design. Emphasis will be placed on compiling a take-off list of materials from blueprints, completing a bill of material and completing the final bid process. This includes a bid accuracy analysis to determine the job's selling price. The student will be able to determine material cost, labor cost, the proper application of direct cost, overhead and profit. Also, to conclude the estimate, the student will be able to write bid proposals and change orders. 2 hrs. lecture, 3 hrs lab/wk.

### ELTE 205

**Industrial Electrical Wiring** (4 CR)

*Prerequisite: ELTE 122 or ELTE 125 or ELTE 200*

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 current 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $125 to $300.

### ELTE 210

**Code Certification Review** (3 CR)

*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. The student should also be able to interpret and apply the National Electrical Code rules to special wiring systems including Hazardous Locations, Elevators, Remote-control circuits and Fire Alarm systems. 3 hrs. lecture/wk.

### ELTE 215

**Generators, Transformers and Motors** (4 CR)

*Prerequisites: ELTE 123 and one of the following: ELTE 122 or ELTE 125 or ELTE 200 or equivalent experience and division administrator's approval*

This is an advanced course on the use of generators, transformers and motors. Upon successful completion of this course, the student should be able to interpret and apply the rules of the current National Electrical Code to wiring systems composed of these electrical components. Also, the student will gain a working knowledge of the theory of these single-phase and 3-phase electrical components and their practical applications in everyday use in the electrical industry. 4 hrs. lecture/wk.

### ELTE 271

**Electrical Internship I** (3 CR)

*Prerequisite: program facilitator 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 with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

# Electronics (ELEC)

### ELEC 120

**Introduction to Electronics** (3 CR)

This is a beginning course in electronics technology that is appropriate for both electronic majors 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## ELEC 122

**Circuit Analysis I** (3 CR)

*Prerequisites: ELEC 120 and MATH 133 or MATH 172*

This course covers resistive circuits having DC sources. Analysis topics include Ohm's law, Kirchoff's law, the superposition theorem, Thevenin's theorem and Norton's theorem. The current, voltage and resistance relationships in series, parallel and combination circuits will be studied. 3 hrs. lecture/wk.

## ELEC 123

**Smart House Technology** (3 CR)

This course is a general introduction to the rapidly growing field of home technology and its integration and use. Lectures, demonstrations and lab work will be used to teach the types of home technology being sold and installed. This course is designed to assist new users to implement this technology in their own homes and as an introduction for students wanting to proceed further into the field as contractors or installers. 3 hrs. lecture/wk.

## ELEC 125

**Digital Electronics I** (4 CR)

This is a beginning course in which students will study and practice the basic concepts of digital electronics. Topics will include digital number systems, logic gates, logic circuits, flip-flops, digital arithmetic, counters and registers. 3 hrs. lecture, 3 hrs. lab/wk.

## ELEC 126

**Microcomputer A+ Preparation** (4 CR)

This course is designed to be a general introduction to personal computer hardware and operating system software. The course teaches the operation, installation and upgrade of all the major components of a typical PC. The course also provides the basic knowledge to prepare the student for passing the A+ test, which is the industry standard certification for personal computer technicians. Since A+ Certification is based upon the Windows Operating System and Intel/AMD-type microprocessors, these will be the basis of the course. The course will cover both of the A+ Certification testing areas: PC Hardware (Core Test) and Operating Systems (OS Test). 3 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $5 to $10.

## ELEC 127

**Robots for Humans** (4 CR)

This course is a general introduction to the rapidly growing field of robotics. The class will use lectures, demonstrations and lab work to teach the basics of robotics. This course is designed to assist new users in making use of this technology in their own lives and as an introduction for students wanting to proceed further into the field. 3 hrs lecture, 2 hrs open lab/wk.

## ELEC 130

**Electronic Devices I** (4 CR)

*Prerequisite or corequisite: ELEC 140*

This is the first course in electronic devices. Topics include diodes and transistors, special purpose diodes and diode application circuits. Both bipolar junction transistors (BJTs) and field effect transistors (FETs) are examined and application circuits for both transistor types are constructed. 3 hrs. lecture, 3 hrs. lab/wk.

## ELEC 131

**Introduction to Sensors and Actuators** (3 CR)

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** (3 CR)

This is an introductory course in programmable logic controllers. The course is designed for individuals without extensive electrical or controller backgrounds. Hardware aspects and programming aspects of controller operation are covered. The foundational controller logic symbols and controller logic operations necessary to interpret and write ladder logic programs are taught in this class. Students will enter, edit and test controller programs through assigned laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $5 to $10.

## ELEC 140

**Circuit Analysis II** (3 CR)

*Prerequisites: ELEC 122 and MATH 134 or MATH 172 or MATH 173*

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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $5 to $30.

## ELEC 150

**Introduction to Telecommunications** (3 CR)

This is an introductory-level course in telecommunications principles that includes both voice and data communications. An examination of the communications industry and its regulatory environment will be provided. Topics include voiceband communications, digital transmission, switching and signaling, and emerging technologies. 3 hrs. lecture/wk.

## ELEC 165

**Advanced Programmable Controllers** (3 CR)

*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 interfaces will be covered. Lecture topics will be supported by laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

## ELEC 175

**Telecommunications** (3 CR)

*Prerequisite or corequisite: ELEC 130*

This course studies hardware and software functions of telecommunication systems. Topics include both voice and data aspects of telecommunication systems, including terminology, interfaces, protocols, transmission media, networks and networking technologies. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 TO 30.

## ELEC 185

**LAN Cabling and Installation** (3 CR)

This course is designed to provide specialized skills for installing and testing local area network cabling and wireless installation. Twisted-pair, coax and

fiber cables will be introduced and contrasted based on their characteristics and applications. Laboratory exercises for terminating and testing network cables and installing wireless systems will accompany the lectures. Students will be trained how to use common wiring tools and testing instruments. Methods of documenting LAN systems will also be introduced. 2 hrs. lecture, 3 hrs. lab/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### ELEC 195

**Introduction to Wireless LANs** (3 CR)

This course will introduce the student to the subject of wireless local area networks. The course will cover the types of equipment and their uses, correct configuration of equipment, types of security methods used, how to determine the physical lay-out of the access points and other equipment and procedures that can be used to administrate the network. 3 hrs. lecture, 2 hrs lab./wk.

### ELEC 225

**Digital Electronics II** (3 CR)

*Prerequisite: ELEC 125*

Students will continue their study of digital concepts and will learn how to build digital circuitry using digital integrated circuit chips and basic concepts of computer organization. In additional, emphasis will be placed on learning how to troubleshoot digital circuits and digital systems. Each student will build a digital computer through a series of laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

### ELEC 230

**Electronic Devices II** (3 CR)

*Prerequisite: ELEC 130*

This class is a continuation of the electronic devices sequence. Topics include operational amplifiers, thyristors and voltage regulators. Operational amplifier applications include comparators, summing amplifiers, integrators, differentiators and active filters. 2 hrs. lecture, 3 hrs. lab/wk.

### ELEC 240

**Electronic Communication Systems** (4 CR)

*Prerequisite or corequisite: ELEC 230*

This course provides a study of electronic communication systems. Topics include the electromagnetic spectrum, decibels, noise, amplitude modulation, antennas, transmission lines and the global positioning satellite system. 3 hrs. lecture, 3 hrs. lab/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $30.

### ELEC 245

**Microprocessors** (3 CR)

*Prerequisite: ELEC 225*

This course provides students with a basic knowledge of microprocessors and how microprocessors interface with other devices to create microcomputer systems. Students will learn how to write assembly language and machine language programs for a microprocessor as well as how to interface memory, input devices and output devices to a microprocessor. Additionally, emphasis will be placed on learning how to troubleshoot microprocessor-based systems. 2 hrs. lecture, 3 hrs. lab/wk.

### ELEC 250

**Microcomputer Maintenance** (3 CR)

*Prerequisite: ELEC 126*

This course is a continuation of the study of personal computers and will further the student's ability to maintain and repair them. In addition, this course will assist the student in preparing for computer-maintenance certification. Topics will include interaction of hardware and operating systems, resource conflicts, networking capabilities, common hardware and software problems, hardware differences of portable computers, and upgrading computers. The course topics will be supported by laboratory projects. 2 hrs. lecture, 3 hrs. lab/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $5 to $10.

### ELEC 271

**Electronics Internship I** (1 CR)

*Prerequisite: assistant dean's approval*

This course affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide selected advanced electronics technology students with appropriate on-the-job experience with area employers, under instructional oversight, that will promote the student's career goals. 18 hrs. approved and appropriate work activity/wk.

### ELEC 272

**Electronics Internship II** (1 CR)

*Prerequisites: ELEC 271 and approval of the program assistant dean*

This course is a continuation of ELEC 271. It affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide selected advanced electronics technology students with appropriate on-the-job experience with area employers, under instructional oversight, that will promote the student's career goals. 18 hrs. of approved and appropriate work activity/wk.

# Emergency Medical Science/MICT (EMS)

### EMS 121

**CPR I - Basic Life Support for Healthcare Provider** (1 CR)

This course provides an overview of the cardiovascular and respiratory systems, a discussion of medical and environmental emergencies leading to the need for CPR, and an introduction to diagnostic signs and triage, as well as insight into the structure and function of the emergency medical services system. The most current practical CPR skills will be taught, including CPR, AED, and airway obstruction techniques for adults, children and infants. Upon successful completion of all American Heart Association standards, the student will receive affirmation at the Healthcare Provider level. 4 hrs. lecture, lab/wk. for 5 wks.

### EMS 125

**CPR II-Basic CPR Instructor** (1 CR)

*Prerequisite: Successful completion of EMS 121 and/or current certification by AHA as Basic Rescuer*

This class will include a review and affirmation of Basic Rescuer techniques, practice in the design and implementation of CPR courses, demonstration of manikin maintenance and decontamination procedures, and mini-lectures. Upon successful completion of this class, students will be eligible for affirmation by the American Heart Association as a BLS instructor. Each participant must teach or co-teach a CPR class while being monitored by an AHA faculty member before the instructor affirmation card will be issued. 2.5 hrs. lecture, lab/wk. for 8 wks. (average).

**EMS 128**

**EMS First Responder** (5 CR)

This course is designed to provide training in emergency medical care for those who are apt to be the first persons responding to an emergency incident. Fire, police, civil defense personnel, school bus drivers, day-care providers, utility workers and industrial workers are a few examples of those persons who would benefit from this training. The student will receive both didactic and psychomotor skills training in CPR, patient assessment, fracture management, airway management and trauma management. Successful completion of this course with a minimum grade of "C" will enable the student to sit for the First Responder certification exam administered by the Kansas Board of Emergency Medical Services. 6 hrs. lecture, 6.5 hrs. lab/wk. for 8 wks. (average).

**EMS 130**

**Emergency Medical Technician** (9 CR)

*Prerequisite: 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 attaned the minimum of an associate's degree*

This program is designed for individuals interested in providing medical care to patients in the pre-hospital setting. It will provide the participants with opportunities to gain information, skills and attitudes necessary for certification and practice as an emergency medical technician (EMT) in the state of Kansas. This program has been approved by the Kansas Board of Emergency Medical Services (BEMS). It addresses information and techniques currently considered the responsibility of the EMT according to the United States Department of Transportation, National Standard Curriculum. The program consists of didactic instruction, practical skill training and clinical experience. Students are also required to attend Saturday session(s) as necessary. Saturday dates and times will be announced during the first class session. Classroom instruction includes anatomy, physiology, recognition and care of medical emergencies, and trauma-related injuries. CPR, bandaging, splinting, childbirth techniques and airway management are among the skills taught. An extrication session will give students hands-on experience with automobile accident situations. Upon instructor recommendation, students will participate in clinical and field observation. All transportation to and from off-campus sites is the responsibility of the student. Students completing this course with a minimum grade of "C" will be allowed to sit for the Kansas EMT State Certification Examination administered by the BEMS. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 7 hrs. lecture, 5 hrs. lab/wk. (average)

**EMS 133**

**Emergency Medical Technician Practicum** (3 CR)

*Prerequisites: EMS 130 or equivalent and a copy of current EMT-B card*

EMT Practicum is designed to give the newly certified EMT-B the additional skills and confidence needed to successfully compete for a position as an EMT-B with an EMS service. Skills will include ambulance operation, driving, map reading, insurance billing and unit maintenance. This course will also provide high-fidelity scenario training in all aspects of the EMS call as well as extensive field lab time with a local EMS service. Students will participate in realistic medical emergency scenarios with "actors" playing life-like patients and bystanders as well as numerous field internship shifts on a licensed ambulance. Students will work through all phases of an ambulance call. They will be presented with complex patient care situations that require the development of critical thinking and decision-making skills. Students will be tested on their ability to lead a team of pre-hospital caregivers in the diagnosis, proper treatment and evacuation of a patient. Scenario simulations will be set up to be as life-like as possible. 2 hrs. lecture, 10 hrs. lab/wk.

**EMS 140**

**Basic Cardiology and EKG Recognition** (3 CR)

*Prerequisites: Prospective students should be certified in a health profession, i.e., EMT, RN, LPN, EMT-P. Permission of the assistant dean is required.*

The health care worker with an understanding of ECG tracing will function more effectively when providing care for the cardiac patient. Increasing numbers of professionals are being called upon to utilize ECG tracing in their work settings, but without adequate knowledge of its use. This course will serve as both continuing education and the preparation for the job entry and/or job advancement. During the course, students will learn to apply monitoring and 12-lead electrodes, diagnose ECG dysrhythmias and infarct locations, treat ECG dysrhythmias, and defibrillate ventricular fibrillation. 3 hrs. lecture/wk.

**EMS 203**

**KS EMT - Intermediate/Defibrillator** (11 CR)

*Prerequisites: EMT-B and additional prerequisite and/or documentation requirements. See assistant dean for details.*

This course will cover selected advanced emergency medical care concepts and practices. This intermediate-level course advances the basic emergency medical technician's knowledge and skills in patient assessment, airway management, intravenous cannulation and manual defibrillation. The KS EMT-I/D's knowledge and skills are intermediate between the EMT-Basic and the EMT-Paramedic. Upon successful completion of this course, the student will be able to utilize the assessment findings to formulate a field impression and implement the treatment plan for the patient suffering a medical or trauma emergency. As the KS-EMT-I/D demonstrates cognitive and motor skill competency in the classroom and skills laboratory, his or her training will proceed to the clinical and field environments, where the knowledge, skills and attitudes necessary for professional practice will be practiced, synthesized and perfected. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 7 hrs. lecture, 5 hrs. lab, 10 hrs. clinical/field experience/wk.

**EMS 206**

**Training Officer I** (1 CR)

*Prerequisites: Kansas Board of EMS certification at the Emergency Medical Technician - Basic (EMT-B) level or above and approval of the course instructor*

This course is a requirement for the Kansas Board of Emergency Medical Services (KSBEMS) certification as a Training Officer (TO). The course is intended to prepare the student to plan, implement, coordinate, teach and evaluate continuing education programs. The course is a prerequisite for Training Officer II. 15 hrs. lecture, 5 hrs. lab total

**EMS 207**

**Training Officer II** (2 CR)

*Prerequisites: Kansas Board of Emergency Medical Services certification at the provider level the student wishes to teach, completion of EMS 206 Training Officer I and approval of the course instructor*

This course is a requirement for the Kansas Board of Emergency Medical Services (KSBEMS) certification as a Training Officer (TP). The course is intended to prepare the student to plan, implement, coordinate, teach and evaluate continuing education programs. As a TOII a student will also be qualified to plan, implement, coordinate, teach and evaluate Initial Instruction Programs for the First Responder level of certification in Kansas. 33 hrs. lecture, 7 hrs. lab total

**EMS 210**

**Emergency Medical Services Instructor Coordinator** (5 CR)

*Prerequisites: Prospective students must meet all the requirements for selection as set forth by the Kansas Board of Emergency Medical Services, which includes certification as a care provider, documentation of pre-hospital experience and successful completion of the BEMS pre-selection process*

This course covers the basic tenets of adult education as they apply to teaching emergency medical services provider courses. Students are oriented to all

Kansas requirements for conducting initial courses of instruction for ambulance attendants. Successful completion will be the first step toward certification as a Kansas EMS instructor coordinator. This program has been approved by the Kansas Board of Emergency Medical Services (BEMS). It addresses information and techniques currently considered the responsibility of the EMT-IC according to the United States Department of Transportation, National Standard Curriculum. 5 hrs. lecture-demonstration/wk. for 8 wks.

## EMS 220

**MICT I** (10 CR)

*Prerequisite: Admission to the MICT program*

MICT I is the first of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. In this narrowly focused but intense foundational course, the paramedic student will gain a significant knowledge of patient assessment, pharmacology and medication administration techniques, electrocardiography, advanced airway management, and paramedic scope of practice. Much material will be covered rapidly, and emphasis is on organization, internalization and synthesis of the basic knowledge of the discipline in this 9-week course. Additionally, during the initial psychomotor teaching labs, students will gain the ability to assess patients, administer medications, treat dysrhythmias and manage the airway through manikin practice. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.24 hrs. lecture/wk. Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $700 to $1,000.

## EMS 225

**MICT II** (10 CR)

*Prerequisite: EMS 220 with a grade of "C" or higher*

MICT II is the second of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. This course builds on the foundational knowledge developed in MICT I and covers advanced management of medical and trauma emergencies in the out-of-hospital environment. Much material will be covered rapidly, and emphasis is on organization, internalization, synthesis and application of the basic knowledge of the discipline in this 9-week course. Students demonstrate competency at motor skill performance, and extensive simulation practice is afforded. Students begin field observation with a paramedic ambulance crew and complete an Advanced Cardiac Life Support Course. 24 hrs. avg. lecture/wk., 12 hrs. lab/field observation avg./wk.

## EMS 230

**MICT III Clinicals** (12 CR)

*Prerequisite: EMS 225 with a grade of "C" or higher*

MICT III is the third of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. During MICT III, paramedic students have the opportunity to take the knowledge and skills gained in MICT I and II and apply them in actual supervised clinical practice. MICT III represents a brief, intense 14-week course in which knowledge and skills are synthesized and applied to patients under supervision of physicians and nurses in clinical practice in the emergency department, critical care unit, surgery/ recovery room, labor/delivery room, pediatric emergency department and burn center. Field observation lab and classroom and laboratory review are included as well. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 4 hrs. lecture avg./wk., 44 hrs. clinical/lab/field avg./wk.

## EMS 271

**MICT IV Field Internship** (15 CR)

*Prerequisite: EMS 230 with a grade of "C" or higher*

MICT IV is the final of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. During MICT IV, paramedic students have the opportunity to take the knowledge and skills gained in MICT I, II and III and apply them in an actual practice environment. MICT IV represents an intense 4-month course in which knowledge, skills and professional behaviors are synthesized and applied to victims of sudden trauma or medical emergencies under supervision of paramedic preceptors at the emergency scene and in the ambulance. Entry-level competence into the profession is demonstrated as the student demonstrates the ability to assess the scene and the patient, develop a plan for therapeutic intervention as well as scene management, and effectively lead the out-of-hospital resuscitation team's effort. Classroom and laboratory review are included. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 4 hrs. lecture avg./ wk., 56 hrs. clinical/lab/field avg./wk.

# Engineering (ENGR)

## ENGR 121

**Engineering Orientation** (2 CR)

Upon successful completion of this course, the student should be able to describe careers in engineering and use fundamental concepts in engineering problem solving. Topics include engineering disciplines, aptitude and academic requirements, professional responsibilities, problem definition and solution, engineering design, and terminology. Students will meet professional engineers during field trips to engineering companies and work sites. The primary intent of this course is to introduce students to the engineering problem-solving process and to help each student make the best career decision. 2 hrs. lecture/wk.

## ENGR 131

**Engineering Graphics I** (4 CR)

*Corequisite: MATH 133 or MATH 171 or MATH 172 or MATH 173 or MATH 241*

Upon successful completion of this course, the student will be able to apply graphic principles used in the engineering design process. The student will master graphics concepts using computer-aided drafting (CAD) software. Topics include 2-D and 3-D CAD commands; geometric construction; multi-view, orthographic projection; sectional views; isometrics; dimensioning; and descriptive geometry. 3 hrs. lecture, 4 hrs. lab/wk.

## ENGR 171

**Programming for Engineering and Science** (3 CR)

*Prerequisite: MATH 171*

At the completion of this course, the student should be able to design algorithms for the solution of engineering and science problems using pseudocoding and flowcharting techniques; code the solution in the FORTRAN programming language; and compile, test and debug the program. Programming concepts covered will include data input from the keyboard and data files, formatted output, sequence, selection and iteration structures, function and subroutine subprograms and array processing. Proficiency with conversions and math in the decimal, binary and hexadecimal numbering systems will also be attained. This is a beginning course that will prepare students for more advanced studies in engineering and science computer applications. 2 hrs. lecture, 2 hrs. lab/wk.

## ENGR 180

**Engineering Land Surveying I** (3 CR)

*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, GPS, and total station. 2 hrs. lecture, 3 hrs. lab/wk.

## ENGR 251

**Statics** (3 CR)

*Prerequisite: MATH 242 and Prerequisite or 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, frame, and shear and moment diagrams. This course is typically offered in the summer and fall semesters. 3 hrs. lecture/wk.

## ENGR 254

**Dynamics** (3 CR)

*Prerequisite: ENGR 251*

Upon successful completion of this course, the student should be able to apply the principles of dynamics, the branch of engineering mechanics that studies objects in motion. Topics covered will include unbalanced force systems (Newton's second law), displacement, velocity and acceleration, work and energy, and impulse and momentum. Computer applications will be included. This course is typically offered in the spring semester. 3 hrs. lecture/wk.

# English (ENGL)

## ENGL 102

**Writing Strategies** (3 CR)

*Prerequisite: Appropriate placement test score*

This course assists the student in developing strategies for sentence writing. The course is designed to meet a variety of learning styles, levels and needs. Students will develop strategies for self-monitoring errors in written products. Students are taught strategies for writing a variety of sentence formats and have extensive practice in writing sentences as a means of implementing new information. 3hrs./wk. This course does not fulfill degree requirements. Students must take the JCCC writing assessment test before enrolling. For more information, see a JCCC counselor.

## ENGL 103

**Practical Writing Skills** (1 CR)

At the completion of this course, the student should be able to recognize and write complete sentences. The student will write a variety of sentences using strategies for building sentences with phrases and clauses as well as editing sentences through coordination and subordination. The student will then practice developing paragraphs in various organizational modes. Along with writing the student will read selected prose and write responses to these readings. The course is designed specifically to aid non-native speaking students in acquiring writing skills through individualized instruction. The aim of this course is to enhance/supplement the English as a Second Language program already offered at JCCC. Also, because hearing-impaired students have similar difficulties with the English language as ESL students, this course addresses the challenges often faced by this student population. This course meets by arrangement in the Writing Center. This course does not fulfill degree requirements. After registering for this course, the student should contact the Writing Center.

## ENGL 105

**Basic English Grammar** (3 CR)

The aim of English 105 is to introduce the student to the basic structures in English grammar: parts of speech, sentence types, phrases and clauses. Students learn to use correct punctuation. Moving from joining short phrases to the basic sentence, students learn to combine ideas to form a variety of sentence structures. Students practice skills, working in class (often in pairs or groups) and making use of computer programs in the Writing Center. Grammar games are used to help prepare students for a test. 3 hrs./wk. This course does not fulfill degree requirements.

## ENGL 106

**Introduction to Writing** (3 CR)

*Prerequisite: ENGL 102 or appropriate score on assessment test*

Beginning with a review of basic sentence skills, this course focuses on paragraph development, including subject selection, topic sentences, methods of development, transitional devices and effective introductions and conclusions. The last part of the course will focus on developing multi-paragraph essays. 3 hrs./wk. This course does not fulfill degree requirements. Students must take the JCCC writing assessment test. For more information, see a JCCC counselor.

## ENGL 107

**Sentence Pattern Skills** (1 CR)

At the completion of this course, the student should be able to identify the parts of speech, elements of a sentence and basic sentence patterns. Emphasis is on sentence combining and sentence composing. Students are told that grammar in isolation will not improve writing skills, and they are encouraged to practice writing. This course meets by arrangement in the Writing Center. This course does not fulfill degree requirements. After registering for this course, the student should contact the Writing Center.

## ENGL 108

**Composing Skills** (1 CR)

After completing Composing Skills, students will be able to choose a topic, narrow the topic, and organize and develop with supporting evidence a variety of paragraph modes. The student will be able to achieve paragraph unity, coherence and emphasis. Also, the student will learn revision and editing strategies. Course meets by arrangement in the Writing Center. This course does not fulfill degree requirements. After registering for this course, the student should contact the Writing Center.

## ENGL 109

**Proofreading Skills** (1 CR)

This 1-credit module is designed to provide students with strategies and rules that will help them recognize and repair common grammar, usage and mechanical errors in their writing. This course focuses on the major and minor errors as set forth in the English program objectives (available in the Writing Center). Students will learn to recognize and correct these errors, not only on exercise sheets, but also in their own writing. This class meets by arrangement in the Writing Center. This course does not fulfill degree requirements. After registering for this course, the student should contact the Writing Center.

## ENGL 110

**English Grammar Review** (1 CR)

English Grammar Review helps students to review the parts of speech, elements of a sentence, basic sentence patterns, major sentence level errors, agreement errors and punctuation. Students are encouraged to practice writing. Course meets by arrangement in the Writing Center. This course does not fulfill degree requirements. After registering for this course, the student should contact the Writing Center.

## ENGL 112

**Research Skills** (1 CR)

Research Skills is a review of the various aspects of the research process, beginning with limiting the subject and moving to revising the finished product. Emphasis is on the gathering of resource materials, synthesizing the information and developing an essay in which the resource information is used to support a thesis and is documented in an approved academic form. This course meets by arrangement in the Writing Center. This course does not fulfill degree requirements. After registering for this course, the student should contact the Writing Center.

## ENGL 115

**Revision Skills** (1 CR)

Revision Skills is designed to instruct the practicing writer in skills needed to revise all writing, including business, college and personal writing. Students will use computer programs and self-paced materials. Revision Skills is intended to complement courses in which writing is assigned. Students will be encouraged to bring in business communication or college assignments to apply the learned skills. Course meets by arrangement in the Writing Center. This course does not fulfill degree requirements. After registering for this course, the student should contact the Writing Center.

## ENGL 120

**Writing in the Disciplines** (1 CR)

This course is designed to complement and/or support classes in which writing is intrinsic to the curriculum and provide students with a process that can be applied to the variety of written assignments typically assigned in classes other than composition. Students will practice writing a variety of short papers using a prescribed process for each assignment. The course is individualized. Students enrolled in this class must come to the Writing Center, LIB 308, to make arrangements for their class schedule, to pick up a syllabus and other materials, and to be assigned an instructor. The course is a combination of written material and software. All completed work will be kept in a folder in the Writing Center. Students should anticipate approximately 20 hours of work to complete the course. This course does not fulfill degree requirements.

## ENGL 121

**Composition I** (3 CR)

*Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117*

Composition I focuses on writing nonfiction prose suitable in its expression and content to both its occasion and its audience. Students will have an opportunity to improve in all phases of the writing process: discovering ideas, gathering information, planning and organizing, drafting, revising and editing. Each essay written in the course should clearly communicate a central idea or thesis, contain sufficient detail to be lively and convincing, reflect the voice of the writer and use carefully edited standard written English. 3 hrs./wk. Students must take the JCCC writing assessment test or submit an ACT score of 19 or higher before enrolling. For more information, see a JCCC counselor. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## ENGL 122

**Composition II** (3 CR)

*Prerequisite: ENGL 121*

Because so much writing is required in college and in the workplace demands the ability to synthesize information gathered from various sources, Composition II will focus on skills essential to gathering, comprehending, analyzing, evaluating and synthesizing information. Composition II also emphasizes organizing and polishing steps important in composing expository, evaluative and persuasive prose. 3 hrs./wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## ENGL 123

**Technical Writing I** (3 CR)

*Prerequisite: ENGL 121*

This course provides a basic knowledge of technical writing. Students will learn the writing process (prewriting, writing and rewriting) to follow when constructing correspondence, including memos, letters, e-mail, reports, instructional manuals and Web pages. Students also will learn seven key traits of effective technical writing: clarity, conciseness, document design, organization, audience recognition, audience involvement and accuracy. Accuracy specifically entails the need for students to adhere to rules of grammar and mechanics. Students will learn how to create computer-generated graphics and learn word processing skills. Finally, the students will learn how to work in teams, modeling Total Quality Management skills. 3 hrs./wk.

## ENGL 130

**Introduction to Literature** (3 CR)

*Prerequisite: ENGL 121*

Students will read, discuss and analyze works from three literary genres: the short story, the poem and the play. Students will learn and apply the technical vocabulary used in the criticism of these literary forms. Students will be introduced to representative works from various literary traditions and cultures, including numerous works from contemporary writers. 3 hrs./wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## ENGL 140

**Writing for Interactive Media** (3 CR)

*Prerequisite: ENGL 121*

This course teaches students to apply the writing process as well as fundamental rhetorical and composition skills to various interactive media including Web pages, CD-ROMs/DVD, e-mail, kiosks, computer program packages and other electronic media. The instruction will focus on skills essential to selecting, evaluating and synthesizing information from primary and secondary sources; in addition, it will emphasize the different approaches to organization that these media require as well as the variety of discourse styles used in informative, instructional, persuasive and entertainment media texts. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## ENGL 150

**Digital Narratives** (3 CR)

*Prerequisite: ENGL 121*

Games, particularly Role-Playing Games (RPGs) and other participatory narratives, share many properties with traditional narratives, yet differ significantly from their linear counterparts. This course focuses on the elements of narrative as well as the principles that drive virtual or alternative possible worlds (both fictive and reality-based), and it will provide students with practice writing and designing artifacts that demonstrate an understanding of plot, character, setting and the impact of structure and purpose in game development. This course is taught in the fall semester only. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $30.

## ENGL 210

**Technical Writing II** (3 CR)

*Prerequisite: ENGL 123*

This course provides an advanced knowledge of technical writing. Students

will learn the writing process (prewriting, writing and rewriting) to follow when constructing correspondence. Types of technical writing covered in this course include memos, letters, e-mail, short reports, long reports, instructional manuals, Web pages, PowerPoint presentations, brochures, newsletters, journal articles, resumes and online resumes. Students also will learn seven key traits of effective technical writing; clarity, conciseness, document design, organization, audience recognition, audience involvement and accuracy. Accuracy specifically entails the need for students to adhere to rules of grammar and mechanics. Students will learn how to create computer-generated graphics and learn word-processing skills. Finally, the students will learn how to work in teams, modeling Total Quality Management skills. 3 hrs./wk.

## ENGL 215

**U.S. Latino and Latina Literature** (3 CR)

*Prerequisite or corequisite: ENGL 122*

This course introduces students to texts by U.S. writers of Hispanic descent or origin. Written primarily in English, the texts may include fiction, non-fiction, poetry, drama, and/or film. The readings, discussions, and related writing projects will emphasize the relationship between mainstream America and borderland writers; explore the cultural and artistic context of the writers and their works; recognize and assess the use of major narrative and rhetorical strategies; and stimulate consideration of issues surrounding assimilation, identity formation, code-switching, and cultural hybridity. 3 hrs. lecture/wk.

## ENGL 217

**Literature by Women** (3 CR)

*Prerequisite or corequisite: ENGL 122*

This survey course introduces students to a representative sample of texts created by women from the mid-seventeenth century to present. Using the lens of gender, students will explore the social, historical, political, and cultural contexts relevant to the literature. Further, students will identify significant literary devices and genres as employed by these authors. The course will emphasize the dynamic relationship between the literature and its contexts. 3 hr. lecture/wk.

## ENGL 222

**Advanced Composition** (3 CR)

*Prerequisite: ENGL 122*

This course offers challenging insights into the act of writing. We will move beyond Composition I and Composition II, focusing on writing persuasively to a select audience; working together to anticipate and defuse objections; supply convincing evidence; synthesize the ideas of others to support our ends; look critically at all sources; and perfect a mature, polished style that is suitable to audience and occasion. 3 hrs./wk.

## ENGL 223

**Creative Writing** (3 CR)

*Prerequisite: ENGL 122*

Students will study and practice writing in two or three of the major literary modes of writing: poetry, fiction, and possibly drama. The reading assignments are based on the premise that, to be a good writer, students must have knowledge of literary techniques and be perceptive readers and critics. Students will examine techniques of two or possibly three of the literary genres and then apply their knowledge to write in each genre. In addition, they will read other students' work and provide useful feedback on that work. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## ENGL 224

**Creative Writing Workshop** (3 CR)

*Prerequisite: ENGL 223*

In this class, students will build upon the knowledge and skills learned in ENGL 223. In addition to studying writing techniques, they will produce a body of written work in one or more literary genres of their choice: poetry, fiction, and/or drama. They will also read other students' work and provide useful feedback on that work. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $15 to $25.

## ENGL 227

**Introduction to Poetry** (3 CR)

*Prerequisite: ENGL 122*

This course emphasizes close reading and analysis of poetry by writers from different time periods, countries, and ethnic backgrounds. Students will study terms, patterns, and forms that are useful for an understanding and appreciation of poetic verse. The course will cover major literary, historical, and cultural movements as they relate to poetry. Students will be introduced to major classical and contemporary American and English poets, along with contemporary foreign-language poetry in translation. 3 hrs. lecture/wk.

## ENGL 230

**Introduction to Fiction** (3 CR)

*Prerequisite: ENGL 122*

This course features significant opportunities to write about the literature and the reader's response to it. Students will learn the historical fictional precedents of the short story; the similarities and differences between the short story and other narrative forms, such as the novel; the differences between the short story and its historical precedents, between short stories and film adaptations of them, and between commercial and literary short stories. Students will discover the place of short stories in major literary movements, the key elements of short stories and interpretive approaches to short stories. 3 hrs./wk.

## ENGL 231

**American Prose** (3 CR)

*Prerequisite: ENGL 122*

American Prose presents a series of literary works by American writers that reflects the attitudes and identity of our national literature and culture. By grappling with the ideas and characterizations presented in each literary work, the student develops meaningful insights into the attitudes and human conditions that influence America's national literary identity. 3 hrs./wk.

## ENGL 232

**Children's Literature** (3 CR)

*Prerequisite: ENGL 122*

Children's Literature is meant for all students interested in bringing children and books together but is especially suited for those who are students with English or education majors; teachers already in the elementary school classroom; parents; those working with children in preschools, day-care centers and libraries; and grandparents and prospective parents. The course would also benefit those exploring the field of writing and illustrating for children. Students will identify children's needs and interests, list the criteria for choosing books for children, and demonstrate the means by which we can bring children and books together. Students will read, examine and critique a variety of children's literature selected by author, genre and historical time period. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

## ENGL 235

**Drama as Literature** (3 CR)

*Prerequisite: ENGL 122*

This course introduces students to the analysis of plays as literature. Beginning with the Greek dramatists and ending with the contemporary scene, students will read full-length plays and the comments of playwrights, directors, actors and critics. They will analyze drama from psychological, historical, philosophical, structural and dramatic perspectives. Students will write essays demonstrating their understanding of the works studied. This course is taught in the fall semester only. 3 hrs./wk.

### ENGL 236

**British Literature I** (3 CR)

*Prerequisite: ENGL 122*

In this survey course, the student will study British literature written up to 1800, ranging from the Anglo-Saxon to the Augustan eras, including works by major authors, such as Chaucer, Shakespeare, Milton, and Swift. The course will emphasize the relationships among influential writers, their lives and times. Additionally, the student will explore the literary differences between the British culture and one other culture that was governed by the British Empire. Such non-British literary works may be from Australia, India, Asia, and various regions of Africa, or the Middle East. 3 hrs. lecture/wk.

### ENGL 237

**British Literature II** (3 CR)

*Prerequisite: ENGL 122*

In this survey course, the student will study British literature written from 1800 to the present. Major authors from the Romantic, Victorian and Modern eras, such as Austen, Blake, Wordsworth, the Shelleys, Dickens, Tennyson, the Brownings, Eliot, and Woolf, will be included. The course will emphasize the relationships among influential writers, their lives and times. Additionally, the student will explore the literary differences between the British culture and one other culture that was governed by the British Empire. Such non-British literary works may be chosen from the traditions of Australia, India, Asia, various regions of Africa, or the Middle East. British Literature I is NOT a prerequisite for this course. 3 hrs. lecture/wk.

### ENGL 243

**Literature of Science Fiction** (3 CR)

*Prerequisite or corequisite: ENGL 122*

This course examines the literature of science fiction, especially from 1960 through the present. Students explore the unifying concepts of science and technology, depicted through imaginative narratives of the past, present and future. Students read short stories and/or novels, view science fiction films and discuss key science fiction concepts. 3 hrs. lecture/wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

### ENGL 245

**Writing Literature for Children** (3 CR)

*Prerequisite: ENGL 232*

Writing Literature for Children is a continuation of Introduction to Children's Literature aimed primarily at those students interested in writing and publishing literature for children. The students will review children's needs and interests, research topics and collect data for possible books. Then students will write and assemble a variety of children's literature. Students will critique their own work and that of their peers and revise their work accordingly. Finally, students will compose all correspondence typically required by publishers. 3 hrs./wk.

### ENGL 250

**World Masterpieces** (3 CR)

*Prerequisite: ENGL 122*

World Masterpieces introduces students to literary study using major literary works composed from the times of Homer to Shakespeare that have been influential in shaping and expressing values of Western culture. Students will read selections representative of the epic, tragic, comic and lyric traditions primarily to gain knowledge of the works assigned. In addition, students will analyze the assigned texts as literary works and as cultural artifacts and influences. Finally, students will compare and contrast contemporary understandings of the individual and society with those expressed in the works studied. In completing the course objectives, students will learn the conventions of writing about literature and become familiar with general reference materials useful in studying literature. 3 hrs./wk.

### ENGL 254

**Masterpieces of the Cinema** (3 CR)

*Prerequisite: ENGL 122*

This course examines the development of cinema from the early experiments in the late 1800s up to the present day, presenting the history and art of both American and international cinema. Students read the textbook, view short and full-length films, and discuss important cinematic techniques and concepts. Students verify their judgments by summarizing and analyzing these important concepts, using discussions, and writing effective, well-organized essays in response to cinematic presentations and explanations. 3 hrs./wk.

### ENGL 256

**American Poetry** (3 CR)

*Prerequisite: ENGL 122*

American Poetry presents a planned reading schedule and directed discussion of poems that reflect the attitudes of American poets and American culture. By grappling with the ideas and characterizations presented in these poems, students can develop meaningful insights into the attitudes and human conditions that have influenced America's national literary identity. 3 hrs./wk.

# English for Academic Purposes (EAP)

### EAP 091

**Reading/Vocabulary I and Writing/Grammar I** (6 CR)

*Prerequisite: Appropriate assessment test score*

This course, which pairs three credit hours of reading/vocabulary with three credit hours of writing/grammar, provides students who are English Language Learners (ELL) with an integrated communicative experience on the high beginning college level. Students will develop their skills in reading, writing, grammar and vocabulary in a learning community setting. Students who successfully complete EAP 091 will be awarded three hours of credit for EAP 101 Writing and Grammar I and three hours of credit for EAP 120 Reading and Vocabulary I. The teaching of this course will be shared by two instructors. This is the first reading-writing course in the English for Academic Purposes (EAP) program. This course does not fulfill degree requirements.

### EAP 092

**Reading/Vocabulary II and Writing/Grammar II** (6 CR)

*Prerequisites: Appropriate assessment test score or EAP 091 (EAP 101 and EAP 120) and EAP 105*

This course, which pairs three credit hours of reading/vocabulary with three credit hours of writing/grammar, provides students who are English Language Learners (ELL) with an integrated communicative experience on the low intermediate college level. Students will develop their skills in reading, writing, vocabulary and grammar in a learning community setting. Students who successfully complete EAP 092 will be awarded three hours of credit for EAP 103 Writing and Grammar II and three hours of credit for EAP 121 Reading and Vocabulary II. The teaching of this course will be shared by two

instructors. This is the second reading-writing course in the English for Academic Purposes (EAP) program. This course does not fulfill degree requirements.

## EAP 093

**Reading/Vocabulary III and Writing/Grammar III** (6 CR)

*Prerequisites: Appropriate assessment test score or EAP 092 (EAP 103 and EAP 121) and EAP 107*

This course, which pairs three credit hours of reading/vocabulary study with three credit hours of writing/grammar, provides students who are English Language Learners (ELL) with an integrated communicative experience on the intermediate level. Students will further develop their skills in reading, writing, vocabulary and grammar in a learning community setting. Writing activities will focus on paragraph and multi-paragraph writing. Students who successfully complete EAP 093 will be awarded three hours of credit for EAP 111 Writing and Grammar III and EAP 122 Reading and Vocabulary III. The teaching of this course will be shared by two instructors. This is the third reading-writing course in the English for Academic Purposes (EAP) program. This course does not fulfill degree requirements.

## EAP 101

**Writing and Grammar I** (3 CR)

*Prerequisite: Appropriate assessment test score Corequisite:EAP 120*

This course, which is paired with EAP Reading and Vocabulary I, provides English as a Second Language students an integrated communicative experience at the beginning college level. As part of a Learning Community, students will learn effective writing techniques for using American English at the sentence and basic paragraph level. The course will also focus on basic study and learning strategies to aid writing. This course is the first writing and grammar course in the sequence of courses for English for Academic Purposes. 3 hrs lecture/wk. This course does not fulfill degree requirements.

## EAP 103

**Writing and Grammar II** (3 CR)

*Prerequisites: Appropriate assessment test score or EAP 091 (EAP 101 and EAP 120) and EAP 105 Corequisite: EAP 121*

This course, which is paired with EAP Reading and Vocabulary II, provides English as a Second Language students an integrated communicative experience. As part of a Learning Community, students will focus on using American English in writing at the paragraph level. The course will also focus on learning and study strategies to enhance writing. This course is the second writing and grammar course in the sequence of courses for English for Academic Purposes. 3 hrs. lecture/wk. This course does not fulfill degree requirements.

## EAP 105

**Speaking and Pronunciation I** (3 CR)

*Prerequisite: Appropriate assessment test score*

This course provides English as Second Language students the opportunity to develop their speaking and pronunciation skills. Focus will be on effective techniques for using American English in academic, career and personal settings. 3 hrs. lecture/wk. This course does not fulfill degree requirements.

## EAP 107

**Speaking and Pronunciation II** (3 CR)

*Prerequisites: Appropriate assessment test score or EAP 091 (EAP 101 and EAP 120) and EAP 105*

This course provides English as Second Language students the opportunity to expand fluency in speaking and pronunciation. The course covers techniques for listening with accuracy and speaking with the stress, rhythm and intonation of American English. Personal communications and group interactions in academic, career and community settings are included. The course concludes with applications to individual life goals. 3 hrs lecture/wk. This course does not fulfill degree requirements.

## EAP 111

**Writing and Grammar III** (3 CR)

*Prerequisites: Appropriate assessment test score or EAP 092 (EAP 103 and EAP 121) and EAP 107 or appropriate COMPASS ESL score Corequisite: EAP 122*

This course, which is paired with EAP Reading and Vocabulary III, provides English as a Second Language students an integrated communicative experience at the intermediate level. As part of a Learning Community, students will focus on developing fluency in writing using American English at the paragraph and multi-paragraph level. The course includes study strategies and writing assignments related to the reading Learning Community component. This course is the third writing and grammar course in the sequence of courses for English for Academic Purposes. This course does not fulfill degree requirements. 3 hrs. lecture/wk.

## EAP 113

**Writing and Grammar IV** (3 CR)

*Prerequisites: Appropriate assessment test score or EAP 093 (EAP 111 and EAP 122) and EAP 115*

This course provides English as a Second Language students the opportunity to improve fluency in American English in writing at the high intermediate to advanced level. Students will engage in writing tasks that relate to the academic disciplines. The course includes reading activities from the academic disciplines and study strategies appropriate for academic tasks. This course is the fourth writing and grammar course in the sequence of courses for English for Academic Purposes. This course does not fulfill degree requirements. 3 hrs. lecture/wk.

## EAP 115

**Speaking and Pronunciation III** (3 CR)

*Prerequisites: Appropriate assessment test score or EAP 092 (EAP 111 and EAP 122) and EAP 107*

This course provides English as a Second Language students the opportunity to enhance fluency in speaking, pronunciation, and listening at the upper intermediate level. Students apply standard American communication patterns to understand lectures, speak in academic settings, and communicate in group interactions. Informal and formal projects include oral reports in specific fields of study and academic debates. The course concludes with analysis of individual goals and assessments to enhance academic success. This course does not fulfill degree requirements. 3 hrs. lecture/wk.

## EAP 117

**Speaking and Pronunciation IV** (3 CR)

*Prerequisites: Either (EAP 111 and EAP 122 and EAP 115) or (EAP 093 and EAP 115) or appropriate COMPASS ESL score*

This course offers English as a Second Language students the opportunity to master speaking, pronunciation, and listening at an advanced level. Pronunciation performance will be enhanced for accent reduction and communication of precise meanings of standard American English. Students apply advanced strategies to process knowledge from specific fields of study and give presentations with idiomatic vocabulary from classical literature, media, and other research sources. The course concludes with expansion of sociolinguistic and cultural competencies for group interactions and large audiences. Pre- and post-assessments measure progress in exit competencies. This course does not fulfill degree requirements. 3 hrs. lecture/wk.

## EAP 120

**Reading/Vocabulary I** (3 CR)

*Prerequisite: Appropriate assessment test score Corequisite: EAP 101*

This course, which is paired with EAP 101 Writing and Grammar I, provides English Language Learner students an integrated communication experience on the high beginning college level. As part of a Learning Community, students will learn effective techniques for reading, studying and using American English in an academic setting. This is the first reading course in the English for Academic Purposes (EAP) series. This course does not fulfill degree requirements.

### EAP 121

**Reading/Vocabulary II** (3 CR)

*Prerequisites: Appropriate assessment test score or EAP 091 (EAP 101 and EAP 120) and EAP 105 Corequisite: EAP 103*

This course, which is paired with EAP Writing and Grammar II, provides English Language Learner (ELL) the opportunity to develop reading fluency, comprehension and vocabulary on the low intermediate college level in a Learning Community setting. Reading, writing, speaking and listening will be integrated, and students will learn effective techniques for studying and using American English in an academic setting. This is the second reading course in the English for Academic Purposes (EAP) series. 3 hrs. lecture/wk. This course does not fulfill degree requirements.

### EAP 122

**Reading and Vocabulary III** (3 CR)

*Prerequisites: Appropriate assessment test score or EAP 092 (EAP 103 and EAP 121) and EAP 107 Corequisite: EAP 111*

This course, which is paired with EAP Writing and Grammar III, provides English Language Learner (ELL) an integrated communicative experience at the intermediate college level. Students will develop reading fluency, comprehension, and vocabulary in a Learning Community setting. Reading, writing, speaking, and listening will be integrated, and students will learn effective techniques for using American English to read and study in an academic setting. This course is the third reading course in the English for Academic Purposes (EAP) series. This course does not fulfill degree requirements.

# Entrepreneurship (ENTR)

### ENTR 120

**Introduction to Entrepreneurship** (2 CR)

The student will understand the role of entrepreneurial businesses in the United States and the impact on our national and global economy. The student will evaluate the skills and commitment necessary to successfully operate an entrepreneurial venture. Additionally, the student will review the challenges and rewards of entrepreneurship as a career choice as well as entrance strategies to accomplish such a choice. 2 hrs. lecture/wk.

### ENTR 131

**Financial Management for Small Business** (2 CR)

*Prerequisite: ACCT 111 or ACCT 121*

Upon successful completion of this course, the student should be able to identify and evaluate the various sources available for funding a small business; demonstrate an understanding of financial terminology; read, prepare and analyze a financial statement; and write a loan proposal. In addition, the student should be able to explain the importance of working capital and cash management. The student should also be able to identify financing needs, establish credit policies, and prepare sales forecasts. This course is required for a vocational certificate and associate of applied science degree in business entrepreneurship. 2 hrs./wk.

### ENTR 142

**Fast Trac Business Plan** (3 CR)

Upon successful completion of this course, the student will be able to evaluate a business concept and write a sound business plan. In the process of doing so, students will be able to assess the strengths and weaknesses of a business concept; collect and organize market research data into a marketing plan; and prepare the financial projects for their business concept. In addition, students will be able to identify and evaluate various resources available for funding small businesses. The course is required for the business plan certificate, the vocational certificate in business entrepreneurship and the associate of applied science degree in business entrepreneurship. 3 hrs. lecture/wk.

### ENTR 160

**Legal Issues for Small Business** (2 CR)

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 covering 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. This course is required for the associate of applied science degree and the vocational certificate in business. 2 hrs./wk.

### ENTR 180

**Opportunity Analysis** (2 CR)

Upon successful completion of this course, the student should be able to assess the current economic, social and political climate for small businesses. In addition, the student should be able to explain how demographic, technological and social changes create opportunities for small business ventures. This course is required for the associate of applied science degree in business entrepreneurship. 2 hrs./wk.

### ENTR 190

**Small Business Analysis** (2 CR)

*Prerequisites: BUSE 131 or ENTR 131 and BUSE 160 or ENTR 160 and BUS 230 or permission of division administrator*

Upon successful completion of this capstone course, the student should be able to identify problems that frequently arise in small business and use 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. This course is required for an associate of applied science degree and a vocational certificate in business entrepreneurship. 2 hrs./wk.

### ENTR 195

**Franchising** (3 CR)

*Prerequisite: BUS 230*

In this course, the student should be able to research the franchising method of doing business from the perspective of both the franchisor and the franchisee. The student will analyze independent management efforts necessary for a successful franchise business venture as well as understand the interdependent contractual obligations that are legally binding between the franchisor-franchisee. 3 hrs. lecture/wk.

### ENTR 210

**Entrepreneurship Internship I** (1 CR)

*Prerequisite: Career program facilitator or assistant dean approval*

Upon the successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. A minimum of 240 hours of on-the-job training is required. This course is required for an associate of science degree in business entrepreneurship. Either ENTR 210 or

BUSE 210, Entrepreneurship Internship I, or ENTR 215 or BUSE 215, Entrepreneurship Internship II, is required for a vocational certificate in business entrepreneurship.

### ENTR 215

**Entrepreneurship Internship II** (1 CR)

*Prerequisites: ENTR 210 and Assistant Dean's Approval*

Upon the successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. A minimum of 240 hours of on-the-job training is required. This course is required for an associate of applied science degree in business entrepreneurship. Either BUSE 210 or ENTR 210, Entrepreneurship Internship I, or BUSE 215 or ENTR 215, Entrepreneurship Internship II is required for a vocational certificate in business entrepreneurship.

### ENTR 220

**Entrepreneurial Marketing** (2 CR)

*Prerequisite: BUS 230*

In this course, the student will gain insights essential for marketing an entrepreneurial venture utilizing innovative and financially responsible marketing strategies. The student will analyze marketing philosophies implemented by key successful entrepreneurs. Additionally, the student will prepare a marketing plan to launch the entrepreneurial venture and a marketing plan to implement during the first two years of business operation. 2 hrs. lecture/wk.

### ENTR 225

**Family Business** (3 CR)

Upon successful completion of this course, the student will gain the knowledge and skills needed for the successful management and leadership of a family enterprise by exploring a diverse set of family firms, examining the interrelationships among the owners, the family, and the management team. The student will analyze the management and family practices that ensure success while recognizing the advantages and challenges facing family enterprises. Emphasis is placed on positioning the family enterprise for sustained growth and continuity through generations. 3 hrs. lecture/wk.

### ENTR 240

**Funding Acquisition for Entrepreneurs** (2 CR)

*Prerequisite: ENTR 142*

Upon successful completion of this course, the student will understand the importance and impact of funding sources for their entrepreneurial venture. This will be accomplished by reviewing the impact of venture capital in every phase of the business venture from idea to exit including planning, teambuilding, protecting intellectual capital, identifying funding sources, raising money, writing funding agreements, and managing through to an IPO or merger and acquisition. Additionally, the student will develop and present a funding proposal. 2 hrs. lecture/wk.

# Fashion Merchandising/Design (FASH)

### FASH 121

**Fashion Fundamentals** (3 CR)

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 and marketing of the fashion product. 3 hrs./wk.

### FASH 123

**Apparel Construction I** (4 CR)

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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $300.

### FASH 124

**Apparel Construction II** (4 CR)

*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. This course is a suggested elective for the Fashion Merchandising program. 2 hrs. lecture, 4 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $300.

### FASH 125

**Visual Merchandising** (3 CR)

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. This course is required for the Fashion Merchandising program. 3 hrs./wk.

### FASH 127

**CAD: Pattern Design I** (4 CR)

*Prerequisite: FASH 123*

Upon successful completion of this course, the student should be able to apply the use of flat pattern methods in developing patterns for original apparel designs. Basic slopers and the CAD (computer-assisted design) Pattern Design System will be used to develop and manipulate patterns. The class will use lecture, demonstration and hands-on experience to teach skills needed in manual and computer-assisted pattern design. The student will plan and create patterns in this class. 2 hrs. lecture, 4 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $80.

### FASH 128

**CAD: Pattern Design II** (4 CR)

*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 I. 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. This is a suggested elective for the Fashion Merchandising program. 2 hrs. lecture, 4 hrs. lab/wk.

## FASH 130

**Fashion Illustration I** (3 CR)

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.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

## FASH 132

**Marketing Communications** (3 CR)

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. This course is typically taught in the fall semester.

## FASH 135

**Image Management** (1 CR)

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** (3 CR)

*Prerequisite: FASH 123*

Upon successful completion of this course, students should be able to produce a first pattern and prepare it for production. This includes translating garment ideas from color sketches (croquis); continuing the design process through fabric selection and pattern drafting; figuring yardage, notions and wholesale cost; and constructing a finished garment. 6 hrs. lecture, lab/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $300.

## FASH 141

**Garment Alterations I** (3 CR)

*Prerequisites: FASH 123 and Prerequisite or Corequisite: FASH 124*

Upon successful completion of this course, the student should be able to apply garment construction principles, techniques and skills in apparel construction and tailoring to garments in need or resizing or repair. The class will use lecture, demonstration and hands-on experience to teach the skills needed to plan and execute the adjustments necessary to resize the garment to a particular body. 4 hrs. integrated lecture/lab per week
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## FASH 142

**Garment Alterations II** (3 CR)

*Prerequisite: FASH 141 and Prerequisite or Corequisite: FASH 143*

Upon successful completion of this course, the student should be able to apply garment construction principles, techniques and skills in apparel construction and tailoring to formalwear and evening garments in need or resizing or repair. The class will use lecture, demonstration and hands-on experience to teach the skills needed to plan and execute the adjustments necessary to resize the

garment to a particular body. 4 hrs. integrated lecture/lab per week.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## FASH 143

**Tailoring** (4 CR)

*Prerequisite: FASH 124*

Upon successful completion of this course, the student should be able to apply advanced construction principles, techniques and skills in the production of tailored garments. This course is a continuation of FASH 124, Apparel Construction II. The class will use lecture, demonstration and hands-on experience as the student completes a trial muslin for a jacket or coat plus a finished three-piece ensemble of advanced complexity during this class. 2 hrs. lecture, 4 hrs. lab/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $300.

## FASH 150

**Textiles** (3 CR)

Upon successful completion of this course, the student should be able to differentiate fibers and fabrics according to their specific characteristics and to select fibers and fabrics for specific applications. In addition, the student should be able to identify properties and characteristics of natural and man-made fibers, the properties and characteristics of yarns, fabric construction methods including weaving and knitting and various finishing processes including printing and dyeing. 3 hrs./wk.

## FASH 220

**CAD Apparel Design** (3 CR)

Upon successful completion of this course, the student should be able to apply the elements and principles of design in evaluating and designing women's, men's and children's apparel. A project of designing a line will apply the student's aesthetic knowledge, the relationship of apparel design to the current socioeconomic conditions and apparel production knowledge. Projects use computer-aided design software. 3 hrs./wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $25 to $30.

## FASH 224

**History of Costume** (3 CR)

Upon successful completion of this course, the student should be able to identify the political, economic, technological and sociological factors that have influenced Western costume worn by women, men and children from ancient Egyptian times to the present. 3 hrs./wk.

## FASH 225

**Store Planning** (3 CR)

*Prerequisite: FASH 125*

Upon successful completion of this course, the student should be able to demonstrate the skills needed to plan and execute the display methods and store planning concepts for promoting merchandise within a large or small store interior. These plans will use the student's understanding of design, fixtures, traffic patterns, floor sets, graphics/signage and materials. This course is a requirement for the visual merchandising certificate. 3 hrs. lecture/wk. This course is typically taught in the spring semester.

## FASH 230

**Fashion Illustration II** (3 CR)

*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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

## FASH 231

**Merchandising Planning and Control** (3 CR)

*Prerequisite: MATH 120*

Upon successful completion of this course, the student should be able to describe the management structure of retail merchandising operations, contrast merchandising functions among various types of retail operations, explain the buying process, explain the financial operations of retail merchandising and apply these principles in computer-simulated case situations. 3 hrs./wk. This course is typically taught in the spring semester.

## FASH 242

**Consumer Product Evaluation** (3 CR)

Upon successful completion of this course, the student should be able to evaluate a wide range of textile and nontextile products, 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. This course is typically taught in the spring semester.

## FASH 268

**Field Study: The Market Center** (3 CR)

*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. This is a suggested course for the Fashion Merchandising program. 3 hrs./wk. This course is typically taught in the spring semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $900.

## FASH 277

**Fashion Seminar: Career Options** (2 CR)

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 279

**Fashion Portfolio Development** (2 CR)

*Prerequisites: FASH 121 and FASH 124 and FASH 127 and FASH 130 and FASH 150 and FASH 220 Prerequisites or corequisites: FASH 280 and FASH 140*

Students will compile, select and create new material for their portfolio as well as evaluate their own competencies and strengths. In addition, students will create a resume and perform a mock interview to be reviewed by faculty and peers. 2 hrs. lecture/wk. This course is typically taught in the spring semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $25 to $80.

## FASH 280

**Capstone: Industry Topics** (3 CR)

*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 analyzing industry topics. This capstone course will review and evaluate competencies that are essential for employment in the fashion industry. This course is required for the Fashion Merchandising program. 3 hrs. lecture/wk. This course is typically taught in the spring semester.

## FASH 283

**Fashion Internship I** (1 CR)

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** (1 CR)

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The student will receive 225 hours of work experience in an approved training situation designed to provide practical experience in the fashion industry. An average of 15 hours on-the-job training/wk.

## FASH 285

**Fashion Internship III** (1 CR)

Upon successful completion of this course, the student should be able to demonstrate the skills required to advance to an entry-level management position. The student will receive 225 hours of work experience in an approved training situation designed to provide practical experience in the fashion industry. An average of 15 hours on-the-job training is required/wk.

## FASH 286

**Fashion Internship IV** (1 CR)

*Prerequisites: FASH 283 and FASH 284 and FASH 285 and 45 hours toward degree in Fashion Merchandising*

Upon successful completion of this course, the student will have received 225 hours of work experience in an approved training environment. The student should be able to demonstrate the skills required in an entry level management position. An average of 15 hours on the job training/wk. is required.

## FASH 298

**European Fashion Emphasis** (3 CR)

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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $3000.

# Fire Services Administration (FIRE)

## FIRE 110

**Essentials of Fire Fighting** (9 CR)

*Prerequisite or corequisite: HPER 240*

This course provides cognitive, psychomotor and affective instruction for those students seeking certification as a fire fighter in the state of Kansas. The class covers hazardous materials (first responder; operations level), fire department communications, fire ground operations, 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 administrated by the University of Kansas, Fire and Rescue Training Institute. 5 hrs. lecture 7 hrs. lab/wk. This course is typically taught in the fall and spring semesters only.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200.

## FIRE 130

**Fire Investigation** (1 CR)

*Prerequisite: FIRE 110*

This course provides instruction in basic fire investigation. Students will learn basic cause and origin determination, scene and evidence security techniques, and report-writing skills. This course meets the job performance requirements pertaining to fire investigation identified in NFPA 1021, Fire Office Professional Qualifications. 1 hr./wk. This course is typically taught in the spring semester only.

## FIRE 135

**Building and Fire Codes** (3 CR)

*Prerequisite: FIRE 110*

This course entails application and interpretation of codes and ordinances, especially the Life Safety Codes used extensively in fire prevention. 3 hrs./wk. This course is typically taught in the spring semester only.

## FIRE 162

**Fire Tactics and Strategy** (3 CR)

*Prerequisite: FIRE 110*

Fire control through manpower, equipment and extinguishing agents will be explored, including theoretical models and practical applications. 3 hrs./wk. This course is typically taught in the fall semester only.

## FIRE 220

**Fire Administration** (3 CR)

*Prerequisite: FIRE 110*

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. This course is typically taught in the fall semester only

## FIRE 222

**Fire Science Law** (3 CR)

*Prerequisite: FIRE 110*

The law as it pertains to the fire service will be explained, along with tort law and business law. 3 hrs. /wk. This course is typically taught in the fall semester only.

## FIRE 224

**Incident Command Systems** (3 CR)

*Prerequisite: FIRE 110*

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. This course is typically taught in the spring semester only.

## FIRE 250

**Fire Service Science Instructional Methodology** (3 CR)

*Prerequisite: FIRE 110*

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 instruction. This course is typically taught in the spring semester only.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100.

# Floriculture (FLR)

## FLR 130

**Principles of Traditional Design** (3 CR)

This course teaches the guidelines and basics of floral design. These principles are known as balance, composition, harmony, focal point, proportion, line, rhythm, texture, form, space, and color. The course will help the students develop an eye for color combinations, flow of lines, perspectives and the post-harvest care of floral materials. Recommendations are made that pertain to receiving, unpacking and processing the flowers. Methods of conditioning, hardening, and forcing flowers and use of preservatives are illustrated. 2 hrs. lecture 3 hrs. instructional lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100.

## FLR 150

**Contemporary Design Styles** (3 CR)

This course will focus on contemporary, Asian, and current trends in floral design. The course will help students develop their skills in asymmetrical balance, negative space, focal point, dramatic lines. Also included is the history of oriental design, cutting edge design, twigs, branches, pods to be used for textures, bold color schemes, and further discussion of the "less is more" concept. 2 hrs lecture, 3 instructional lab hrs/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100.

## FLR 200

**Plants for Interior Design** (3 CR)

This course discusses the basic aspects of healthy plant growth, including the functions of the root system and the leaf. Photosynthesis, respiration, and transpiration are explained, and the factors that affect these processes are discussed. Students will also learn Plant Nomenclature (common names and scientific names) for many plants. Students will be able to diagnose an unhealthy plant and determine the necessary steps needed to take to bring it back to health. The course will help students obtain a greater appreciation of foliage and blooming plants and understand their role in improving the interior environment. 2 hrs.lecture and 3 hrs instructional lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations

that students should expect in addition to the course tuition, fees, and textbooks. $100.

**FLR 220**

**Wedding Design** (3 CR)

*Prerequisities: FLR 130 and FLR 150*

This course will focus on traditional and contemporary wedding designs. Because weddings often constitute a large portion of a florist?s business, it is imperative that students become proficient in various wedding designs, and be trained in many specialized arranging techniques. The course covers steps in creating the bridal bouquet, including round, crescent, cascade, triangle, and hand tied. Corsage construction, hair pieces, and other accessories will be discussed. Marketing and promotional efforts to build the wedding business will also be discussed. 2 hrs. lecture 3 hrs instructional lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100.

**FLR 250**

**Sympathy Flowers** (3 CR)

*Prerequisites: FLR 130 and FLR 150*

This course will focus on the basic concepts of design for funeral bouquets, wreaths, and casket sprays. The student will learn how to combine flowers using texture, shape and color for different effects. Interesting ways to use foliage, twigs, mosses and other accessory materials will be presented along with different uses of ribbon. Topics of discussion will also include the best use of sympathy cards and how to develop a good working relationship with your funeral directors. 2 hrs. lecture and instructional 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100.

**FLR 270**

**Retail Flower Shop Operations** (3 CR)

*Prerequisites: FLR 200 and FLR 220 and FLR 250*

This course will focuses on the actual retail operation of a flower shop. Students will explore the various types of flower shops. Topics will include marketing strategies, advertising and promotion, develop selling skills, and merchandising. In addition, students will learn about employee relations, delivery services, public relations, management, florist computer software, buying and pricing. 2 hrs. lecture, 3 hrs. integrated lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100.

# Foreign Language (FL)

**FL 116**

**Elementary Latin I** (3 CR)

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. This course is not offered in the spring semester.

**FL 117**

**Elementary Latin II** (3 CR)

*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. This course is taught in the spring semester.

**FL 120**

**Elementary German I** (5 CR)

This course presents the sounds, vocabulary and basic structural patterns of German, focusing on the development of listening comprehension, speaking, reading and writing skills. Cultural material will be integrated into the course. 5 hrs./wk.

**FL 121**

**Elementary German II** (5 CR)

*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** (5 CR)

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** (5 CR)

*Prerequisite: FL 130 with a grade of C or higher or two years of high school Spanish; or the appropriate score on the placement test*

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. Placement test recommended. Go to the Testing Center or to the Language Resource Center. 5 hrs./wk.

**FL 133**

**Basic Spanish for Hospitality Management** (2 CR)

In this basic course, students will be introduced to terminology related to the hospitality industry, basic Spanish grammar and phrases related to work. 2 hrs./wk.

**FL 140**

**Elementary French I** (5 CR)

Areas covered in this basic course include vocabulary building, grammar study, conversation and an introduction to French culture and civilization. The emphasis is on conversation. 5 hrs./wk.

**FL 141**

**Elementary French II** (5 CR)

*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. Placement test recommended. Go to the Testing Center or the Language Resource Center. 5 hrs./wk.

**FL 145**

**Field Study in Russian Language & Culture** (2 CR)

This field study course is open to students with any level of Russian language proficiency - from beginning to advanced. The course combines orientation sessions in Russian language and culture at JCCC with two weeks of study in Russia. During their stay in Russia, students will attend a Russian university, take classes in Russian language and culture and participate in excursions to sites of historical and cultural significance. Students will be placed in Russian language classes that are commensurate with their proficiency level in the Russian language. 10 hrs. lecture & 80 hrs. field study in Russia. FEES: Students are responsible for all expenses incurred during this field study, including costs for travel documents, insurance and all travel expenses. Students should contact instructor for cost estimate.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2300 to $2500.

## FL 150

**Elementary Russian I** (5 CR)

In this course, students will learn the basic sounds, vocabulary and structural patterns of Russian. Emphasis will be on listening comprehension, speaking, reading and writing skills. Cultural material will be included. 5 hrs./wk.

## FL 151

**Elementary Russian II** (5 CR)

*Prerequisite: FL 150 or one year of high school Russian*

This course completes the presentation begun in Elementary Russian I. Students will gain listening comprehension, speaking, reading and writing skills appropriate to a second-level course. This course is taught in the spring semester. 5 hrs./wk.

## FL 155

**Elementary Arabic I** (5 CR)

In this basic course, teacher and student activities are geared toward developing functional abilities to use Arabic accurately and fluently in listening, speaking, reading, and writing. This course requires intensive classroom interaction and out-of-class assignments. 5 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10.

## FL 156

**Elementary Arabic II** (5 CR)

*Prerequisite: FL 155*

This course will continue the presentation of vocabulary and basic structural patterns begun in Elementary Arabic I. There will be a continuation of comprehension, listening, reading, writing from an everyday use emphasis. This course is taught in the spring semester. 5 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10.

## FL 160

**Elementary Italian I** (5 CR)

Students will be introduced to the sounds, vocabulary and basic structural patterns of Italian, with primary focus on the development of listening comprehension, speaking, reading and writing skills. Integrated throughout the course will be an introduction to the culture of Italy. 5 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $8 to $20.

## FL 161

**Elementary Italian II** (5 CR)

*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. This course is taught in the spring semester. 5hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $8 to $20.

## FL 165

**Elementary Chinese I** (5 CR)

This course will introduce students to the basic sounds, vocabulary, grammar and usage, characters and reading of the Chinese language. The emphasis will be on developing basic conversational skills. Students will develop an understanding and appreciation of Chinese culture. 5 hrs./wk.

## FL 166

**Elementary Chinese II** (5 CR)

*Prerequisite: FL 165 or equivalent college-level course with a grade of "D" or higher or one year of high school Chinese with a grade of "D" or higher*

This course offers a continuation of Elementary Chinese I, emphasizing the sounds, vocabulary, grammar, usage, characters and reading of the Chinese language. Students will develop more advanced conversational skills and cultural understanding. 5 hrs./wk.

## FL 170

**Elementary Japanese I** (5 CR)

This course is an introduction to the sounds, vocabulary, grammar, usage and readings of the Japanese language. The emphasis will be on developing basic conversational skills. Cultural materials will be included. This course is typically taught in the fall semester. 5 hrs./wk.

## FL 171

**Elementary Japanese II** (5 CR)

*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. Focus is on developing more advanced conversational skills and cultural understanding. This course is typically taught in the spring semester. 5 hrs./wk.

## FL 175

**Elementary Brazilian Portuguese I** (5 CR)

In this basic course, students will study Portuguese grammar, conversation, composition and the culture of Brazil. 5 hrs./wk.

## FL 176

**Elementary Brazilian Portuguese II** (5 CR)

*Prerequisite: FL 175*

This course will continue the presentation of the material introduced in Elementary Brazilian Portuguese I. Graded reading selections are added as a basis for conversation and composition in discussion periods. This course is taught in the spring semester. 5 hrs. lecture/wk.

## FL 178

**Intermediate Russian I** (3 CR)

*Prerequisite: FL 151 or two years of high school Russian*

This course will emphasize vocabulary development and more advanced study

of Russian grammar. Students will practice reading, listening comprehension, speaking and writing at the intermediate level. 3 hrs./wk.

## FL 179

**Intermediate Russian II** (3 CR)

*Prerequisite: FL 178 or three years of high school Russian*

Students will study Russian language and culture that would prepare them to travel in a Russian-speaking country and engage in simple conversation with the citizens. 3 hrs./wk.

## FL 180

**Elementary American Sign Language I** (3 CR)

This class will focus on the development of beginning American Sign Language communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. 6 hrs. integrated lecture-lab/wk. FL 180 and INTR 120 are the same course. Do not enroll in both.

## FL 181

**Elementary American Sign Language II** (3 CR)

*Prerequisite: FL 180 or INTR 120 with a grade of "C" or higher*

This course will focus on continued development of elementary American Sign Language skills beyond those taught in Elementary ASL I. Students will work on developing communication competencies, concentrating on comprehension and production skills. Information about the linguistic and cultural features will be included in the context of language learning experiences. 6 hrs. integrated lecture-lab/wk. FL 181 and INTR 121 are the same course. Do not enroll in both.

## FL 182

**Intermediate Japanese I** (5 CR)

*Prerequisite: FL 171 or two years of high school Japanese and approval of the instructor*

This course continues the study of Japanese language and culture, emphasizing the sounds, vocabulary, grammar, usage and readings of the Japanese language. The course concentrates on developing further advanced conversational skills by increasing vocabulary and variety of sentence patterns. Cultural understanding will also be stressed. This course is typically taught in the fall semester. 5 hrs. lecture/wk.

## FL 183

**Intermediate Japanese II** (5 CR)

*Prerequisite: FL182 or three years of high school Japanese and approval of the instructor*

This course is a continuation of FL 182, the study of Japanese language and culture, emphasizing the sounds, vocabulary, grammar, usage and readings of the Japanese language. The course concentrates on developing further advanced conversational skills by increasing vocabulary and variety of sentence patterns. Cultural understanding will be stressed also. This course is typically taught in the spring semester. 5 hrs. lecture/wk.

## FL 192

**Intermediate Chinese I** (3 CR)

*Prerequisite: FL 166 or equivalent*

This course is a continuation of study of the Chinese language and culture, emphasizing the sounds, vocabulary, grammar, usage and readings of the Chinese language. Focus will be on developing more advanced conversational skills by increasing vocabulary and variety of sentence patterns. Cultural understanding will also be stressed. 3 hrs./wk.

## FL 193

**Intermediate Chinese II** (3 CR)

*Prerequisite: FL 192 or equivalent*

This course is a continuation of study of the intermediate Chinese language and culture, emphasizing the sounds, vocabulary, grammar, usage and readings of the Chinese language. Focus will be on developing more advanced conversational skills by increasing vocabulary and variety of sentence patterns. Cultural understanding will also be stressed. 3 hrs. lecture/wk.

## FL 195

**Intermediate Arabic I** (3 CR)

*Prerequisite: FL 156*

This course is an in-depth study of Arabic grammar and vocabulary. The four skills of speaking, reading, writing, and listening will be covered. This course aims to develop an intermediate level of proficiency in Arabic. 3 hrs. lecture/wk.

## FL 196

**Intermediate Arabic II** (3 CR)

*Prerequisite: FL 195*

An in-depth study of Arabic grammar and vocabulary. The four skills of speaking, reading, writing, and listening will be covered. This course aims to develop an intermediate level of proficiency in Arabic. 3 hrs. lecture/wk.

## FL 205

**Conversational Japanese** (2 CR)

*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. 2 hrs. lecture/wk.

## FL 220

**Intermediate German I** (3 CR)

*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. Placement test recommended. Go to the Testing Center or to the Language Resource Center. 3 hrs./wk.

## FL 221

**Intermediate German II** (3 CR)

*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. Placement test recommended. Go to the Testing Center or to the Language Resource Center. 3 hrs./wk.

## FL 223

**Conversational German** (2 CR)

*Prerequisite: FL 121 or two years of high school German*

By applying vocabulary and structures presented in the text and handouts and by applying knowledge gained in a systematic review of German, the successful student will be able to communicate in German in situations that typically arise while traveling in a German-speaking country. Placement test recommended. Go to the Testing Center or to the Language Resource Center. 2 hrs./wk.

**FL 230**

**Intermediate Spanish I** (3 CR)

*Prerequisites: FL 131 with a grade of C or higher or three years of high school Spanish or the appropriate score on the placement test*

This course refines grammar, builds vocabulary, increases understanding of Hispanic culture, and provides practice designed to improve speaking fluency. It includes composition and conversation. Placement test recommended: can be taken in the Testing Center or the Language Resource Center. 3 hrs./wk.

**FL 231**

**Intermediate Spanish II** (3 CR)

*Prerequisite: FL 230 with a grade of C or higher or or four years of high school Spanish or the appropriate score on the placement test*

This course refines grammar, builds vocabulary, increases understanding of Hispanic culture, and provides practice designed to improve speaking fluency. It includes more advanced readings as a source for composition and conversation. Placement test recommended: can be taken in the Testing Center or the Language Resource Center. 3 hrs./wk.

**FL 234**

**Conversational Spanish** (2 CR)

*Prerequisite: FL 230 with a grade of B or higher; or FL 231 with a grade of "C" or higher; or four years of high school Spanish; or the score equivalent to FL 231 on the placement test*

This course enhances students' ability to express themselves orally in Spanish through vocabulary building and reiteration of essential grammatical structures. The vocabulary emphasizes everyday life situations and current events. Placement test recommended: can be taken in the Testing Center or the Language Resource Center. 2 hrs. lecture/wk.

**FL 240**

**Intermediate French I** (3 CR)

*Prerequisite: FL 141 or two years of high school French*

In this course, students begin a more in-depth study of French grammar and vocabulary as they improve their mastery of the four communicative skills (listening, speaking, reading and writing). Reading assignments (from literary, journalistic and Internet sources) will be more advanced and writing assignments will be more extensive at the Intermediate level. Placement test recommended. Go to the Testing Center or to the Language Resource Center. 3 hrs./wk.

**FL 241**

**Intermediate French II** (3 CR)

*Prerequisite: FL 240 or three years of high school French*

In this class, students continue their in-depth study of French grammar and improvement of vocabulary. All four communication skills (listening, speaking, reading, and writing) continue to be emphasized as reading assignments, compositions, listening comprehension exercises and class discussion become more complex. Placement test recommended. Go to the Testing Center or to the Language Resource Center. 3 hrs./wk.

**FL 243**

**Conversational French** (2 CR)

*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. Placement test recommended. Go to the Testing Center or to the Language Resource Center. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations

that students should expect in addition to the course tuition, fees, and textbooks. $1 to $3.

**FL 246**

**Conversational Russian** (2 CR)

*Prerequisite: FL 151 or two years of high school Russian*

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. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

**FL 250**

**Conversational French: Cinema** (2 CR)

*Prerequisite: FL 141 or two years of high school French*

This course is designed to build students? speaking and listening comprehension proficiencies in French through the viewing and discussion of French and francophone films. Students will study vocabulary and grammatical structures presented in the course textbook and/or handouts and will view films and discuss them. Most topics of discussion will relate to everyday life and social situations as well as basic personal information. Students will also learn to identify and discuss the main components of a film and key cinematic techniques and concepts. 4 hrs. lecture/wk.

**FL 270**

**Intermediate American Sign Language I** (3 CR)

*Prerequisite: FL 181 or INTR 121*

This course will focus on the development of intermediate American Sign Language communication skills. Emphasis will be on teaching in context comprehension skills and linguistic features of the language. 6 hrs. lecture-lab/ wk. INTR 122, FL 270 and ASL 122 are the same courses; only enroll in one. Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $40.

**FL 271**

**Intermediate American Sign Language II** (3 CR)

*Prerequisite: FL 270 or INTR 122*

The study of intermediate American Sign Language will continue in this course. It is designed to further intermediate communication skills in American Sign Language. Information about the linguistic and cultural features will be included in the context of language learning experiences. 6 hrs. lecture/wk. INTR 123, FL 271 and ASL 123 are the same courses; only enroll in one. Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $40.

**FL 298**

**French Culture and Civilization** (3 CR)

In this travel-for-credit course, students will visit selected sites in France, where they will compare the French and U.S. languages, values, culture and institutions. Summer.

# Game Development (GAME)

**GAME 101**

**Computer Game Creation** (4 CR)

This course is designed to present the skills and to provide the hands-on experience required to create computer games utilizing game development tools that require no programming. Typical game creation topics to be covered include 2D graphics, 3D modeling, music and sound effects. Typical tasks will include setting up a game development studio, manipulating graphic images, obtaining or creating sounds and music, installing and using various game development tools and working with pictures and animation. 3 hrs. lecture, 1.5 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

### GAME 102

**The Business of Games** (3 CR)

In this course, students are introduced to the business and process of game development, from the concept document to publishing. Students will learn the stages of game development within the context of the often complex relationship between developer, publisher and retailer. The course uses a participatory format emphasizing analytical thinking and problem solving, both key skills for persons seeking a career in the game development industry. 3 hrs lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

### GAME 110

**Flash Gaming** (4 CR)

This course is designed to present the skills and to provide the hands-on experience required to create computer games utilizing Flash MX 2004. Typical topics to be covered include 2D coordinate systems, basic game physics, game trigonometry, motion techniques, collision detection, collision reaction, conservation of momentum and energy, and tile based worlds. Typical tasks include creation of angle conversion functions; projection functions; controlling speed, velocity, and acceleration; applying Newton's three laws of motion, affecting gravity and friction; and creation of grid management systems. 3 hrs. lecture and 1.5 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

### GAME 140

**Game Programming I - 2D** (4 CR)

*Prerequisite: CS 200*

This course is designed to present skills and provide hands-on experience required to create two-dimensional games utilizing C++. Typical game topics will include programming in a GUI (graphical user interface) environment, game libraries, sound, music and working with graphics. Typical tasks will include setting up the environment, creating several games, using music and sound in a game, and exercises that will highlight important game programming concepts. 3 hrs. lecture, 1.5 hrs. lab/wk.

### GAME 180

**Artificial Intelligence for Games** (3 CR)

*Prerequisite: CS 200*

Upon successful completion of this course, students should be able to deconstruct simple computer programs illustrating introductory concepts in artificial intelligence as applied to computer games. They will define terms and application areas in the field, and describe game representation and implementation techniques used in artificial intelligence for games. 3 hrs lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

### GAME 200

**Game Design** (3 CR)

Students will refer to the history of video games to describe the progression of development up to the modern forms of games available today. Students will critically analyze video games and identify and understand the thematic, visual, systematic, and geographical elements that contribute to making a fun user experience. Abstract systems will be introduced at the beginning of the course, and students will be invited to give their own examples. Models will be shown early as references for students when investigating specific video game structures later in the course. Students will develop a common lattice of "game design patterns" creating a common vocabulary and database. Creative habits and professional attitudes will be discussed. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

### GAME 230

**Game Programming II -3D** (4 CR)

*Prerequisite: GAME 140*

This course will provide an opportunity for students to obtain the knowledge and skills necessary to create 3D multiplayer games. Topics include 3D models of players, vehicles, items, and structures; audio and music; graphical user interfaces and menus; UV wrapped textures and skins; environmental effects; and outdoor terrain. 3 hrs. lecture, 2 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

### GAME 250

**Game Programming III-Capstone** (4 CR)

*Prerequisites: GAME 200 and GAME 230 and CIM 145 and ENGL 150 and Prerequisite or corequisite: GAME 180*

This course is designed for students to apply the foundations of game design and game programming to a significant original game. Students should work within a team to analyze a problem, develop and present a proposed game design document, build a demonstrable prototype of the game and develop a significant portion of the finished product. Students should also develop a project schedule and present progress information to the class. Students should also develop job search skills and both written and oral communication skills. 3 hrs. lecture, 2 hrs. lab by arrangement/wk
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

### GAME 255

**Mobile Game Programming** (4 CR)

*Prerequisites: GAME 140 and GAME 200*

This course is designed for students who want to learn mobile device game programming. The students will learn the various limitations on mobile devices and the options available for programming them. They will create a 2D game for mobile devices. 3 hrs lecture, 2 hrs lab per week.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

# Geographic Information Systems (KEOG)

### KEOG 120

**Introduction to Geographic Information Systems** (3 CR)

Fundamental concepts of geographic information systems (GIS), elements of GIS, analysis of spatial information, real-world applications, map creation and analysis. Primary objective is to investigate interactive GIS applications rather than develop expert users. Course taught at MCC-Longview Community College, 500 SW Longview Road, Lee's Summit, Missouri 64081, 816-672-2549, and MCC-Maple Woods Community College, 2601 NE Barry Road, Kansas City, Missouri 64156, 816-437-3355.

### KEOG 220

**Geographic Information Systems Database & Design** (3 CR)

*Prerequisite: KEOG 120*

Concepts of Geo-database design and management in geographic information systems (GIS), SQL statements, geographic data types and functions, data entry, techniques of geographic information structure and indexing, querying techniques, searches, and spatial analysis, creation and use of metadata real-world applications. Course taught at MCC-Longview Community College, 500 SW Longview Road, Lee's Summit, Missouri 64081, 816-672-2549, and MCC-Maple Woods Community College, 2601 NE Barry Road, Kansas City, Missouri 64156, 816-437-3355.

### KEOG 224

**Applications in Geographic Information Systems** (3 CR)

*Prerequistes: KEOG 120 and KEOG 220*

Applications in Geographic Information Systems. Data collection, incorporation of local and global data, and analysis of spatial information that can be used to investigate major application areas, national GIS policy. This course is taught at MCC-Longview Community College, 500 SW Longview Road, Lee's Summit, Missouri 64081, 816-627-2549, and MCC-Maple Wood Community College, 2601 NE Barry Road, Kansas City, Missouri 64156, 816-437-3355.

### KEOG 228

**Administrative Issues in Geographic Info Systems** (3 CR)

*Prerequisite: KEOG 120*

Addresses issues unique to GIS operation such as implementation issues, decision making procedures, strategies for success, legal issues, involvement of management, NCGIA Guidelines, marking within an organization, strategic planning and industry outlook. 3 hrs. lecture/wk. 1-3 credit hour course. A three credit hour internship is required for a student with no GIS experience and 1 hour for someone already employed in the GIS field. This course is taught at MCC-Longview Community College, 500 SW Longview Road, Lee's Summit, Missouri 64081, 816-672-2549, and MCC-Maple Woods Community College, 2601 NE Barry Road, Kansas City, Missouri 64156, 816-437-3355.

### KEOG 230

**Geographic Information Systems Internship** (1 CR)

*Prerequisites: KEOG 120 and KEOG 220*

Internship in a Geographic Information System facility. Experience real-workplace requirements, complete assigned tasks by hosting facility such as GIS data entry, data retrieval, GPS field work, documentation, or general GIS facility duties. Arranged meetings with instructor includes work ethics, expectations, challenges, evaluation. 225-675 hours. This course is taught at MCC-Longview Community College, 500 SW Longview Road, Lee's Summit, Missouri 64018, 816-672-2549, and MCC-Maple Woods Community College, 2601 NE Barry Road, Kansas City, Missouri 64156, 816-437-3355.

# Geoscience (GEOS)

### GEOS 130

**General Geology** (5 CR)

In this introductory course the students will survey the geologic processes that form and shape the earth over geologic time using the models of the rock cycle, the hydrologic cycle and the tectonic cycle. In the laboratory they will conduct hands-on activities designed to enhance and reinforce the geologic concepts they have studied. 4 hrs. lecture, 3 hrs. lab/wk.

### GEOS 140

**Physical Geography** (3 CR)

This course is a survey of the physical and environmental topics of geography, including the methods used to study them. The Earth as a system and the subsystems of the atmosphere, hydrosphere, lithosphere and biosphere constitute the major units of study. Students will acquire basic terminology that they will use to explain the earth, the atmosphere, the landscape, and the processes that occur on earth to change the landscape. Topics may include mapping with topographic maps and remote sensing; development and structure of the atmosphere; weather; water resources; climate; rock formation; mountain building; chemical and physical weathering; mass movement; soil formation; erosion, transportation and deposition by running water, wind, ice, currents, waves and tides; and the foundation that these processes build for the biosphere on earth. 3 hrs./wk.

### GEOS 141

**Physical Geography Lab** (2 CR)

*Prerequisite or corequisite: GEOS 140 or the equivalent*

Students in this course will practice their knowledge of physical geography through the collection and analysis of atmospheric data and the identification and interpretation of landforms and biological patterns as depicted on topographic maps and remotely sensed imagery. 4 hrs. lab/wk.

### GEOS 145

**World Regional Geography** (3 CR)

In this introductory course, the student will first review the basic theories of the discipline of geography, the relationship of world population and resources and the factors affecting development. Next, the student will survey the major regions of the world to identify each region's distinguishing geographic characteristics, summarize its past development and explain the key issues affecting the region's future development. 3 hrs. lecture/wk.

# Graphic Design (GDES)

### GDES 120

**Introduction to Graphic Design** (3 CR)

This course is designed to acquaint the student with the various aspects of the graphic design field. Topics include the ways in which visual messages are used in society, the skills needed by a graphic designer and the potential areas of specialization and employment. This class will have guest speakers from the field of graphic design. Emphasis will be on assisting the student to make an informed decision about graphic design as a career. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $40 to $50.

### GDES 130

**Drawing and Media Methods 1** (3 CR)

*Prerequisites: GDES 120 and ART 124 and CDTP 135 and CDTP 140 and CDTP 145*

This course will provide instruction in perceptual techniques, perspective theory and drawing process methods that relate to the visual analysis of the three-dimensional forms drawn from life. Focus will be on the application of theory, processes and techniques to attain structural accuracy and the illusion of three-dimensional form on a two-dimensional surface. 6 hrs. lecture and studio/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## GDES 131

**Drawing and Media Methods 2** (3 CR)

*Prerequisite: GDES 130*

This course is a continuation of Drawing and Media Methods I, with emphasis on the creative application of perspective theory, perceptual skill and drawing methods. Drawing methods and rendering techniques will be applied to visual problem-solving processes and the communication of design concepts. 6 hrs. lecture studio/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## GDES 132

**Typography** (3 CR)

*Prerequisites: ART 124 and GDES 120 and CDTP 135 and CDTP 140 and CDTP 145*

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. Working knowledge of QuarkXpress and Adobe InDesign required. 6 hrs. lecture and studio/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## GDES 134

**Layout Design** (3 CR)

*Prerequisite: GDES 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. This course is typically offered in the spring semester only. 6 hrs. lecture and studio/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## GDES 140

**Technical Processes** (3 CR)

*Prerequisites: PHOT 121 and CDTP 135 and CDTP 140 and CDTP 145*

This course covers digital prepress applications, scanning, image manipulation and color output devices. The transition from conventional to digital production will be covered. Analysis of output and file management and the understanding of proofing systems will be covered. Proper usage of peripheral equipment will be emphasized. 6 hrs. lecture and studio/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## GDES 230

**Drawing and Media Methods 3** (3 CR)

*Prerequisites: GDES 131 and GDES 132 and GDES 134*

This course will provide an understanding of the application of illustration to graphic design. Visual problem-solving processes acquired in Drawing and Media Methods 2 will be further developed through problems in image composition emphasizing expressive communication. Techniques in traditional and digital media are explored. This course is typically taught in the fall semester only. 6 hrs. lecture and studio/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## GDES 231

**Advanced Typography** (3 CR)

*Prerequisite: GDES 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. This course is typically offered in the fall semester only. Working knowledge of Macromedia Dreamweaver is required. 6 hrs. lecture and studio/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## GDES 235

**Production Methods** (3 CR)

*Prerequisites: GDES 134 and GDES 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. This course is typically offered in the fall semester only. 6 hrs. lecture and studio/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## GDES 236

**Electronic Production** (3 CR)

*Prerequisites: GDES 230 and GDES 231 and GDES 235*

This course is a continuation of the Production Methods course, providing experience in digital prepress and electronic production techniques. The student will apply production skills to problems of professional scope and complexity, including specialty processes, trapping and color separation. Preparation of graphic files for screen presentation and for the Web will be explored. This course is typically offered in the spring semester only. 6 hrs. lecture and studio/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

## GDES 244

**Communication Systems** (3 CR)

*Prerequisites: GDES 230 GDES 231 and GDES 235*

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 communicative power of typographic, hand graphic and photographic modes, will be studied. Traditional and electronic methods will be used to

develop projects. This course is typically offered in the spring semester only. 6 hrs. lecture and studio/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

### GDES 245

**Advanced Design Practice** (3 CR)

*Prerequisites: GDES 230 and GDES 231 and GDES 235*

This course will focus on the use of the student's total design capability and technical knowledge in solving graphic design problems of professional scope and complexity. Students will have the opportunity to work with three art directors and produce three professional projects for potential inclusion in their portfolios. This course is typically offered in the spring semester only. 6 hrs. lecture and studio/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

### GDES 272

**Professional Preparation** (3 CR)

*Prerequisites: GDES 230 and GDES 231 and GDES 235 Prerequisite: The student must have completed all required studio courses in the graphic design program prior to the semester for which he or she is enrolling in this course or be co-enrolled in all fourth-semester studio courses.*

This course will provide graphic design majors instruction in the organization and presentation of his or her work in a portfolio format of professional quality. A portfolio, digital portfolio archive, self promo, resume and business ensemble will be produced. Instruction in interviewing techniques and employment searches will also be provided. 6 hrs. lecture and studio/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $400.

### GDES 275

**Graphic Design Internship** (1 CR)

*Prerequisite: Graphic design faculty review committee approval*

Students will work in an approved training situation under instructional supervision. The internship is designed to give the student the opportunity to use the skills learned in the graphic 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50 to $100.

# Health Care (HC)

### HC 101

**Introduction to Health Care Delivery** (3 CR)

This course is an introduction to the health care delivery system with an overview of health careers and the roles and responsibilities of members of the health care team. Emphasis will be on how to work within a health care team, effective communication skills, professional safety and workplace skills, and legal and ethical rights and responsibilities of patients and health care workers. 3 hrs. lecture/wk.

### HC 125

**International Awareness Field Study** (2 CR)

This is a service-learning course. While partnering with a not-for-profit agency, teams of students will deliver service to a community in a developing country that suffers from extreme poverty. The service provided will vary depending on the identified needs of the community. While serving in the developing country, students will gain an understanding of the culture, language and health status of the people. Students will be exposed to the social, political and economic aspects of life that shape the community. Prior to travel, students are required to attend preparation meetings, fund raise and participate in a local service project. 16 hrs. lecture, 40 hrs. field study
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $450.

# Health Care Interpreting (HCI)

### HCI 110

**Introduction to Interpreting** (3 CR)

*Prerequisites: Interview and permission of the facilitator. Potential indicators of proficiency may be required.*

This course provides a practical and theoretical introduction to the field of bilingual interpreting. Students will study interpreter roles and skills, modes of interpreting and translating, ethical issues, professional standards of practices, cultural competence and applied linguistics. Upon completion, students should have a strong foundation of knowledge regarding the profession of interpreting and should be ready for specific skills training. This course is taught in English. 3 hrs. lecture/wk. This course is taught in the fall semester
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20.

### HCI 120

**Interpreting Skills I** (3 CR)

*Prerequisite or corequisite: HCI 110 with a grade of "C" or higher*

This course develops students' skills in sight translation and consecutive interpreting. Listening and memory skills, communication strategies and intervention techniques also are emphasized. Upon completion, students should be able to sight translate short written texts and consecutively interpret non-technical, interactive messages between Spanish and English. This course is taught in English with some Spanish terminology and practice. 2 hrs. lecture and 2.5 hrs lab/wk. This course is taught in the fall semester.

### HCI 130

**Interpreting Skills II** (3 CR)

*Prerequisites: HCI 110 with a grade of "C" or higher and HCI 120 with a grade of "C" or higher*

This course develops students' skills in simultaneous interpreting and written translation. In addition, through classroom, lab and field experiences, students practice the three interpretation modes they have learned in the program and improve all aspects of their interpreting while forming good professional habits. Self-assessment, professional growth and development of a personal philosophy of interpreting are stressed. This course is taught in English with some Spanish terminology and practice. 2 hrs lecture and 2.5 hrs lab/wk. This course is taught in the spring semester.

### HCI 140

**Spanish Medical Interpreting** (3 CR)

*Prerequisite: HCI 120 with a grade of "C" or higher and Prerequisites or corequisites: HCI 130 with a grade of "C" or higher and AAC 130 with a grade of "C" or higher*

This course develops the knowledge, techniques, and practices needed to

function as a bilingual interpreter in a medical environment. Students will be introduced to basic medical conditions, procedures, courses of treatment and equipment, with vocabulary and terminology in both English and Spanish. Upon completion, students should be able to apply medical interpreting and translating techniques in a variety of health care settings. This course is taught in English with some Spanish terminology. 3 hrs. lecture/wk. This course is taught in the spring semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20.

### HCI 180

**Medical Interpreting Practicum** (2 CR)

*Prerequisites: HCI 130 with a grade of "C" or higher and HCI 140 with a grade of "C" or higher and Prerequisite or corequisite: HC 101 with a grade of "C" or higher*

Students will observe and interpret at assigned medical facilities, participate in organized class discussions about their interpreting experiences and develop a personal philosophy of interpreting. Both classroom meetings and fieldwork are required for this class. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 1 hr. lecture, 3 hrs. practicum/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20.

# Health Information Technology (KMRT)

### KMRT 101

**Introduction to the Health Information Technology Profession** (2 CR)

Orientation to the health information management profession and the supporting professional organization. History and evolution of health care delivery, facilities, and practitioners. Supervisory functions of the health information management department. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 102

**Health Records Systems, Analysis and Control** (3.5 CR)

Content, storage, retrieval, control, and retention of medical records, especially hospital records. Forms design and control, microfilming, and computer applications for health record departments. 2.5 hrs. lecture, 2 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 103

**Medical Terminology for Health Records** (3 CR)

Professional language of medicine. Analysis of medical terms by roots and combining forms. Disease processes, diagnostic and operative procedures for each system of the body. Selected medical specialties. 3 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 106

**Health Care Statistics** (3 CR)

*Prerequisite: KMRT 102*

Vital health statistics, their uses and values. Abstracting and analysis of data from medical records, collection of data from other sources, and methods of presenting the information. 2.5 hrs. lecture, 1 hr. lab/ wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 108

**Legal Aspects of the Health Information Technology Profession** (2 CR)

*Prerequisite: KMRT 102*

Legal principles applied to the health care professions. Confidentiality of the medical record, informed consent, the medical record as a legal document, release of clinical information, response to subpoena, and testimony. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 109

**Directed Practice I** (2.5 CR)

*Prerequisites: BIOL 144 and KMRT 102*

Supervised on-the-job training in a medical records department. Supervised discussion of clinical experiences. 2 hrs. lab, 3 hrs. field studies/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 110

**Pharmacology** (1.5 CR)

*Prerequisites: BIOL 144 and KMRT 103*

Introduction to basic pharmacology with a body systems approach to disease. 1 hr. lecture, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 200

**Introduction to Classification Systems** (1 CR)

Classification systems used to organize clinical data in health care. The ICD-9-CM classification system will be introduced. 1 hr. lecture/wk. Course taught at Penn Valley Community College. Students should contact the MCC-Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 201

**Quality Management** (3 CR)

*Prerequisite: KMRT 108*

Methods of assessing and improving quality in a health care setting. Concept of continuous quality improvement. Compliance with guidelines of regulatory and accrediting agencies. 2.5 hrs. lecture, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 202

**Class. Systms/Nomenclatures/Indexes & Registers I** (4 CR)

*Prerequisite: KMRT 200*

Nomenclatures and classification systems for coding and indexing diagnoses and procedures with special emphasis on ICD-9-CM. 2.5 hrs. lecture, 3 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 203

**Directed Practice II** (2 CR)

*Prerequisites: BIOL 144 and KMRT 202 and KMRT 210 or BIOL 144 and concurrent enrollment in KMRT 202 and KMRT 210*

Supervised learning experience in a medical records department under the direction of a credentialed professional involving a variety of procedures including coding and abstracting health information, medical transcription, and release of information. Supervised discussion of clinical experiences. 1 hr. lab, 3 hrs. field studies/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 206

**Specialized Health Records Systems** (2 CR)

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. lecture /wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 207

**Class. System/Nomenclature/Index & Register II** (3 CR)

*Prerequisites: BIOL 144 and KMRT 202*

Nomenclatures and classification system for coding and indexing diagnoses and procedures with emphasis on healthcare facilities. Impact of DRGs on the coding function. 2 hrs. lecture, 2 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 208

**Directed Practice III** (2 CR)

*Prerequisite: KMRT 203*

Supervised on-the-job instruction about health record systems in specialized health care facilities. Supervised discussion of directed practice experiences. 2 hrs. lab, 2 hrs. field studies. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 210

**Classif Systems & Nomenclatures/Ambulatory Care** (3 CR)

*Prerequisites: KMRT 200 and BIOL 108/PVCC or concurrent enrollment in BIOL 108/PVCC*

Outpatient coding, classification, and payment systems. Assignment of CPT-4 codes to procedures and services. Common outpatient procedures. Role of the health information technologist in ambulatory coding & billing. 2 hrs. lecture, 2 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 211

**Organization & Administration Health Information** (3 CR)

*Prerequisites: KMRT 201, KMRT 202, and KMRT 203*

General principles of management and organization as applied to health information settings. Budget development and control, personnel recruitment and retention, performance appraisal, and progressive discipline. Office design, productivity monitoring, work simplification, job analysis and job descriptions, and quality management. 2.5 hrs. lecture, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KMRT 212

**Intro to Medical Insurance & Office Procedures** (1.5 CR)

*Prerequisites: KMRT 103, KMRT 202, KMRT 210 and BIOL 144*

An overview of medical office systems and administrative procedures, with emphasis on insurance billing, compliance with regulatory agencies, and technology tools, including medical transcription. 1 hr. lecture, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of health information technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

# Health Occupations (AVHO)

### AVHO 102

**Certified Nurse Aide (CNA)** (5 CR)

*Prerequisite: ENGL 121 with a grade of "C" or higher or Appropriate Compass reading test score. Documentation of current TB test and current CPR for Health Care Providers and a Social Security Card.*

This course provides classroom and clinical instruction for the primary care of clients in long-term and acute- care facilities. Students learn skills for daily hygiene, bedside care, vital sign measurement, positioning and safe transfer of clients. The class prepares and schedules the student to take the Kansas CNA examination. In-state tuition and fees $280 total. Out-of-state tuition and fees $1015 total. 96 contact hrs. For additional information go to the jccc.edu web page: click on classes; click on credit class search; click the semester; course prefix is AVHO Health Occupations. Click on CRN number for information. The credit reflected in this course is for transcript reporting, recording and transfer only. For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/CNA_Information-Requirements. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

### AVHO 103

**Certified Nurse Aide Refresher Course (CNA)** (1 CR)

*Prerequisite: Kansas CNA Certification*

This 21-hour CNA refresher course provides classroom and laboratory experience to update the inactive CNA. The student will discuss the nurse aide's responsibility in the current health care system and the importance of resident rights. The student will demonstrate safety measures, infection control procedures, personal care skills, measurement of vital signs and transfers, positioning and turning. 21 contact hours. In-state tuition and fees $48 total. Out-of-state tuition and fees $195 total. For additional information go to the jccc.edu web page: click on classes; click on credit class search; click the semester; course prefix is AVHO Health Occupations. Click on CRN number for information. The credit reflected in this course is for transcript reporting,

recording and transfer only. For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/CMA_Update_Info-Requirements

## AVHO 104

**Certified Medication Aide (CMA)** (4 CR)

*Prerequisites: Appropriate Compass reading test score, and proof of Kansas CNA certification or having completed the state CNA examination and awaiting results. If CNA examination results are not satisfactory, the student must withdraw from the CMA course. Documentation of current TB skin test - negative results within the last year. Current CPR for Health Care Providers and Social Security card.*

This course includes the development of knowledge related to many commonly prescribed medications. Students will learn the classification, side effects and techniques of administration, including preparation and accurate distribution of medications. Safe administration of oral medications is discussed and demonstrated. Students will be scheduled to take the Kansas CMA examination. In-state tuition and fees $232 total. Out-of-state tuition and fees $820 total. 80 contact hrs. For additional information go to the jccc.edu web page: click on classes; click on credit class search; click the semester; course prefix is AVHO Health Occupations. Click on CRN number for information. The credit reflected in this course is for transcript reporting, recording and transfer only. For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/CMA_Information-Requirements. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $50.

## AVHO 106

**Home Health Aide** (1 CR)

*Prerequisites: Proof of Kansas CNA certification and appropriate Compass reading test score Requirements - copy of current TB test, current CPR for Health Care Providers card, social security card*

This course provides the student with information necessary for nutritional meal planning, task modification, emotional support and personal service to clients and families needing health care assistance at home. Students will be scheduled to take the Kansas HHA certification examination. In-state tuition and fees $98 total. Out-of-state tuition and fees $245 total. 21 contact hrs. For additional information go to the jccc.net web page: click on classes; click on credit class search; click the semester; course prefix is AVHO Health Occupations. Click on CRN number for information. The credit reflected in this course is for transcript reporting, recording and transfer only. For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/HHA_Information-Requirements. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.

## AVHO 108

**Certified Medication Aide Update (CMA)** (1 CR)

*Prerequisites: Proof of Kansas CMA certification and Proof of Kansas CNA 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 discussions 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. 15 contact hours. In-state tuition and fees $48 total. Out-of-state tuition and fees $195 total. For additional information go to the jccc.edu web page: click on classes; click on credit class search; click the semester; course prefix is AVHO Health Occupations. Click on CRN number for information. The credit reflected in this course is for transcript reporting, recording and transfer only. For more information, go to

http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/CMA_Update_Info-Requirements
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20.

## AVHO 112

**Rehabilitative Aide** (2 CR)

*Prerequisite: Proof of current Kansas CNA certification*

This course includes both classroom and laboratory instruction for the aging process as well as the role of the rehabilitative aide as a member of the health care team. Students learn the skills required to enhance the mobility of elderly residents in long-term care as well as the skills required to care for residents with special needs. A certificate from the college will be issued. In-state tuition and fees $96 total. Out-of-state tuition and fees $390 total. 32 contact hrs. For additional information go to the jccc.edu web page: click on classes; click on credit class search; click the semester; course prefix is AVHO Health Occupations. Click on CRN number for information. The credit reflected in this course is for transcript reporting, recording and transfer only. For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/RA_Information_-_Requirements

## AVHO 115

**I V Therapy For LPNs** (3 CR)

*Prerequisites: Proof of Kansas LPN licensure. Present evidence of personal liability insurance at the time of application for admission to the program and maintain it throughout the clinical practicum. Maintenance of current CPR certification for the duration of the course. Evidence of negative TB test or chest X-ray within the past year.*

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. In-state tuition and fees $204 total. Out-of-state tuition and fees $645 total. 48 contact hrs. For additional information go to the jccc.edu web page: click on classes; click on credit class search; click the semester; course prefix is AVHO Health Occupations. Click on CRN number for information. The credit reflected in this course is for transcript reporting, recording and transfer only. For more information, go to http://www.jccc.net/home/depts/5104/site/newstudent/types/adm_avs/IV_Therapy_Info-Requirements
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50 to $100.

# Heating,Vent.,Air Conditioning (HVAC)

## HVAC 121

**Basic Principles of HVAC** (4 CR)

*Prerequisite or corequisite: HVAC 123 or ELTE 123*

This is a beginning course in heating, ventilation and air conditioning technology that is appropriate for HVAC majors and other interested students. Upon successful completion of this course, the student should be able to identify the function of the basic components of an air-conditioning system. Topics will include heat laws, refrigerants, oils and refrigeration cycles of residential and light commercial systems. In the lab, students will design, assemble and operate a working refrigeration system. Competencies will include brazing, wiring, evacuating and charging a system. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and

textbooks. $30 to $150.

## HVAC 123

**Electromechanical Systems** (4 CR)

This is a beginning course in electrical theory that is required for HVAC, electrical and power plant technology, but is appropriate for all interested students. Common components found in the HVAC industry are used to develop these skills. Upon successful completion of this course, the student should be able to identify electrical components and their relationships to the various repair and troubleshooting techniques. The materials in this course will prove useful to service technicians whose background in electricity is limited. The course includes material from basic electrical theory to troubleshooting complex electrical circuits. This course will provide practice in application of electrical theory as well as in the interconnection of components of heating and cooling systems. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.

## HVAC 124

**Equipment Selection and Duct Design** (4 CR)

*Prerequisites: HVAC 121 and either HVAC 123 or ELTE 123*

Upon successful completion of this course, the student should be able to identify techniques and procedures used in the residential construction industry to determine proper sizing of HVAC equipment and ducts to meet the requirements for a high-quality, comfortable climate in terms of heating, cooling, humidifying, dehumidifying, ventilation and air cleaning or filtering. 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $5 to $10.

## HVAC 125

**Energy Alternatives** (2 CR)

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 and alternate fuel vehicles. Students will understand the advantages of using various alternate energy technologies, the effects or by-products of each and the problems that might be encountered. Some student research will be included in the context of the course. Emphasis will be on the most promising or effective alternate energy technologies available. 2 hrs. lecture/wk.

## HVAC 127

**Residential Systems: Heating** (4 CR)

*Prerequisites: HVAC 121 and either HVAC 123 or ELTE 123*

Upon successful completion of this course, the student should be able to identify all the components and accessories and their relation to the functions of residential heating systems. Topics covered will be natural gas, propane, oil, forced air and hydronic-types of equipment. Emphasis will be on the electrical diagrams and mechanical principles of operation of these systems. Practical instruction in service diagnosis procedures and techniques for efficient operation, maintenance, troubleshooting and repair of these systems make up the lab portion of the course. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

## HVAC 137

**Residential Systems: Air Conditioning** (4 CR)

*Prerequisites: HVAC 121 and either HVAC 123 or ELTE 123*

Upon successful completion of this course, the student should be able to identify all the components and accessories and their relation to the functions of residential air conditioning systems. Topics covered will include electric and natural gas air conditioner condensing units, metering devices, evaporation coils, and refrigerants. Electrical diagrams, psychrometric charts and techniques for efficient operation, maintenance, troubleshooting and repair of these systems make up the laboratory portion of the course. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 3 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

## HVAC 143

**Reading Blueprints and Ladder Diagrams** (2 CR)

Upon successful completion of this course, the student should be able to identify all types of industrial plant blueprints. Included will be a 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 use of ladder logic and various components such as input, output and diagrams. The structure, symbols and terminology of ladder logic diagrams will be introduced. Logic and decision-making functions are presented, along with practice in creating ladder logic diagrams. 2 hrs. lecture/wk.

## HVAC 146

**Plumbing Systems Applications** (3 CR)

Upon successful completion of this course, the student should be able to demonstrate familiarity with many aspects of fuel gas piping, gas appliance venting, water heater installations, combustion air requirements and proper piping techniques. Classroom lectures center on methods for proper sizing of both fuel gas piping and vent sizing with emphasis on interpretation of both the Uniform Plumbing Code and the National Fuel Gas Code. There will be an emphasis on combustion air requirements. Laboratory competencies will include identification of materials and proper installation methods of fuel gas lines, vent piping systems and copper water line connections. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

## HVAC 148

**HVAC Installation and Start-up Procedures** (3 CR)

*Prerequisites: HVAC 121 and either HVAC 123 or ELTE 123*

Upon successful completion of this course, the student should be able to identify techniques and procedures to install new systems, retrofit systems and do an initial start-up, check-out furnaces and air conditioners. Topics will include electrical requirements, flue appliance location, permit and inspections, combustion air, sheet metal ducts, and mechanical standards. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

## HVAC 150

**Refrigerant Management and Certification** (1 CR)

Upon successful completion of this course, the student should have knowledge and confidence necessary to pass the EPA Refrigerant Certification exam and properly, efficiently and responsibly handle refrigerants as set forth in the Clean Air Act of 1990. 1 hr. lecture/wk.

## HVAC 155

**Workplace Skills** (1 CR)

Upon successful completion of this course, the student should be able to

identify the job skills necessary to have a successful career in the field of their choice. Topics included listening skills, oral communication, human relations, decision making/problem solving, how to work as a team, time and resource management, work ethics, career planning and resume building. 1 hr. lecture/wk.

### HVAC 167

**Sheet Metal Layout and Fabrication** (3 CR)

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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

### HVAC 221

**Commercial Systems: Air Conditioning** (4 CR)

*Prerequisites: HVAC 121 and either HVAC 123 or ELTE 123*

Upon successful completion of this course, the student should be able to identify cooling systems used in commercial, institutional and industrial applications. Types of equipment include reciprocating and centrifugal chillers, absorption systems, cooling towers, fans and air handlers. Topics also include psychometrics, pressure-enthalpy diagrams and commercial load calculations, evacuation and charging. 3 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

### HVAC 223

**Commercial Systems: Heating** (4 CR)

*Prerequisite: HVAC 123 or ELTE 123*

Upon successful completion of this course, the student should be able to identify large heating systems used in commercial, institutional and industrial applications. Types of equipment include hot water, low-pressure and high-pressure steam boilers; auxiliary, safety and flame safeguard controls; steam traps; condensate return; and water treatment systems. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools. 3 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

### HVAC 229

**Advanced Control Systems** (4 CR)

*Prerequisites: HVAC 121 and either HVAC 123 or ELTE 123*

Upon successful completion of this course, the student should be able to identify the components and theory in electronic, pneumatic and direct digital control systems as they apply to HVAC systems. This course will reinforce and build on those competencies learned in HVAC 123 and HVAC 121. Classroom lectures will center on components, wiring diagrams, calibration and sequences of operation, system components, theory of operation, wiring diagrams and installation methods. Laboratory competencies include identification, calibration, maintenance and problem diagnosis of pneumatic, electronic and DDC systems, thermostat controllers and their related sensors/transmitters. Students will program a complete building energy management system. Interactive instructional media will be used in this course. 3 hrs. lecture, 3 hrs. lab/wk

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

### HVAC 231

**HVAC Rooftop Units** (3 CR)

*Prerequisites: HVAC 121 and either HVAC 123 or ELTE 123*

Topics will include electrical controls and economizers of various rooftop units, roof curbs, installation, service, diagnosis, evacuation and charging of typical light commercial rooftop units. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

### HVAC 235

**Residential Heat Pump Systems** (4 CR)

*Prerequisites: HVAC 121 and either HVAC 123 or ELTE 123*

Upon successful completion of this course, the student should be able to identify the function of all components and accessories of all electric and dual heat pump systems. Topics will include electric heat and heat pump fundamentals, principles and applications; refrigerant flow controls; defrost cycle controls; heat pump thermostats; indoor air distribution; dual fuel controls; and change-over stats. Emphasis will be on the electrical diagrams and mechanical principles of operation. These systems, as well as practical instruction in service and diagram procedures and techniques for the efficient operation, maintenance, troubleshooting and repair of these systems, will make up the lab portion of the course. The student will 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

### HVAC 271

**HVAC Internship** (3 CR)

*Prerequisite: Program facilitator approval Required*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

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# History (HIST)

### HIST 120

**Local and Kansas History** (3 CR)

This course introduces students to the history of Kansas from the beginning of the Late Ceramic Period (1500) to the present. Emphasis will be on the examination of the living patterns of the various peoples who have inhabited the region during this time frame. This course will also analyze the social and economic factors and political objectives that transformed the central plains from the domain of the bison-hunting Plains Indian to a society based in a market-agricultural economy. 3 hrs./wk.

### HIST 125

**Western Civilization: Readings and Discussion I** (3 CR)

The course explores the major developments, ideas and personalities that have shaped Western civilization. Organized around a readings and discussion format, students engage some of the world's most provocative and influential literature. Western Civilization I begins with the ancient cultures of the Middle East, Greece and Rome and follows the development of Western thought from the medieval period to the Renaissance and Reformation. 3 hrs. lecture/wk. It is not necessary to take HIST 125 before HIST 126.

## HIST 126

**Western Civilization: Readings and Discussion II** (3 CR)

The course explores the major developments, ideas and personalities that, for the past 500 years, have shaped Western civilization. Organized around a readings and discussion format, the course allows students to engage some of the world's most provocative and influential literature. Western Civilization II begins with the three revolutions that define modernity - Scientific, French, and Industrial. The course also highlights the new ideologies of the 19th century and more recent themes of modernization and the cultural crisis of the 20th century. 3 hrs. lecture/wk. It is not necessary to take HIST 125 before HIST 126. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## HIST 128

**Medieval History** (3 CR)

Medieval History is a detailed survey of the period from late Roman Antiquity to the early Renaissance. Primary and secondary texts and visual resources will be used to illuminate the period that saw first the decline into relative stagnation caused by barbarian onslaughts, and then gradual reemergence of a powerful civilization that revitalized itself by renewing the insights of ancient times. 3 hrs. lecture/wk.

## HIST 129

**Early Modern Europe 1500-1789** (3 CR)

This course is an introduction to early modern European history, with emphasis on the economic, social and political developments that have shaped the modern world: the Renaissance; the Catholic and Protestant Reformations; the rise of nation-states; the new inter-cultural contact between Europe and the world; the Commercial Revolution and the Enlightenment. 3 hrs. lecture/wk.

## HIST 130

**European History Since 1789** (3 CR)

This course covers the major political, intellectual, and economic and social developments in Europe from the end of the 18th century to the present, including modern political ideologies, major wars, the growth of strong governments, the effect of modern science on social and political thought, the Industrial Revolution, the creation of large middle classes, and the effect of modern technology. 3 hrs./wk.

## HIST 132

**History of Africa** (3 CR)

This course introduces students to the history of Africa until the present. It emphasizes the fundamental characteristics and long-term developments in the evolution of African political and socioeconomic institutions. 3 hrs./wk.

## HIST 135

**Eastern Civilization** (3 CR)

This course is an introduction to the societies and cultures of Asia. Through lectures, readings and discussions, the course will focus on aspects of the history, politics, art, literature and economics of China, Japan and India. The major traditional themes and concepts of these civilizations will be stressed. 3 hrs. /wk.

## HIST 137

**African American Studies** (3 CR)

This course surveys the major themes and developments in African-American culture and history from the colonial period to the present. The course is divided into three five-week segments. Each segment relates to a historical period; slave, post-emancipation and contemporary. Each segment also permits a flexible, interdisciplinary approach that will include literature, fine arts and the social sciences. 3 hrs. lecture/wk.

## HIST 140

**U.S. History to 1877** (3 CR)

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, the expansion of the Republic during the mid-19th century, and the Civil War and Reconstruction. The emphasis will be on analysis and interpretation of these developments. 3 hrs./wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## HIST 141

**U.S. History Since 1877** (3 CR)

This survey course will emphasize developments and trends in American society from the 1870s to the late twentieth century. Topics will include the Reconstruction era, industrialization, immigration, reform movements, World Wars I and II, social and cultural trends, and foreign policy. Emphasis will be on analysis and interpretation of these developments. 3 hrs./wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## HIST 150

**Islam: Religion & Civilization** (3 CR)

This course covers the context in which Islam arose; the career of the Prophet Muhammad; the main teachings and practices of the religion; the Qur'an and other early Islamic literature; subsequent political developments in the religion and its spread; its main religious branches; its history during the Middle Ages; the Christian crusades and their consequences; the major components of Islamic civilization including law, the arts, literature, philosophy, science, and mathematics; Sufi; the effects of Western imperialism upon Islamic states; major developments in Islamic thought and practice since the seventeenth century; the Islamic diaspora; and Islam today. HIST 150 is the same course as REL 150 and HUM 150; enroll in one only. 3 hrs. lecture/wk.

## HIST 151

**World History I: Traditional World** (3 CR)

This course provides students an introduction to the history of the major world civilizations up to approximately 1500. Upon successful completion of the course, students will be able to identify the major political, social, economic and technical developments in the histories of Egypt, Mesopotamia, other Near Eastern civilizations, Rome, Greece, India, China, sub-Saharan Africa, pre-Columbian America and medieval Europe. Students will be able to define the concept of a traditional, as opposed to a modern, society. They will be able to compare these societies with each another and with the modern society of the contemporary United States. 3 hrs. lecture/wk.

## HIST 152

**World History II: Modern World** (3 CR)

This course provides students an introduction to the history of the world since approximately 1500. Upon successful completion, students will be able to describe and analyze the development of modernism, which occurred first in the West, including the scientific revolution, secularism, industrialism and the rise of new political ideologies. They will be able to trace the expansion of modernization in both the Western and non-Western worlds and the response

to modernism in non-Western countries. 3 hrs. lecture/wk.

### HIST 160

**Modern Russian History** (3 CR)

This course examines Russian history within a Eurasian context. It is a study of three centuries of the social, political, economic and cultural forces that shaped Russian history, beginning with a survey of the events that place Russia outside the Western historical tradition. 3 hrs./ wk. or online. Usually this course is offered in the fall semester either on-campus or online. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

### HIST 162

**Modern Latin America** (3 CR)

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 states, such as Cuba and Mexico, are explored. Literary and intellectual trends together with contemporary popular culture are featured in the course. 3 hrs./wk.

### HIST 164

**Japan: Changing Tradition** (3 CR)

*Prerequisite: assistant dean approval*

This self-paced course explores Japanese history, politics and economics from the early days of the Tokugawa regime from 1500 to the present. The thrust of the course is geared to exploring the themes that permeate the Japanese experience over the past two centuries.

### HIST 195

**History of the Middle East** (3 CR)

This course introduces students to the environmental, political, economic, religious and ethnic landscape of the Middle East and Northern Africa. Though its focus is historical, the course prepares students for an understanding of the contemporary challenges faced by the region. Particular attention is paid to the Middle East and Northern Africa as the intersection of three monotheistic traditions, the central role of aridity and natural resources in its development, the interfacing of multiple cultures with Islam, the religious and ethnic diversity of the region today, and modern encounters with the nation-state system and western secularism. Students will also explore the contributions of the region to the larger world and the interactions of Middle Eastern and Northern African countries and people with Asia, Europe, and the United States. 3 hrs. lecture/wk.

# Home Economics (HMEC)

### HMEC 151

**Nutrition and Meal Planning** (3 CR)

This course covers the basic food groups, their use in meal planning, their functions and their nutritional values. In addition to the current trends in eating, this course covers diets and exercise, as well as fad diets, life-cycle nutritional needs, and the effects of nutrient intake on growth and development. This is a required course for the food and beverage program and the chef apprenticeship program. 3 hrs./wk.

# Honors Program (HON)

### HON 250

**Honors Forum: In Search of Solutions** (3 CR)

This course will focus on two topics during the semester and how those topics affect the local, national and global communities. The course complements other courses in the curriculum by applying the dual emphases of specific content and skill development to the areas of interaction, analysis, synthesis and conflict resolution. Students will study each issue in a historical and contemporary context, develop a greater understanding of the issues, and take a position on the issues. This position will be subjected to further challenge and dialogue. In this course, the process of reflecting, researching, analyzing and evaluating are as important as content. As points of view concerning the issue are developed, the students must articulate and defend these viewpoints as they are challenged by others and make judgments among alternative options. The first topic is selected by the faculty members, then midway through the semester, the students will select the second topic. This course will require students to use many forms of research, including the Internet and electronic databases. In addition, students will be expected to use e-mail for sharing information with classmates and instructors.

# Horticulture (HORT)

### HORT 115

**Home Horticulture** (2 CR)

This course provides basic knowledge for the design and management of home lawns, flower and vegetable gardens, and landscape trees and shrubs. Students will learn basic plant anatomy and physiology concepts; how to recognize some common plant deficiency symptoms; the use of fertilizers and pesticides; identification of some common trees, shrubs and garden plants; and the major considerations of good landscape design. 1 hr. lecture, 2 hrs. lab/wk.

### HORT 120

**Introduction to Urban Agribusiness** (3 CR)

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, the position of pesticide applicators' position and golf course management. 3 hrs. lecture/wk.

### HORT 135

**Landscape Design** (3 CR)

The course is designed to familiarize students with aspects of landscape design. Students will analyze the site and preferences of the client and complete a landscape design following basic design principles. Students will learn presentation graphics, hand lettering techniques, and how to make a hand drawing to scale. Note: Plant material courses (HORT 214, HORT 215, HORT 220) could be helpful for this course but are not required. 2 hrs. lecture, 2 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30.

### HORT 140

**Turfgrass I** (3 CR)

The basics of turfgrass identification, selection, use and care will be covered. The emphasis will be on efficient management of soil and turf on large or small grounds. Upon successful completion of this course, students should be able to demonstrate their ability to properly identify the major categories of turfgrass; establish and maintain turfgrass; identify turfgrass pests; and develop a pest control fertilizer program. Irrigation systems, their maintenance

and repair will also be discussed. 2 hrs. lecture, 2 hrs. lab/wk.

## HORT 150

### Fruits, Vegetables and Herb Crops (2 CR)

This course is designed to familiarize garden center employees with the plant materials and production of crops many homeowners use and grow. This course will help the employee answer many homeowner questions about production, varieties and potential crop problems. Home hobbyists may also wish to enroll in this course. 1 hr. lecture, 2 hrs. lab/wk.

## HORT 160

### Garden Center Operations (3 CR)

This course is designed for garden center employees and provides background on the elements necessary for success in a competitive retail environment. The business organization is emphasized, including environmental monitoring, selling, inventory issues, merchandising, advertising, cost effectiveness, labor/team relationships and customer service. In addition, safety and legal issues are examined. 3 hrs. lecture/wk.

## HORT 165

### Arboriculture (3 CR)

This course will prepare the student to work with trees in Zones 5-6. In lecture and lab settings students will learn and demonstrate how to properly plant, prune and maintain trees, identify hazard trees and proper pruning and tree removal techniques. Emphasis will be placed on ANSI and OSHA safety requirements. At the end of this course the student will be prepared to take the test for arboriculture certification in Kansas. 2 hrs. lecture 3 hrs. lab/wk.

## HORT 201

### Introduction to Horticultural Science (4 CR)

This is an introduction to the principles and practices of horticultural plant systems. Plant structure and function will be discussed, along with the effects of environmental factors on plant growth. General cultural practices will be described, including pest control, mineral nutrition and plant propagation. 3 hrs. lecture, 2 hrs. lab/wk.

## HORT 205

### Plant Propagation (3 CR)

*Prerequisite: HORT 201 or permission of assistant dean*

This course provides basic knowledge of the art and science of sexual and asexual methods of propagating plants. Students study the processes of seed development, seed dormancy, germination, root initiation and grafting. Students will learn basic seed sowing, cutting and grafting skills. The students will be able to demonstrate the selection of appropriate propagation methods and choose the proper environmental conditions necessary to achieve successful propagation of seeds or cuttings. 2 hrs. lecture, 2 hrs. lab/wk.

## HORT 210

### Concepts of Floral Design (3 CR)

This is an introductory course for students to learn the design basics of flower arranging. The course will help the students develop an eye for color combinations, flow of lines, balance, geometric shapes and textures in materials used, mechanics of design, customer perspectives and the post-harvest care of floral materials. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $150.

## HORT 214

### Woody Plants I, Deciduous (3 CR)

The class places emphasis on identification, ornamental characters, site requirements, and use of woody ornamental deciduous trees and shrubs with special emphasis on the cultivated varieties in climatic zones 5 and 6. Plant uses and seasonal effects and influences that affect plant choices will be also be taught. This course will assist the grounds maintenance employee, landscaper, and garden center employee in identifying plant materials used in the landscape. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10.

## HORT 215

### Woody Plants II, Evergreens (3 CR)

This course places emphasis on identification, ornamental characteristics, site requirements and use of evergreen trees and shrubs and flowering shrubs with special emphasis on the cultivated varieties in climatic zones 5 and 6. Plant uses and seasonal effects and influences that affect plant choices will be taught. This course will assist the grounds maintenance employee, landscaper and garden center employee in identifying plant materials used in the landscape. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10.

## HORT 220

### Herbaceous Plants (3 CR)

This course will focus on the identification, ornamental characters, culture, propagation, and use of herbaceous perennials, bulbs, ground covers, vines and annuals. This course will assist the grounds maintenance employee, landscaper, and garden center employee in identifying and selecting herbaceous plant materials with additional emphasis on uses and maintenance of these plants when used in the landscape. 2 hrs. lecture, 3 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10.

## HORT 225

### Plant Problems (3 CR)

*Prerequisites: HORT 214 and HORT 220 or permission of assistant dean*

This course is a broad-spectrum overview of plant insects, diseases and nutrition. Students will look at plants to identify the common characteristics found when diagnosing plant problems. Identification, treatment and treatment alternatives will be considered to help customers make diagnostic decisions for the use of chemicals and integrated pest management techniques (IPM). 2 hrs. lecture, 3 hrs. lab/wk.

## HORT 235

### Landscape Maintenance and Techniques (3 CR)

This course is designed to familiarize students with the principles and techniques involved in landscape maintenance including pruning techniques, fertilization, irrigation, spray schedules and weed control. Installation and maintenance of annual and perennial plant material is examined. In addition, the student will learn to design preventive strategies and identify and examine disease and insect damage. The students will learn how to maintain good customer relations. 2 hrs. lecture, 2 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30.

## HORT 240

### Turfgrass II (3 CR)

*Prerequisite: HORT 140*

This course is a continuation of turfgrass I (HORT 140). Topics include green

construction, top dressing, sprayer calibration, management programs (e.g., setting up a lawn care program) and the influence environment has on turfgrass growth. 2 hrs. lecture 2 hrs. lab/wk.

### HORT 245

**Commercial Crop Production** (3 CR)

This course is designed to familiarize Market Farmers with the plant materials and production of crops grown in the Market Farming industry. This course will help answer questions about varieties of plants to grow, establishment, growth, harvesting and post-harvesting of crop, varieties of plants to grow. Students will become familiar with different marketing options and good record keeping. 3 hrs. lecture/wk.

### HORT 255

**Landscape Pest Control** (3 CR)

This course will explore the general concepts of turf, ornamental, commercial crop and vegetable garden maintenance and pest control in the local area. The student will become familiar with federal and state regulations pertaining to horticulture chemical application. Upon completion of this course, the student should be prepared to take the Kansas or Missouri licensing examination to become a certified applicator of restricted horticultural pesticides and herbicides. 3 hrs. lecture/wk.

### HORT 260

**Horticulture Soils** (3 CR)

This course covers soil components as well as the physical, chemical and biological properties of soils that affect plant growth. Emphasis will be placed on horticultural substrates and urban soils and their applications. 2 hrs. lecture, 2 hrs. lab/wk.

### HORT 265

**Landscape Construction** (3 CR)

This course will cover the theories, principles and practices used in the interpretation and implementation of landscape construction. It will include site planning and preparation, safety principles, tool use and identification, landscape and construction materials, job bid development and project management. Construction projects in the class will vary by semester. 2 hrs. lecture, 2 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $235.

### HORT 270

**Horticulture Internship** (3 CR)

*Prerequisite: Approval of assistant dean*

Student should be able to apply classroom knowledge to an actual work situation. The internship will provide students on-the-job experience under the supervision of professionals in the Horticultural industry. The work will be developed cooperatively with area employers, college staff and each student to provide a job experience in the area of their horticultural focus and career goals. 20 hrs field study

### HORT 272

**Sustainable Agriculture Fall Practicum** (2 CR)

Through practical experience complemented by lectures and discussions, students will gain exposure to a broad range of tasks facing the market farmer during the fall and early winter seasons. This includes production and marketing of summer crops, planning, and production of fall crops in high tunnels and open field, and marketing these fall crops. Topics include production planning, planting, integrated crop management, harvest and postharvest practices, marketing through various channels, tools and equipment, soil fertility management, and record keeping. Practicum activities will integrate with other courses in this market farming certificate program. Students will learn both conventional and organic production techniques. Entrepreneurship will be emphasized throughout. 7 hrs. practicum/wk.

### HORT 274

**Sustainable Agriculture Spring Practicum** (2 CR)

Through practical experience complemented by lectures and discussions, students will gain exposure to a broad range of tasks facing the market farmer during the winter and early spring seasons. This includes production and marketing of winter crops and planning and production of spring and summer crops in high tunnels and open field and marketing these spring crops. Topics include production planning, planting, integrated crop management, harvest and postharvest practices, marketing through various channels, tools and equipment, soil fertility management, and record keeping. Practicum activities will integrate with other courses in this market farming certificate program. Students will learn both conventional and organic production techniques. Entrepreneurship will be emphasized throughout. 7 hrs practicum/wk.

### HORT 276

**Sustainable Agriculture Summer Practicum** (2 CR)

Through practical experience complemented by lectures and discussions, students will gain exposure to a broad range of tasks facing the market farmer during the summer season. This includes planning, production and marketing of spring and summer crops and planning and production of fall crops in high tunnels and open field. Topics include production planning, planting, integrated crop management, harvest and postharvest practices, marketing through various channels, tools and equipment, soil fertility management, and record keeping. Practicum activities will integrate with other courses in this market farming certificate program. Students will learn both conventional and organic production techniques. Entrepreneurship will be emphasized throughout. 7 hrs. practicum/wk.

# Hospitality Management (HMGT)

### HMGT 120

**Food Service Sanitation** (1 CR)

This course covers the basic principles of providing and serving safe food. It also provides the student with safe food-handling procedures necessary to manage a sanitary and safe food service operation in compliance with the National Food code and the National Restaurant Association. The successful completion of the Serv Safe Sanitation exam will result in a national sanitation certification. 1 hr. lecture/wk.

### HMGT 121

**Perspectives of Hospitality Management** (3 CR)

This introductory course is designed to provide students with current information on topics relevant to career exploration, employment and operational specifics of the various segments of the hospitality industry. The course includes exploration of the tourism, lodging, food and beverage and related industries, along with the operational characteristics unique to each and the critical concepts of service management. The identification of current events and trends will be included along with the evaluation of impact on the hospitality industry. This course also identifies and explores career opportunities and includes the professional profiles and job search materials directly related to the hospitality industry. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $25 to $50.

### HMGT 123

**Professional Cooking I** (3 CR)

*Prerequisite or corequisite: HMGT 120*

This is the first of two courses in professional cooking methods for students enrolled in hospitality management programs. Upon completion of this course, the student should be able to demonstrate skills in basic cooking methods, recipe conversion, and professional food preparation and handling. Additionally, the student should be able to safely operate common food service equipment used in commercial kitchens. 1 hr. lecture, 2.5 hrs. lab/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50 to $200.

## HMGT 126

**Food Management** (4 CR)

*Prerequisites: HMGT 123 and HGMT 230 and HMGT 277 and admission to the hospitality management program*

This course offers an overview of restaurant management practices used in the hospitality industry. Emphasis will be on demonstrating the components of menu planning and the styles of food service used for various occasions -- buffet service and French, Russian and American service. The student will participate in the operation of the campus restaurant, including food preparation, service, sales promotion, purchasing and costing. 7 hrs./wk.

## HMGT 128

**Supervisory Management** (3 CR)

This course contains the 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** (3 CR)

This course offers an overview of product and dram shop liability as well as of the various areas of federal and state legislation that regulate the hospitality industry. Emphasis will be on familiarizing the hospitality manager with ways to avoid costly and time-consuming lawsuits. A manager's or owner's legal rights and responsibilities also will be discussed. Upon successful completion of this course, the student should be able to recognize potential legal problems. 3 hrs./wk.

## HMGT 132

**Seminar in Housekeeping Operations** (3 CR)

This course presents a systematic approach to managing housekeeping operations in the hospitality industry. The course will also include related health department and OSHA regulations. While enrolled in this class, a student must work a minimum of 15 hours a week in a lodging operation. The work experience is concurrent but does not necessarily concentrate on the subject being taught in the course. This course is typically offered in the fall semester. 2 hrs./wk.

## HMGT 145

**Food Production Specialties** (3 CR)

*Prerequisite: HMGT 123*

This course covers the fundamentals of convenience baking, hors d'oeuvre and cold kitchen preparation. It provides knowledge of and basic skills in the pastry kitchen, where the student can handle convenience products from the frozen or dried state and produce finished pies, cakes and dessert items. It provides further knowledge of and skill in the garde-manger kitchen, specifically making salads, cocktail hors d'oeuvres and cocktail sandwiches, as well as making economic purchases for gourmet food items. In addition, the student will learn how to make intermezzo ices, identify different types of cheese, and design and make a general plan for a buffet. 1 1/2 hrs. lecture, 2 hrs. lab/wk.

## HMGT 150

**Seminar: Food Service Sales and Marketing** (3 CR)

This course includes detailed information in distinguishing the difference between marketing, sales, promotion, advertising and merchandising. In addition, development and quantifying the cost of a marketing plan by analyzing markets and developing a primary target market will be discussed. This course is a seminar course, and students are required to be employed 15 hours per week in a job related to the hospitality industry. 3 hrs. lecture, 15 hrs. internship/wk.

## HMGT 165

**Food Industry Compliance & Safety** (3 CR)

Upon successful completion of this course, the student should be able to analyze and explain the basic legal compliance issues regarding food safety and the post-harvest handling of local food products. This course focuses on the legal compliance issues of market farming as well as the food safe handling principles necessary for an individual involved in market farming. It will provide students with practical methods of application involved with food safety and post-harvest marketing. 3 hrs. lecture/wk.

## HMGT 167

**Local Food Production** (3 CR)

Upon successful completion of this course, the student should be able to analyze and explain the basic cooking methods, recipe conversion and professional food preparation and handling of local food products. Additionally, the student should be able to safely operate common food service equipment used in commercial kitchens. It will provide students with practical methods of application involved with safe handling and production of post-harvest local food products. 2 hrs. lecture, 1.5 hrs. instructional lab/wk.

## HMGT 203

**Hotel Sales and Marketing** (3 CR)

*Prerequisites: HMGT 121 and admission to the hospitality management program*

This course will focus on practical sales and marketing techniques for the hotel industry. It will cover a marketing plan and advertising campaign for a hotel, including identifying target markets, prospecting for sales leads and using sales techniques. This course is typically offered in the fall semester. 3 hrs. lecture/wk.

## HMGT 207

**Hospitality Human Resource Management** (3 CR)

*Prerequisite: HMGT 128*

This course will examine hospitality human resources management from the global perspective as the rise of multinational hospitality corporations and a multicultural society place new requirements on managers with human resource responsibilities. Special emphasis will be placed on both the "soft skills" involved in counseling, interpersonal relations and different management theories, as well as the "hard skills" involved in the legislative aspects of managing people. This course will concentrate on how to manage managers. 3 hrs. lecture/wk.

## HMGT 220

**American Regional Cuisine** (3 CR)

*Prerequisite: HMGT 230*

This course introduces the student to regional American cooking from nine regional culinary traditions and two specialty traditions within American cuisine. Students will study the cuisine of New England; the Mid-Atlantic states; the Deep South; Florida and the Caribbean; Cajun and Creole; the Central Plains and Rocky Mountain states; Tex-Mex and the American Southwest; California and Hawaii; the Pacific Northwest, as well as vegetarian

cuisine and kosher dietary laws. Upon completion of this course, the student should be able to demonstrate skills in cooking and presenting classic American dishes in their traditional forms within a restaurant setting. 1 hr. lecture, 2.5 hrs. lab/wk.

## HMGT 221

**Design and Facilities Management** (3 CR)

*Prerequisites: HMGT 123 and HMGT 271*

This course includes detailed information about food service design that covers layout, design and equipment specifications. In addition, facilities operations will be discussed regarding electrical, water and transportation systems; refrigeration; waste disposal; energy management; and HVAC. Preventive maintenance will be emphasized. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $25 to $100.

## HMGT 223

**Fundamentals of Baking** (3 CR)

This course covers bakeshop production as it relates to the basic principles of ingredients, measurements, mixing, proofing, baking and final presentation. In addition, the student will be able to identify the various types of baking equipment used in the preparation of bakeshop products. The class includes lecture and participation. 1 hr. lecture, 2.5 hrs. lab/wk.

## HMGT 226

**Garde Manger** (3 CR)

*Prerequisite: HMGT 230*

This course is designed for the student to learn cold food production and charcuterie. The course will allow the student to develop fundamental principles of the cold kitchen and modernize traditional methods of salad preparation. 1 hr. lecture, 2.5 hrs. lab/wk.

## HMGT 228

**Advanced Hospitality Management** (3 CR)

*Prerequisite: assistant dean's approval*

This course includes detailed information about various components of menu planning, food service, supervision, design and beverage control. In addition, an understanding of the external factors affecting the hotel-restaurant industry will be discussed. Skills necessary to secure a position in management within the hospitality industry will be emphasized, and case studies and computer simulation (HOTS) will be used for critical thinking analysis. Business plans will be developed as part of the course project. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $25 to $50.

## HMGT 230

**Professional Cooking II** (3 CR)

*Prerequisites: HMGT 120 and HMGT 123*

This is the second of two courses in professional cooking methods for students enrolled in hospitality management programs. Upon completion of this course, the student should be able to demonstrate advanced level skills in cooking methods, recipe conversion, and professional food preparation and handling. Additionally, the student should be able to safely operate advanced food service equipment used in commercial kitchens. This course consists of lecture, demonstration and participation in food preparation. 1 hr. lecture, 2.5 hrs. lab/wk.

## HMGT 231

**Advanced Food Preparation** (4 CR)

*Prerequisites: HMGT 230 and assistant dean's approval*

This course is designed to develop a student's advanced culinary skills in preparation of international cuisine commonly served in today's operations in Latin America, Europe, Asia, the Middle East, the Far East and the Pacific area. 4 hrs. lecture/wk.

## HMGT 235

**Seminar: Risk Management and Loss Prevention** (3 CR)

This course explains the issues surrounding the need for individualized security programs, examines a wide variety of security and safety equipment and procedures, discusses guest protection and internal security for asset protection. It explores risk management and loss prevention issues and outlines OSHA regulations that apply to lodging properties. While enrolled in this class, a student must work a minimum of 15 hours a week in a lodging operation. The work experience is concurrent but does not necessarily concentrate on the subject being taught in the course. This course is typically offered in the spring semester. 2 hrs lecture, 15 hrs. work/wk.

## HMGT 240

**Advanced Baking** (4 CR)

*Prerequisites: HMGT 123 and HMGT 223*

This course covers the principles needed to enter the baking and pastry industry. The course provides knowledge of specialty ingredients and techniques needed to make tortes, finished desserts and a wedding cake. The student will be instructed in the making of these items through lecture and will prepare a variety of such items in lab. 4 hrs. lecture, lab/wk.

## HMGT 248

**Confectionery Arts** (3 CR)

This course covers the design and production of artistic centerpieces made from confections. It provides knowledge of and basic skills in making decorative dining table centerpieces using food products such as cooled and pulled sugar syrup, isomalt, pastillage, marzipan and chocolate. The student will be instructed in the preparation of these ingredients and will construct center and showpieces after viewing demonstrations. 4.5 hrs. lecture, lab/wk.

## HMGT 250

**Introduction to Catering** (3 CR)

This course includes detailed information about the different types of catered events within the hospitality industry. Topics covered include the importance of marketing, contract writing, food production, room arrangements and required personnel relative to specific catered events. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $5 to $25.

## HMGT 256

**Casino Management** (3 CR)

This course is designed to familiarize students with the unique conditions and management challenges associated with a casino property. An overview of game operation and rules will serve as a foundation. Management controls will be emphasized including how to compute statistical data to assist management in operations. The course is not intended to be a training exercise. Casino marketing and ways to develop effective player rating systems will be analyzed. The history of the casino industry and regulatory environment will also be examined. The course is not intended to be a training exercise for those interested in learning to deal games. 3 hrs. lecture/wk.

## HMGT 265

**Front Office Management** (3 CR)

This course provides a full understanding of the flow of business from the front

office, beginning with the reservations process to checkout and settlement. It also includes the night audit and statistical analysis of rates and revenue management. This course is typically offered in the spring semester. 3 hrs./wk.

### HMGT 268

**Hospitality Managerial Accounting** (3 CR)

*Prerequisites: MATH 120 and HMGT 121 and HMGT 273*

This course introduces the student to basic managerial accounting. This includes accounting concepts, processing data and the flow of financial information within a hospitality operation. The course provides a working knowledge of an income statement, balance sheet, statement of owner's equity and cash flows. 3 hrs. lecture/wk.

### HMGT 271

**Seminar in Hospitality Management: Purchasing** (3 CR)

This course offers an overview of purchasing techniques and specification writing for commodities used in the hospitality industry. Emphasis will be on decision-making skills in the areas of quality, quantity, specifications and general value analysis. Two hours in class and a minimum of 15 hours a week are required in a supervised work situation in an approved area of the hospitality industry. Work experience is concurrent but does not necessarily concentrate on the subject being taught in the course.

### HMGT 273

**Hospitality Cost Accounting** (3 CR)

*Prerequisites: MATH 120 or higher and HMGT 121*

This course includes detailed information on how to prepare operation statements for a food service operator, including inventory and control systems. Areas of concentration will be food cost controls, labor cost controls, purchasing controls and profit production. The practice set will be used to reinforce control systems. 2 hrs./wk.

### HMGT 275

**Seminar in Hospitality Management: Internship** (3 CR)

*Prerequisite: Admission to the hospitality management program*

This course provides industry experience for students in cooperating businesses, agencies and organizations. While enrolled in this course, a student must work a minimum of 320 hours in an approved position in the hospitality industry. By arrangement.

### HMGT 277

**Seminar in Hospitality Management: Menu Planning** (3 CR)

*Prerequisite: HMGT 123*

This course provides the basic knowledge of menu design and planning. Students will learn the components of menu design and planning for each concept category. The course will cover the topics of menu layout, selection and development, price structures and the theory of menu design. A minimum of 15 hours a week is required in a supervised work situation in an approved area of the hospitality industry. Work experience is concurrent but does not necessarily concentrate on the subject being taught in the course. 2 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $5 to $25.

### HMGT 279

**Beverage Control** (3 CR)

This course covers the history of wines and their use and storage procedures. The students should gain an understanding of beverage control and how it is used in all types of operations. The course will also cover in-depth study of

spirits, internal control systems and local/state alcoholic beverage control laws. 3 hrs./wk.

### HMGT 281

**Culinary Arts Practicum I** (2 CR)

*Prerequisite: Acceptance into the American Culinary Federation Chef Apprenticeship training program and hospitality management assistant dean's approval*

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $300.

### HMGT 282

**Culinary Arts Practicum II** (2 CR)

*Prerequisite: HMGT 281*

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation. This course is a continuation of Culinary Arts Practicum I.

### HMGT 285

**Culinary Arts Practicum III** (2 CR)

*Prerequisite: HMGT 282*

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation. This course is a continuation of Culinary Arts Practicum II.

### HMGT 286

**Culinary Arts Practicum IV** (2 CR)

*Prerequisite: HMGT 285*

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation. This course is a continuation of Culinary Arts Practicum III.

### HMGT 287

**Culinary Arts Practicum V** (2 CR)

*Prerequisite: HMGT 286*

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation. This course is a continuation of Culinary Arts Practicum IV.

### HMGT 288

**Culinary Arts Practicum VI** (2 CR)

*Prerequisites: HMGT 287 and assistant dean's approval and approval of hospitality management assistant dean*

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of

this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation. This course is a continuation of Culinary Arts Practicum V.

# Hospitality Mgt Pastry Baking (HMPB)

### HMPB 155

**Pastry Shop Production I** (4 CR)

*Prerequisites: HMGT 120 and HMGT 123 Corequisites: HMPB 160 and HMPB 233 and HMPB 252*

This course will provide hands-on instruction of techniques used to make basic pastry shop staples used in the production of items intended for retails sales in a professional pastry shop. This course is typically offered in the fall semester. 1 hr. lecture & 4 hrs. lab/wk.

### HMPB 160

**Pastry Shop Principles I** (4 CR)

*Prerequisites: HMGT 120 and HMGT 123 Corequisites: HMPB 155 and HMPB 233 and HMPB 252*

This course will examine the fundamental baking concepts including sanitation, ingredient identification and usage, weights and measures, inventory and product ordering needed as it pertains to a professional pastry shop. Students will be operating a working bake shop. This course is typically offered in the fall semester. 1 hr. lecture 3 hrs. lab/wk.

### HMPB 233

**Patisserie** (4 CR)

*Prerequisites: HMGT 120 and HMGT 123 Corequisites: HMPB 155 and HMPB 160 and HMPB 252*

This course will provide hands-on instruction of techniques to make finished pastry items such as tortes, tarts, pastries, cookies, candies and breads as well as how to present items in a professional manner. This course is typically offered in the fall semester. 1 hr. lecture 3 hrs. lab/wk.

### HMPB 252

**Pastry Shop Business Basics I** (3 CR)

*Prerequisites: HMGT 120 and HMGT 123 Corequisites: HMPB 155 and HMPB 160 and HMPB 233*

This course will provide basic hands-on techniques used to market finished pastry items, customer service, setting up, restocking and maintaining a display case, as well as taking pastry orders. This course is typically offered in the fall semester. 1 hr. lecture 3 hrs. lab/wk.

### HMPB 255

**Pastry Shop Production II** (4 CR)

*Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and HMPB 252 Corequisites: HMPB 260 and HMPB 257 and HMPB 252*

This course will provide hand-on instruction of advanced techniques used to make advanced staples used in the production of advanced pastries, cakes, tarts, and tortes intended for retail sales in a professional pastry shop. This course is typically offered in the spring semester. 1 hr lect. 3 hrs lab./wk.

### HMPB 257

**Sugar Basics** (4 CR)

*Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and HMPB 252*

*Corequisites: HMPB 255 and HMPB 260 and HMPB 262*

This course will provide hands-on instruction of pulled and brown sugar techniques used for garnishing advanced pastry items. The student will learn how to cook, pull, blow and store sugar pieces used in a professional pastry shop. This course is typically offered in the spring semester. 3 hrs. lab and 1 hr. lab/wk.

### HMPB 260

**Pastry Shop Principles II** (4 CR)

*Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and HMPB 252 Corequisites: HMPB 255 and HMPB 257 and HMPB 262*

This course will examine the advanced baking concepts including high dollar ingredient identification and usage, storage, advanced inventory control, costing and product sources and product availability as it pertains to a professional pastry shop. This course is typically offered in the spring semester. 1 hr. lecture, 3 hrs. lab/wk.

### HMPB 262

**Pastry Shop Business Basics II** (3 CR)

*Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and HMPB 252 Corequisites: HMPB 255 and HMPB 260 and HMPB 257*

This course will provide advanced hands-on techniques used to market finished pastry items, execute excellent customer service, establishing operational guidelines, inventory and restocking, product ordering, product research, maintaining a display case, as well as taking pastry orders. This course is typically offered in the spring semester. 1 hr. lecture 2 hrs. lab/wk.

# Humanities (HUM)

### HUM 122

**Introduction to Humanities** (3 CR)

This interdisciplinary study begins with a look at artistic and technical elements of several art forms, including painting, sculpture, architecture, music, theater, film, dance and literature. Major themes expressed in the works and their reflection of the values of their culture are also examined.

### HUM 137

**Introduction to Russian Culture** (3 CR)

This course is a survey of the cultural history of Russia from the ninth century to the present. The approach is 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. When paired with Introduction to Literature, Russian emphasis, it includes an online component. Usually this course is offered in the spring semester. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

### HUM 138

**Introduction to Russian Culture, Field Study** (1 CR)

*Prerequisite: HUM 137 or approval of instructor*

This course is the field study portion of the HUM 137, Introduction to Russia, course. Students study, on site, selected works of art, architecture, music, literature, theater and film for the various historical periods from the perspective of Russian experts in these fields. In addition, students enhance their knowledge of Russian history by visiting the sites of many of the major events that have shaped the development of Russia's culture. 2 hrs. lab/wk.

**HUM 145**

**Introduction to World Humanities I** (3 CR)

This course will acquaint students with the arts and ideas of the world's major civilizations, from antiquity through 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, methodologies 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** (3 CR)

This course will acquaint students with the arts and ideas of the world's major civilizations, from the Renaissance to the present. The approach will be both interdisciplinary and chronological, covering the artistic values embodied in painting, sculpture, architecture, literature, theater, music and dance as they have emerged out of their historical contexts. In addition to providing the fundamental principles, methodologies and theories used in the study of the humanities, the course aims to enhance students' understanding of the contemporary world. 3 hrs. lecture/wk.

**HUM 150**

**Islam: Religion & Civilization** (3 CR)

This course covers the context in which Islam arose; the career of the Prophet Muhammad; the main teachings and practices of the religion; the Qur'an and other early Islamic literature; subsequent political developments in the religion and its spread; its main religious branches; its history during the Middle Ages; the Christian crusades and their consequences; the major components of Islamic civilization including law, the arts, literature, philosophy, science, and mathematics; Sufi; the effects of Western imperialism upon Islamic states; major developments in Islamic thought and practice since the seventeenth century; the Islamic diaspora; and Islam today. HUM 150 is the same course as HIST 150 and REL 150; enroll in one only. 3 hrs. lecture/wk.

**HUM 155**

**Classical Mythology** (3 CR)

This course provides a systematic study of the myths and epic cycles of the Greeks and Romans in both literature and art and investigates their survival and metamorphosis in the literature and visual arts of Western Europe. In addition, this course provides several methodological frameworks with which to analyze several types of tales and their relation to history, religion, rituals and art.

**HUM 164**

**Civilization** (3 CR)

This course covers the major ideas and events of Western civilization communicated through the arts. The course begins after the fall of the Roman Empire and includes material to the 20th century.

# Industrial Technology (INDT)

**INDT 125**

**Industrial Safety** (3 CR)

Upon successful completion of this course, the student should be able to identify various industrial safety and health considerations, list basic safety rules and regulations, identify the proper personal protective equipment needed for common industrial tasks and recognize the need for an ongoing safety program. 3 hr. lecture/wk.

**INDT 140**

**Quality Improvement Using SPC** (2 CR)

Upon successful completion of this course, the student should be able to describe and apply basic concepts of quality improvement. This course will examine the application of the "Transformation of America" concept to American businesses. Statistical process control will be introduced as a tool to improve quality. W. Edwards Deming's 14 points and the management changes required to implement quality improvement also will be covered. 2 hrs. lecture/wk.

**INDT 155**

**Workplace Skills** (1 CR)

Upon successful completion of this course, the student should be able to identify the job skills necessary to have a successful career in the field of his or her choosing. Topics include listening skills, oral communication, human relations, decision making/problem solving, how to work as a team, time and resource management, work ethics and career planning. 1 hr. lecture/wk.

# Information Technology (IT)

**IT 200**

**Networking Technologies** (3 CR)

This course is designed to provide students with the fundamentals of networking technology. Concepts covered include network terminology and protocols, network standards, LANs and WANs, the layers of the OSI reference model, cabling practices, network topologies, and IP addressing.

**IT 203**

**Voice over IP Fundamentals** (4 CR)

*Prerequisite: IT 200*

This course is designed to provide students with the fundamentals of Voice over IP (VoIP) networking technology. Concepts covered include an explanation of the national voice and data network, telephony terminology, VoIP protocol analysis and telephony survey techniques. 3 hrs. lecture, 2 hrs. lab/wk.

**IT 205**

**Implementing Windows Client** (3 CR)

The focus of this course is the use of Microsoft Windows as an operating system in a business environment. Planning a simple network system, installation and configuration of the software and hardware, resource management, connectivity, running application software under Windows, monitoring and optimizing system hardware, and troubleshooting all lead the student to a deeper understanding of local area network use and administration. 2 hrs. lecture, 3 hrs. lab/wk.

**IT 221**

**Windows Server** (3 CR)

*Prerequisites: IT 200 and ELEC 126 and IT 205*

This course is designed to provide students with the knowledge and skills to perform competently in the role of a network administrator utilizing the Windows network operating system. Students completing this course will be able to accomplish basic fundamental network management tasks, including planning server roles and subsequent requirements, planning the network file system, implementing user accounts and file system security, implementing network printing, and managing the network servers. 2 hrs. lecture, 3 hrs. lab/wk.

## IT 225

**Windows Active Directory Services** (3 CR)

*Prerequisite: IT 221*

The focus of this course is using Microsoft Windows Server or Advanced Server software to install, configure and troubleshoot Active Directory components, Domain Name Space (DNS) for Active Directory and Active Directory security solutions. The course also emphasizes the skills required to manage, monitor and optimize the desktop environment using Group Policy. 2 hrs. lecture, 3 hrs. lab/wk.

## IT 227

**SQL Server Administration** (3 CR)

*Prerequisite: IT 221*

Upon successful completion of this course, the student should be able to administer an SQL server installation. Topics covered include installing, upgrading and configuring SQL servers using SQL utilities; working with databases and users; backing up and restoring databases and log files; automating maintenance tasks; managing, copying and moving data; replicating; tuning; and troubleshooting. 2 hrs. lecture, 3 hrs. lab/wk.

## IT 228

**Exchange Server** (3 CR)

*Prerequisite: IT 225*

This course is designed to provide network administrators with information that enhances their ability to manage an Exchange server network. Included are topics related to server and client mail management and server performance, e-mail concepts and advanced Internet networking. 3 hrs. lecture, 2 hrs. lab/wk.

## IT 230

**UNIX Fundamentals** (3 CR)

This course is designed to provide students with a fundamental understanding of the UNIX operating system environment. Students successfully completing this course will be able to execute common Unix commands and utilities; and accomplish basic system tasks such as navigating the file system, applying file system security, managing user accounts, installing and configuring user software, using the printing environment, and managing the resources of a basic Unix system. 2 hrs. lecture, 3 hrs. lab/wk.

## IT 231

**UNIX Administration** (3 CR)

*Prerequisite: IT 230*

This course is designed to provide students with the necessary knowledge and skills to perform competently as a Unix system administrator. Students successfully completing this course should be able to perform basic system administration tasks including installing, configuring and troubleshooting a basic Unix system, managing devices, implementing the printing environment, creating and maintaining file systems, installing packages, and configuring the graphical user interface. 2 hrs. lecture, 3 hrs. lab/wk.

## IT 232

**UNIX Networking and Security** (4 CR)

*Prerequisite: IT 231*

This course is designed to provide network administrators with information that enhances their ability to manage a Unix network in the enterprise. Included are topics that are related to Unix management of DNS, DHCP, NFS, and Samba. 3 hrs. lecture, 2 hr. lab/wk.

## IT 245

**Network Infrastructure** (3 CR)

*Prerequisite: IT 221*

This course is designed to provide an in-depth understanding of the ability to install, manage, monitor, configure and troubleshoot DNS, DHCP, Remote Access, Network Protocols, IP Routing and WINS in a Windows 2000 network infrastructure. In addition, it will provide an in-depth understanding of the ability to manage, monitor and troubleshoot Network Address Translation and Certificate Services. Laboratory exercises will accompany the lectures. 2 hrs. lecture, 3 hrs. lab/wk.

## IT 246

**Introduction to Routers** (3 CR)

*Prerequisite: IT 200*

This course is designed to provide students a fundamental understanding of network routing and the operation of routers. Topics include installing and configuring routers, OPSF and Link State routing protocols, working with metrics and route selection, and TCP/IP configuration. Programming and setup using Cisco routers will be conducted. Laboratory exercises will accompany lectures. 2 hrs. lecture, 3 hrs. lab/wk.

## IT 247

**Introduction to Wide-Area Networks** (3 CR)

*Prerequisite: IT 246*

This course is designed to provide students a fundamental understanding of internetworking. Topics include local area network segmentation using switches and routers. Wide area network physical technologies will be studied. Configuring WAN protocols using PPP, ISDN and Frame Relay will be presented. Securing the network with standard and extended access lists will be performed. IP and IPX routing will be covered. Programming and configuration will be conducted using Cisco routers and switches. Laboratory exercises will accompany lectures. 2 hrs. lecture, 3 hrs. lab/wk.

## IT 249

**Advanced Routing** (3 CR)

*Prerequisite: IT 247*

This course provides advanced instruction of Cisco routers found in medium to large networks. It is intended for students preparing for advanced Cisco certification. Upon completion of this course, the student will be able to select and implement the appropriate Cisco services required to build a scalable router network. Topics covered include extending IP addressing, implementing OSPF for a single area and multiple areas, configuring EIGRP, and implementing BGP. This course will follow semester five in the Cisco Networking Academy curriculum.

## IT 250

**Networking Seminar** (3 CR)

*Prerequisite: IT 225 and IT 247*

This course is designed to teach advanced concepts in information technology. Topics covered are section specific and include e-mail servers, Web servers, database servers, routing, switching and advanced LAN design concepts. Prerequisites are posted for each section. Students may use this course as a capstone for applying concepts and procedures developed in previous courses using realistic business scenarios. 2 hrs. lecture, 3 hrs. lab/wk.

## IT 251

**Network Security Fundamentals** (4 CR)

*Prerequisite: IT 247*

This course is designed to provide students with a fundamental understanding of network security principles and implementation. Topics covered include authentication, the types of attacks and malicious code that may be used against computer networks, the threats and countermeasures for e-mail, Web

applications, remote access, and file and print services. A variety of security topologies will be discussed as well as technologies and concepts used for providing secure communication channels, secure internetworking devices, intrusion detection systems, and firewalls. Hands-on exercises will be used to reinforce the concepts. 3 hrs. lecture, 2 hrs. lab/wk.

### IT 252

**Firewall Security** (4 CR)

*Prerequisite: IT 247*

This course is designed to teach students how to protect local area networks (LANs) using firewall security devices. It focuses on the overall security process based on a security policy with an emphasis on hands-on skills. It covers the basic functionality of the Cisco Private Internet Exchange (PIX) product family. Students will learn specific PIX configurations and settings designed to maximize security. This course is also intended to prepare students to pass the Cisco Secure PIX Firewall Certification exam. 3 hrs. lecture, 2 hrs. lab/wk.

### IT 253

**Advanced Switching** (3 CR)

*Prerequisite: IT 247*

This course provides advanced instruction of Cisco switches found in medium to large networks. It introduces students to the deployment of the state-of-the art campus Local Area Networks (LAN). The course focuses on the selection and implementation of the appropriate Cisco Internetworking Operating System (IOS) services to build reliable scalable multilayer-switches LANs. Students will develop skills with Virtual LANs (VLAN), Virtual Trunking Protocol (VTP), Spanning Tree Protocol (STP), inter-VLAN routing, redundancy, Quality of Service (QoS) issues, campus LAN security, and transparent LAN services.

### IT 254

**Remote Access Networks** (3 CR)

*Prerequisite: IT 247*

This is an advanced course that covers the techniques and features for enabling or enhancing Wide Area Network (WAN) and remote access solutions. It focuses on using one or more of the available WAN dialup or permanent connection technologies for remote access between enterprise sites. This course includes asynchronous modem connections, Point-to-Point Protocol (PPP) features, and network security using Virtual Private Networks (VPNs). Students will apply common remote access solutions including ISDN Basic Rate Interface and Primary Rate Interface (BRI and PRI), Dial-On-Demand Routing (DDR), Frame Relay, dial backup, Quality of Service (QOS), and Authentication Authorization Accounting (AAA). 3 hrs. lecture, 2 hrs. lab/wk.

### IT 255

**Wireless Security** (4 CR)

*Prerequisite: IT 247*

This course is designed to teach the student how to build, maintain and configure security on a Wireless Local Area Network (WLAN). It provides the student with hands-on projects to reinforce WLAN concepts from LAN cabling and other information technology and electronics courses. Upon completion of this course, students should be able to design, document and troubleshoot the security plan and operation of a WLAN. This course is also intended to prepare the student to pass the Cisco Wireless LAN Certification exam. 3 hrs. lecture, 2 hrs. lab/wk.

### IT 271

**Information Technology Internship I** (3 CR)

*Prerequisites: IT 210 or IT 221 or IT 230 and approval of the assistant dean*

This course affords the student the opportunity to apply classroom knowledge

to an actual work environment. It will provide advanced information technology students with appropriate on-the-job experience with area employers, under instructional oversight, which will promote the student's career goals. Student will work a total of 300 hours a semester at an approved job site.

### IT 272

**Information Technology Internship II** (3 CR)

*Prerequisites: IT 271 and approval of the assistant dean*

This course is a continuation of IT 271, Internship I. It provides the student additional opportunity to apply classroom knowledge to an actual work environment. Students will work a total of 300 hours per semester at an approved job site.

## Interactive Media (CIM)

### CIM 130

**Interactive Media Concepts** (2 CR)

This survey course introduces students to the interactive media field. Topics to be covered include the definition of interactive media, the basic stages of interactive media creation and project management fundamentals. Current and future trends in interactive media will also be covered. 2 hrs. lecture/wk.

### CIM 133

**Screen Design** (4 CR)

*Prerequisite: CDTP 135*

This course will cover fundamental visual principles and the creation of graphic elements, as well as the layout of those visual elements, for the computer screen. Visual perception, composition, color and typographic principles will be covered as applicable to presentation graphics, Web graphics, CD-ROM and kiosk graphics. Cross-platform issues will be addressed. This course is intended to provide nondesigners with fundamental visual literacy. 3 hrs. lecture, 2 hrs. lab/wk.

### CIM 135

**Digital Imaging and Video** (3 CR)

*Prerequisite: CDTP 135 Recommended: PHOT 121*

This course provides an introduction to electronically mediated photography, including digital video. The course covers basic concepts of photographic communication and design. The course covers basic techniques of electronic photography, including operation of input devices, two-dimensional and time-based computer imaging and digital video production software programs and output devices. Recommended prior courses are Fundamentals of Photography and Introduction to Photoshop. 6 hrs. integrated lecture, studio/wk.

### CIM 140

**Interactive Media Assets** (4 CR)

*Prerequisites: CDTP 135 and CDTP 145 and CWEB 105 and CWEB 130 Prerequisite or corequisite: CIM 130*

This course explores the creation, acquisition and management of assets for use in the development of interactive media. Assets to be covered include digital graphics, digital sound, digital video and computer-based animation. 3 hrs. lecture, 2 hrs. lab/wk.

### CIM 154

**Interactive Authoring I: Director** (4 CR)

*Prerequisite: CIM 130 and Prerequisite or corequisite: 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 that includes text, graphics, sound, movies and animation. The student should have the skills needed to create both a linear presentation and an interactive presentation. Navigational strategies for CD-ROM and Internet will be discussed. 3 hrs. lecture, 2 hrs. lab/wk.

## CIM 156

**Interactive Authoring I: Web** (4 CR)

*Prerequisite: CIM 130 Prerequisite or corequisite: CIM 140*

This course will focus on the front-end aspects of Web design, HTML, authoring, graphics production and media development. The course will introduce concepts about the way the World Wide Web works, which will orient students to the peculiarities of the Web and introduce them to new technologies that are destined to have an important effect on the Web's future but are currently in various stages of development. Students will examine specifications for each project, carefully analyze individual sites and, as a class, establish a set of criteria that define what works, what doesn't and why. 3 hrs. lecture, 2 hrs. lab/wk.

## CIM 200

**Interactive Communication Form** (3 CR)

*Prerequisite or corequisite: CIM 130*

This course will focus on concepts and forms of human communication historically, currently and in the future of our culture. Immediated and mediated forms of communication, such as lecture, telephony, television, print and computer interaction, will be explored. Particular attention will be given to how communication forms affect 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** (4 CR)

*Prerequisite: CIM 154 or CIM 156 and Corequisite: CIM 250*

The course will provide a conceptual as well as a hands-on exploration of the development process for interactive media. Information design, interaction design and presentation design will be equally emphasized. Students 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. This course is taught in the fall semester.

## CIM 235

**Advanced Digital Video** (3 CR)

*Prerequisite: CIM 135*

This course provides advanced instruction in the production and applications of digital video. The course covers advanced concepts and techniques in video design and production, from the initial preproduction scripts and storyboards through actual shooting to nonlinear editing, mastering and output. The emphasis is on in-depth, advanced, practical experience in producing professional-level video products for a variety of applications, including education, corporate, documentary and entertainment. 6 hrs. integrated lecture studio/wk.

## CIM 250

**Interface Design** (4 CR)

*Prerequisite: CIM 154 or CIM 156 Corequisite: CIM 230*

This course will specifically focus on the issues and complexity of interface design for interactive media applications. Students are provided an in-depth study of 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. This course is taught in the fall semester.

## CIM 254

**Interactive Authoring II: Director** (4 CR)

*Prerequisite: CIM 154*

At completion of this course, the student should be able to create Director applications using Director's scripting language and the Internet capabilities of Macromedia Director. The primary emphasis of the course is hands-on experience with the Lingo, Behaviors, Shockwave and scripts of Director. During the course, students will be involved in learning advanced Lingo. 3 hrs. lecture, 2 hrs. lab/wk.

## CIM 270

**Interactive Media Project** (4 CR)

*Prerequisites or corequisites: CIM 200 and CIM 230 and CIM 250*

This project-oriented course will require students to actively participate in a group interactive media project, which will require each student to analyze the problem; write a project proposal; design, produce and gather assets for the project; prototype and create a project; and test and evaluate the final project. 3 hrs. lecture, 2 hrs. lab/wk. This course is taught in the spring semester.

## CIM 272

**Interactive Media Internship** (1 CR)

*Prerequisite: facilitator approval required*

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 interactive media program. Student interns will be required to complete a minimum of 180 hours of on-the-job training. ANI 272 and CIM 272 are the same course; do not enroll in both.

## CIM 273

**Career Preparation** (4 CR)

*Prerequisites: CIM 230 and CIM 250 and Prerequisite or corequisite: CIM 270*

This course will provide interactive media majors instruction in the presentation of his or her work in a digital portfolio format of professional quality. A printed and written resume will be produced. Self-promotion, networking, job searches and interview skills will also be covered. 3 hrs. lecture, 2 hrs. lab/wk. CIM 273 is the same course as ANI 273; do not enroll in both. This course is taught in the spring semester.

# Interior Design (ITMD)

## ITMD 121

**Interior Design/Tech Prep** (3 CR)

This course provides basic, introductory knowledge about interior design. Upon successful completion of this course, the student should understand the significance of interior design, complete projects using the elements and principles of design and color theory in interior spaces, use space planning skills to arrange furniture on a floor plan, and present the floor plan and its decorative scheme. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $75 to $100.

**ITMD 123**

**Space Planning** (3 CR)

*Prerequisites: ITMD 121 with "C" or higher and DRAF 164 with a grade of "C" or higher or DRAF 261 with "C" or higher*

This is an advanced course focusing on space planning. Upon successful completion of this course, the student should be able to demonstrate an advanced level of furniture arrangement on a floor plan. 4 hrs. integrated lecture and lab/wk. Note: the prerequisites ITMD 121 and either DRAF 164 or DRAF 261 all require a grade of "C" or higher.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50.

**ITMD 125**

**Interior Textiles** (3 CR)

This course is a comprehensive study of textiles used in interior design. Upon successful completion of this course, the student should be able to differentiate fibers and textiles according to their specific characteristics and to select fibers and interior textiles for specific applications. Specific course content includes properties and characteristics of natural and man-made fibers; construction methods; and various finishing processes, such as weaving, knitting, felting, printing and dyeing. The course will concentrate on textiles designed for interior applications. 2 hrs. lecture, 2 hrs. lab/wk

**ITMD 127**

**Elements of Floral Design** (1 CR)

This course provides in-depth knowledge and hands-on application of floral design. Upon successful completion of this course, the student should be able to use the principles of floral design, develop a proficiency in the techniques of line and mass arrangements, possess a greater appreciation for flowers and other plant material, apply the mechanics and design considerations involved in working with silk and dried materials, and design and create silk and dried floral arrangements. 1.5 hrs. integrated lecture, lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $150.

**ITMD 129**

**Design Presentation** (3 CR)

*Prerequisites: ITMD 121 with a grade of "C" or higher and DRAF 164 with a grade of "C" or higher or DRAF 261 with a grade of "C" or higher*

This is an intermediate course focusing on interior design presentation skills. Upon successful completion of this course, the student should be able to demonstrate visual communication skills including isometric, axonometric, oblique and perspective drawings as well as the use of rendering techniques and color to enhance drawings. Additionally the student should be able to organize, mount and verbally present storyboards to communicate the design concept. 2 hrs. lecture, 2 hrs. lab/wk. NOTE: The prerequisite of ITMD 121 and either DRAF 164 or DRAF 261 require a grade of "C" or higher.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $75 to $100.

**ITMD 132**

**Materials and Resources** (3 CR)

This course provides in-depth knowledge about materials used in interior spaces. Upon successful completion of this course, the student should be able to evaluate the quality of interior materials; demonstrate the ability to use catalogs and other product information resources; identify manufacturing and/or construction techniques used in products; use correct terminology to describe the various types of interior materials; and compare the design, use, durability and cost of materials. 3 hrs./wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM

details.

**ITMD 133**

**Furniture & Ornamentation/Antiquity to Renaissance** (3 CR)

This course provides in-depth knowledge in the study of Western furniture and ornament. Upon successful completion of this course, the student should be able to analyze and compare the 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 correctly use vocabulary related to each era. 3hrs./wk.

**ITMD 140**

**Window Treatments** (1 CR)

*Prerequisites: ITMD 121 and ITMD 125 both with a grade of "C" or higher and Prerequisite or Corequisite: ITMD 271 or ITMD 275 both with a grade of "C" or higher*

This course provides comprehensive knowledge about draperies and window treatments and their construction. Upon successful completion of this course, the student should demonstrate the use of correct vocabulary relating to drapery and window treatments, explain the equipment used in the drapery industry, distinguish appropriate textiles and hardware for specific window treatments, measure for window treatments, and describe and select the proper suspension system for specific window treatments. The student will measure, select and present the proper style, fabric and suspension system for a specific window treatment. 1 hr./wk. NOTE: The prerequisites of ITMD 121 and ITMD 125 both require a grade of "C" or higher and Prerequisites or Corequisites ITMD 271 or ITMD 275 both require a grade of "C" or higher.

**ITMD 143**

**Accessory Fundamentals** (1 CR)

*Prerequisite: ITMD 121 with a grade of "C" or higher*

This course provides in-depth knowledge about accessories and accessory placement. Upon successful completion of this course, the student should be able to identify the various principles and elements of design as they relate to accessories. Students should be able to identify and explain the difference between functional and decorative accessories. Additionally, the student should demonstrate an understanding of the quality of different types accessories, how to identify the client's personal style, and how to successfully place different types of accessories. 1 hr. lecture/wk. NOTE: The prerequisite of ITMD 121 requires a grade of "C" or higher.

**ITMD 145**

**Upholstered Furniture** (1 CR)

*Prerequisites: ITMD 121 and ITMD 125 both with a grade of "C" or higher and Prerequisite or corequisite: ITMD 271 or ITMD 275 both with a grade of "C" or higher*

This course provides comprehensive knowledge about upholstery construction. Upon successful completion of this course, the student should be able to demonstrate the use of correct vocabulary relating to upholstery construction, explain the equipment used in the upholstery industry, identify appropriate textiles and materials for upholstery use, and describe the various suspension systems used in bench-constructed and mass-produced furniture. 1 hr./wk. NOTE: The prerequisites of ITMD 121 and ITMD 125 both require a grade of "C" or higher and Prerequisites and Corequisites ITMD 271 or ITMD 275 both require a grade of "C" or higher.

**ITMD 147**

**Lighting Basics** (1 CR)

*Prerequisite: ITMD 121 with a grade of "C" or higher or FASH 125*

This course provides general knowledge about lighting design and planning. Upon successful completion of this course, the student should be able to define and use vocabulary relating to lighting design and planning. The student should be able to recognize and explain lighting application and technology used in the lighting industry. 1 hr. lecture/wk. NOTE: The prerequisites are FASH 125 and ITMD 121 which requires a grade of "C" or higher.

### ITMD 148

**History of Asian Furniture and Design** (2 CR)

*Prequisite: Program Facilitator Approval*

This course provides in-depth knowledge in the study of Asian furniture and ornament. Upon successful completion of this course, the student will be able to analyze and compare furniture, ornamentation, design motifs and textiles of the Near East and Far East during historical periods from antiquity to modern times. The student should be able to identify the religious, political and social influences on the ornamentation and furnishings of each period. In addition, the student should be able to identify the craftsmanship and materials used in the furniture of each historical period and to demonstrate the use of correct vocabulary related to each era. 2 hrs./wk.

### ITMD 149

**Casegoods** (1 CR)

*Prerequisite: ITMD 121 with a grade of "C" or higher*

Upon successful completion of this course the student should be able to understand various construction techniques, describe different wood species and their properties, and explain the best functional and decorative uses for each wood species. The student will apply principles and elements of design when selecting casegoods, describe care and repair of casegoods, and understand current trends in the casegood industry. 1 hr. lecture/wk. NOTE: The prerequisite ITMD 121 requires a grade of "C" or higher.

### ITMD 150

**Asian Rugs and Carpets** (1 CR)

This course provides in-depth knowledge in the study of Asian carpets and rugs. Upon successful completion of this course, the students will be able to analyze and compare materials, ornamentation, design motifs and textiles of the Near East and Far East during historical periods from antiquity to modern times. The student should be able to identify the religious, political and social influences on the ornamentation and furnishings. In addition, the student should be able to demonstrate the use of correct vocabulary. 1 hr./wk.

### ITMD 175

**Advanced Floral Design** (1 CR)

*Prerequisite: ITMD 127*

This course is a continuation of Elements of Floral Design and provides the student with a more comprehensive application of floral design for home interiors. Upon successful completion of this course, the student will be able to determine the appropriate floral design for an existing home, design a variety of florals for specific placement, work with other students on a specific project and learn how to buy and price interior floral designs. 1 hr. lecture, 1.5 hrs. lab/wk.

### ITMD 180

**Leadership in Design** (1 CR)

*Prerequisite: ITMD 123 with a grade of "C" or higher*

Upon successful completion of this course, the student should be able to identify leadership skills necessary to have successful involvement in the field of interior design and professional organizations. Topics include group communication methods, time management, team-building skills, and organizing and facilitating meetings. Students desiring leadership opportunities in professional organizations are encouraged to enroll. 1 hr. lecture/wk. NOTE: The prerequisite of ITMD 123 requires a grade of "C" or

higher.

### ITMD 189

**Sustaining Design** (1 CR)

Upon successful completion of this course the student should be able to understand and explain the concepts, terminology and global issues of the various ecological approaches to design and of the impact of design on the environment. The student will have an understanding of the cradle-to-cradle paradigm. Students will learn to identify the impact their selections will have on the environment and to consider ecological options when specifying products. 1 hr. lecture/wk.

### ITMD 213

**Lighting Design and Planning** (3 CR)

*Prerequisite: ITMD 121 with grade of "C" or higher or FASH 125*

This course provides in-depth knowledge about lighting design and planning giving the student the ability to not only understand but to manipulate and create the lighting plan. Upon successful completion of this course, the student should be able to define and use vocabulary relating to lighting design and planning and to recognize and explain lighting application and technology used in the lighting industry. Additionally, the student should be able to identify and describe proper fixtures and equipment for lighting applications and demonstrate skills in selecting proper lighting designs for specific applications. 3 hrs. lecture/wk. NOTE: The prerequisite of ITMD 121 requires a grade of "C" or higher or FASH 125.

### ITMD 219

**Issues in Interior Design** (3 CR)

*Prerequisite: ITMD 221 with a grade of "C" or higher*

This course is designed to educate the student on the current issues that affect the interior design profession such as environmental design, green/sustainable design and Universal Design. These topics may vary based on current industry concerns. Upon successful completion of this course, the student should be able to identify, explain and analyze ramifications to the industry that arise from the economy, politics and social culture. 3 hrs. lecture/wk. NOTE: The prerequisite of ITMD 221 requires a grade of "C" or higher.

### ITMD 221

**Residential Design** (3 CR)

*Prerequisites: DRAF 264 with a grade of "C" or higher and ITMD 123 with a grade of "C" or higher and ITMD 129 with a grade of "C" or higher or ITMD 122 with a grade of "C" or higher*

This is an advanced course focusing on residential design. Upon successful completion of this course, the student should be able to demonstrate an advanced level of space planning and furniture arrangement on a floor plan. In addition, the student will develop color schemes that will solve specific assigned interior design problems and demonstrate the ability to coordinate fabrics, colors, texture, patterns and finishes in a complete floor plan for a residential unit. The student will produce floor plans and additional views enhanced by color and shadow. 2 hrs. lecture, 3 hrs. lab/wk. NOTE: The prerequisites of DRAF 264 and ITMD 123 and either ITMD 129 or ITMD 122 all require a grade of "C" or higher.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50.

### ITMD 223

**Commercial Design** (3 CR)

*Prerequisite: DRAF 264 with a grade of "C" or higher*

This is an advanced course focusing on contract design. Upon successful completion of this course, the student will be able to define and use vocabulary related to contract design, identify and use proper architectural symbols

common to contract floor plans and elevations, and explain the differences between residential and contract design. Additionally, the student should be able to demonstrate the skills necessary to convert, redesign and create contract design space; explain the concept of open office planning; and compare and analyze the costs and benefits of open planning versus closed planning. 2 hr. lecture, 3 hrs. lab/wk. NOTE: The prerequisite of DRAF 264 requires a grade of "C" or higher.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50.

## ITMD 225

**Interior Textiles II** (3 CR)

*Prerequisite: ITMD 125 with a grade of "C" or higher*

This course is an advanced study of textiles used in interior design. Upon successful completion of this course, the student should be able to differentiate fibers and textiles according to their specific characteristics and to select fibers and interior textiles for specific applications. The course concentrates on textiles designed for residential and contract applications. 2 hrs. lecture 2 hrs. lab/wk. NOTE: The prerequisite of ITMD 125 requires a grade of "C" or higher.

## ITMD 231

**Furniture & Ornamentation Renaissance to 20th Century** (3 CR)

This course provides in-depth knowledge in the study of Western furniture and ornament. Upon successful completion of this course, the student should be able to analyze and compare furniture, ornamentation, design motifs and textiles of historical periods from the Renaissance to the 20th century. Additionally, the student should be able to define the social, religious and political influences on the ornamentation and furnishings of each period. The student should also be able to identify the craftsmanship and materials used in the furniture of each historical period and correctly use vocabulary related to each era. 3 hrs./wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## ITMD 234

**Kitchen and Bath: Planning and Design** (3 CR)

*Prerequisites: DRAF 264 with a grade of "C" or higher and either ITMD 122 with a grade of "C" or higher or ITMD 123 with a grade of "C" or higher*

This is a comprehensive course in kitchen and bath design and planning. Upon successful completion of this course, the student should be able to define and use proper vocabulary related to kitchen and bath design and construction, identify and use proper architectural symbols common to kitchen and bath plans and elevations, state the space relationships required for proper kitchen and bath usage, convert to metric measurements, and draw a kitchen and bath floor plan and elevation. 2 hrs. lecture, 1 hr. lab/wk. NOTE: The prerequisite of DRAF 264 and either ITMD 122 or ITMD 123 all require a grade of "C" or higher.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50 to $75.

## ITMD 237

**Capstone: Merchandising and Entrepreneurship** (2 CR)

*Prerequisite: Approval of program facilitator*

This course is designed as a capstone for the Interior Merchandising and Interior Entrepreneurship programs. It should be taken in conjunction with or after completion of the final interiors studio course or in the graduating semester. Upon successful completion of this course, the student should be able to select and rework portfolio materials for maximum visual potential and appeal. In addition, the student will prepare a resume, conduct a job search, and present written and oral presentations based on resource and product files from other classes. 2 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations

that students should expect in addition to the course tuition, fees, and textbooks. $75 to $100.

## ITMD 239

**Capstone: Interior Design** (2 CR)

*Prerequisite: Program Facilitator Approval*

This course is designed as a capstone for the Interior Design Program. It should be taken in conjunction with or after completion of the final interiors studio course or in the graduating semester. Upon successful completion of this course, the student should be able to select and rework portfolio materials for maximum visual potential and appeal. In addition, the student will prepare a resume, conduct a job search, and present written and oral presentations based on resource and product files from other classes. 2 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $75 to $100.

## ITMD 250

**20th Century Designers** (1 CR)

This course provides in-depth knowledge in the study of the 20th-century designers. Upon successful completion of course, the student should be able to analyze and compare furniture, ornamentation, design motifs and textiles of various 20th-century designers. Recognition of periods and individual styles is stressed. The student will have an opportunity to study a specific designer in depth. 1 hr lecture /wk.

## ITMD 271

**Budgeting and Estimating** (3 CR)

*Prerequisites: ITMD 121 with a grade of "C" or higher and ITMD 125 with a grade of "C" or higher and MATH 120 with a grade of "C" or higher*

Upon successful completion of this course, the student should be able to demonstrate a business-like approach toward job and work, explain and list methods of pricing interior design/merchandising materials and services, measure accurately for materials, utilize business math in interior design/merchandising applications, and accurately compute cost in cases. 3 hrs. lecture/wk. NOTE: The prerequisites of ITMD 121 and ITMD 125 and MATH 120 or higher all require a grade of "C" or higher.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20.

## ITMD 273

**Interiors Seminar: Practices and Procedures** (2 CR)

*Prerequisite: ITMD 122 with a grade of "C" or higher or ITMD 123 with a grade of "C" or higher*

Upon successful completion of this course, the student should be able to demonstrate the use of proper interior design industry terminology, appropriate business forms and contracts, define the types of business legal structure, and solve business organizational and ethical problems through use of case studies. 2 hrs./wk. NOTE: The prerequisite of ITMD 122 or ITMD 123 both require a grade of "C" or higher.

## ITMD 282

**Interiors Internship I** (1 CR)

*Prerequisite: ITMD 121 with a grade of C or higher*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the interiors industry. A minimum of 15 hours each week on-the-job training is required. NOTE: The prerequisite of ITMD 121 requires a grade of "C" or higher.

### ITMD 284

**Interiors Internship II** (1 CR)

*Prerequisites: ITMD 121 with a grade of C or higher and ITMD 282 with a grade of C or higher*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the interiors industry. A minimum of 15 hours each week on-the-job training is required. NOTE: The prerequisite of ITMD 121 and ITMD 282 both require a grade of "C" or higher.

### ITMD 295

**Field Study: Design and Merchandising** (3 CR)

*Prerequisites: ITMD 121 and approval of the program facilitator*

This travel-for-credit course consists of visits to manufacturing plants, a market showroom and a merchandise mart in a major market city.

### ITMD 296

**Interior Design: the Orient** (3 CR)

Upon successful completion of this course, the student should be able to recognize and identify Asian furniture pieces and accessories from different countries; define and use vocabulary common to the art periods; and compare and contrast furniture and accessory pieces observed in museums, temples, homes and antique stores. This course will include five 3-hour pre-departure seminars followed by a three-week field trip to Japan, Hong Kong and Thailand.

# Interpreter Training (INTR)

### INTR 122

**Intermediate American Sign Language I** (3 CR)

*Prerequisite: INTR 121 or ASL 121 or FL 181 with a grade of "C" or higher and Corequisite: Students accepted in the interpreter training program must take corequisites of INTR 130 and INTR 126 and (INTR 147 or ASL 145) and (INTR 145 or ASL 145) all with a grade of "C" or higher*

This course will focus on the development of intermediate American Sign Language communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. 6 hrs.lecture-lab/wk. The daytime sections only are open to students in the interpreter training program. INTR 122, FL 270 and ASL 122 are the same courses; only enroll in one.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### INTR 123

**Intermediate American Sign Language II** (3 CR)

*Prerequisite: INTR 122 or ASL 122 or FL 270 with a grade of "C" or higher and Corequisite: For students accepted in the interpreter training program: INTR 131 and INTR 135 and INTR 242 and INTR 248 all with a grade of "C" or higher*

The course will continue study of intermediate American Sign Language. It is designed to develop further intermediate communication skills in American Sign Language. Information about the linguistic and cultural features will be included in the context of language learning experiences. 6 hrs. integrated lecture-lab/ wk. The daytime sections are open only to students in the interpreter training program. INTR 123, FL 271 and ASL 123 are the same courses; only enroll in one.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and

textbooks. $10 to $20.

### INTR 126

**Classifiers in American Sign Language** (2 CR)

*Prerequisites: INTR 121 or ASL 121 with grade of "C" or higher and acceptance in the interpreter training program Corequisites: (INTR 122 or ASL 122) and INTR 130 and (INTR 147 or ASL 147) and (INTR 145 or ASL 145)*

The course will provide an in-depth analysis of classifiers in ASL through discussion and demonstration of the three different categories of classifiers in ASL: representative classifiers (noun and its action), descriptive classifiers (size-and-shape, extent, perimeter, pattern and texture), and instrumental classifiers (manipulative and handle). Students will learn to comprehend and produce classifiers from all three categories.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $400 to $500.

### INTR 130

**Survey of the Interpreting Profession** (3 CR)

*Prerequisites: INTR 121 or FL 181 or ASL 121 with a grade of "C" or higher and acceptance in the interpreter training program Corequisites: (INTR 122 or ASL 122) and INTR 126 and (INTR 147 or ASL 147) and (INTR 145 or ASL 145) all with a grade of "C" or higher*

This course provides an introduction to interpreting as an occupation. Students will come to understand interpersonal communication skills, professional ethics, parameters of responsibilities, community resources and legal ramifications as they relate to the interpreter. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

### INTR 131

**Interpreting Preparation Skills** (2 CR)

*Prerequisites: INTR 130 with a grade of "C" or higher and acceptance into the interpreter training program Corequisites: INTR 123 and INTR 135 and INTR 242 and INTR 248 all with a grade of "C" or higher*

This course provides students with a foundation in the theory of interpretation. Students will explore the Colonomos Model of interpreting and apply this model by first using pre-interpreting skills in isolation. Then students will progress from producing translations to interpreting consecutively. 4 hrs. integrated lecture-lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

### INTR 135

**Intro to American Sign Language Linguistics** (3 CR)

*Prerequisite: INTR 122 or ASL 122 or FL 270 with a grade of "C" or higher Corequisites: for students accepted in the interpreter training program enroll in: INTR 123 and INTR 242 and INTR 131 and INTR 248 all with a grade of "C" or higher*

This course introduces students to the structural and grammatical principles of ASL. Students will explore concepts of equivalency between English and ASL 3 hrs. lecture/wk. The daytime sections are open only to students in the interpreter training program. INTR 135 and ASL 135 are the same course; do not enroll in both.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

## INTR 145

**Introduction to the Deaf Community** (3 CR)

*Prerequisite: Acceptance to interpreter training program and Prerequisite or corequisite: ANTH 125 and SPD 120 for Interpreter Training Program Corequisites for Interpreter Training Prog: INTR 122 and INTR 126 and INTR 130 and INTR 147 all with a grade of "C" or higher Note: Prerequisite or corequisite of INTR 120 or ASL 120 or FL 180 required for students in the American Sign Language Studies Certificate*

This course will prepare students to develop and recognize the diversity within the Deaf Community, significant events and figures in Deaf History, and basic norms and values of Deaf Culture. Students will examine and compare Deaf Culture and hearing culture in America. The daytime sections are open only to students in the interpreter training program. 3 hrs./wk. INTR 145 and ASL 145 are the same course; do not enroll in both.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

## INTR 147

**Fingerspelling I** (2 CR)

*Prerequisite: INTR 121 or FL 181 or ASL 121 with a grade of "C" or higher and Corequisites: For students accepted in the interpreter training program, enroll in: (INTR 122 or ASL 122) and INTR 126 and INTR 130 and (INTR 145 or ASL 145) all with a grade of "C" or higher*

Students will work on developing beginning expressive and receptive fingerspelling skills based on word recognition principles. 1 hr. lecture, 2 hrs. lab/wk. The daytime sections are open only to students in the interpreter training program. INTR 147 and ASL 147 are the same course; do not enroll in both.

## INTR 150

**American Sign Language Literature** (3 CR)

*Prerequisite: INTR 122 with a grade of "C" or higher*

This course will provide introduction, discussion, and demonstration of literature in American Sign Language (ASL). The literature involves ASL Poetry, ASL Storytelling/Narratives, Deaf Humor, Deaf Folklore and other genres that have been passed on from one generation to another by culturally deaf people. Students will receive, analyze and retell a variety of ASL literature. 3 hrs. lecture/wk. INTR 150 and ASL 150 are the same course; do not enroll in both.

## INTR 181

**Interpreting Practicum I** (1 CR)

*Prerequisite: INTR 130 with a grade of "C" or higher Corequisites: (INTR 145 or ASL 145) and INTR 223 and INTR 226 and INTR 250 all with a grade of "C" or higher*

Students will observe skilled interpreters in various interpreting situations in a variety of settings during the semester. 2 hrs. lab, field work/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

## INTR 223

**Advanced American Sign Language** (3 CR)

*Prerequisite: INTR 123 or ASL 123 or FL 271 with a grade of "C" or higher Corequisites: INTR 250 and INTR 226 and INTR 181 all with a grade of "C" or higher*

This course is a continuation of Intermediate American Sign Language II. Students will learn about culturally significant topics related to the Deaf community, more complex ASL grammatical features and conversational skill development. Comprehension skills and linguistic features of ASL will be taught to a variety of contexts in simulated, typical interaction. Students will have opportunities to utilize what they learn about advanced ASL through class activities, dialogues, short stories, general conversations and class discussions. Sign comprehension and production skills will be emphasized. This course meets for six hours of internship/week.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $25.

## INTR 226

**Specialized and Technical Vocabulary** (2 CR)

*Prerequisite: INTR 123 or ASL 123 with a grade of "C" or higher Corequisites: INTR 181 and INTR 250 and INTR 223 all with a grade of "C" or higher*

This course will expand the interpreter training students' vocabulary related to specialized and technical contexts. Students will discuss vocabulary use in a variety of contexts to include socially restricted terms and phrases Deaf people use; colloquialisms; varying registers; terminology in medical, mental health, religion, sex, drugs; and strong language in ASL. Students' development of comprehension and production skills in common formal and informal settings will be emphasized. Students will also discuss Signing Exact English (SEE II) and the differences from American Sign Language (ASL). 3 hrs. integrated lecture-lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

## INTR 242

**Fingerspelling II** (2 CR)

*Prerequisite: INTR 142 with a grade of "C" or higher Corerequisites: INTR 123 and INTR 131 and INTR 135 and INTR 248 all with a grade of "C" or higher*

This course focuses on continued development of expressive and receptive fingerspelling skills based on word and phrase recognition and expression. 1 hr. lecture, 2 hrs. lab/wk.

## INTR 248

**Deaf Community Ethnography** (3 CR)

*Prerequisite: INTR 145 or ASL 145 with a grade of "C" or higher Corequisites: (INTR 123 or ASL 123) and INTR 131 and (INTR 135 or ASL 135) and INTR 242 all with a grade of "C" or higher*

This advanced course will provide students the opportunity to explore power and oppression issues experienced by d/Deaf people. Specific attention will be given to society's views of the d/Deaf community and the influence of various media on these views. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $25.

## INTR 250

**Interpreting I** (6 CR)

*Prerequisite: INTR 131 with a grade of "C" or higher Corequisites: INTR 181 and INTR 223 and INTR 226 all with a grade of "C" or higher*

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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

## INTR 251

**Interpreting II** (2 CR)

*Prerequisite: INTR 250 with a grade of "C" or higher Corequisites: INTR 262 and INTR 282 and AAC 150 all with a grade of "C" or higher*

A description is not available for this course.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

### INTR 262

**Seminar on Interpreting** (3 CR)

*Prerequisite: INTR 250 with a grade of "C" or higher Corequisites: INTR 251 and INTR 282 and AAC 150 all with a grade of "C" or higher*

This course provides students with knowledge of stress management as applied to both the physical demands and mental conditions of sign language interpreting. Students will learn and apply decision-making techniques in regard to the Interpreter (RID) Code of Ethics. Additionally, the course provides students with knowledge of career development theory, career decision-making and the job-search process. 3 hrs. lecture/wk.

### INTR 282

**Interpreting Practicum II** (6 CR)

*Prerequisite: INTR 181 with a grade of "C" or higher Corequisites: INTR 251 and INTR 262 and AAC 150 all with a grade of "C" or higher*

This course provides students with an opportunity to observe and interpret in an off-site setting with the supervision of an experienced interpreter. Students will actively engage in discussions relating to the difficulties and rewards of working in a realistic interpreting environment. The fieldwork totals 270 hours a semester.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $50.

# Journalism/Media Communication (JOUR)

### JOUR 120

**Mass Media and Society** (3 CR)

Via books, newspapers, magazines, recordings, movies, radio, television, new technologies and the related areas of advertising and public relations, each of us is exposed to and affected by the mass media on a daily basis. This course will increase student awareness of the various media and help them understand the influence of the media on their daily activities, beliefs, decisions and goals. As a result, the student will become a more astute critic of the messages delivered by the mass media. 3 hrs./wk.

### JOUR 122

**Reporting for the Media** (3 CR)

Reporting for the Media is structured for students interested in the basics of writing and reporting. Writing for print, broadcast, and online media are included. Information gathering and story writing are conducted under strict deadlines to prepare students for a professional position. Basic news writing and style principles will be gained by writing stories for JCCC student media, including the student newspaper, The Campus Ledger. 3 hrs./wk.

### JOUR 125

**Fundamentals of Advertising** (3 CR)

Fundamentals of Advertising introduces the student to the contemporary advertising process. Research, planning, creativity, production, media placement and sales are discussed, along with individual mediums and their forms, functions and roles in society. Major emphasis is placed on the areas of advertising/marketing research, planning and creativity, including integrated marketing communications. 3 hrs./wk.

### JOUR 127

**Introduction to Broadcasting** (3 CR)

This course serves as a general introduction to students interested in pursuing knowledge of or a career in radio and television broadcasting. The course includes a study of the industry's development, its form and function, job responsibilities, basic production techniques, audience measurement, FCC regulations and ethics. Class time will include discussion of current trends and issues in the field, with students developing an understanding of broadcast media. Productions in the college's audio booth and TV facilities offer an opportunity to experience the field of broadcasting. These experiences will allow students to evaluate broadcasting as a possible career choice. 3 hrs./wk.

### JOUR 130

**Principles of Public Relations** (3 CR)

This course is intended to provide the student with an overview of the history, principles and real-life functions of public relations. Public relations is a rapidly growing field. The ability to work with the public is essential in business, education, health care and numerous other fields. This course is designed to give students the background to develop their PR skills, both verbally and in writing. 3 hrs./wk.

### JOUR 202

**Broadcast Performance** (3 CR)

Students will learn how to improve their speaking voices and body language as well as the techniques necessary to effectively communicate messages through basic announcing skills. Interviewing, radio and television news, and commercial announcing are some of the topics covered in this course, which will allow students to polish their skills through performances in the college's television studio and audio booth. 3 hrs./wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $15.

### JOUR 222

**Advanced Reporting** (3 CR)

*Prerequisite: JOUR 122*

This is an advanced newsgathering and reporting course designed to sharpen the discernment, critical thinking and writing skills of student journalists. Specific English language rules and principles plus AP news writing style will be emphasized in the production of incisive, well-defined news stories, features, profiles, editorials and personal columns. Professional writings in various media will be examined and critiqued, and class members will have the opportunity to participate in hands-on editing and layout. Students will gain additional experience by preparing for and participating in news conferences and events, as well as interacting with area media writers. 3 hrs./wk.

### JOUR 225

**Promotional Writing** (3 CR)

*Prerequisite: JOUR 125 or JOUR 130*

Students will study the elements of layout and copywriting for promotional purposes, with emphasis on advertising, direct mail and public relations writing. 3 hrs./wk.

### JOUR 227

**Basic Video Production** (3 CR)

This course provides students with the fundamentals of video production. The goal is to teach students basic video techniques. Topics covered include technology, lighting, camera operations, audio and editing. Students will gain

hands-on experience in the college's Media Production Services Department. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

### JOUR 242

**Advanced Broadcast Performance: TV** (3 CR)

*Prerequisite: JOUR 202*

Students will produce news, feature, sports, and interview programming for airing on the college's cable station. The development of news packages, event reporting, breaking news, and extended coverage of news events will be included. Learning composure, focus, and detail in a team information-gathering operation will be emphasized. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $15.

### JOUR 247

**Advanced Video Production** (3 CR)

*Prerequisite: JOUR 227*

Students will direct, produce, and edit programming for distribution via the college's media outlets. Students will develop the technical skills involved in both studio production and field production as well as advanced skills in camera operations, multi-camera directing, lighting, audio production, and graphics. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $30.

### JOUR 271

**Journalism Internship** (3 CR)

*Prerequisites: Instructor approval; completion of six credit hours in journalism/media communications at JCCC or another college with a minimum grade of "C" in those 6 hours.*

A journalism/media internship allows students to gain work experience at an approved training center under staff supervision. Emphasis is on learning new skills related to a particular program or department at a media facility. Students may learn the application of writing techniques needed to produce and broadcast news, and produce advertising or public relations promotional copy. On-the-job training involves approximately 15-20 hrs./wk. by arrangement.

# Land Surveying (KSRV)

### KSRV 120

**Introduction to Geographic Information Systems** (3 CR)

Fundamental concepts of Geographic Information Systems (GIS), elements of GIS, analysis of spatial information real-world applications, map creation and analysis. Primary objective is to investigate interactive GIS applications rather than develop expert users. 3 hrs. lecture/wk.

### KSRV 137

**Subdivision Planning and Layout** (3 CR)

*Prerequisites: ENGR 180 MCC's and DRAF 152*

Physical elements of designing land subdivisions including traffic circulation, sewer and drainage systems, soils and earthwork, grading considerations, erosion control, lot and block arrangement, topography and existing land use factors, geometric analysis, laws and codes affecting land subdivisions,

environmental considerations, site analysis procedures. 3 hrs. lecture/wk. Courses taught at MCC-Longview Community College, 500 SW Longview Rd., Lee's Summit, MO. Students should contact the Longview coordinator of land surveying about the class meeting times and beginning and ending dates of classes. Call 816-672-2510.

### KSRV 152

**Engineering Graphics & CADD I** (5 CR)

*Prerequisite: MATH test*

Introduction to engineering communications and basic computer-aided drafting/design (CADD). Emphasis on sketching, orthographic projections, drawing layout, drafting and CADD standards and conventions, dimensioning, sectioning, annotation and basic design principles. Foundation for computer aided drafting/design including file management, basic drawing commands, basic editing commands, layering conventions, blocks, dimensioning, polylines, sectioning, and drawing layout, hatching and plotting. 3 hrs. lecture, 4 hrs lab.

### KSRV 220

**GIS Database and Design** (3 CR)

*Prerequisite: KSRV 120*

Concepts of Geo-database design and management in Geographic Information Systems (GIS), SQL statements, geographic data types and functions, data entry, techniques of geographic information structure and indexing, querying techniques, searches, and spatial analysis, creation and use of metadata real-world applications. 3 hrs. lecture

### KSRV 235

**Advanced Surveying** (3 CR)

*Prerequisite: ENGR 180*

This course is a continuation of surveying skills introduced in ENGR 180 with an emphasis on advanced techniques beyond plane surveying such as geodetic control networks, practical astronomy, state plane coordinates, photogrammetry and the US Public Land Surveys System. 3 hrs. lecture/wk. Course taught at MCC-Longview Community College, 500 SW Longview Rd., Lee's Summit, MO. Students should contact the Longview coordinator of land surveying about the class meeting times and beginning and ending dates of classes. Call 816-672-2510.

### KSRV 236

**Boundary Control & Legal Principles** (3 CR)

*Prerequisite: ENGR 180*

A study of the legal principles of land boundaries, section corners, area; interpretations of land descriptions; identification of land parcels; legal principles of boundary locations; and the United States land survey system. 3 hrs. lecture/wk. Course taught at MCC-Longview Community College, 500 SW Longview Rd., Lee's Summit, MO. Students should contact the Longview coordinator of land surveying about the class meeting times and beginning and ending dates of classes. Call 816-672-2510.

### KSRV 237

**Evidence and Procedures for Boundary Locations** (3 CR)

*Prerequisite: ENGR 180*

A study of the land survey practice of retracement and creation of new parcels as it relates to the lot survey, the sectional survey, and the water boundary survey. Discussion of further standard business practice. 3 hrs. lecture/wk. Course taught at MCC-Longview Community College, 500 SW Longview Rd., Lee's Summit, MO. Students should contact the Longview coordinator of land surveying about the class meeting times and beginning and ending dates of classes. Call 816-672-2510.

**KSRV 244**

**Fundamentals of GPS Surveying** (3 CR)

*Prerequisite: ENGR 180*

The purpose of this course is to introduce the student and practitioner to the modern practices of satellite surveying with an emphasis on its origins in physical geodesy. 3 hrs. lecture

**KSRV 269**

**Computer Aided Design II** (4 CR)

*Prerequisites: DRAF 152 or 169 (MCC)*

Advanced Computer Aided Drafting and design (CADD). Advanced dimensioning and tolerancing techniques, attributes, advanced drawing aids, file management and basic customization. Effective use of model space, paper space and viewports. An introduction to three-dimensional wire frames, surface models, solid models and rendering tools. 2 hrs. lecture, 4 hs. lab/wk.

# Leadership (LEAD)

**LEAD 120**

**Leadership Development Seminar** (3 CR)

This seminar course is designed for individuals who are interested in exploring the concepts of leadership using discussion, film, exercises and works of classic literature. The course will lead to the development of a personal leadership philosophy. 3 hrs./wk.

**LEAD 130**

**Leadership & Civic Engagement** (3 CR)

This course is designed to help students develop the capacity and confidence for leadership in their personal, professional, and civic activities. The course focuses on the study of essential components and concepts of leadership, examination of characteristics and skills of effective historic and contemporary leaders, analysis of leadership skills and responsibilities in community settings, identification of personal leadership goals and standards, and development of competencies needed to meet community and global challenges in an informed, innovative, and responsible manner. 3 hrs. lecture/wk.

# Learning Communities (LCOM)

**LCOM 126**

**Composition II/U.S. Hist to 1877 - You MUST enroll in both 18393-ENGL 122 037 and 18768-HIST 140 007** (6 CR)

*Prerequisite: ENGL 106 or appropriate placement score*

Students earn 6 transferable credit hours in general education requirements (3 for ENGL 122, Composition II, and 3 for HIST 140, U.S. History to 1877). The philosophy behind joining these two courses together is to encourage students to think critically and write effectively with American history providing unifying themes. Writing instruction works best when students can focus sustained attention on one particular discipline. Writing in college and the workplace demands the ability to synthesize often conflicting information gathered from various sources. The discipline of American history provides ample opportunities for students to develop skills in composing various types of prose.

**LCOM 127**

**Comp II/US Hist Since 1877 - You MUST enroll in both 85180 Engl 122 023 AND 85897 Hist 141 006** (6 CR)

*Prerequisite: ENGL 106 or appropriate test score*

Students earn 6 transferable credit hours in general education requirements (3 for ENGL 122, Composition II, and 3 for HIST 141, U.S. History Since 1877). The philosophy behind joining these two courses together is to encourage students to think critically and write effectively with American history providing unifying themes. Writing instruction works best when students can focus sustained attention on one particular discipline. Writing in college and the workplace demands the ability to synthesize often conflicting information gathered from various sources. The discipline of American history provides ample opportunities for students to develop skills in composing various types of prose.

**LCOM 128**

**Art History: Renaissance to Modern/Furniture and Ornamentation: Renaissance to Modern** (6 CR)

Students earn 6 credit hours (3 for ARTH 182, Art History: Renaissance/Modern, and 3 for ITMD 231, History of Furniture & Ornamentation/Renaissance-20th Century). NOTE: This learning community will meet on campus on Tuesdays and the Nelson-Atkins Museum of Art on Thursdays. In a traditional curriculum the history of the visual arts and architecture and the history of furniture and ornamentation are taught separately. In this learning community the two courses will be thoroughly integrated, thus providing students with a more accurate and meaningful way to learn. The class will meet once a week on the JCCC campus and once a week at the Nelson-Atkins Museum of Art in Kansas City, MO. Students, therefore will have the unique opportunity to study paintings, sculpture, furniture and the decorative arts from the Renaissance to the present using historically significant objects and art works. The class will involve such activities as oral presentations about art works in the museum and researching and writing about furniture and ornamentation. Students should have reliable transportation for the weekly drive to the Nelson-Atkins and should NOT enroll in an 11 a.m.-12:15 p.m. class.

**LCOM 132**

**Composition II/Literature of Science Fiction** (6 CR)

*Prerequisite: ENGL 121*

Students earn 6 credit hours (3 for ENGL 122, Composition II, and 3 for ENGL 243, Literature of Science Fiction). Students in this learning community will integrate their work in Composition II with their work in Literature of Science Fiction. Science fiction literature will be read and evaluated and will act as the subject matter for the writing inherent in the Composition II course objectives: we'll read and summarize science fiction stories and criticism; we'll critique and synthesize definitions of science fiction, its development, and its key concepts; and we'll explore the translation of text to screen.

**LCOM 135**

**Social Issues:Appomattox-9/11 - You MUST enroll in both 11788 Soc 122 002 AND 14980 Hist 141 008** (6 CR)

Students earn 6 transferable credit hours in general education requirements (3 for SOC 122, Introduction to Sociology, and 3 for HIST 141, U.S. History Since 1877). Come explore American society in a learning community combining U.S. History since 1865 with Introduction to Sociology. Examine historical events with sociological eyes and understand how we created this society in which we live. We'll cover everything from A to Z: Appomattox to Z-Boys, Economics to Ecology, Family to Feminism, Media to the Moral Majority, Religions to Race, Social Class to Sexuality, Technology to Terrorism and Wealth to World War II.

**LCOM 140**

**Selling Interior Products** (6 CR)

Students earn 6 credit hours (3 for ITMD 132, Interior Products, and 3 for MKT 134, Professional Selling). In this learning community, students will learn in-depth product knowledge inclusive of specific features and benefits for numerous interior products. Additionally, students will learn how to utilize professional selling skills to sell interior products. Students will practice

through role playing the steps of professional selling to illustrate the application of skill techniques in each step. 6 hrs. lecture/wk.

## LCOM 142

**Digital Literacies** (6 CR)

*Prerequisite: ENGL 106 or appropriate test score, Prerequisite for CWEB 105 is CWEB 101; Prerequisite for CWEB 115 is CWEB 105; Prerequisite for CWEB 130 CPCA 161 or CWEB 105 or CWEB 106*

Students earn 6 credit hours (3 credit hours for ENGL 121, Composition I, 1 credit hour for CWEB 105, Intro to Web Pages: Dreamweaver; 1 credit hour for CWEB 115, Intermediate Web Pages: Dreamweaver and 1 credit hour for CWEB 130, Intro to Flash) (The CWEB courses would be taken in sequence throughout the semester.) This course combines the basic thinking skills and core competencies needed to thrive in the modern interactive environment. Students will enroll in ENGL 121 and CWEB 105, 115 and 130. Students will learn to transform "technobabble" into a language they can speak and understand. The course unlocks the power and potential of the Internet through a four-step inquiry process of awareness, analysis, reflection and action. This course helps students acquire an empowering set of "navigational" skills which include the ability to: 1) access information from a variety of sources; 2) analyze and explore how messages are "constructed" whether print, verbal, visual or multi-media; 3) evaluate media's explicit and implicit messages against one's own ethical, moral and/or democratic principles and 4) express or create their own messages using a variety of media tools.

## LCOM 145

**The Origins of Human Nature** (6 CR)

Students earn 6 credit hours (3 for SOC 122 Intro to Sociology and 3 for PSYC 130 Intro to Psychology). Is it nature? Is it nurture? Are we who we are because of our genes or our environment, or both? Experience this Learning Community to learn what sociology and psychology have to say about human nature.

## LCOM 147

**Foundations of Modern Thought - You MUST enroll in both 16303-HIST 126 002 and 17765-SOC 122 011** (6 CR)

Students can earn 6 transferable credit hours in general education requirements (3 for HIST 126, Western Civilization: Readings and Discussions, and 3 for SOC 122, Intro to Sociology). Modern social issues and structures have their origins in classic thought and writings. This learning community connects the heritage of Western thought to our contemporary lives. Search for the connections to democratic thought, social inequalities, the creation and dissolution of community, and other foundational ideas of modern society.

## LCOM 149

**Interpersonal Commun/Navigation - You MUST enroll in both 13774-HPER 102 001 and 13772-SPD 120 014** (4 CR)

Students earn 4 transferable credit hours in general education requirements (3 for SPD 120, Interpersonal Communication, and 1 for HPER 102, Navigation 102). This 4-credit hour course combines principles of effective communication with helping students experience a successful transition to college life. Students will learn practical life management skills and how to enhance their academic skills, while navigating through the fundamental elements of the communication process. Students in this learning community class will learn principles of communication theory, terminology of human communication, and will apply communication skills in everyday life. Students will have an opportunity to learn about self, one's self-concept, and how we relate to our world through healthy interpersonal relationships. Students will participate in self-awareness and career exploration activities that involve campus and community resources. Through decision-making activities, conflict management role playing perception awareness drills, and mastering one's listening skills, students will view and appreciate communication in a new and improved way. Emphasis will be on interactive and participatory activities, that include journal writing, small and large group discussion, quizzes and self-assessment.

## LCOM 151

**America & Global Terrorism - You MUST enroll in both 82970-Admj 224 002 and 83199-Pols 124 351** (6 CR)

Students earn 6-credit hours (3 credit hours for POLS 124 American National Government and 3 for ADMJ 224 Introduction to Terrorism). This course gives an overall view of terrorism and the impact on the American political system. This is a Coordinated Studies Learning Community that includes three full hours of on-campus instruction plus online work. The American government course is a JCCC online offering of many years.

## LCOM 153

**Russian Literature/Russian Culture-You MUST enroll in both 18969-ENGL 130 006 and 17227-HUM 137 001** (6 CR)

*Prerequisite: ENGL 121*

Students earn 6-credit hours (3 credit hours for ENGL 130, Introduction to Literature and 3 credit hours for HUM 137, Introduction to Russian Culture). This course is an interdisciplinary survey of Russian culture and literature from the ninth century to the present day. Students examine representative examples of Russian fiction, poetry, drama, art, architecture, music, and dance within their cultural, historical and political context. Russian poetry, drama, and fiction do not stand in isolation from the culture that produced them and are most fruitfully studied and understood within that context.

## LCOM 155

**Intro to Algebra/Learn Strat Math - You MUST enroll in both 16087-MATH 115 013 and 19067-LS 174 002** (4 CR)

*Prerequisite: MATH 111 with a minimum grade of "C" or appropriate score on the math assessment test*

Students earn 4-credit hours (3 credit hours for MATH 115, Intro to Algebra and 1 credit hour for LS 174, Learning Strategies for MATH). This course facilitates mathematics learning by integrating thinking skills, study skills and mathematical content. The student will acquire life-long learning skills along with the basic skills of algebra. Students in this learning community class will learn problem solving, test taking and cognitive skills. They will apply these skills to their math textbook, homework assignments, class discussions and lectures. This course will also address emotions and attitudes which may block math learning and will offer strategies and techniques designed to overcome these feelings. MATH 115 may fulfill some certificate requirements, but will not fulfill degree requirements.

## LCOM 157

**Fund of Math/Learning Strat for Math-You MUST enroll in both 16074-MATH 111 004 and 19066-LS 174 001** (4 CR)

*Prerequisite: Appropriate score on the math assessment test*

Students earn 4-credit hours (3 credit hours for MATH 111 Fundamentals of Math and 1 credit hour for LS 174 Learning Strategies for Math). This course facilitates mathematics learning by integrating thinking skills, study skills and mathematical content. The student will acquire life-long learning skills along with fundamental math procedures and concepts. Students in this learning community class will learn problem solving, test taking and cognitive skills. They will apply these skills to their math textbook, homework assignments, class discussions and lectures. This course will also address emotions and attitudes which may block math learning and will offer strategies and techniques designed to overcome these feelings. Active learning will be encouraged through activities such as pair and share, journal writing, group discussions, self-assessments and collaborative learning.

## LCOM 159

**Intimate Relationships** (6 CR)

Students earn 6-credit hours (3-credit hours for PSYC 130, Introduction to Psychology and 3-credit hours for SOC 131, Marriage and the Family). Does media imitate life or does life imitate media? Experience this learning community that combines Psychology and Marriage and the Family. Explore

intimate relationships by applying sociological and psychological principles to episodes of classic shows such as "The Brady Bunch," and "Leave it to Beaver," as well as "Sex and the City," "Big Love," "Brokeback Mountain," and other popular shows. Find the keys to understanding the intimacies of contemporary relationships in this spicy course.

## LCOM 161

**Environmental Science/Comp II - You MUST enroll in both 19032-ENGL 122 042 and 19260-BIOL 130 009** (6 CR)

*Prerequisite: ENGL 121*

Students earn 6-credit hours (3 for ENGL 122, Composition II and 3 for BIOL 130, Environmental Science). Most Americans are only dimly aware of their immediate environment, and they know even less about how that place fits into, impacts, and is impacted by the global environment. Through reading, writing, and discussion, this course will raise students' awareness of where they are and help them become more conscious of their own place in and responsibility to the earth's ecology. This is a Coordinated Studies Learning Community that includes six full hours of on-campus instruction.

## LCOM 163

**Russia: Empire of East & West** (5 CR)

*Prerequisites: FL 141 or two years of high school Russian*

Students earn 5-credit hours (2 for FL 246, Conversational Russian and 3 for HIST 160, Modern Russian History). This interdisciplinary Russian Conversation and Russian History course allows students to build their conversation skills with the vocabulary and grammar appropriate to describe and discuss the events, personalities and forces that shaped Russia as an Eurasian empire. The course requires 2-credit-hours weekly time and 3-credit-hours of online work.

## LCOM 165

**American Histories/Family Hist** (6 CR)

*Prerequisite: ENGL 106 or appropriate placement score or EAP 113 and EAP 117*

Students can earn 6-credit-hours (3-credit hours for ENGL 121, Composition I and 3-credit hours for HIST 141, U.S. Since 1877). U.S. History comes alive and makes more sense to people when they can see the big and little events in light of their own family's stories and memories. Not only will students study the expected topics (World War II, Viet Nam, the Great Depression), they will also explore the history of private life: what people ate, wore, worked and played at in any given era. At the same time, students will work on writing their own family's history. Instead of approaching Composition I as a series of unrelated essays, students will learn to write by focusing on how class readings and discussions related directly to their own and their family's lives. Through narrative, analysis, and research, they will create a document that their family can rely on and refer to over the course of generations to come.

## LCOM 167

**Society: From Cells to People** (6 CR)

Students each 6 credit hours (3 for SOC 122 Intro to Sociology and 3 for BIOL 122 Principles of Biology) What is the difference between the society in the ant hill in your backyard and the society of a human megalopolis? Do bacteria have a society? Enroll in this Learning Community to study the parallels between biological and sociological structures. Learn how the processes of life evolve, function, change, and interact in the biological and social worlds. Examin the diversity within the unity of life.

## LCOM 169

**Intermediate Algebra/Learning Strategies for Math** (4 CR)

*Prerequisite: MATH 115 with a grade of "C" or higher or appropriate score on the math assessment test*

This course is a combination of Intermediate Algebra (MATH 116 - 3 credit

hours) and Learning Strategies for Mathematics (LS 174 - 1 credit hour). This course should be strongly considered for any student who has taken Intermediate Algebra repeated times without success. The student will acquire life-long learning skills along with fundamental math procedures and concepts. Students in this learning community class will learn problem solving, test taking and cognitive skills. They will apply these skills to their math textbook, homework assignments, class discussions and lectures. This course will also address emotions and attitudes which may block math learning and will offer strategies and techniques designed to overcome these feelings. Active learning will be encouraged through activities such as pair and share, journal writing, group discussions, self-assessments and collaborative learning. The course meets for approximately one hour more per week than a regular course.

# Learning Strategies (LS)

## LS 174

**Learning Strategies for Math** (1 CR)

*Corequisite: Concurrent enrollment in a math course*

This course teaches thinking and study skills specifically geared toward the learning of math. Students practice these skills on their math textbooks and homework assignments as well as in their math class discussions and lectures. This course also addresses feelings and attitudes that may block math learning and offers strategies and techniques designed to overcome these feelings. 1 hr./wk. Learning Strategies courses offer students opportunities to acquire the thinking and learning skills needed to be a successful learner, including reading textbooks, taking notes, organizing information and preparing for tests. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## LS 176

**Strategic Learning System** (1 CR)

*Corequisite: Concurrent enrollment in a college lecture course*

In this course, students will learn a series of strategies for processing information from textbooks and lectures and strategies for studying for and taking tests. As the strategies are introduced, students apply them to the content of courses in which they are concurrently enrolled. Upon successful completion of the course, students will have developed a system for learning that can be adapted for use in any learning situation. 1 hr./wk. Learning Strategies courses offer students opportunities to acquire the thinking and learning skills needed to be a successful learner, including reading textbooks, taking notes, organizing information and preparing for tests.

## LS 178

**Memory Strategies** (1 CR)

*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. Learning Strategies courses offer students opportunities to acquire the thinking and learning skills needed to be a successful learner, including reading textbooks, taking notes, organizing information and preparing for tests.

## LS 186

**Exam Strategies** (1 CR)

*Corequisite: Concurrent enrollment in at least one other college course in which exams are taken*

This course offers students an opportunity to explore their own learning styles and to develop appropriate strategies for improving test performance through

improved learning procedures. Emphasis will be on practical application of the learned strategies to courses in which the students are concurrently enrolled. 1 hr./wk. Learning Strategies courses offer students opportunities to acquire the thinking and learning skills needed to be a successful learner, including reading textbooks, taking notes, organizing information and preparing for tests.

### LS 200

**College Learning Methods** (3 CR)

*Corequisite: Concurrent enrollment in at least one academic college course*

This course provides students with opportunities to develop skills and habits that will help them establish and maintain effective learning systems. Students first learn and practice the learning methods in class and then apply these methods to appropriate situations in their other college coursework. The methods, which are based on valid learning and thinking principles, will help students meet the higher-level demands of the subjects encountered in college courses. 3 hrs./wk. Learning Strategies courses offer students opportunities to acquire the thinking and learning skills needed to be a successful learner, including reading textbooks, taking notes, organizing information and preparing for tests.

# Legal Studies (LAW)

### LAW 121

**Introduction to Law** (3 CR)

Upon successful completion of this course, the student should be able to explain the major substantive and procedural aspects of law. This course provides an overview of the legal system and knowledge of specific legal topics, including torts, criminal law, contracts, family law, business law, real estate and probate. This course is a requirement for applying to the paralegal program and for completion of the legal nurse consultant program. 3 hrs. lecture/wk.

### LAW 123

**Paralegal Professional Studies** (1 CR)

Upon successful completion of this course, the student should be able to explain the legal assistant profession. Topics will include paralegal licensing, certification, education, employment and professional ethics. The course is required for students seeking admission to the paralegal program. 1 hr. lecture/wk.

### LAW 131

**Legal Research and Writing I** (3 CR)

*Prerequisites: Admission to the paralegal program and BOT 106 or program administrator approval*

This course will introduce the student to the types of specialized informational resources used to perform legal research, including both print and electronic media. The student will become familiar with the major characteristics of these resources and how to use them. The student will learn how to design a research strategy, and will learn a systematic method for researching legal issues and managing the legal research process. Numerous opportunities will be provided for skill development in the use of the these resources. 3 hrs. lecture/wk.

### LAW 132

**Civil Litigation** (3 CR)

*Prerequisites: Admission to the paralegal program or division administrator approval. Legal nurse consultant students - LAW 225 and LAW 121*

This course will acquaint the student with the major characteristics of the civil litigation process. Students will become familiar with the various types of procedural rules regulating the civil litigation process and their application.

Emphasis will be on the role of the legal assistant in a civil litigation practice and will include the drafting of pleadings. 3 hrs. lecture/wk.

### LAW 140

**Alternative Dispute Resolution** (3 CR)

*Prerequisites: Legal nurse consultant students and paralegal program students - LAW 132 and selective admission approval*

This course examines the various methods used by our legal system for dispute resolution and the role of the legal assistant in those methods. Upon successful completion of this course, the students should be able to explore the nature of conflict and the principles of negotiation and review the traditional litigation system. The course will concentrate on the major alternatives to litigation, including mediation and arbitration. 3 hrs. lecture/wk.

### LAW 142

**Torts** (3 CR)

*Prerequisites: Legal nurse consultant students and paralegal program students - LAW 132 and selective admission approval*

Upon successful completion of this course, the student should be able to explain the major principles of tort law and personal injury litigation. The student should be able to discuss and compare the elements of negligence torts, intentional torts and strict liability torts, as well as the types of damages available and defenses to each of these torts. 3 hrs. lecture/wk.

### LAW 148

**Criminal Litigation** (3 CR)

*Prerequisite: Legal nurse consultant students and paralegal program students - LAW 132*

Upon successful completion of this course, the student should be able to explain the objectives, substantive principles and procedural rules of the criminal process. The student will be able to explain the role of the paralegal in criminal litigation practice and draft documents used in the criminal litigation process. 3 hrs. lecture/wk.

### LAW 152

**Real Estate Law** (3 CR)

*Prerequisites: Paralegal program students - Admission to the paralegal program or division administrator approval. Legal nurse consultant students - LAW 225 and LAW 121*

Upon successful completion of this course, the student should be able to describe common types of real estate transactions and conveyances. The preparation of legal instruments, namely deeds, contracts, leases and mortgages will be studied. 3 hrs. lecture/wk.

### LAW 162

**Family Law** (3 CR)

*Prerequisites: Paralegal program students - admission to paralegal program or assistant dean's approval. Legal nurse consultant students - LAW 225 and LAW 121*

Upon successful completion of this course, the student should be able to describe the substantive and procedural principles of family law, including issues related to adoption, divorce, custody, support and visitation. The student will also be able to draft pleadings including petition for divorce, petition for adoption, decrees, settlement agreements and motions for modification. 3 hrs. lecture/wk.

### LAW 171

**Law Office Management** (3 CR)

*Prerequisites: Paralegal program students - admission to the paralegal*

*program or division administrator approval. Legal nurse consultant students - LAW 225 and LAW 121*

This course will acquaint the student with the general principles of law office management and will emphasize the unique characteristics of organizing and managing the law office or legal department. Projects will provide students with opportunities for practical application of law office management concepts. 3 hrs. lecture/wk.

### LAW 205

**Legal Research and Writing II** (3 CR)

*Prerequisite: LAW 131 or program administrator approval*

This course is a continuation of LAW 131-Legal Research and Writing I. In this course, the student will learn how to use Westlaw to perform legal research. The student will learn how to analyze and apply relevant legal authority to a specific legal problem, and how to communicate their results and conclusions in a professional legal document. Numerous opportunities will be provided for skill development. 3 hrs. lecture/wk.

### LAW 212

**Business Organizations** (3 CR)

*Prerequisites: Paralegal program students - admission to the paralegal program or division administrator approval. Legal nurse consultant students - LAW 225 and LAW 121*

Upon successful completion of this course, the student should be able to describe the various forms of business ownership, including corporations, partnerships and sole proprietorships. The emphasis in the course is on the role of the legal assistant in a business law practice and on the preparation of related documents. 3 hrs. lecture/wk.

### LAW 220

**Computer-Assisted Legal Research** (2 CR)

*Prerequisite: Paralegal program students - LAW 131. Legal nurse consultant students - LAW 131*

Upon successful completion of this course, the student should be able to access general and legal resources on the Internet and conduct electronic legal research using online and CD-ROM databases.

### LAW 223

**Law Office Computing** (3 CR)

*Prerequisites: Paralegal program students - admission to the paralegal program and completion of BOT 106*

Upon successful completion of this course, the student should be able to evaluate and use legal software to perform customary law office procedures including computer litigation support, drafting and editing of specific legal documents, document and file management, time-keeping and billing, docket control, and forms generation. 3 hrs. lecture/wk. LAW 223 and CIS 223 are the same course.

### LAW 225

**Legal Nurse Consultant Profession** (1 CR)

*Prerequisite: Admission to the legal nurse consultant program or assistant dean's approval*

In this course, students will examine the functions of legal nurse consultants and available career opportunities, including relevant issues regarding employment and independent contracting. 1 hr. lecture/wk.

### LAW 226

**Immigration Law** (3 CR)

*Prerequisites: Paralegal program students: admission to the paralegal*

*program or program administrator approval . Legal nurse consultant students: LAW 225 and LAW 121*

Upon successful completion of this course, the student will be able to explain the various aspects of immigration law. The emphasis in the course is on the functions of the paralegal in an immigration law practice and on the preparation of related documents. 3 hrs. lecture/wk.

### LAW 241

**Wills, Trusts and Probate Administration** (3 CR)

*Prerequisites: Paralegal program students - admission to the paralegal program or division administrator approval. Legal nurse consultant students - LAW 225 and LAW 121*

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 this course. 3 hrs. lecture/wk.

### LAW 245

**Elder Law** (3 CR)

*Prerequisites: Paralegal program students - admission to the paralegal program or division administrator approval. Legal nurse consultant students - LAW 225 and LAW 121*

Upon successful completion of this course, the student should be able to explain the legal aspects of aging. Topics include financial and estate planning, health care, personal planning and protection, taxation, housing and other legal matters affecting the elderly and people with special legal needs. 3 hrs. lecture/wk.

### LAW 247

**Intellectual Property Law** (3 CR)

*Prerequisites: Paralegal program students - admission to the paralegal program or division administrator approval. Legal nurse consultant students - LAW 225 and LAW 121*

In this course, students will learn the various forms of intellectual property. The emphasis in the course is on the functions of the paralegal in an intellectual law practice and on the preparation of related documents. 3 hrs. lecture/wk.

### LAW 250

**Medicolegal Research and Writing** (3 CR)

*Prerequisites: Admission to the legal nurse consultant program and LIBR 125*

This course emphasizes the role of the legal nurse consultant in the preparation of, and contribution to, various documents used in the context of a medicolegal-related law practice. Topics include the use of medical and science-related information resources and the preparation of such documents as legal memoranda; legal-related correspondence; summaries of medical/science literature; summaries of health-care records; and summaries of health-care expenses and settlement brochures, particularly in the context of intentional torts, negligence, product liability, strict liability, and medical-malpractice litigation. 3 hrs. lecture/wk.

### LAW 266

**Employment Law** (3 CR)

*Prerequisites: Paralegal program students - admission to the paralegal program or division administrator approval. Legal nurse consultant students - LAW 121 and LAW 225*

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.

### LAW 268

**Bankruptcy** (2 CR)

*Prerequisite: Paralegal program students - admission to the paralegal program or division administrator approval. Legal nurse consultant students - LAW 121 or LAW 225*

This course will familiarize the student with the purpose and application of the federal Bankruptcy Code. Topics will include Bankruptcy Court procedures and the preparation of bankruptcy forms and documents. Emphasis will be on the role of the legal assistant in a bankruptcy practice. 2 hrs. lecture/wk.

### LAW 270

**Administrative Law** (3 CR)

*Prerequisite: Admission to the legal nurse consultant program and LAW 225 and LAW 121 or admission to the paralegal program*

Upon successful completion of the course, the student will be able to explain and apply substantive and procedural principles of administrative agencies. The course will concentrate on the basic principles of workers' compensation law, Social Security law; the Americans with Disabilities Act and the Occupational Safety Health Administration. 3 hrs. lecture/wk.

### LAW 271

**Legal Ethics, Interviewing and Investigation** (3 CR)

*Prerequisite: Paralegal program students - LAW 132. legal nurse consultant students - LAW 132 or LAW 260 Corequisite: Paralegal program students - LAW 205. Legal nurse consultant students: LAW 205 or LAW 250*

Upon successful completion of this course, the student should be able to explain ethical rules and standards governing the legal profession, interview clients and witnesses, and perform factual investigation pursuant to legal proceedings. The emphasis will be on recognition of ethical problems commonly encountered, as well as the development of interviewing and investigating skills. 3 hrs. lecture/wk.

### LAW 275

**Paralegal Internship I** (1 CR)

*Prerequisite or Corequisite: Paralegal program students - LAW 271*

This course provides the student with an opportunity to gain practical work experience under the supervision of an attorney in day-to-day, on-site office work. The student must complete 120 hours of work at the internship site. In addition to on-site work, the student will meet with the internship instructor during the internship period four times and complete all requirements; keep an eight-week log; interview a practicing paralegal; draft a cover letter and resume; and submit final evaluations by the employer and student. Obtaining an internship is the responsibility of the individual student. 120 internship hours

### LAW 276

**Paralegal Internship II** (1 CR)

*Prerequisite: LAW 275*

This course provides the student with an opportunity to gain practical work experience under the supervision of an attorney in day-to-day, on-site office work. The student must complete 120 hours of work at the internship site. In addition to on-site work, the student will meet with the internship instructor during the internship period four times and complete all requirements; keep an eight-week log; interview a practicing paralegal manager; participate in a mock job interview; and submit final evaluations by the employer and the student. Obtaining an internship is the responsibility of the individual student.

# Library (LIBR)

### LIBR 125

**Introduction to Library Research** (1 CR)

This course provides an introduction to the methods and technologies of library research. Included will be a study of the various information resources available for research and techniques for retrieving information from both print and electronic sources. The resources of Billington Library will be featured, although the emphasis will be on building information retrieval skills that will be useful in many settings.

# Marketing Management (MKT)

### MKT 121

**Retail Management** (3 CR)

Upon successful completion of this course, the student should be able to describe and analyze retail store organization and operation including customer markets, store location and design, human resource management, merchandise planning and control, and retail promotion. 3 hrs. lecture/wk.

### MKT 133

**Salesmanship** (3 CR)

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

**Professional Selling** (3 CR)

Upon successful completion of this course, the student should be able to describe the process of successful selling in the retail environment. In addition, the student should be able to define the steps of selling and identify appropriate application. The student should also be able to apply selling principles through role-play. Students who have received credit for MKT 133 may not receive credit for MKT 134. 3 hrs. lecture/wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

### MKT 140

**Teleservice Communication Skills** (3 CR)

Upon successful completion of this course, the student should be able to describe the process of successful communication in the teleservice field. In addition, the student should be able to define the principles of teleclient service and identify their appropriate application. The student should also be able to demonstrate effective telecommunication and client services skills through role-playing. Students who have received credit for MKT 133 or MKT 134 may not receive credit for MKT 140. 3 hrs. lecture/wk.

### MKT 202

**Consumer Behavior** (3 CR)

Upon successful completion of this course, the student should be able to analyze the elements and influences that affect consumer behavior. In addition, the student should be able to apply the basic principles of consumer behavior and insight to the application of consumer-research findings used in the professional practice of marketing. 3 hrs. lecture/wk.

**MKT 221**

**Sales Management** (3 CR)

*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** (3 CR)

*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 way services are required to be marketed because of 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 240**

**Advertising and Promotion** (3 CR)

In this course, the student will understand and recognize the importance of an integrated marketing communications planning model in order to coordinate all of the promotional mix elements for today's businesses. Topics of study include advertising, direct marketing, sales promotion, public relations and interactive media. The course integrates theory with planning, management and strategy. Upon completion, the student will be able to develop an effective marketing communications program. 3 hrs. lecture/wk.

**MKT 284**

**Marketing and Management Internship I** (1 CR)

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hrs./wk. on-the-job training is required.

**MKT 286**

**Marketing and Management Internship II** (1 CR)

*Prerequisite: MKT 284*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hrs./wk. on-the-job training is required.

**MKT 288**

**Marketing and Management Internship III** (1 CR)

*Prerequisite: MKT 286*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hrs./wk. on-the-job training is required.

**MKT 289**

**Marketing and Management Internship IV** (1 CR)

*Prerequisite: MKT 288*

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 15 hrs./wk. on-the-job training is required.

**MKT 290**

**Capstone: Marketing and Management Case Studies** (3 CR)

*Prerequisites: BUS 141 and BUS 230 and MKT 284 and MKT 286 or assistant dean's approval*

Upon successful completion of this course, the student should be able to identify problems, develop and describe the situational analysis, formulate alternative solutions, and reach and explain a decision for each issue. In addition, the student should be able to apply the knowledge of marketing and management concepts and techniques in the analysis of cases and actual business situations. 3 hrs. lecture/wk.

# Mathematics (MATH)

**MATH 098**

**Fundamentals of Mathematics and Elementary Algebra** (6 CR)

*Prerequisite: An appropriate score on an assessment test*

This 16-week course is an integration of the content of both Fundamentals of Mathematics and Elementary Algebra and graded as if taken as two separate courses. You will earn 3 credit hours in Fundamentals of Mathematics and 3 credit hours in Elementary Algebra that will transfer as if they were being taught in the traditional format. Students will receive credit on their transcript for MATH 111 and MATH 115. NOTE: MATH 115 may fulfill some certificate requirements, but will not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

**MATH 099**

**Elementary Algebra and Intermediate Algebra** (6 CR)

*Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on an assessment test.*

This 16-week course is an integration of the content of both Elementary Algebra and Intermediate Algebra and graded as if taken as two separate courses. You will earn 3 credit hours in Elementary Algebra and 3 credit hours in Intermediate Algebra that will transfer as if they were being taught in the traditional format. Students will receive credit on their transcript for MATH 115 and MATH 116. MATH 115 may fulfill some certificate requirements, but will not fulfill degree requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

**MATH 111**

**Fundamentals of Mathematics** (3 CR)

*Prerequisite: Appropriate score on the math assessment test*

Fundamentals of Mathematics is designed for the student who needs to improve or review basic math skills and concepts. This course includes computation using integers, fractions, decimals, proportions and percents along with an overview of percents, measurement, geometry, statistics and linear equations. Fundamentals of Math provides the mathematical foundation upon which subsequent studies in mathematics and other areas depend. 3 or 5 hrs. lecture / wk. This course does not fulfill degree requirements. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 115

**Elementary Algebra** (3 CR)

*Prerequisite: MATH 111 with a grade of "C" or higher or appropriate score on the math assessment test*

This is a beginning course in algebra, designed to help students acquire a solid foundation in the basic skills of algebra. Students will learn to simplify arithmetic and algebraic expressions, including exponential expressions, polynomials, rational expressions and radical expressions; solve equations and inequalities, including linear equations and quadratic equations; graph linear equations; and analyze linear equations. 3 or 5 hrs. lecture/wk. MATH 115 may fulfill some certificate requirements, but will not fulfill degree requirements. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 116

**Intermediate Algebra** (3 CR)

*Prerequisite: MATH 115 with a grade of "C" or higher or appropriate score on the math assessment test*

This course focuses on arithmetic and algebraic manipulation, equations and inequalities, graphs, and analysis of equations and graphs. Students will simplify arithmetic and algebraic expressions, including those containing rational expressions, rational exponents, radicals and complex numbers; solve equations and inequalities including linear, quadratic, quadratic in form, as well as those containing rational expressions, radicals or absolute value; graph linear inequalities and basic conics; and analyze functions and nonfunctions. 3 or 5 hrs.lecture/wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 118

**Geometry** (3 CR)

*Prerequisite: MATH 115 with a grade of "C" or higher or appropriate score on the math assessment test*

This course is an informal approach to geometry. Topics will include lines, polygons, area, volume, circles, similarity, congruence and coordinate geometry. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 120

**Business Mathematics** (3 CR)

*Prerequisite: MATH 111 with a grade of "C" or higher or appropriate score on the math assessment test*

This is a course for the student who needs specific skills in mathematics to address business problems and business applications. Students will learn the mathematics involved in payroll, retailing, asset valuation, interest, finance, and the time value of money. Students will use a calculator and computer to solve a variety of applications. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $25.

## MATH 122

**Mathematics in Our Culture** (3 CR)

*Prerequisite: MATH 111 with a grade of "C" or higher 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 133

**Technical Mathematics I** (4 CR)

*Prerequisite: MATH 111 with a grade of "C" or higher 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 134

**Technical Mathematics II** (5 CR)

*Prerequisite: MATH 133 or an equivalent course with a grade of "C" or higher*

This course is the second of a two-semester sequence on technical applications of algebra and trigonometry. Topics will include factoring, algebraic fractions, quadratic equations, exponents, radicals, an introduction to coordinate geometry, logarithmic and exponential functions, trigonometric graphs and identities. 5 hrs. /wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 165

**Finite Mathematics** (3 CR)

*Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math assessment test*

This course will emphasize the beauty, scope, practical applications and relevance of mathematics. It is designed to involve the students with the concepts as well as quantitative skills. Topics include inductive and deductive reasoning, mathematical patterns, sets, introduction to trigonometry, Euclidean geometry, probability, statistics and matrices. The common themes throughout the course are innovation in computers, related mathematical and cultural history and reasoning ability. 3 hrs./wk. MATH 165 is only offered during the spring term.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 171

**College Algebra** (3 CR)

*Prerequisite: MATH 116 with a grade of "C" or higher or MATH 134 with a grade of "C" or higher or appropriate score on the math assessment test*
*Note: Not available to students with credit in MATH 173*

This course focuses on the study of functions and their graphs, techniques of solving equations and the recognition and creation of patterns. Students will

analyze and graph functions, including constant, linear, absolute value, square root, polynomial, rational, exponential and logarithmic functions and non-functions; solve equations and inequalities, including polynomial equations, exponential equations, logarithmic equations, systems of linear equations and systems of linear inequalities; and analyze and create algebraic and numerical patterns. 3 or 5 hrs./wk. Not available for credit for students with credit in MATH 173. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 172

**Trigonometry** (3 CR)

*Prerequisite: MATH 171 with a grade of "C" or higher or appropriate score on the math assessment test Note: Not available to students with credit in MATH 173*

This is a course in trigonometric functions and graphs. Emphasis will be on understanding function notation, definitions, algebraic relations, real-world applications, graphing in the real and complex plane, inverse functions, polar functions and vectors. Students who take Math 172 and Math 173 will receive at most five hours of credit toward graduation. 3 hrs./wk. Not available for credit for students with credit in MATH 173.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 173

**Precalculus** (5 CR)

*Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math assessment test Note: Not available for credit for students with credit in MATH 171 and/or MATH 172*

Note: MATH 173 is an accelerated course recommended for students with a strong high school math background (three to four years) who plan to take calculus. This course focuses on the study of functions and their graphs, trigonometry, techniques of solving equations and the recognition and creation of patterns. Students will analyze and graph functions, including constant, linear, absolute value, square root, polynomial, rational, exponential, logarithmic and trigonometric functions and nonfunctions; solve equations and inequalities, including polynomial equations, exponential equations, logarithmic equations, trigonometric equations, systems of linear and nonlinear equations and systems of linear and nonlinear inequalities; and analyze and create algebraic and numerical patterns. 5 hrs./wk. Not available for credit for students with credit in MATH 171 and/or MATH 172.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 175

**Discrete Mathematics and its Applications** (3 CR)

*Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math assessment test*

This course is designed to present the beauty, scope, practical applications and relevance of mathematics. It will focus on applications of general interest drawn primarily from the social and biological sciences and business. Topics will be placed in a historical context, and mathematical reasoning will be stressed. Many of the applications will be computer-oriented. 3 hrs./wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 181

**Statistics** (3 CR)

*Prerequisite: MATH 171 or MATH 173 or an equivalent course with a grade*

of "C" or higher or appropriate score on the math assessment test

This is a beginning course in statistical analysis, the skill of making sense of raw data - constructing graphical representations of data, developing models for making predictions, performing tests to determine significant change and finding intervals for population values. Students will learn the basics of descriptive statistics, probability, sampling, confidence intervals, distributions, hypothesis testing, regression and correlation. Computer applications will be incorporated into course topics. 3 hrs./wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 191

**Math & Physics for Games I** (4 CR)

*Prerequisites: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on math assessment test and CS 200*

This introductory course focuses on the mathematics and physics concepts needed to program a variety of video game scenarios. Student will learn to use vectors and matrix transformations to model the motion of physical objects in two and three dimensions. Students will also learn various computer programming methods in order to model these mathematical and physical concepts. 3 hrs. lecture and 2 hrs. lab/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 210

**Mathematics for Elementary Teachers I** (3 CR)

*Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on math assessment test*

This is the first of a two-course sequence for prospective teachers of elementary and middle school mathematics. The focus of this course is an in-depth investigation of the mathematical principles and concepts encountered in grades K-8. Topics include set theory, numeration systems, number sense, critical thinking, and problem-solving strategies. The use of appropriate techniques and tools, such as calculators, computers and manipulatives, will be integrated throughout the course in order to enhance the depth of understanding. 3 hrs. lecture/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 212

**Math for Elementary Teachers II** (3 CR)

*Prerequisite: MATH 210 with a grade of "C" or higher or consent of the assistant dean*

This is the second of a two-course sequence for prospective teachers of elementary/middle school mathematics. The focus of this course is an in-depth investigation of the mathematical principles and concepts encountered in grades K-8. Topics include probability, statistics, measurement, and shapes including congruency, similarity, and transformations. The use of appropriate techniques and tools, such as calculators, computers, and manipulatives, will be integrated throughout the course in order to enhance the depth of understanding. 3 hrs. lecture/wk. NOTE: the prerequisite of MATH 210 requires a grade of "C" or higher.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 225

**Mathematics as a Decision Making Tool** (3 CR)

*Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math assessment test*

The focus of this course is to develop the quantitative skills and reasoning ability necessary to help students read critically and make decisions in our technical information society. A project tying this course to the student's own interest is a course requirement. Major topics include collecting and describing data, inferential statistics and probability, geometric similarity, geometric growth, symmetry and patterns. 3 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 231

### Business and Applied Calculus I (3 CR)

*Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math assessment test*

This is the first course in calculus as it applies to business, psychology and the physical sciences. Concepts include measuring the slope of a curve, writing equations of tangent lines, finding maximum and minimum points, determining the rate of change of a function, and measuring the area under a curve. Algebraic skills and application problems are stressed. Specific calculus topics include finding limits, differentiation of algebraic, exponential and logarithmic functions, and integration of algebraic and exponential functions. Trigonometry (MATH 172) can be taken concurrently with MATH 231 for those students planning to enroll in MATH 232 in subsequent semesters. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $$100.

## MATH 232

### Business and Applied Calculus II (3 CR)

*Prerequisites: MATH 231 and either MATH 172 or MATH 173 with a grade of "C" or higher or appropriate score on the math assessment test*

This is the second course in a two-semester series on calculus that covers five techniques of integration, differentiation and integration of trigonometric functions, differential equations, and functions of several variables as applied to business, statistics, biology and the social sciences. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 237

### Calculus for Biology and Medicine (5 CR)

*Prerequisite: MATH 172 or MATH 173 or an equivalent course with a grade of "C" or higher or an appropriate score on an assessment test*

This course focuses on the study and mathematical modeling of biological systems. Through a host of biological and medical applications, the rudiments of calculus are developed. Concepts include measuring the slope of a curve, writing equations of tangent lines, maximizing and minimizing a function, determining the rate of change of a function, and measuring the area under a curve. Solution techniques, both analytic and numeric, for difference and differential equations are used. Modeling activities are heavily emphasized. Qualitative analysis of solutions of differential equations is incorporated in modeling activities. Application areas include mathematical physiology, pharmacology, cell biology and populations biology. 5 hrs. lecture/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 241

### Calculus I (5 CR)

*Prerequisite: MATH 172 or MATH 173 or an equivalent course with a grade of "C" or higher or an appropriate score on an assessment test*

This is the first of a three-semester sequence on calculus designed for

engineering, physics and math majors. Rates of change, areas and volumes will be studied. To accomplish this, the students will study and apply limits and continuity. Differentiation and integration of algebraic, trigonometric and transcendental functions will also be a major focus of this course. 5 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 242

### Calculus II (5 CR)

*Prerequisite: MATH 237 or MATH 241 or an equivalent course with a grade of "C" or higher*

This is the second course of a three-semester sequence on calculus. The emphasis will be an analytic, numerical and graphical approach to techniques of integration, infinite series and vectors in the plane including scientific applications. 5 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 243

### Calculus III (5 CR)

*Prerequisite: MATH 242 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher*

This is the third course in a three-semester sequence on analytic geometry and calculus. Topics include vector-valued functions, functions of several variables, multiple integration, and vector analysis. 5 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 244

### Differential Equations (3 CR)

*Prerequisite: MATH 243 or an equivalent course with a grade of "C" or higher*

This course will cover standard types of equations that involve rates of change. In particular, this is an introductory course in equations that involve ordinary derivatives. Both qualitative and quantitative approaches will be used. Standard types and methods will be covered, including Laplace transforms and numerical methods. 3 hrs./wk. Beginning summer 2009 this course will be replaced by the 4-credit-hour course MATH 254 Differential Equations.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 246

### Elementary Linear Algebra (3 CR)

*Prerequisite: MATH 242 or an equivalent course with a grade of "C" or higher*

This sophomore-level introduction to linear algebra uses a matrix-oriented approach, with an emphasis on problem solving and applications. The course focus is on matrix arithmetic, systems of linear equations, properties of Euclidean n-space, eigenvalues and eigenvectors, orthogonality and vector spaces. The use of technology is a major feature of the course. 3 hrs. lecture/wk. MATH 246 is only offered during the spring term.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## MATH 254

### Differential Equations (4 CR)

*Prerequisite: MATH 243 with a grade of "C" or higher or an equivalent*

*course with a grade of "C" or higher*

This course will cover standard types of equations that involve rates of change. In particular, this is an introductory course in equations that involve ordinary derivatives. Both qualitative and quantitative approaches will be used. Standard types and methods will be covered, including Laplace transforms, infinite series, and numerical methods. Basic linear algebra will be developed to solve systems of differential equations. 4 hrs. lecture/wk. This course replaces the 3-credit-hour course, MATH 244, effective summer 2009

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

### MATH 285

**Statistics for Business** (4 CR)

*Prerequisite: MATH 232 or MATH 242 or an equivalent course with a grade of "C" or higher Note: Students transferring MATH 285 to the University of Kansas must have CIS 201 as a corequisite.*

This is a beginning course in calculus-based statistical analysis, the skill of making sense of raw data -- constructing graphical representations of data, developing models for making predictions, performing tests to determine significant change and finding intervals for population values. Students must have an understanding of calculus concepts in order to successfully complete this course. Students will learn the basics of descriptive statistics, probability, sampling, confidence intervals, hypothesis testing and linear regression. The course will stress the applications to business with emphasis on quality control. 4 hrs./wk. Students transferring MATH 285 to KU must have CIS 201 as a corequisite.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

# Metal Fabrication and Welding (MFAB)

### MFAB 120

**MFAB Tools and Equipment** (2 CR)

Upon completion of this course the student should be able to identify, operate, maintain, and explain the proper use of power equipment and the operation of several selected metal fabrication hand tools common to a welding fabrication shop. Instructors will demonstrate the safe use of primary and secondary tools and equipment. The student will be required to provide ANSI-Z-87 safety glasses and other basic personal protective equipment (PPE). This course is recommended for students who have never had an industrial arts or shop class. 1 hr lecture, 1.5 hr lab/wk.

### MFAB 121

**Intro to Shielded Metal Arc Welding I (SMAW I)** (4 CR)

*Prerequisite or corequisite: MFAB 120 or MFAB 127*

Upon successful completion of this course, the student should be able to perform oxy-fuel cutting (OFC), oxy-fuel welding (OFW) and brazing, shielded metal arc welding (SMAW). The SMAW portion of the course will cover positions but will be limited to AWS U-bend tests with backing and fillet welds. All welds will be tested according to industry standards. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

### MFAB 125

**Advanced Gas and Arc Welding** (4 CR)

*Prerequisite: MFAB 121*

This course is a continuation of Introduction to Welding. The course will cover more advanced projects in oxyacetylene, cutting, shielded metal arc welding (SMAW) and carbon arc cutting with air (CAC-A). The SMAW process will be used to weld v-groove butt joints in the flat, horizontal, vertical up and overhead positions, with root and face AWS U-bend test being performed on AWS open root joints without backing weld made in the vertical and overhead positions. AWS welder qualification/certification will be awarded to students successfully performing U-bend tests to code. 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.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

### MFAB 127

**Welding Processes** (2 CR)

Upon successful completion of this course, the student should be able to identify various welding processes used by industries. Standard shop and maintenance welding processes will be taught and demonstrated. Welds will be tested and inspected according to industry standards. This course can be used by an individual company to train or upgrade train employees and can be customized to fit individual needs. Artists, hobbyist, automotive students or first-time welders will benefit from this class. 1 hr. lecture, 1.5 hrs. lab/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

### MFAB 130

**Introduction to Gas Metal Arc Welding I (GMAW I)** (4 CR)

*Prerequisite or corequisite: MFAB 120 or MFAB 127*

Upon successful completion of this course, the student should be able to identify the theory of gas metal arc welding (GMAW) and flux-cored arc welding (FCAW). The welding of mild steel plate will occur in all positions on both fillet and groove welds with the GMAW process. Standard AWS terms and definitions will be used. The Plasma Arc Cutting (PAC) metal cutting process will be used to conserve material use and plant preparation. A root and face guide U-bend test will be performed on selected weld test coupons. Students successfully completing U-bends will be awarded a document of standards of acceptability. 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.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

### MFAB 140

**Maintenance Repair Welding** (3 CR)

*Prerequisite: MFAB 121 or MFAB 130*

Upon successful completion of this course, the student should be able to perform oxyfuel cutting (OFC), shielded metal arc welding (SMAW), gas metal arc welding (GMAW) and plasma arc cutting (PAC). Basic blueprint and standard AWS welding symbols will be introduced. Selected welds and assignments will be tested according to industry and AWS standards. The student will be required to provide ANSI Z-87.1 approved safety glasses and may be expected to provide other basic hand tools and/or equipment as required by employers. This course is designed for individuals who have welding experience or who are employed by a company that requires welding skills. This course can be customized for advanced training. 1 hr. lecture, 2 hrs. lab/wk.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

**MFAB 152**

**Manufacturing Materials and Processes** (3 CR)

This is a beginning course in metal fabrication technology that is appropriate for the metal fabrication major and other interested students. Upon successful completion of this course, the student should be able to identify various manufacturing materials and processes currently used in industry. The capabilities and applications of machine tool, general fabrication, welding processes, robotics, cut-off equipment and other manufacturing processes and equipment will be studied. Lectures will be supplemented by class tours and demonstrations of various processes and equipment. Students are required to wear safety glasses during demonstrations. 3 hrs. lecture-demonstrations/wk.

**MFAB 160**

**Gas Tungsten Arc Welding** (4 CR)

*Prerequisite: MFAB 121 or MFAB 130*

This course will cover the basic theory of gas tungsten arc welding (GTAW). The student will weld on mild steel, stainless steel and aluminum in a variety of positions on both fillet and groove welds using the GTAW process, with guided AWS U-bend test being performed on mild steel. AWS qualification/certification will be awarded to successful students who qualify weld to code standards. Students will also use the plasma arc cutting system (PAC) on selected assignments. The students 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

**MFAB 170**

**Basic Machine Tool Processes** (4 CR)

Upon successful completion of this course, the student should be able to practice the basic principles of machining as well as the setup and operation of machines. This course is a hands-on course that will include the use of lathes, mills, drills, saws, grainders, cut-off and other types of equipment. Machine tool safety will be emphasized throughout the course. 2 hrs. lecture, 4 hrs. lab/wk.

**MFAB 180**

**Blueprint and Symbols Reading for Welders** (2 CR)

Upon successful completion of this course, the student should be able to identify basic welding positions and explain, list, sketch, draw, use or describe current American Welding Society (AWS) welding symbols and weld joint configurations. The student will be introduced to several methods of producing welding blueprints, object representatives, and specific meanings of selected lines, surface features, sectional views and basic math formulas used in the welding industry. The student will be able to identify the symbols used for fillet welds and groove welds made with and without backing. Topics such as pipe welding representations, pipe welding connections, pipe welding classifications, welder certification, metallurgical effects of heat on metals and the importance of weld quality and welding safety will be studied. 4 hrs. lecture/wk.

**MFAB 230**

**Gas Metal Arc Welding II** (4 CR)

*Prerequisite: MFAB 130*

Upon successful completion of this course, the student should be able to identify the theory of gas metal arc welding (GMAW). The student will weld with the GMAW process in the flat, horizontal, vertical up and overhead positions on both fillet and groove welds. The GMAW welds will be made on aluminum and stainless steel AWS U-bend test will be made on overhead and horizontal weldments. 1 hr. lecture, 6 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

**MFAB 240**

**Metallurgy** (2 CR)

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. AWS terms and definitions will be emphasized throughout the course. 2 hrs. lecture-demonstration/wk.

**MFAB 260**

**Fabrication Practices I** (4 CR)

*Prerequisite: Metal Fabrication Combination Welder Certificates I and II or have earned the Metal Fabrication Vocational Certificate or equivalent advanced welder training course work to be approved by program administrator/facilitator*

Upon completion of this class, the student should be able to work from discipline specific drawings to manufacture and assemble a mock building section using already acquired skills. This class is a capstone course and is intended to serve all MFAB graduate students who have completed the fundamental skills coursework within the metal fabrication certificate or degree programs. The Fabrication Practices I class is part one of an advanced comprehensive class intended to put to practical use the skills obtained throughout the existing Metal Fabrication and Welding Technology Career program. This class will put emphasis on structural steel, its erection and assembly. The coursework will focus on modern welding fabrication techniques and practices used in the manufacturing and installation of structural steel, piping systems, and miscellaneous welded mechanical items. Students will work in teams from discipline specific drawings to manufacture and assemble a mock building section using already acquired skills. Completers of this class may elect to test to the AWS Entry Level I Welder program and the National Center for Construction Education and Research (NCCER) accreditation and national registry. 1 hr lecture, 6 hrs lab/wk.

**MFAB 261**

**Fabrication Practices II** (4 CR)

*Prerequisite: Metal Fabrication Welder Certificates I and II, or have earned the Metal Fabrication Vocational Certificate or equivalent advanced welders training coursework to be approved by program administrator/facilitator*

Upon completion of this class, the student should be able to work from discipline specific drawings to manufacture and assemble a mock building section using already acquired skills. This class is intended to serve all MFAB graduate students and current MFAB students who have completed the fundamental skills coursework within the metal fabrication certificate or degree programs. The Fabrication Practices II class is part two of an advanced comprehensive class intended to put to practical use the skills obtained throughout the existing Metal Fabrication and Welding Technology Career program. This class will put emphasis on pressure holding tanks and pressure vessels. Coursework will focus on modern welded fabrication techniques and practices used in the manufacturing and installation of steel pipe, tank and vessel systems, and miscellaneous welded mechanical structural items. Students will work in teams of three or four persons. Teams will work from discipline specific drawings to manufacture and assemble a mock tank/vessel section using skills already acquired. Completers of this class may elect to test to the AWS Entry Level II Welder program and the National Center for Construction Education and Research (NCCER) accreditation and national registry. 1 hr. lecture, 6 hrs lab/wk.

**MFAB 271**

**Metal Fabrication Internship** (3 CR)

*Prerequisite: Program facilitator 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 with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 1 hrs. lecture, 15 hrs. minimum on-the-job training/wk.
<u>Associated Costs</u>: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $150.

# Music (MUS)

### MUS 121

**Introduction to Music Listening** (3 CR)

This course is designed to enhance student music listening. Students will learn to identify changes in the elements of music through the different stylistic periods of classical music. Factual and historical information will be presented to broaden the student's cultural and music appreciation. Students will hear recorded examples of music from the Medieval, Renaissance, Baroque, Classical, Romantic and 20th-century eras, as well as popular American forms and music from non-Western cultures. 3 hrs./wk.

### MUS 123

**Introduction to Music Fundamentals** (2 CR)

This course is designed to present the fundamentals of music theory to students who have no previous background or training in that subject. Students will receive detailed instruction in naming notes; scales and chords; building intervals; and correlating these skills to the keyboard. 2 hrs./wk.

### MUS 125

**Introduction to Jazz Listening** (3 CR)

This is an entry-level course for the student with little or no prior knowledge of the American art form of jazz music. Through reading and listening, the student will learn the basic structure of the elements of music and how these are organized to create jazz. Topics to be covered will include rhythm, harmony, and form; Dixieland style; swing style; bop; and contemporary jazz. 3 hrs./wk.

### MUS 126

**Introduction to World Music** (3 CR)

This course provides students with an introduction to the musical heritage of the world. Through an interdisciplinary approach targeting the arts, humanities and social sciences, the course fosters skills necessary to gain a deeper appreciation of both familiar and unfamiliar musical traditions. The course will survey a representative cross section of the major musical traditions of the world, which may include Native American, Black American, sub-Saharan African, Eastern European/Bosnian, Indian, Indonesian, Japanese and Latin American/Brazilian traditions. Note: The course does not require the ability to read music. 3 hrs. lecture/wk.

### MUS 131

**Sight-Singing and Ear Training I** (2 CR)

This course is an introduction to sight singing and ear training. Basic methods of reading music are presented and practiced. Students are also trained to recognize aurally and notate the basic elements of music: intervals, diatonic melodies, simple rhythms, chord qualities, and basic harmonic progressions. The content is designed to complement the Harmony I course, though it is not necessary they be taken in the same semester. 2 hrs./wk.

### MUS 132

**Sight-Singing and Ear Training II** (2 CR)

*Prerequisite: MUS 131*

This course is a continuation of the class Sight-singing and Ear Training I. The content is designed to complement the Harmony II course though it is not necessary they be taken in the same semester. 2 hrs./wk. This course is typically taught in the spring semester.

### MUS 133

**Sight-Singing and Ear Training III** (2 CR)

*Prerequisite: MUS 132*

This course is a continuation of the classes Sight-singing and Ear Training I and II. The content is designed to complement the Harmony III course, though it is not necessary they be taken in the same semester. 2 hrs./wk.

### MUS 134

**Sight-Singing and Ear Training IV** (2 CR)

*Prerequisite: MUS 133*

This course is a continuation of the first three courses in sight-singing and ear training. Students are trained to produce and hear the most complex aspects of music theory in the common practice era (1650-1920). The content is designed to complement the Harmony IV course, though it is not necessary they be taken in the same semester. 2 hrs./wk.

### MUS 141

**Music Theory: Harmony I** (3 CR)

This course is a basic study of the harmonic system sited in Western music composed from 1650 to 1900 and still in use in areas of music composition. Students will learn the basic skills involved in writing and analyzing music of this nature as well as play simple chord progressions on the piano. 3 hrs./wk.

### MUS 142

**Music Theory: Harmony II** (3 CR)

*Prerequisite: MUS 141 or passing equivalency test*

Harmony II is a continuation of the study of the harmonic system used in music composed from 1650 to 1900 and still in use in certain areas of music composition. The course covers use of non-harmonic tones, supertonic and dominant sevenths, functions of the submediant and mediant triads, advanced melodic writing and secondary dominant chords. Student will learn to harmonize melodies at the keyboard and play simple chord progressions on the piano. Music of the period will be analyzed. Selected software programs will enhance student skills and understanding. 3 hrs./wk. This course is typically taught in the spring semester.

### MUS 143

**Music Theory: Harmony III** (3 CR)

*Prerequisite: MUS 142 or passing equivalency test*

This is a continuation of the study of the harmonic system used in all music composed from 1650 to 1900 and still in use in many areas of music composition today. Important topics include devices of modulation, binary and ternary, and 12 bar blues 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, secondary dominants, borrowed chords and Neopolitan chords. Students will work with keyboard harmony exercises of increasing difficulty. Selected software programs will enhance student skills and understanding. 3 hrs./wk.

### MUS 144

**Music Theory: Harmony IV** (3 CR)

*Prerequisite: MUS 143 or passing equivalency test*

Harmony IV is a continuation of the study of the harmonic practices of tonal

music and introduction to 20th-century harmony. Topics include augmented sixth chords, enharmonic modulation, and advanced chromatic harmonies. An introduction to 20th-Century harmonic organization includes extended tertian harmony, modal harmony, parallelism, pandiatonicism, atonality, serialism, and aleatory music. Students will work with keyboard harmony exercises of increasing difficulty. Selected software programs will enhance student skills and understanding. 3 hrs./wk.

## MUS 151

**Mixed Vocal Ensemble I** (1 CR)

*Prerequisite: Audition required*

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles but not in others. The ensemble will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs./wk.

## MUS 152

**Mixed Vocal Ensemble II** (1 CR)

*Prerequisites: MUS 151 and audition required*

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles but not in others. The ensemble will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs./wk.

## MUS 153

**Mixed Vocal Ensemble III** (1 CR)

*Prerequisites: MUS 152 and audition required*

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles but not in others. The ensemble will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs./wk.

## MUS 154

**Mixed Vocal Ensemble IV** (1 CR)

*Prerequisites: MUS 153 and audition required*

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles but not in others. The ensemble will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs./wk.

## MUS 156

**MIDI Music Composition** (3 CR)

MIDI Music Composition I is designed to create a technical and conceptual foundation for further studies in electronic music. Students will learn and demonstrate basic compositional techniques, including form, melody, rhythm and harmony. Also, the student will demonstrate the ability to use computers and software to create and perform music. Emphasis will be on developing skills appropriate to the beginning student for the purpose of creative and technical expression. 2 hrs. lecture, 2 hrs. lab/wk.

## MUS 157

**Introduction to Digital Audio** (3 CR)

*Prerequisite: MUS 156*

Introduction to Digital Audio is designed to further develop skills acquired in MIDI Music Composition I. Students will practice using ProTools digital audio software, combined with a digital audio interface to record, edit and play back music. Students will be introduced to basic concepts of sound, and common audio effects, including reverb, delay and compression. Students will also further develop their compositional skills through demonstration and practice, and create audio recordings of their music. 2 hrs. lecture, 2 hrs. lab/wk.

## MUS 158

**Digital Audio Techniques I** (4 CR)

*Prerequisite: MUS 157*

This course is designed to develop both the creative abilities and technical skills needed to produce music using modern digital recording techniques and equipment. Students will acquire an increased proficiency with the operation of ProTools, the industry standard digital audio software, and the corresponding digital audio hardware. Students will demonstrate knowledge of microphone types and techniques by conducting simple recording sessions, from set-up to final mix. 3 hrs. lecture, 2 hrs. lab/wk.

## MUS 159

**Digital Audio Techniques II** (4 CR)

*Prerequisites: MUS 158*

This course is designed for the student interested in the continued development of the creative abilities and technical skills needed to produce music using modern digital recording techniques and equipment. Students will understand simple copyright types and procedures, and create an itemized budget to establish a digital project studio. Students will demonstrate advanced knowledge of ProTools, and apply final mastering techniques in order to compile a portfolio of original music for personal, academic or professional purposes. 3 lecture, 2 hrs. lab/wk.

## MUS 161

**Chamber Choir I** (1 CR)

*Prerequisite: Audition required*

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs./wk.

## MUS 162

**Chamber Choir II** (1 CR)

*Prerequisites: MUS 161 and audition*

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs./wk.

## MUS 163

**Chamber Choir III** (1 CR)

*Prerequisites: MUS 162 and audition*

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs./wk.

## MUS 164

**Chamber Choir IV** (1 CR)

*Prerequisites: MUS 163 and audition*

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs./wk.

## MUS 165

**Music Composition I** (1 CR)

*Prerequisite: MUS 141 or consent of instructor*

This entry-level course provides instruction in the craft of musical composition. Traditional compositional techniques and concepts will be studied through demonstration and practice. Students will learn correct notational procedures and compose melodies and short pieces for one or two live performers. 1 hr. lecture/wk.

## MUS 166

**Music Composition II** (1 CR)

*Prerequisite: MUS 165*

This is an intermediate-level course for students seeking instruction in the craft of musical composition. Traditional compositional techniques and concepts will be studied through demonstration and practice. Students will learn to use a computer to notate their compositions, will begin to work with tonal harmony, will write music for a trio and/or quartet, and will have a piece performed during a music department recital. 1 hr. lecture/wk.

## MUS 167

**Music Composition III** (1 CR)

*Prerequisite: MUS 166*

This class is an intermediate-level course for the student seeking instruction in the craft of musical composition. Traditional compositional techniques and concepts will be studied through demonstration and practice. Students will enhance their ability to use a computer to notate their compositions, will begin to work with nonfunctional tonal harmony, will write music for SATB choir or for vocal soloist, and will have a piece performed during a music department recital. 1 hr. lecture/wk.

## MUS 168

**Music Composition IV** (1 CR)

*Prerequisite: MUS 167*

This course is an advanced-level class for students seeking further instruction in the craft of musical composition. Traditional compositional techniques and concepts will be studied through demonstration and practice. Students will refine their ability to use a computer to notate their compositions, will continue to work with nonfunctional tonal harmony, will write music for larger ensembles, will have a piece performed in a music department recital, and will compile a portfolio of their work. 1 hr. lecture/wk.

## MUS 171

**Voice Class I** (1 CR)

This course is designed to introduce the student to beginning vocal technique, vocal vocabulary, performance experience and solo vocal repertoire. 1 hr./wk.

## MUS 172

**Voice Class II** (1 CR)

*Prerequisite: MUS 171*

This course is designed to continue instruction in proper vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

## MUS 173

**Voice Class III** (1 CR)

*Prerequisite: MUS 172*

This course is designed to continue instruction in proper vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

## MUS 174

**Voice Class IV** (1 CR)

*Prerequisite: MUS 173*

This course is designed to continue instruction in proper vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

## MUS 176

**Jazz Band I** (1 CR)

*Prerequisite: Audition required*

This is an entry-level course in the jazz band performing format for the student with little or no experience in this course of study. The student will learn, through rehearsal and performance, the basic elements of music and how these are utilized in the jazz band. Topics will include simple rhythms, basic melodic construction and major scale construction. 3 hrs./wk.

## MUS 177

**Jazz Band II** (1 CR)

*Prerequisite: MUS 176 or audition required*

This is a beginning-level course for the student with at least one semester of prior jazz band experience. Through rehearsal and performance, the student will learn beginning elements of music as applied to the jazz band performing format. Topics covered will include syncopated rhythm, Dorian minor scales and blues form. 3 hrs./wk.

## MUS 178

**Jazz Band III** (1 CR)

*Prerequisites: MUS 177 and audition required*

This is an intermediate-level course for the student with at least two semesters of prior jazz band experience. Through rehearsal and performance, the intermediate levels of jazz band performance will be learned. Topics covered will include Latin style, Mixolydian scales and the 32-bar song form. 3 hrs./wk.

## MUS 179

**Jazz Band IV** (1 CR)

*Prerequisites: MUS 178 and audition required*

This is an advanced-level course for the student with at least three semesters of prior jazz band experience. Advanced elements of jazz music will be learned through rehearsal and performance. Topics covered will include Lydian scales and ensemble performance techniques. 3 hrs./wk.

## MUS 187

**Jazz Improvisation I** (2 CR)

*Prerequisite: Audition*

This is an entry-level course for the student with little or no jazz improvisation experience. Through written work and performance on the instrument of choice, the student will learn the basic elements of jazz improvisation. Topics

to be covered will include identification and performance of basic intervals, major scales, Dorian modes, Mixolydian modes, major seventh chords, minor seventh chords, dominant seventh chords and the basic blues form. 2 hrs./wk.

## MUS 188

**Jazz Improvisation II** (2 CR)

*Prerequisites: MUS 187 and audition required*

This is an advanced-level course for the student with at least one semester of jazz improvisation. Through performance on the chosen instrument and written studies, the student will learn advanced concepts of jazz improvisation. Topics to be covered include jazz performance style, construction of the improvised solo and 32-bar song form. 2 hrs./wk.

## MUS 191

**Concert Band I** (1 CR)

*Prerequisite: Audition required*

This is an entry-level course in the concert band format for the student with little or no concert band experience. Students will learn the basic elements of music as related to the concert band through rehearsal and performance. Topics include counting and subdividing motifs into melodies; and differentiating between major and minor tonalities. 3 hrs./wk.

## MUS 192

**Concert Band II** (1 CR)

*Prerequisites: MUS 191 and audition required*

This is a beginning-level course in the concert band format for the student with at least one semester of prior concert band experience. Students will learn the beginning-level elements of music as related to the concert band through rehearsal and performance. Topics to be covered include odd meters, minor scales and homophonic texture. 3 hrs./wk.

## MUS 193

**Concert Band III** (1 CR)

*Prerequisite: MUS 192 or audition required*

This is an intermediate course for the student with at least two semesters of prior concert band experience. Through rehearsal and performance, the student will learn intermediate levels of the elements of music in the concert band format. Topics will include parade march style, concert march style and concert overture style. 3 hrs./wk.

## MUS 194

**Concert Band IV** (1 CR)

*Prerequisite: MUS 193 or audition required*

This is an advanced course for the student with at least three semesters of prior concert band performing experience. Through rehearsal and performance, the student will learn the advanced concepts of concert band performance. Topics will include polyphonic texture, concert suite style and medley style. 3 hrs./wk.

## MUS 195

**Vocal Jazz Ensemble I** (1 CR)

*Prerequisite: Audition required*

This is an entry-level course in the vocal jazz performing format. Through rehearsal and public performance, the student will learn the basic elements of music as applied to vocal jazz. Topics will include 8th note swing, jazz syncopation and 32-bar song form. 3 hrs./wk.

## MUS 196

**Vocal Jazz Ensemble II** (1 CR)

*Prerequisites: MUS 195 and audition required*

This is a beginning-level course in the vocal jazz performing format. Through rehearsal and public performance, the student will learn the basic elements of music as applied to vocal jazz. Topics will include Dorian minor scales, Mixolydian scales and 12-bar blues form. 3 hrs./wk.

## MUS 197

**Vocal Jazz Ensemble III** (1 CR)

*Prerequisites: MUS 196 and audition required*

This is an intermediate-level course in the vocal jazz performing format. Through rehearsal and public performance, the student will learn the basic elements of music as applied to vocal jazz. Topics will include beginning improvisation, Latin rhythm and major scales. 3 hrs./wk.

## MUS 198

**Vocal Jazz Ensemble IV** (1 CR)

*Prerequisites: MUS 197 and audition required*

This is an advanced-level course in the vocal jazz performing format. Through rehearsal and public performance, the student will learn the basic elements of music as applied to vocal jazz. Topics will include scat, improvisation in 32-bar song form, Lydian scales and ballad style. 3 hrs./wk.

## MUS 201

**Chamber Ensemble I** (1 CR)

*Prerequisite: Audition required*

This is an entry-level course for the student with little or no experience in the chamber ensemble performing format. Through written work and performance on the chosen instrument, the student will learn the basic fundamentals of this performing medium. Topics to be covered will include tone quality, intervals and rhythmic patterns. 2 hrs./wk.

## MUS 202

**Chamber Ensemble II** (1 CR)

*Prerequisite: MUS 201 or placement by instructor*

This is a beginning-level course for the student with at least one semester of experience in the chamber ensemble performing format. Through written work and performance on the chosen instrument the student will learn the basic fundamental of this performing medium. Topics to be covered will include minor scales, chord construction and compound rhythms. 2 hrs./wk.

## MUS 203

**Chamber Ensemble III** (1 CR)

*Prerequisite: MUS 202 or placement by instructor*

This is an intermediate-level course for the student with at least two semesters of chamber ensemble experience. Through written work and performance on the chosen instrument, the student will learn intermediate-advanced concepts of chamber ensemble performance. Topics to be covered include sight reading, intonation and style. 2 hrs./wk.

## MUS 204

**Chamber Ensemble IV** (1 CR)

*Prerequisite: MUS 203 or placement by instructor*

This is an advanced-level course for the student with at least three semesters of prior ensemble experience. Through performance on the chosen instrument, the student will learn the advanced concepts of chamber ensemble performance. Topics to be covered will include balance and cooperative expression. 2 hrs./wk.

## MUS 211

**Orchestra I** (1 CR)

*Prerequisite: Audition required*

This is an entry-level course in the orchestra format for the student with little or no orchestra experience. Students will learn the basic elements of music as related to the orchestra through rehearsal and performance. Topics include counting and subdividing duple, triple and quadruple rhythm; assembling melodic motifs into melodies; and differentiating between major and minor tonalities. Students will rehearse and perform with the Overland Park Civic Orchestra. 2 hrs. (1 evening)/wk.

## MUS 212

**Orchestra II** (1 CR)

*Prerequisites: MUS 211 and audition required*

This is a beginning-level course in the orchestra format for the student with at least one semester of prior orchestra experience. Students will learn the beginning-level elements of music as related to the orchestra through rehearsal and performance. Topics to be covered include odd meters, minor scales and homophonic texture. 2 hrs. (1 evening)/wk.

## MUS 213

**Orchestra III** (1 CR)

*Prerequisites: MUS 212 and audition required*

This is an intermediate course for the student with at least two semesters of prior orchestra experience. Through rehearsal and performance, the student will learn intermediate levels of the elements of music in the orchestra format. Topics will include parade march style, concert march style and concert overture style. (1 evening)/wk.

## MUS 214

**Orchestra IV** (1 CR)

*Prerequisites: MUS 213 and audition required*

This is an advanced course for the student with at least three semesters of prior orchestra performing experience. Through rehearsal and performance, the student will learn advanced concepts in orchestral performance. Topics will include polyphonic texture, concert suite style and medley style. 2 hrs. (1 evening)/wk.

## MUS 221

**Piano Class I** (2 CR)

This course provides a basic knowledge of music and the essential techniques required to play the piano. Students will learn essential musical terminology, including musical notation and symbols, major and minor key signatures, and the harmonization of melodies using tonic and dominant triads. Specific piano-related terminology will include finger exercises, basic keyboard repertoire using major and minor five-finger patterns, major and minor scales, major and minor triads in root position, ensemble playing of two to four parts, and the formation of good practice habits. Group Piano II should follow the successful completion of this course. Private piano lessons are encouraged for students who successfully complete both courses. 2 hrs./wk.

## MUS 222

**Piano Class II** (2 CR)

*Prerequisites: MUS 221 and instructor approval required*

This is a beginning-level course that provides a basic knowledge of keyboard instruments. Students will learn and review musical terminology, musical notation and symbols, and specific piano-related terminology. Topics covered will include major and minor key signatures; exercises and repertoire using major and minor scales; exercises and repertoire using major, minor, diminished and augmented triads in root position and inversions; chord

progressions; ensemble playing of two to four parts; and use of the damper pedal. This course is the continuation of MUS 221. Completion of this course should precede Applied Piano I. This course is for beginners able to progress at a fast pace, students with minimal previous experience or students who have completed MUS 221. 2 hrs./wk.

## MUS 223

**Piano Class III** (2 CR)

*Prerequisite: MUS 222 or permission of the instructor*

This is an intermediate course that provides a basic knowledge of keyboard instruments. Students will learn and review musical terminology, musical notation and symbols, and specific piano-related terminology. Topics covered will include major and minor key signatures; exercises and repertoire using major and minor scales and modes; exercises and repertoire using major, minor, diminished and augmented triads in root position and inversions; chord progressions; ensemble playing of two to four parts; and use of the damper pedal. This course is the continuation of MUS 222. Completion of this course should precede Applied Piano I. This course is designed for students who have completed one year of study or who have completed MUS 222. 2 hrs./wk.

## MUS 224

**Piano Class IV** (2 CR)

*Prerequisite: MUS 223 or permission of the instructor*

This is an advanced-level course for the student with at least three semesters of prior piano class instruction. Students will learn the advanced concepts of piano playing. Topics to be covered will include basic music notation, major and minor key signatures, tempo indications, major and minor arpeggios, finger patterns, practice method chord progressions, and the use of the damper pedal. 2 hrs./wk.

## MUS 226

**Applied Guitar I (Class)** (1 CR)

Students will be provided with a foundation in guitar technique upon which to base further study of the instrument. The course consists of an introduction to the use of the guitar as a solo, accompaniment and ensemble instrument. 1 hr./wk.

## MUS 227

**Applied Guitar II (Class)** (1 CR)

*Prerequisite: MUS 226 or instructor permission*

This continuation of MUS 226 builds a foundation in guitar technique upon which to base further study of the instrument. The course continues to teach techniques that enable students to use the guitar as a solo, accompaniment and ensemble instrument. 1 hr./wk.

## MUS 228

**Applied Guitar III (Class)** (1 CR)

*Prerequisite: MUS 227 or instructor permission*

This continuation of MUS 227 is designed to move students from the basic skill level to the intermediate skill level. The course continues to teach techniques that enable students to use the guitar as a solo, accompaniment and ensemble instrument. 1 hr./wk.

## MUS 229

**Applied Guitar IV (Class)** (1 CR)

*Prerequisite: MUS 228 or instructor permission*

This is a continuation of MUS 228 at an intermediate level of guitar playing skills. The course continues to teach techniques that enable students to use the guitar as a solo, accompaniment and ensemble instrument. 1 hr./wk.

## MUS 231

**Applied Voice I (Private)** (1 CR)

This course is designed to introduce the student to beginning vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

## MUS 232

**Applied Voice II (Private)** (1 CR)

*Prerequisite: MUS 231*

This course uses private lessons to continue instruction in beginning vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

## MUS 233

**Applied Voice III (Private)** (1 CR)

*Prerequisite: MUS 232*

This course uses private lessons to continue instruction in beginning intermediate vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

## MUS 234

**Applied Voice IV (Private)** (1 CR)

*Prerequisite: MUS 233*

This course uses private lessons to continue instruction in intermediate vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

## MUS 236

**Applied Piano I (Private)** (1 CR)

This is an entry-level course for the student with little or no prior piano training. This course provides a basic knowledge of keyboard instruments. Students will learn essential musical terminology, musical notation and symbols, and specific piano-related terminology. Topics covered will include major and minor key signatures; exercises and repertoire using major and minor five-finger patterns; and exercises and repertoire using major and minor scales.

## MUS 237

**Applied Piano II (Private)** (1 CR)

*Prerequisite: MUS 236*

This is a beginning-level course for the student with at least one semester of prior applied piano study. Students will learn the intermediate-level concepts of piano performance. Topics to be covered will include major scales and the natural and harmonic forms of the minor scales, rhythmic patterns and subdivisions of duple and triple meter and the basic keyboard literature of the intermediate level.

## MUS 238

**Applied Piano III (Private)** (1 CR)

*Prerequisite: MUS 237*

This is an intermediate-level course for the student with at least two semesters of prior applied piano study. Students will learn the intermediate-level concepts of piano performance. Topics to be covered will include scale, the melodic form of the minor scale, rhythmic patterns and subdivisions of compound meter, and the basic keyboard literature of the intermediate level.

## MUS 239

**Applied Piano IV (Private)** (1 CR)

*Prerequisite: MUS 238*

This is an advanced-level course for the student with at least two semesters of prior applied piano study. Students will learn the intermediate level concepts of piano performance. Topics to be covered will include Dorian and Mixolydian modes, pentatonic scales and performance of a Chopin etude.

## MUS 241

**Applied Guitar I (Private)** (1 CR)

In this private study in basic guitar technique, emphasis will be upon playing position, posture, tone production and basic music reading skills. Students will begin with studies and short pieces.

## MUS 242

**Applied Guitar II (Private)** (1 CR)

*Prerequisite: MUS 241 or instructor approval*

This is a continuation of private study in basic guitar technique. Emphasis will be upon playing position, posture, tone production and basic music-reading skills. Students will begin with studies and short pieces.

## MUS 243

**Applied Guitar III (Private)** (1 CR)

*Prerequisite: MUS 242 or instructor approval*

In this private study in intermediate guitar technique, emphasis will be on playing position, posture, tone production and intermediate music reading skills. Students will progress toward playing literature requiring intermediate skill levels.

## MUS 244

**Applied Guitar IV (Private)** (1 CR)

*Prerequisite: MUS 243 or instructor approval*

In this continuation of private study in intermediate guitar technique, emphasis will be on playing position, posture, tone production and intermediate music reading skills. Students will progress toward playing literature requiring intermediate skill levels.

## MUS 246

**Applied Classical Guitar I (Private)** (1 CR)

Private study in basic classical guitar technique and repertoire. Emphasis will be upon classical left- and right-hand technique, playing position, posture, tone production and standard classical guitar literature. Students will begin with studies and short pieces.

## MUS 247

**Applied Classical Guitar II (Private)** (1 CR)

*Prerequisite: MUS 246 or instructor approval*

This continuation of private study in basic classical guitar technique and repertoire will emphasize classical left- and right-hand technique, playing position, posture, tone production and standard classical guitar literature. Students will continue with studies and short pieces, then progress toward longer pieces with the intent of performing these in a recital situation.

## MUS 248

**Applied Classical Guitar III (Private)** (1 CR)

*Prerequisite: MUS 247 or instructor approval*

In this private study in intermediate classical guitar technique and repertoire, emphasis will be on classical left- and right-hand technique, playing position, posture, tone production and standard classical guitar literature. Students will progress toward playing and performing more advanced pieces and guitar studies.

## MUS 249

**Applied Classical Guitar IV (Private)** (1 CR)

*Prerequisite: MUS 248 or instructor approval*

This continuation of private study in intermediate classical guitar technique and repertoire will emphasize classical left- and right-hand technique, playing position, posture, tone production and standard classical guitar literature. Students will progress toward playing and performing more advanced pieces and guitar studies.

## MUS 251

**Applied Brass I (Private)** (1 CR)

This is an entry-level course for the student with little or no experience in performing on a brass instrument. Through written exercises and performance on the instrument of choice, the student will learn the basic concepts of brass performance. Topics to be covered include tone production, basic musical intervals and major scales.

## MUS 252

**Applied Brass II (Private)** (1 CR)

*Prerequisite: MUS 251 or placement by instructor*

This is a beginning-level course for the student with at least one semester of prior brass instrument study. Through written exercises and performance on the instrument of choice, the student will learn the beginning concepts of brass performance. Topics to be covered include embouchure development, minor scales and duple and triple rhythmic patterns.

## MUS 253

**Applied Brass III (Private)** (1 CR)

*Prerequisite: MUS 252 or placement by instructor*

This is an intermediate-level course for the student with at least two semesters of prior brass instrument study. Through written exercises and performance on the instrument of choice, the student will learn the intermediate concepts of brass performance. Topics to be covered include the chromatic scale, quadruple rhythmic patterns and chord construction.

## MUS 254

**Applied Brass IV (Private)** (1 CR)

*Prerequisite: MUS 253 or placement by instructor*

This is an advanced-level course for the student with at least three semesters of prior brass instrument study. Through written exercises and performance on the instrument of choice, the student will learn the advanced concepts of brass performance. Topics to be covered include the pentatonic scale, whole tone scale and melodic contours.

## MUS 256

**Applied Percussion I (Private)** (1 CR)

This is an entry-level course for the student with little or no training in percussion instruments. The student will learn the beginning concepts of percussion performance. Topics to be covered include basic duple and triple rhythm, snare drum rudiments and basic snare drum performance patterns.

## MUS 257

**Applied Percussion II(Private)** (1 CR)

*Prerequisite: MUS 256 or placement by instructor*

This is a beginning-level course for the student with at least one semester of prior instruction in percussion instruments. The student will learn beginning concepts of percussion performance. Topics to be covered include compound rhythm, snare drum rudiments and basic timpani skills.

## MUS 258

**Applied Percussion III (Private)** (1 CR)

*Prerequisite: MUS 257 or placement by instructor*

This is an intermediate-level course for the student with at least two semesters of prior instruction in percussion instruments. The student will learn beginning concepts of percussion performance. Topics to be covered include snare drum rudiments, basic mallet percussion skills and suspended cymbal skills.

## MUS 259

**Applied Percussion IV (Private)** (1 CR)

*Prerequisite: MUS 258 or placement by instructor*

This is an advanced-level course for the student with at least three semesters of prior instruction in percussion instruments. The student will learn advanced concepts of percussion performance. Topics to be covered include snare drum rudiments, crash cymbal techniques and drum set skills.

## MUS 261

**Applied Woodwind I (Private)** (1 CR)

This is an entry-level course for the student with little or no experience performing on a woodwind instrument. Through written exercises and performance on the instrument of choice, the student will learn the basic elements of woodwind performance. Topics to be covered include tone production, basic intervals and major scales.

## MUS 262

**Applied Woodwind II (Private)** (1 CR)

*Prerequisite: MUS 261 or placement by instructor*

This is a beginning-level course for the student with at least one semester of prior woodwind study. The student will learn beginning concepts of woodwind performance on the chosen instrument through written exercises and performance. Topics to be covered include embouchure development, minor scales and duple and triple meters.

## MUS 263

**Applied Woodwind III (Private)** (1 CR)

*Prerequisite: MUS 262 or placement by instructor*

This is an intermediate-level course for the student with at least two semesters of prior woodwind study. The student will learn the intermediate concepts of woodwind performance through written exercises and performance. Topics to be covered include chromatic scale, quadruple rhythmic patterns and chord construction.

## MUS 264

**Applied Woodwind IV (Private)** (1 CR)

*Prerequisite: MUS 263 or placement by instructor*

This is an advanced-level course for the student with at least three semesters of prior woodwind study. Through written exercises and performance, the student will learn the advanced concepts of woodwind performance. Topics to be covered include pentatonic scale, whole tone scale and melodic contour.

## MUS 266

**Applied Harp I (Private)** (1 CR)

This course is the first college level course for harp students. The student will work in a studio setting with an instructor. Assignments will be based on the individual student's readiness, but work will emphasize growth in areas of technical development, understanding musical styles, developing music vocabulary and building a performance repertoire. 1/2 hr./wk.

### MUS 267

**Applied Harp II (Private)** (1 CR)

*Prerequisite: MUS 266*

This course continues the work in Applied Harp I. The student will work in a studio setting with an instructor. Assignments will be based on the individual student's readiness. Work will emphasize further growth in areas of technical development, understanding musical styles, developing music vocabulary and building a performance repertoire. 1/2 hr./wk.

### MUS 268

**Applied Harp III (Private)** (1 CR)

*Prerequisite: MUS 267*

This course continues the work in Applied Harp II. The student will work in a studio setting with an instructor. Assignments will be based on the individual student's readiness. Work will emphasize further growth in areas of technical development, understanding musical styles, developing music vocabulary and building a performance repertoire. 1/2 hr/wk.

### MUS 269

**Applied Harp IV (Private)** (1 CR)

*Prerequisite: MUS 268*

This course continues the work in Applied Harp III. The student will work in a studio setting with an instructor. Assignments will be based on the individual student's readiness. Work will emphasize further growth in areas of technical development, understanding musical styles, developing music vocabulary and building a performance repertoire. 1/2 hr./wk.

# Nursing (NURS)

### NURS 124

**Foundations of Nursing** (9 CR)

*Prerequisites: Admission to the Nursing Program and current certification in Kansas as Certified Nursing Assistant (CNA) and Cardiopulmonary Resuscitation Certification (CPR) for Health Care Providers and CHEM 122 and MATH 116 or higher level MATH course and corequisite: BIOL 144 and PSYC 130*

This course is the first in a sequence of five nursing courses. Students will acquire nursing knowledge and skills necessary to care for patients across the health care continuum. Students will use a critical thinking approach to apply fundamental principles of nursing to patient care. In the clinical component, students will apply theoretical content and therapeutic interventions to patients with health alterations. Course instruction will occur in the classroom, online, in the health resource center and healthcare agencies. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 4 hrs. lecture, 1 hr. lab, 15 hr. clinical/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $540 to $565.

### NURS 126

**Nursing Care of the Adult: Health Alterations** (9 CR)

*Prerequisites: BIOL 144 and PSYC 130 and NURS 124 and prerequisite or corequisite: PSYC 218*

This course is the second in a sequence of five nursing courses. Students will build on fundamental nursing knowledge and skills acquired in the first nursing course to care for adult patients across the health care continuum. The content will emphasize nursing care of older adults experiencing complex

multi-system conditions. The content will also include nursing care for young, middle-aged, and older adults experiencing alterations in mental health. The student will use a critical thinking approach to apply concepts of adaptation, nursing process, therapeutic interactions, communication, and teaching/learning in the care of the culturally diverse patient. In the critical component, students will apply theoretical content and therapeutic nursing interventions to patients with acute and chronic health alterations. Course instruction will occur in the classroom, online, in the health resource center and health care agencies. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 4 hrs. lecture, 1 hr. lab, 15 hr. clinical/wk.

### NURS 136

**LPN-RN Transition Course** (6 CR)

*Prerequisites: Completion of LPN program, Current Cardiopulmonary Resuscitation Certificate (CPR) for Health Care Providers and CHEM 122 and MATH 116 or higher and either BIOL 144 or BIOL 140 and BIOL 225 and ENGL 121 and PSYC 130 and PSYC 218*

This course is an introduction to the second year of the associate degree nurse (ADN) program for graduates of licensed practical nurse (LPN) programs. The content will emphasize nursing care for patients experiencing alterations in mental health and complex multi-system conditions. The student will use a critical thinking approach to apply concepts of adaptation, nursing process, therapeutic interactions, and teaching learning in the care of the patient. An in-depth examination of physical assessment and psychomotor/communication skills will prepare the student for transition to the associate degree nursing program. Course instruction will occur in the classroom, online, in the health resource center, and health care agencies. 15 hrs. lecture, 1 hr. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $320.

### NURS 228

**Nursing Care of the Childbearing Family** (5 CR)

*Prerequisites: ENGL 121 and PSYC 218 and NURS 126 Corequisites: BIOL 230 and either SOC 122 or SOC 125 and NURS 230*

This course is the third or fourth in a sequence of five nursing courses. Students will acquire nursing knowledge and skills necessary to care for the childbearing family. Common alterations, stressors in the family, cultural sensitivity and the art of nursing will be emphasized during the antepartum, intrapartum, postpartum and newborn periods. Students will use principles of therapeutic communication, critical thinking, and teaching/learning to apply nursing process to both normal and high-risk mothers and newborns. In the clinical component, students will apply theoretical content and therapeutic nursing interventions with a caring approach to a culturally diverse population. Course instruction will occur in the classroom, online, in the health resource center and health care agencies. This course will be taken in the same semester with NURS 230, Nursing Care of Children. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 4 hrs. lecture, 1 hr. lab, 15 hrs. clinical/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $160.

### NURS 230

**Nursing Care of Children** (5 CR)

*Prerequisites: ENGL 121 and PSYC 218 and NURS 126 Corequisites: BIOL 230 and SOC 122 or SOC 125 and NURS 228*

This course is the third or fourth in a sequence of five nursing courses. Students will acquire nursing knowledge skills necessary to care for infants through adolescents on a continuum of health and adaptation that may result in acute or chronic illness. Students will use principles of therapeutic communication, psychosocial concepts, growth and development, critical thinking, and organization to apply the nursing process to culturally diverse

populations. In the clinical component, students will apply theoretical content and therapeutic nursing interventions to infants/children/adolescents with acute and/or chronic health alterations. Course instruction will occur in the classroom, online, in the health resource center and health care agencies. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 4 hrs. lecture, 1 hr. lab, 15 hrs. clinical/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $160.

### NURS 232

**Complex Patient Care Management** (9 CR)

*Prerequisites: NURS 228 and NURS 230*

This course is the last in a sequence of five nursing courses that will enable students to care for patients experiencing complex multi-system health alterations across the health care continuum. Students will use a critical thinking approach to apply concepts of management to a group of patients in a health care setting. This course integrates knowledge and skills acquired in the previous four courses and facilitates student transition to professional nursing practice. In the clinical component, students will apply theoretical content and therapeutic nursing interventions to a group of patients/families with complex, acute and chronic health alterations. Course instruction will occur in the classroom, online, in the health resource center and health care agencies. 4 hrs. lecture, 1 hr. lab, 15 hrs. clinical/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $450 to $550.

### NURS 234

**Registered Nurse Refresher** (9 CR)

*Prerequisite: Previously licensed as a registered nurse. Corequisite: Current CPR certification for health care providers, professional liability insurance, current immunizations, health and dental records up-to-date*

The course will prepare the Registered Nurse (RN) to reenter the acute health care setting for employment after an absence from the patient care arena. The course has a general med-surg focus, and will review adult anatomy and physiology, pathophysiology, pharmacology, lab values and key issues related to patient care. The course includes classroom, lab, simulation, clinical and preceptorship experiences.

### NURS 236

**Registered Nurse Perioperative Nursing** (3 CR)

*Prerequisites: Currently licensed as a Registered Nurse and current CPR certification for health care providers Corequisite: Could possibly complete CPR while taking this course*

This course will prepare the novice perioperative registered nurse (RN) or the RN desiring to enhance employment opportunities in the perioperative setting with basic didactic perioperative content. The course will provide the rationale and theory needed to provide safe patient care in the perioperative setting as an operating room nurse. The course is designed to supplement clinical practice. 2 hrs lecture 1 hr. lab/wk.

### NURS 238

**Registered Nurse Perioperative Clinical** (2 CR)

*Prerequisites: Currently licensed as a Registered Nurse and current CPR certification for health care providers Corequisite: NURS 236*

This course will prepare the novice registered nurse (RN) desiring to enhance employment opportunities in the perioperative setting with basic perioperative skill competencies. The clinical practice will be in the perioperative setting to provide a realistic experience for the student. 192 clinical hours

# Occupational Therapy Assistant (KOT)

### KOT 100

**Introduction to Occupational Therapy** (2 CR)

Introduction to the history, philosophy and practice of occupational therapy. Exploration of diversity and the role it plays in health care. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KOT 102

**Documentation Guidelines** (2 CR)

*Prerequisite: Formal admission into the occupational therapy assistant program*

Guidelines for documentation of occupational therapy services. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KOT 103

**Clinical Conditions** (2 CR)

*Prerequisite: Formal admission into the occupational therapy assistant program*

Etiology, clinical process and prognosis of common diseases and illnesses. Effect of disease or illness on an individual's performance and the impact this has on the person, family and society. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KOT 106

**Therapeutic Interventions I** (4 CR)

*Prerequisite: Formal admission into the occupational therapy assistant program*

Basic therapeutic interventions, techniques, applications and legislation pertinent to OT practice. Learn OT's role in promoting health and wellness. 2.5 hrs. lecture, 3 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KOT 112

**Basic Emergency Patient Care** (1 CR)

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. lecture/wk. Course taught at Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KOT 116

**Level I Fieldwork I** (1 CR)

*Prerequisite: Formal admission into the occupational therapy assistant program*

Introduction to the role, policies and procedures of fieldwork. Directed experience in a specified community setting. 0.5 hr. lecture, 1 hr. lab/ wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KOT 118

**Assistive Technology** (2 CR)

*Prerequisites: BIOL 144 and BIOL 145, KOT 112, KOT 100, 102, 103, 106 and 116*

Hands-on introduction to high-tech assistive technology and augmentative communication. 1 hr. lecture, 2 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KOT 120

**Pediatrics** (3 CR)

*Prerequisites: KOT 112, BIOL 144 and BIOL 145 and KOT 100, KOT 102, KOT 103, KOT 106 and KOT 116*

Occupational therapy practice as it relates to individuals from birth to early adolescence. Study of normal growth and development. 3 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of occupational therapy assistant about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KOT 121

**Level I Fieldwork II**

*Prerequisites: BIOL 144 and BIOL 145, KOT 112, and KOT 100, KOT 102, KOT 103, KOT 106 and KOT 116 and concurrent enrollment in KOT 120*

Directed experience in a specified community setting. Course is .5 credit hour. 1 hr. clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KOT 130

**Analysis of Physical Performance** (3 CR)

*Prerequisites: KOT 112, BIOL 144 and BIOL 145, KOT 100, KOT 102 KOT 103 KOT 106 and KOT 116*

Analysis and evaluation of the components of physical performance and their relationship to functional activities. 2 hrs. lecture, 2 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KOT 154

**Applied Neurology** (2 CR)

*Prerequisites: BIOL 144 and BIOL 145, MCC BIOL 210, and admission to OTHA or PTHA program.*

Foundations of neuroscience necessary for practice as a rehabilitation professional. Correlation of Clinical problems with pathology of the nervous system. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KOT 173

**Special Topics** (2 CR)

*Prerequisite: Concurrent enrollment in physical therapy assistant or occupational therapy assistant programs or completion of an associate or advanced degree in physical therapy or occupational therapy*

A study of advanced topics relevant to the current practice of rehabilitation. Cross listed as KPT 173. 2 hrs. lecture/wk. Course taught at Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KOT 201

**Mental Health** (2.5 CR)

*Prerequisites: KOT 118 and KOT 120 and KOT 121 and KOT 130 and KOT 154*

Occupational therapy assessment and treatment techniques in the mental health setting. 2 hrs. lecture, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KOT 202

**Physical Dysfunction** (3 CR)

*Prerequisites: KOT 118 and KOT 120 and KOT 121 and KOT 130 and KOT 154*

Occupational therapy assessment and treatment used with the physically and cognitively challenged population. 3 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KOT 203

**Gerontology** (3 CR)

*Prerequisites: KOT 118 and KOT 120 and KOT 121 and KOT 130 and KOT 154*

Concepts and processing of aging. The role of occupational therapy with the elderly. 3 hr. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KOT 208

**Therapeutic Interventions II** (2 CR)

*Prerequisites: KOT 118 and KOT 120 and KOT 121 and KOT 130 and KOT 154*

Advanced therapeutic interventions and techniques used to enhance functional ability and independence in daily life tasks and occupations. 1 hr. lecture, 2 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KOT 212

**Level I Fieldwork III** (2 CR)

*Prequisites: KOT 118 and KOT 120 and KOT 121 and KOT 130 and KOT 154*

Directed experience in specified community settings. 4 hrs. clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant

program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KOT 217

**Fieldwork Seminar** (3 CR)

*Prerequisites: KOT 118 and KOT 120 and KOT 121 and KOT 130 and KOT 154*

Preparation for full-time clinical practice, the national certification process, state licensure, and future employment. 3 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KOT 222

**Level II Fieldwork** (12 CR)

*Prerequisites: KOT 201, KOT 202, KOT 203, KOT 208 and KOT 212 and KOT 217*

Directed clinical experience in different practice areas of occupational therapy. 40 hrs. field studies/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the occupational therapy assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

# Philosophy (PHIL)

### PHIL 121

**Introduction to Philosophy** (3 CR)

Students will examine the basic questions of philosophical inquiry, such as the nature of being, and the ways humans acquire knowledge and moral, social, religious and political values. Emphasis is on the application of the study of traditional problems of philosophy to the study of contemporary society. 3 hrs./wk.

### PHIL 124

**Logic and Critical Thinking** (3 CR)

This course is an inquiry into techniques of persuasion and the standards for interpretation and assessment that are the basis for critical thinking. Argumentative and 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 causal claims. Relations between categorical propositions and Venn diagrams are examined and, finally, the course suggests strategies for fresh attacks on conceptual problems. 3 hrs./wk.

### PHIL 138

**Business Ethics** (1 CR)

This course applies classical and contemporary theories of morality to problems, questions and dilemmas arising in business. Using the major concepts and principles of deontological, consequentialist and perfectionist theories, it examines and analyzes cases involving such areas as employer/employee relations, corporate responsibility, truth telling in business and workplace diversity. Emphasis is on the development of moral reasoning skills that allow for meaningful analysis and evaluation of moral situations. 1 hr./wk.

### PHIL 143

**Ethics** (3 CR)

This course provides a systematic and critical study of values related to human conduct. It focuses on both traditional standards of ethical conduct and qualities of personal character. What we hold to be right or wrong, the basis for believing so, and what we consider to be virtues or vices are examined with an eye to understanding our current ethical situation. 3 hrs./wk.

### PHIL 154

**History of Ancient Philosophy** (3 CR)

This course provides a thorough exploration of ancient Greek and Roman philosophical thought from the original efforts of the Pre-Socratics to understand the fundamental operations of the natural world to concerns about the way a person might live successfully in nature and society. Also explored are the notable Athenians of the classical period, Protagoras, Socrates, Plato and Aristotle, and the later schools of thought such as cynicism, skepticism, hedonism and stoicism. In the process, it provides a comprehensive understanding of the philosophical foundations of the Western world view. 3 hrs./wk.

### PHIL 161

**Elementary Symbolic Logic** (3 CR)

This course is a beginning course in symbolic logic and should be of particular benefit to those students who will pursue more advanced studies in linguistics, philosophy of language, mathematics or computer science. Students will be introduced to modern analytical techniques of formal deductive logic. Students should gain the ability to use a formal language to translate English language arguments and the ability to demonstrate the validity or invalidity of symbolic arguments using the techniques of truth-table analysis and formal proof. Some attention will also be given to the historical development of symbolic logic. 3 hrs./wk.

### PHIL 176

**Philosophy of Religion** (3 CR)

This course is an inquiry into the nature of religion, religious thought and religious language. It addresses philosophical topics such as the nature of religious belief, the apparent need of some people for religion, the arguments offered as proof for and against the existence of God, apparent contradictions between scientific and religious teachings, special problems raised by religious language, and the changes religion and philosophy of religion have made to accommodate a modern world view. 3 hrs./wk.

### PHIL 210

**History of Modern Philosophy** (3 CR)

*Prerequisite: PHIL 121 or PHIL 143 or HIST 125 or HIST 126*

This course takes a historical approach to the development of modern philosophy and covers the period from the Renaissance to the 20th-century. The course will cover the epistemological, metaphysical and relevant axiological issues of the major philosophers and philosophical movements of this period. The course will also examine the influence of modern philosophy on contemporary thought. 3 hrs. lecture/wk.

# Photography (PHOT)

### PHOT 121

**Fundamentals of Photography** (3 CR)

This course provides an introduction to the tools, procedures, concepts and application of photographic imaging. Students will use cameras, light meters and darkroom equipment for film developing and printing to make images to meet the requirements of a series of assignments designed to develop specific skills, competencies and points of view and to stimulate the students' creative capacities for personal expression, communication and self-understanding. Students must provide their own camera with adjustable focus, shutter speeds

and aperture. 6 hrs. lecture, lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $150.

### PHOT 122

**Advanced Photography** (3 CR)

*Prerequisite: PHOT 121*

This course provides an introduction to advanced techniques, tools, procedures and concepts of photographic imaging, with an emphasis on black-and-white photography as a fine art. Students will use Zone System tests and procedures to produce prints of maximum quality. Students will use advanced techniques, such as split-developers for contrast control, multiple-imaging and archival processing, and print presentation. Several "alternative" printing processes will be discussed and demonstrated. This course also includes a basic introduction to medium format (2 1/4) and large format (4 x 5) camera equipment and technique. Students will apply the above to make images for a series of conceptually advanced, project/series-oriented assignments to stimulate the student's creative capacities for personal expression, communication and self-understanding. 6 hrs. lecture, lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $150.

### PHOT 123

**Studio Photography** (3 CR)

*Prerequisite: PHOT 121*

This course provides an introduction to advanced techniques, tools, procedures and concepts of studio and commercial photography. Students will use professional camera and studio equipment, including studio electronic flash and hand-held light/flash meters. This course also includes an introduction to professional medium format (2 1/4) and large format (4"x5") equipment and advanced camera techniques for total image control. Students will use studio lighting for various portraiture styles and for small-product, table-top photography. Applications of digital photography as they apply to studio photographic processes will be introduced. Students will apply the above to make images for a series of advanced studio assignments. 6 hrs. lecture, lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $75 to $$150.

### PHOT 125

**Photography for Publication** (3 CR)

*Prerequisite: PHOT 121*

This course provides an introduction to the concepts and application of photographic imaging for media publication. Students will use cameras, computers, software, scanners and image-output devices to master the issues, concepts and constraints involved in creating images for a broad range of publication needs. They will prepare and format digitized image files for storage, transmission and print-based and Web-based reproduction. This course is designed to meet the photographic imaging needs of journalism students. 6 hrs. lecture, lab/wk.

### PHOT 128

**Digital Photography** (3 CR)

This course is an introduction to the concepts, tools and technology of digital imaging for photographers. Students will develop competence in the use of digital photographic equipment, software, storage devices and printers to produce digital photographic images satisfying the requirements of a series of assignments designed to develop specific skills and competencies. Students will "capture," manipulate, correct, transmit, store and output images. They will use digital technology to produce images for commercial and/or artistic applications. Ethics and cultural implications of the technology will be discussed. 6 hrs. lecture, lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $75 to $150.

# Physical Ed, Health & Rec (HPER)

### HPER 100

**Basketball (Beginning)** (1 CR)

Students will have an opportunity to learn fundamental basketball skills through demonstration and discussion of strategies for team play. Emphasis is on individual participation. 2 hrs./wk.

### HPER 101

**Basketball (Intermediate)** (1 CR)

*Prerequisite: HPER 100*

Students will have an opportunity to learn intermediate basketball skills through demonstration and discussion of strategies for team play. This course will advance the skills of the student who successfully completed the beginning basketball course. Emphasis is on individual participation and competition team play. 2 hrs./wk

### HPER 102

**Navigation 102: Orientation at JCCC** (1 CR)

This course is designed to help students transition from past experiences to college life. The topics will focus on four key areas, including practical life skills, wellness-related presentations, working with diverse individuals and groups, and academic skills enhancement. Thus, the goal of this course is to provide students with a valuable living and learning experience that equips them with the tools necessary to be academically successful and remain in school. This course will help students "navigate" through their first semester at JCCC. 2 hrs. lecture/wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

### HPER 103

**Touch/Flag Football** (1 CR)

The fundamentals of touch and flag recreational football will be introduced as well as strategies necessary for team play. 2 hrs./wk.

### HPER 104

**Yoga** (1 CR)

This class will utilize techniques from yoga which aim to provide mind/body benefits including better posture and increased body awareness. Muscular strength and flexibility will be developed through poses and positions. This class will be geared towards all students, both beginners as well as those who have previous training. 3 hrs. activity/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $12 to $15.

### HPER 105

**Bowling (Beginning)** (1 CR)

The student will have the opportunity to learn and practice the fundamentals of bowling. The student will be introduced to the history of the game, rules, equipment and lane specifications, scoring, handicap calculations, and operation of automatic scoring equipment. 2 hrs./wk. HPER mini-courses meet an additional 16 hours on a modular schedule.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and

textbooks. $0 to $34.

## HPER 107

**Bowling (Intermediate)** (1 CR)

*Prerequisite: HPER 105*

Students will demonstrate advanced fundamentals of bowling. The student will acquire advanced knowledge of the history of the game, rules, equipment and lane specifications. Intermediate to advanced bowling competition will be explored. 2 hrs./wk. HPER mini-courses meet an additional 16 hours on a modular schedule.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $34.

## HPER 110

**Racquetball (Beginning)** (1 CR)

A brief history of rules and terminology of racquetball will be followed by instruction and actual practice and application of the fundamentals. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $45 to $200.

## HPER 112

**Racquetball (Intermediate)** (1 CR)

*Prerequisite: HPER 110*

Students will review the rules and terminology of racquetball, as well as demonstrate the basic skills. The student will demonstrate skills and strategies in a competitive format and use the mental preparation and conditioning aspects of the game of racquetball. The intermediate racquetball student will apply skills in a competitive format. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $45 to $200.

## HPER 115

**Soccer** (1 CR)

The fundamentals of soccer will be introduced as well as strategies necessary for team play. 2 hrs./wk.

## HPER 117

**Power Volleyball (Beginning)** (1 CR)

The basic skills of volleyball taught in this class include the forearm pass, overhead set, serve, block and spike (attacking). Elementary offense and defense along with volleyball rules, scoring and officiating will be covered. 2 hrs./wk.

## HPER 118

**Power Volleyball (Intermediate)** (1 CR)

*Prerequisite: HPER 117*

Students will have the opportunity to build upon the basic fundamentals of the Power Volleyball (Beginning) class. Intermediate skills, strategies, offensive and defensive systems and rules will be covered for six-player, four-player, three-player, and two-player volleyball. 2 hrs./wk.

## HPER 130

**Running Awareness and Exercise** (1 CR)

The course will introduce the student to aerobic fitness through the activity of running. The training principles for running and competitive racing will be covered, and the individual will complete a personal running and/or racing

training program. 2 hrs./wk.

## HPER 134

**Weight Training (Beginning)** (1 CR)

In this class, muscular strength and endurance will be developed through weight training activity. A workout program will be implemented for each student. The muscular system, basic terminology of weight training and weight training theory will be discussed. 2 hrs./wk.

## HPER 135

**Weight Training (Intermediate)** (1 CR)

*Prerequisite: HPER 134*

In this class, muscular strength and endurance will be developed. A self-designed and directed resistance workout program will be implemented. The proper use of a training log and personal fitness evaluation techniques will be discussed. 2 hrs./wk.

## HPER 137

**Tennis (Beginning)** (1 CR)

Students will get individualized instruction in this course on the rules, terminology and history of tennis. The student will receive instruction on the basic strokes of tennis, as well as the strategies of singles and doubles play. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $40.

## HPER 138

**Tennis (Intermediate)** (1 CR)

*Prerequisite: HPER 137*

Students will review the rules, terminology and history of tennis. The student will receive instruction on the strokes of tennis, as well as the strategies of singles and doubles play in a competitive format. Emphasis will be on the mental and physical conditioning of the game. 2 hrs./wk. HPER mini-courses meet an additional 16 hours on a modular schedule.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $40.

## HPER 140

**Modern Dance (Beginning)** (1 CR)

This course emphasizes the movement between positions rather than the picture-perfect poses of ballet and other dance styles. Moving through space off of and onto the floor, breathing and moving improvisationally will be explored. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $12 to $40.

## HPER 142

**Modern Dance (Intermediate)** (1 CR)

*Prerequisite: HPER 140*

A continuation of Modern Dance (Beginning), this course presents more difficult and longer movement combinations. Students further explore their creativity through elements of improvisations, choreography and performance while gaining greater muscular flexibility and strength. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $12 to $40.

**HPER 150**

**Aerobics (Beginning)** (1 CR)

Motor skills, jogging and dance steps are combined in this exercise program to improve muscle tone and cardiovascular fitness. 2 hrs. wk.

**HPER 152**

**Aerobics (Intermediate)** (1 CR)

*Prerequisite: HPER 150*

The motor skills, jogging and dance steps are performed at faster pace for a longer period of time than in Aerobics (Beginning). The course will introduce the student to the fitness benefits from increased duration and intensity of aerobic activities. 2 hrs./wk.

**HPER 155**

**Ballet (Beginning)** (1 CR)

This progressive ballet system is designed to produce muscular strength and flexibility and a working knowledge of anatomy, plus the aesthetic satisfaction of expressing yourself through a classical art form. Offered to students of all ages and experience, both beginners as well as those who have had some training. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $17 to $30.

**HPER 157**

**Ballet (Intermediate)** (1 CR)

*Prerequisite: HPER 155*

A continuation of Beginning Ballet, this progressive ballet system explores multilayered ballet movement in simple dance combinations. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $17 to $30.

**HPER 158**

**Jazz Dance (Beginning)** (1 CR)

An introduction to the concepts and motor skills involved with jazz dance. Basic body position will be introduced as well as basic terminology, jazz history, various jazz styles and the basic techniques involved, isolations, combinations, choreography and rhythmic influences. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $7 to $30.

**HPER 159**

**Jazz Dance (Intermediate)** (1 CR)

*Prerequisite: HPER 158 or equivalent*

A continuation of Beginning Jazz Dance, this course will require students to assimilate and execute more difficult isolated dance moves as well as use the basic skills acquired in Beginning Jazz Dance to perform complex dance sequences to a variety of music. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $7 to $30.

**HPER 163**

**Ballroom Dance (Beginning)** (1 CR)

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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $40.

**HPER 165**

**Karate I** (1 CR)

The student will receive instruction in the basic fundamentals of karate, including stances, blocks, kicks, strikes and self-defense techniques. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $30.

**HPER 166**

**Karate II** (1 CR)

*Prerequisite: HPER 165*

The student will review the skills from the prerequisite course of Karate I. Students will demonstrate techniques that include the moving block, kicks and positions for karate. The course will also cover combination moves as well as the defensive technique.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $30.

**HPER 167**

**Karate III** (1 CR)

*Prerequisite: HPER 166*

Students will have the opportunity to achieve higher levels of proficiency, routines, kumite (sport/free fighting) and self-defense. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $30.

**HPER 168**

**Karate IV** (1 CR)

*Prerequisite: HPER 167 Note: Beginning Japanese is a suggested prerequisite*

Students in this course will have the opportunity to achieve the advanced level of karate in the following: taiso (exercise), kata (forms), kumite (sport/free fighting) and self-defense application. 2 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $30.

**HPER 172**

**Track and Field (Beginning)** (1 CR)

This course will introduce the student to the sport of track and field. Through activity and discussion the student will improve his or her motor ability to perform track and field events. 2 hrs./wk.

**HPER 174**

**Coaching and Officiating of Track and Field** (2 CR)

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** (1 CR)

Beginning foil fencing will provide the student with the fundamental rules and

techniques of foil fencing. The student will utilize these skills in a fencing bout. The student will also be instructed in the rules and procedures of officiating foil fencing. 2 hrs./wk.

## HPER 176

**Self Defense I** (1 CR)

The class will present students with a variety of techniques for escaping a physical attack. Students will receive an introduction to the four ranges of self defense: ground, grappling, striking, and weapons. Students will learn the principles that apply in any self defense situation and the basic positions and structure of each range. The class is appropriate for beginners as well as those with previous self defense or martial arts training. 2 hrs. activity/wk.

## HPER 180

**Fencing (Intermediate)** (1 CR)

*Prerequisite: HPER 175*

Intermediate fencing will provide the student with advanced techniques and rules of foil fencing and with fundamental techniques and rules of epee fencing. The student will utilize these skills in a fencing competition. The student will also be instructed in the rules and procedures of refereeing foil fencing and organization of fencing competitions. 2 activity hrs./wk.

## HPER 182

**Swimming (Beginning)** (1 CR)

Students in beginning swimming will learn basic swimming skills and safety information that are fundamental to safe swimming performance. 1 hr./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $25 to $80.

## HPER 183

**Swimming (Intermediate)** (1 CR)

*Prerequisite: HPER 182 or the equivalent*

Students in intermediate swimming will learn more advanced swimming strokes, skills and safety information along with increasing personal fitness levels through continuous endurance swimming. 1 hr./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $25 to $80.

## HPER 185

**Archery** (1 CR)

Students will receive individualized instruction in the basic skills of archery as a recreational sport lending itself as a lifetime leisure interest. Safety, fundamental care and usage of archery tackle and beginning archery skills will be taught along with a survey of the history of archery. 2 hrs./wk. HPER 185 Archery classes will meet in the lobby in the gym building by room 116.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10 to $20.

## HPER 190

**Golf** (1 CR)

The beginning golfer will be given instruction in the rules of and basic swing fundamentals for the game of golf. Proper golf equipment, proper use of this equipment and golf etiquette will be reviewed. 2 hrs./wk. HPER mini-courses meet an additional 16 hours on a modular schedule.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $80 to $400.

## HPER 192

**Wellness for Life** (1 CR)

This course introduces students to the theory and principles upon which the concepts of lifetime fitness and wellness are based. Students will examine the relationship that exists between wellness and lifestyle behaviors. Individual self-assessments will be used to establish current health and fitness levels. 1 hr./wk.

## HPER 194

**Sports Conditioning (Beginning)** (1 CR)

Students will have the opportunity to learn the fundamentals of general and sports specific conditioning. All aspects of physical and psychological development are incorporated in this class. Strength, power, speed, acceleration, muscular hypertrophy and endurance, cardiovascular endurance, motor skills and agility drills are taught and practiced. The class will include general physical preparation sport fitness, plyometrics, agility drills and sport-related specific conditioning. The students will learn about the principle of year-round conditioning, including conditioning appropriate to the off-season, preparatory period, pre-competition period and competition period. 2 hrs./wk.

## HPER 195

**Introduction to Sports Medicine** (3 CR)

The purpose of this class is to introduce the basic concepts of sports medicine, specifically Athletic Training. It will address the fundamentals of the human musculoskeletal system, sports related injuries, injury treatment, and other sports medicine related topics. This class is designed for beginning athletic training students and other students interested in the subject. 3 hrs. lecture/wk.

## HPER 197

**Sports Conditioning (Intermediate)** (1 CR)

*Prerequisite: HPER 194*

Students will have the opportunity to build upon principles and practices of general and sports-specific conditioning learned in Beginning Sports Conditioning. All aspects of physical and psychological development are incorporated in this class. Strength, power, speed, acceleration, muscular hypertrophy and endurance, cardiovascular endurance, motor skills and agility drills are taught and practiced. The class will include general physical preparation, sport fitness and conditioning. Students will continue to learn about the principle of year-round conditioning, including conditioning appropriate to the off-season, preparatory period, pre-competition period and competition period. 2 hrs. lecture/wk.

## HPER 198

**Athletic Training Practicum I** (1 CR)

*Corequisite: HPER 195*

At the conclusion of this practicum, the student will be able to explain and demonstrate a variety of basic principles and practices in athletic training, including the essentials of record keeping, athletic injury taping and strapping techniques, an introduction to the supervised use of and safety procedures for therapeutic modalities and therapeutic exercise equipment. Major anatomical landmarks and basic anatomy of the major joints of the human body will be identified and palpated. This practicum, intended for athletic training and other allied health students, will be hands-on and conducted under the direct supervision of a certified/licensed athletic trainer. This course may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 16 hrs. lecture, 112 hrs. practicum

## HPER 200

**First Aid and CPR** (2 CR)

After completing this course, students should be able to perform the basic skills of first aid. The course will cover cause, prevention and first aid care of

common emergencies. Certification may be earned in first aid and cardiopulmonary resuscitation. 2 hrs./wk.

## HPER 202

**Personal Community Health** (3 CR)

This course is designed to provide the student with the knowledge and understanding to make positive, healthy lifestyle choices. In addition, students will learn about issues within the community that affect their daily health both directly and indirectly. 3 hrs./wk.

## HPER 204

**Care and Prevention of Athletic Injury** (3 CR)

Care and Prevention of Athletic Injuries will focus on recognition, evaluation, treatment, and recording of common athletic injuries. Human anatomy will be emphasized through the understanding of athletic movements and physical testing. Additional topics include legal and ethical practices for the athletic trainer and the psychology of today?s competitive athlete. Care and Prevention of athletic Injuries is the basic sports medicine class required by most exercise science and coaching degree programs. 3 hrs./wk.

## HPER 205

**Individual Lifetime Sports** (2 CR)

This course provides a basic knowledge of several individual lifetime sports including badminton, bowling, golf, racquetball and tennis. Students will learn fundamental skills for each sport as well as history, benefits, equipment, rules, etiquette, safety, scoring and strategy. 3 hrs./wk. Fall.

## HPER 207

**Athletic Training Practicum 2** (2 CR)

*Prerequisites: HPER 195 and HPER 198 and BIOL 140 and BIOL 225 and Corequisite: HPER 204*

At the conclusion of this practicum, the student will be able to explain and demonstrate the basic theories supporting the uses of therapeutic modalities and therapeutic exercise, and the evaluation/assessment of injuries to athletes. The student will demonstrate a functional understanding of the major muscle groups of the human body. The student will be able to discuss and explain the duties and responsibilities of a certified athletic trainer (ATC). Direct work with specific athletic teams will facilitate the practicum. This practicum will be hands-on, and conducted under the direct supervision of a certified/licensed athletic trainer. This class is intended for athletic training and other allied health students. This course may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 16 lecture 304 practicum hrs.

## HPER 208

**Introduction to Exercise Physiology** (3 CR)

This introduction to exercise physiology will introduce the effects of exercise on the muscular system, the cardiovascular system and the metabolic system. The course will prepare the student in the design of and principles for an individual exercise program. 3 hrs./wk.

## HPER 217

**Coaching and Officiating Basketball** (2 CR)

This course introduces students to the theory and principles of coaching basketball and the rules and mechanics of officiating. Students will have the opportunity to learn how to organize, coach and plan daily practice sessions. 2 hrs./wk.

## HPER 220

**Sports Officiating** (3 CR)

The rules and practical application of officiating will be covered for the following sports: volleyball, football, basketball, baseball and softball. 3 hrs./wk.

## HPER 224

**Outdoor Recreation** (3 CR)

This course introduces the student to activities that create interaction between the individual and/or individuals and elements of the outdoor recreational setting. Outdoor Recreation Students plan activity projects such as camping, hiking, nature observation and biking. 3 hrs./wk. or, may be taught online for 16 weeks.

## HPER 240

**Lifetime Fitness I** (1 CR)

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** (1 CR)

*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** (1 CR)

*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** (1 CR)

*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** (3 CR)

This course is designed to meet the needs of students who wish to teach in the area of elementary physical education and/or elementary education. This course will provide the students with knowledge and background in planning, classroom management techniques, teaching methodology, legal liability, evaluation, wellness, special students, sports, and games related to elementary physical education. The course will include observation and teaching. 3 hrs./wk. Spring

## HPER 255

**Introduction to Physical Education** (3 CR)

This course will introduce the student to the field of physical education and sport. This course will discuss the historical, biomechanical, physiological and psychological foundations of physical education and sport. It will examine the role of physical activity as a means to help individuals acquire the skills, fitness levels and knowledge that contribute to the arena of physical development and organized competition. It will also discuss the role physical education and sports play in our society. Each individual will develop a

personal philosophy for physical education and sports. 3 hrs./wk. Spring.

# Physical Science (PSCI)

### PSCI 120

**Physical Science** (4 CR)

This course is an introduction to the fundamental concepts and principles of physics, chemistry, geology and astronomy. Topics include energy, electricity, magnetism, modern physics and chemical bonding. It is counted toward laboratory science requirements and is intended for non-science majors. It includes presentation of material using audiovisual, computer and other multimedia aids. Three hours of class and three hours of work in a scheduled lab are required each week. 3 hrs. lecture, 3 hrs. lab/wk.

# Physical Therapist Assistant (KPT)

### KPT 102

**Basic Emergency Patient Care** (1 CR)

Current cardiopulmonary resuscitation skills, including adult, child and infant resuscitation according to American Heart Association standards. Medical and environmental emergencies review. (Successful completion of the course qualifies the student for the Basic Life Support Course Certification.) 1 hr. lecture/wk. Course taught at Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KPT 151

**Introduction to Physical Therapy** (2 CR)

Introduction to the basic concepts of the function of a physical therapist and physical therapist assistant as members of the health team and interaction of health care disciplines in the care of the patient. Medical terminology related to the specific discipline. 2 hrs. lecture/wk. Course taught at Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KPT 152

**Physical Therapy Fundamentals I** (4 CR)

*Prerequisite: Formal acceptance into the program.*

Theory and application of treatment modalities used in physical therapy. Therapeutic measures and patient handling skills used in the physical treatment of various injuries and diseases. Field trips to observe the clinic and its modalities. 2.5 hrs. lecture, 3 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KPT 153

**Kinesiology** (4 CR)

*Prerequisites: BIOL 144, BIOL 145, KPT 152 and KPT 160*

Anatomy and function of the musculoskeletal system. Analysis of various daily activities. Application of physical therapy assessment procedures related to clinical kinesiology. 2 hrs. lecture, 4 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KPT 154

**Applied Neurology** (2 CR)

*Prerequisites: BIOL 144 and BIOL 145, MCC BIOL 210 and admission to OTHA or PTHA program.*

Foundations of neuroscience necessary for practice as a rehabilitation professional. Anatomy and function of the nervous system. Correlation of clinical problems with pathology of the nervous system. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KPT 155

**Rehabilitation** (4 CR)

*Prerequisite: KPT 162*

Introduction to the philosophy underlying rehabilitation theory and principles of treatment involved in normal and abnormal ambulation and mobility. Application of external supports and assistive devices, and teaching activities of daily living with attention to description, demonstration and practice. Field trips are required. 3 hrs. lecture, 2 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KPT 158

**Therapeutic Exercise** (4 CR)

*Prerequisite: KPT 162*

Introduction 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 to learn various specialized techniques. 2 hrs. lecture, 4 hrs. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KPT 159

**Orthopedic Pathology** (2 CR)

*Prerequisites: BIOL 144, BIOL 145, KPT 152 and KPT 160*

Orthopedic pathologies commonly seen in physical therapy practice, diagnosis, signs and symptoms, physiological factors and treatment. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KPT 160

**Medical Diseases** (2 CR)

*Prerequisites: Formal acceptance into the program.*

Medical diseases commonly seen in physical therapy practice; diagnosis, signs and symptoms, physiologic factors and treatment. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KPT 161

**Physical Therapy Fundamentals II** (4 CR)

*Prerequisites: BIOL 144, BIOL 145, KPT 152, and KPT 160*

Introduction 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. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KPT 162

**Clinical Experience I** (2 CR)

*Prerequisites: KPT 153, KPT 154, KPT 159, KPT 161, and KPT 102*

Supervised clinical experience in the practical application of techniques and procedures covered in all previous physical therapist assistant courses. Assisting physical therapists and physical therapist assistants in treatment of patients in a variety of clinical settings. 5 hrs. clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KPT 164

**Pediatrics and Gerontology** (2 CR)

*Prerequisite: KPT 162*

Specialized information related to the treatment of pediatric and older adult populations. 2 hrs. lecture/ wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KPT 170

**Clinical Experience II** (2 CR)

*Prerequisites: KPT 162 and concurrent enrollment in KPT 155, KPT 158, KPT 164 and KPT 171*

Supervised clinical experience in the practical application of techniques and procedures covered in all previous KPT courses. Assisting physical therapists and physical therapist assistants in the treatment of patients in a variety of clinical settings. 5 hrs. clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KPT 171

**Clinical Seminar** (2 CR)

*Prerequisite: KPT 162*

This course contains current professional and patient patient-care issues regarding the practice of physical therapy, such as ethics, departmental organization, reimbursement, safety and research. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KPT 172

**Clinical Experience III** (12 CR)

*Prerequisites: Completion of all other required courses in the KPT program*

Practical application of principles learned in prior coursework. Experience rotation internships in selected hospitals and other clinical sites throughout the United States under the guidance of a physical therapist. 40 hrs. field studies/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of the physical therapist assistant program about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

## KPT 173

**Special Topics** (2 CR)

*Prerequisites: Completion of all previous semesters of physical therapy and biology coursework with a minimum grade of "C"*

This course presents specialized topics in physical therapy and the administration of health care. 1 hr. lecture/wk.

# Physics (PHYS)

## PHYS 130

**General Physics I** (5 CR)

*Prerequisite: MATH 171 or assessment scores*

In this introductory course for pre-professional and general education, students will learn the fundamentals of selected areas of classical physics. Using the tools of algebra and trigonometry, the course develops the topics of mechanics, heat and thermodynamics, and concludes with waves. The two-semester PHYS 130/131 sequence is designed to meet the requirements of area pre-professional programs. This is a transfer course that meets the college's requirements for associate's degree programs and also meets transfer requirements of area colleges and universities. The course includes an integrated laboratory component the completion of which is a necessary part of the total instructional package. 4 hrs. lecture, 3 hrs. lab/wk.

## PHYS 131

**General Physics II** (5 CR)

*Prerequisite: PHYS 130*

In this introductory course for pre-professional and general education, students will learn the fundamentals of selected areas of classical physics. Using the tools of algebra and trigonometry, the course develops the topics of electricity and magnetism, light and optics and some elements of modern physics, such as relativity and quantum physics. The two-semester PHYS 130/131 sequence is designed to meet the requirements of area pre-professional programs. This is a transfer course that meets the college's requirements for associate's degree programs and also meets transfer requirements of area colleges and universities. The course includes an integrated laboratory component the completion of which is a necessary part of the total instructional package. 4 hrs. lecture, 3 hrs. lab/wk.

## PHYS 133

**Applied Physics** (5 CR)

*Prerequisite: MATH 133 or higher*

This is a one-semester, comprehensive physics course intended for students enrolled in the biotechnology certificate program or an associate of applied science degree program. The course will cover all areas of applied physics, including mechanics, heat, thermodynamics, waves, electricity, magnetism, light, optics and some elements of modern physics. Emphasis will be placed on concepts and applications to real-life problems. This course includes an integrated laboratory component the completion of which is a necessary part of the total instructional package. 4 hrs. lecture, 3 hrs. lab/wk.

## PHYS 191

**Math & Physics for Games I** (4 CR)

*Prerequisite: MATH 171 or MATH 173 with grade of "C" or higher or appropriate score on math assessment test and CS 200*

This introductory course focuses on the mathematics and physics concepts needed to program a variety of video game scenarios. Students will learn to use vectors and matrix transformations to model the motion of physical objects in two and three dimensions. Students will also learn various computer

programming methods in order to model these mathematical and physical concepts. 3 hrs. lecture and 2 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $0 to $100.

## PHYS 220

**Engineering Physics I** (5 CR)

*Prerequisite or 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** (5 CR)

*Prerequisites: PHYS 220 and MATH 242*

This is an introduction to physics for engineering and science students. Included are mathematical approaches to the study of electricity, magnetism, sound, optics and modern physics. 4 hrs. lecture, 3 hrs. lab/wk.

# Political Science (POLS)

## POLS 122

**Political Science** (3 CR)

This course provides students the opportunity to explore the discipline of political science and to discover how political scientists study politics in the contemporary world. 3 hrs. lecture/wk. and online

## POLS 124

**American National Government** (3 CR)

This course examines the components of the public policy-making process. Topics of study include American political culture, constitutional principles, intergovernmental relations, public opinion, political parties, interest groups, media, the influence of the constant campaign of candidate-centered politics, budget construction, bureaucracy, and decision-making institutions. 3 hrs./wk. and online. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## POLS 126

**State and Local Government** (3 CR)

This course examines the executive, legislative, judicial and service functions of state and local government in the United States in general and in Kansas in particular. The course includes guest lectures by elected officials, government personnel and community activists. 3 hrs./wk. This course is typically offered only once each academic year.

## POLS 132

**Introduction to Comparative Government** (3 CR)

This course compares the different political structures of many of the world's most important countries, including economic development, patterns of government and administration, party structures and policy formation. 3 hrs. wk. or online.

## POLS 135

**International Relations** (3 CR)

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. and online

## POLS 200

**Model United Nations** (3 CR)

This course is designed for students who are interested in learning and understanding international organizations and participating in competitive intercollegiate Model United Nations. This course orients students with the history, structure and function of the United Nations and those facets of an assigned country. This orientation will assist students in their preparation for the Model United Nations (MUN) conference during the spring semester. 3 hrs lecture/wk.

## POLS 210

**Methodology in Social Sciences** (3 CR)

*Prerequisite: PSYC 130 or SOC 122 or ECON 230*

This course deals with scientific research methods utilized in the social sciences, especially psychology, sociology, political science and anthropology. The course examines a wide range of data collection methodologies including observation, questionnaire construction, and controlled experimentation. The course will be beneficial for analyzing and evaluating the quality of research findings reported in both the popular and academic press. It will also be useful to those who plan to engage in occupations requiring the use of research methodology. This course may not be offered every semester. POLS 210, PSYC 210 and SOC 210 are the same course. Do not enroll in more than one of these three courses. This course is a required corequisite for PSYC 230 Personality Theory. 3 hrs./wk.

## POLS 245

**Introduction to Public Administration** (3 CR)

This course provides students the opportunity to explore public administration and public policy including institutional arrangements for the provision of public services and the study of those arrangements. 3 hrs. lecture/wk.

## POLS 270

**Political Science Internship** (3 CR)

*Prerequisite and/or corequisite: By permission of the political science internship coordinator, completion of 6 credit hours in political science courses at JCCC or another college within the last two years, earning a minimum of a 3.0 on a 4.0 scale in those political science courses, and a written recommendation from your political science classroom instructor*

Students augment their academic course work with an internship in an appropriate setting under instructional supervision. Internship projects are cooperative efforts between appropriate supervisors in state, local or national government settings or not-for-profit organizations and college staff and students. Internships give students the opportunity to participate in the real-world application of their academic studies. In addition, this synthesis of classroom study with practical experience provides students with skills and insights useful in selecting a career or avocation in community service. The student spends the equivalent of 10 hours per week performing internship duties over the course of the semester or a total of 150 hours.

# Polysomnography/Sleep Tech (PSG)

## PSG 125

**Introduction to Sleep Medicine** (4 CR)

*Prerequisite: Admission to the polysmonography program Corequisite: Current AHA BLS Health Care Provider Certification*

This course is an introduction to the history of sleep medicine. It also explores

the role and the communication, time management, infection control, basic patient assessment, safety and professional expectations of the polysomnographic technologist. Students will have the opportunity to have direct observation in an associated sleep center or lab. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 4 hrs. integrated lecture/lab each week and 48 clinical hrs./semester

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $50 to $150.

### PSG 130

**Physiology of Sleep Medicine** (3 CR)

*Prerequisite: Admission to the polysomnography*

This course will provide a comprehensive study of neuroanatomy and physiology and normal sleep mechanisms. It will also provide an overview of the cardiovascular and respiratory anatomy and physiology as it relates to sleep medicine. This includes ECG interpretation, oxygenation and ventilation assessment, and mechanisms and basic management of breathing and upper airway collapse. 3 hrs. lecture/wk.

### PSG 140

**Sleep Disorders** (4 CR)

*Prerequisites: PSG 125 with a grade of "C" or higher and PSG 130 with a grade of "C" or higher and Corequisite: Current AHA BLS for Health Care*

This course is designed to provide the basic information related to the disease processes and conditions which adversely effect sleep. The etiologies, clinical presentation, diagnosis and therapeutic interventions will be covered for each condition. 3 hrs. lecture and 48 clinical hrs./semester

### PSG 145

**Sleep Study Instrumentation** (4 CR)

*Prerequisites: PSG 125 with a grade of "C" or higher and PSG 130 with a grade of "C" or higher*

This course will introduce the bio-potential electrophysiologic, polysomnographic, and ancillary equipment involved in patient assessment and the conducting of sleep studies. The basic principles, set up, operation, maintenance, cleaning and troubleshooting will be emphasized. 6 hrs. integrated lecture lab./wk.

### PSG 150

**Polysomnography I** (4 CR)

*Prerequisites: PSG 125 with a grade of "C" or higher and PSG 130 with a grade of "C" or higher and Prerequisites or Corequisites: PSG 145 with a grade of "C" or higher and PSG 140 with a grade of "C" or*

This course provides the didactic preparation that will be needed to supplement the clinical experiences of Polysomnography Clinical I. Students will develop new knowledge and skills related to patient and equipment preparation, monitoring and documentation and therapeutic interventions associated with polysomnographic procedures. 6 hrs. integrated lecture lab./wk.

### PSG 245

**Polysomnography Clinical I** (6 CR)

*Prerequisites: PSG 140 with a grade of "C" or higher and PSG 145 with a grade of "C" or higher and PSG 150 with a grade of "C" or higher and Corequisites: Current AHA BLS Health Care Provider Certification*

This course is the clinical application of entry-level sleep related diagnosis and treatment. Students will have the opportunity to work with patients under close supervision to further develop their skill and understanding of basic

polysomnographic procedures. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 24 hrs. clinic/wk.

### PSG 250

**Polysomnography II** (4 CR)

*Prerequisite: PSG 150 with a grade of "C" or higher*

This course provides the didactic preparation that will be needed to supplement the clinical experiences of Polysomnography Clinical II. Students will refine knowledge and skills related to patient and equipment preparation, monitoring and documentation and therapeutic interventions associated with polysomnographic procedures. 6 hrs. integrated lecture lab/wk.

### PSG 255

**Polysomnography Clinical II** (6 CR)

*Prerequisites: PSG 245 with a grade of "C" or higher and PSG 250 with a grade of "C" or higher and Corequisites: Current AHA BLS Health Care Provider Certification*

This course is the clinical application of sleep related diagnosis and treatment. Students will have the opportunity to further refine their skills in obtaining and evaluating high quality sleep recordings and gaining clinical competence associated with advanced-level polysomnographic technology skills. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 24 hrs. clinical/wk.

### PSG 265

**Polysomnography Capstone** (3 CR)

*Prerequisite or Corequisite: PSG 255 with a grade of "C" or higher*

This course is designed as a capstone experience to facilitate final preparation for employment and the BRPT examination for the RPSGT credential. Students will demonstrate knowledge and skill competency attainment expected of a polysomnographic technologist. Students will also be required to pass a comprehensive exam based on the current BRPT matrix. 5 hrs. integrated lecture lab./wk.

# Power Plant Technology (PPT)

### PPT 130

**Basic Hydraulics, Mechanics and Pneumatics** (3 CR)

This introductory course is designed to give a general overview of hydraulic, mechanic and pneumatic principles. Upon successful completion of this course, the student will be able to describe the concepts involved in industrial maintenance of hydraulic, mechanical and pneumatic equipment and identify the major components and their functions. Topics will include hydraulics, pneumatics, rigging, ladders, scaffolds, lubrication, drive belts, vibrations, mechanical drives, alignments, bearings and electricity. This course is appropriate for power plant technology majors or other interested students. 3 hrs. lecture/wk.

### PPT 140

**Generating Plant Fundamentals** (3 CR)

This is an introductory course designed to give a general overview of power plant operations and functions. Upon successful completion of this course, the student will be able to describe the concepts involved in converting energy to electricity through a stream generation power plant and identify the major components and their functions. Topics will include fossil fuels, boilers, turbines, feedwater heaters, ash removal, condensate, power plant controls, and

temperature and pressure relationships. This course is appropriate for power plant technology majors or other interested students. 3 hrs. lecture/wk.

**PPT 150**

**Station Power Fundamentals** (3 CR)

This course will give students the ability to describe the concepts involved in providing electricity to a power plant. Topics will include electrical concepts, the power grid, switchyards, transformers, critical services, essential services and black-out conditions. This course is appropriate for power plant technology majors or other interested students. 3 hrs. lecture/wk.

**PPT 210**

**Reading Piping & Instrument Diagrams** (3 CR)

This course will enable the student to be able to read a set of piping and instrument diagrams (P&IDs) and trace the flow paths of the major systems in a power plant. Topics will include symbols and terminology, the condensate system, the feedwater system, high pressure steam, extraction steam, fuel flow, auxiliary cooling, and lubrication systems. This course is appropriate for power plant technology (PPT) majors or other interested students. 3 hrs. lecture/wk.

**PPT 230**

**Introduction to Water Chemistry & Water Treatment** (3 CR)

*Prerequisite or corequisite: MATH 171*

This introductory course is designed to give a general overview of water chemistry and water treatment in power plants. Upon successful completion of this course, the student should be able to describe the concepts and solve the problems associated with water treatment in boiler operations. Topics will include hydrology, specific gravity of liquids, acids, bases, measurements, cooling towers, clarification, ion exchange and filtration. This course is appropriate for power plant technology majors and other interested students. 3 hrs. lecture/wk.

**PPT 250**

**Intro to Power Plant Combustion and Exhaust** (3 CR)

*Prerequisite: PPT 140*

Upon successful completion of this course, the student should be able to describe the concepts involved in the combustion of fuel for energy generation. Topics will include fuel handling, combustion requirements, combustion control and by-products of combustion. This course is appropriate for power plant technology majors and other interested students, with the permission of the instructor. 3 hrs. lecture/wk.

**PPT 251**

**Introduction to Power Plant Steam and Water Cycle** (3 CR)

*Prerequisite: PPT 140*

Upon successful completion of this course, the student will be able to describe the steam water cycle in a steam generation plant. Topics will include boilers, turbines, feedwater heaters, condensers, cooling towers and auxiliary equipment. Enrollment in the course is limited to power plant technology majors or by permission of the instructor. 3 hrs. lecture/wk.

**PPT 271**

**Power Plant Technology Internship** (3 CR)

*Prerequisite: Career program facilitator approval required*

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 employees, college staff and each student to provide a variety of actual job experience directly related to the student's career goals. This course is only available to students who have declared a power plant technology major. 20 hrs. on-the-job training/wk., or a minimum of 40

hrs./wk. on the job for summer semester

**PPT 280**

**Power Plant Operations and Process Controls** (3 CR)

*Prerequisites or corequisites: PPT 250 and PPT 251*

Upon successful completion of this course, the student should be able to describe the concepts involved in operating a steam generation power plant and identify the major components and their functions. Topics will include cold start-up, warm start-up, shutdown, normal operations, load changes, safety checks, and power plant controls. This course is designed to integrate and build on previous power plant technology course work. This course is appropriate for power plant technology majors and other interested students with the permission of the instructor. 3 hrs. lecture/wk.

# Practical Nursing (AVPN)

**AVPN 115**

**Nursing I** (22 CR)

*Prerequisites: CNA certification and BIOL 144 and PSYC 130 and MATH 111 and admission to the practical nursing program*

Using the nursing process, the student will promote adaptive responses in the client during health and illness. The student will develop a basic understanding of the role of the practical nurse in the health care system and demonstrate the fundamental skills essential to the nursing care of the client. The nursing process will be applied to the care of clients in long-term care, the medical office and the acute-care settings. Basic concepts of gerontology, professional vocational relationships, pharmacology, medical terminology and nutrition will be used in the care of the clients. In-state tuition and fees $1,041 total. Out-of-state tuition and fees $4,451 total. 550 contact hrs. The credit reflected in this course is for transcript reporting, recording and transfer only. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $250 to $550.

**AVPN 117**

**Nursing II** (22 CR)

*Prerequisite: AVPN 115*

In Nursing II, the student will continue to explore the practical nurse's role in assisting clients to meet basic and more complex physiological needs using the nursing process in a variety of health care settings, including acute care, long-term care and mental health facilities. The student will apply concepts of leadership and change and demonstrate the roles of charge nurse, medication nurse, treatment nurse and patient-care nurse in long-term care. The student will promote adaptive responses in the child and family during the child's illness, pregnancy, labor and delivery, and postpartum and neonatal phases of reproductive processes. The student will explore the adaptive capacity of individuals with emotional stresses and diagnosed mental disorders across the life span. Basic concepts of gerontology, professional vocational relationships, pharmacology, medical terminology and nutrition will be applied in the care delivered. In-state tuition and fees $1075 total. Out-of-state tuition and fees $4,485 total. 550 contact hrs. The credit reflected in this course is for transcript reporting, recording and transfer only. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $250 to $550.

# Psychology (PSYC)

## PSYC 121

**Applied Psychology** (3 CR)

The course will focus on learning how to apply psychological principles in order to better understand one's own experience (cognitive, behavioral and emotional) and that of other people. This course is not a substitute for Introduction to Psychology and will not meet the prerequisite requirement for advanced psychology courses. 3 hrs./wk.

## PSYC 130

**Introduction to Psychology** (3 CR)

This basic introduction to psychology includes the study of biological aspects of behavior, the brain, consciousness, sensation and perception, motivation and emotion, stress, maturation and development, learning and memory, normal and abnormal personality, and social psychology. This course is the prerequisite for all advanced-level psychology courses. 3 hrs./wk. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

## PSYC 200

**Industrial and Organizational Psychology** (3 CR)

*Prerequisite: PSYC 130*

The course will examine human behavior and psychological principles in an industrial/personnel context. It will also focus on how organizational factors contribute to individual behavior and how individuals affect groups and organizational functioning. Topics include recruiting, selecting and training personnel; evaluating job performance, work motivation, job satisfaction and other attitudes; leadership; and organization and job design. This course may not be offered every semester. 3 hrs./wk.

## PSYC 205

**Human Sexuality** (3 CR)

*Prerequisite: PSYC 130*

PSYC 205, Human Sexuality, is a balanced and thoughtful account of what is known about sexuality from various perspectives. A broad and representative survey of research is presented in a number of topical areas. Psychobiology, sexual development during childhood and adolescence, sexual interactions, love relationships and behavior, gender issues, sexual orientation, health issues and diseases, and sexual problems and solutions will be studied. Primary emphasis will be placed on the individual and the couple as a unit of analysis. Class discussions of issues relating to human sexuality will be encouraged. 3 hrs. lecture/wk.

## PSYC 210

**Methodology in Social Sciences** (3 CR)

*Prerequisite: PSYC 130 or SOC 122 or ECON 230*

This course deals with scientific research methods utilized in the social sciences, especially psychology, sociology, political science and anthropology. The course examines a wide range of data collection methodologies including observation, questionnaire construction, and controlled experimentation. The course will be beneficial for analyzing and evaluating the quality of research findings reported in both the popular and academic press. It will also be useful to those who plan to engage in occupations requiring the use of research methodology. This course may not be offered every semester. PSYC 210, SOC 210 and PSYC 210 are the same course. Do not enroll in more than one of these three courses. This course is a required prerequisite or corequisite for PSYC 230 Personality Theory. 3 hrs./wk.

## PSYC 215

**Child Development** (3 CR)

*Prerequisite: PSYC 130*

This course is a comprehensive account of human development from conception through adolescence. The course integrates genetic, biological, physical and anthropological influences with psychological processes and explores determinants of behavior from a genetic and environmental perspective. 3 hrs./wk.

## PSYC 218

**Human Development** (3 CR)

*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** (3 CR)

*Prerequisite: PSYC 130*

This course is designed to be an undergraduate-level introduction to the psychology of social behavior. It will provide a systematic attempt to understand how the "thought, feeling and behavior of individuals are influenced by the actual, imagined or implied presence of others." Consideration will be given to such concepts as methodology, attitude and attitude change, aggression, leadership, affiliation and obedience and will introduce conformity. The course is intended to introduce students to critical analysis, application and the mechanical and intellectual challenges of college work. 3 hrs./wk.

## PSYC 225

**Educational Psychology** (3 CR)

*Prerequisite: PSYC 130*

This course addresses issues that apply theories of psychology to the educational environment. Topics included in the study of educational psychology include research methodology, theories of human development, principles of learning, the psychology of motivation, theories of intelligence, testing and assessment techniques, and career development. A 20-hour observation in an educational setting is required. This course may not be offered every semester. 3 hrs./wk.

## PSYC 230

**Personality Theory** (3 CR)

*Prerequisite: PSYC 130 and prerequisite or corequisite of either PSYC 210 or SOC 210 or PSYC 210*

The general viewpoints of paradigms in psychology will be studied, with emphasis on each system's contribution to understanding human personality. The assumptions of each system will be critically analyzed using evidence from research and criticisms from philosophy. Usefulness of theories will be presented, and the systems will be compared and contrasted. General theories covered will include psychoanalysis, trait, biological, humanistic, behavioral/social and cognitive. This course is typically offered in the spring semester. 3 hrs./wk.

## PSYC 250

**Health Psychology** (3 CR)

*Prerequisite: PSYC 130*

This course covers content, methods and theory regarding the interplay between psychological and biological determinants of health and illness and examines how these factors relate to health status. The course focus is on the application of psychological methods, principles of maintenance of health, prevention of disease, treatment of illness, and rehabilitation and recovery from impaired health. It follows an interdisciplinary approach to content and instruction. 3 hrs. lecture/wk.

# Radiologic Technology (KRAD)

### KRAD 150

**Introduction to Radiologic Technology** (2 CR)

Introduction to the profession of radiologic technology, including the duties of the radiologic technologist in the health care environment. 1 hr. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 160

**Survey of Radiologic Technology** (6 CR)

*Prerequisite: Admission to the radiologic technology program*

Orientation to the program and clinical responsibilities. Topics related to basic patient interactions, body mechanics, patient transportation, radiographic terminology, radiographic examinations of the chest and abdomen, methods of radiation protection and types of radiographic equipment will be explored. 4.2 hrs. lecture, 6 hrs. clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 162

**Image Processing** (2 CR)

*Prerequisites: KRAD 160, KRAD 172 and KRAD 173*

Materials and factors relating to acquisition, processing, viewing, and storage of radiographs. 1.5 hrs. lecture, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 165

**Patient Care** (2 CR)

*Prerequisite: KRAD 160*

This course will explore patient-health professional interactions, basic patient care and management, medico-legal issues, and medical ethics. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 170

**Radiation Biology and Protection** (3 CR)

*Prerequisite: KRAD 160 with concurrent enrollment in corresponding semester of clinical training*

The principles of radiation biology and techniques used to protect the patient and personnel from the effects of exposure to ionizing radiation. 3 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 171

**Radiographic Exposures I** (3 CR)

*Prerequisite: Admission to the program*

Factors that affect radiographic image formation and determine image quality. 2.5 hrs. lecture, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 172

**Radiographic Positioning I** (3 CR)

*Prerequisite: KRAD 160 and concurrent enrollment in KRAD 165 and KRAD 173*

Anatomy and positioning of the alimentary canal, urinary system, and upper and lower extremities. 2.5 hrs. lecture, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 173

**Clinical Practice I** (3 CR)

*Prerequisite: KRAD 160 and concurrent enrollment in KRAD 165 and KRAD 172*

Performance of patient examination in a clinical setting under the supervision of a radiologic technologist. 16 hrs. clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 174

**Radiographic Exposures II** (3 CR)

*Prerequisites: KRAD 160, KRAD 171, KRAD 172 and KRAD 173*

Quality control of radiographic images. Technic charts, calibration of equipment, standard exposure systems, and factors used for conversion of technics for variables in the exposure system. Special techniques used in producing radiographic images. 2.5 hrs. lecture, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 175

**Clinical Practice II** (4 CR)

*Prerequisites: KRAD 165, KRAD 172 and KRAD 173 and concurrent enrollment in KRAD 176*

Performance of patient examinations in a clinical setting under the supervision of a radiologic technologist. 24 hrs. field study/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 176

**Radiographic Positioning II** (3 CR)

*Prerequisites: BIOL 140 and KRAD 165, KRAD 172 and KRAD 173 and concurrent enrollment in KRAD 162 and KRAD 175*

Anatomy, radiographic positioning, and film critique of pelvis, bony thorax, vertebral column, cranium, and facial bones. 2.5 hrs. lecture, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 178

**Clinical Practice III** (4 CR)

*Prerequisites: KRAD 175 and KRAD 176*

Performance of patient examinations in a clinical setting under the supervision of a radiologic technologist. 20 hrs. clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 278

**Imaging Modalities and Pathology** (3 CR)

*Prerequisites: KRAD 279, KRAD 280, KRAD 281 and concurrent enrollment in KRAD 282*

Human disease processes and their relationship to patient examination in the radiology department. Radiographic pathology and imaging modalities. 3 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 279

**Radiographic Positioning III** (2 CR)

*Prerequisites: KRAD 176 and KRAD 178 and concurrent enrollment in KRAD 280, KRAD 281 and KRAD 285*

Anatomy and positioning of the biliary system, mammary glands and temporal bone. Advanced film critique of radiographs of all routine radiographic examinations. 2 hrs. lecture. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 280

**Clinical Practice IV** (4 CR)

*Prerequisites: KRAD 162, KRAD 176 and KRAD 178, and concurrent enrollment in KRAD 279, KRAD 281 and KRAD 285*

Performance of patient examinations in a clinical setting under the supervision of a radiological technologist. 24 hrs. clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 281

**Radiation Physics** (3 CR)

*Prerequisite: PHYS 162 and KRAD 171*

Application of fundamental physics principles relating to energy, electricity, and magnetism and their relevance to the study of x-rays and x-ray equipment. 2.5 hrs. lecture, 1 hr. lab/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 282

**Clinical Practice V** (4 CR)

*Prerequisites: KRAD 279, KRAD 280, KRAD 281 and KRAD 285 and concurrent enrollment in KRAD 278*

Performance of patient examinations in a clinical setting under the supervision of a radiologic technologist. 24 hrs. clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 283

**Final Seminar** (2 CR)

*Prerequisites: KRAD 174 and KRAD 279 and KRAD 280*

Preparation for the National Registry examination. Simulation of American Registry of Radiologic Technologists examination. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KRAD 285

**Special Procedures** (2 CR)

*Prerequisites: KRAD 170 and KRAD 171 and KRAD 178, and concurrent enrollment in KRAD 279 and KRAD 280 and KRAD 281*

Anatomy, positioning, equipment and special tasks related to performance of special contrast media studies. Vascular, neurological, lymphatic, skeletal, and pulmonary systems. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of radiologic technology about the class meeting times and beginning and ending dates of times and beginning and ending dates of classes. Call 816-759-4000.

# Railroad Conductor (RRTC)

### RRTC 123

**Introduction to Conductor Service** (4 CR)

*Prerequisite: Admission to the JCCC railroad operations program, conductor option*

This is an introductory course for the conductor service option within the railroad operations program. Upon successful completion of this course, the student should be able to describe railroad organization and general operations, policies and practices to ensure railroad safety, and the basic responsibilities of conductors. 5 hrs. lecture, demonstration/wk. Selective admission program - see a counselor about special requirements.

### RRTC 175

**Conductor Mechanical Operation** (2 CR)

*Prerequisites: Admission to the JCCC railroad operations program, conductor option, and successful completion of RRTC 123 with a grade of "C" or higher*

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. Selective admission program - see a counselor about special requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $36.

### RRTC 261

**Conductor Service** (2 CR)

*Prerequisite: Admission to the JCCC railroad operations program, conductor option, and successful completion of RRTC 175 with a grade of "C" or higher*

Upon successful completion of this course, the student should be able to describe and apply railroad organization and general operations, policies and practices to ensure railroad safety and basic responsibilities of conductors. This course includes safety and the general rules with which conductors must

comply and teaches the techniques and administrative procedures conductors use on the job to perform safely and effectively. 2.5 hrs. lecture/wk. Selective admission program - see a counselor about special requirements.

### RRTC 263

**General Code of Operating Rules** (4 CR)

*Prerequisite: Admission to the JCCC railroad operations program, conductor option, and successful completion of RRTC 261 with a grade of "C" or higher*

This is the fourth course in the conductor option for the railroad operations degree program. Conductors must maintain a thorough understanding of the General Code of Operating Rules (GCOR). This course provides an in-depth study of the GCOR. Upon completion of this course, the student should be able to demonstrate abilities to apply the General Code of Operating Rules to safe and efficient train movement and operations. 5 hrs. lecture/wk. Selective admission program - see a counselor about special requirements.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $25.

### RRTC 267

**Conductor Field Application** (4 CR)

*Prerequisite: Admission to the JCCC railroad operations program, conductor option, and successful completion of RRTC 263 with a grade of "C" or higher*

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 an actual field location. The student prepares a daily reflective journal of the hands-on (OJT) railyard experience. 1 hr. lecture, 8 hrs on-the-job training/day for 7 days.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100.

# Railroad Dispatcher (RRTD)

### RRTD 122

**Introduction to Railroad Dispatching** (2 CR)

*Prerequisite: Admission to the JCCC railroad operations program, dispatcher option*

Upon successful completion of this course, the student should be able to describe railroad organization and general operations, policies and practices to ensure railroad safety and basic dispatching functions. 2.5 hrs. lecture/wk. Class currently held at Tarrant County Junior College, Ft. Worth, Texas.

### RRTD 271

**Apprentice Railroad Dispatching Training I** (6 CR)

*Prerequisites: Admission to the JCCC railroad operations program, dispatcher option, and successful completion of RRTD 275 with a grade of "C" or higher*

Upon successful completion of this course, the student should demonstrate abilities to apply the General Code of Operating Rules, maintenance of way operating rules and the train dispatcher's manual of policies and practices to safe and effective train movement and maintenance operations. This is an intensive course that prepares students to observe actual dispatching operations. 7.5 hrs. lecture/wk. Class currently held at Tarrant County Junior College, Ft. Worth, Texas.

### RRTD 272

**Apprentice Railroad Dispatching Training II** (6 CR)

*Prerequisites: Admission to the JCCC railroad operations program, dispatcher option, and successful completion of RRTD 271 with a grade of "C" or higher*

Upon successful completion of this course, students should demonstrate their ability to use centralized traffic control equipment, computerized track warrant control equipment, and management information systems that record and report train movement. Students will also identify and resolve traffic conflicts safely and effectively. This is an intensive course in which students observe, practice and demonstrate rail traffic dispatching functions in a laboratory setting. In addition, the student will spend an additional week observing dispatching-related activities in the field in conjunction with this course. 4.5 hrs. lecture, 3 hrs. lab/wk. Class currently held at Tarrant County Junior College, Ft. Worth, Texas.

### RRTD 275

**Railroad Dispatching Field Observation** (3 CR)

*Prerequisites: Admission to the JCCC railroad operations program, dispatcher option, and RRTD 122 with a grade of "C" or higher*

Upon successful completion of this course, the student will have observed actual dispatching operations and should be able to identify major responsibilities. Students will observe operations under the supervision of experienced dispatcher mentors in actual dispatching offices. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk. Class currently held at Tarrant County Junior College, Ft. Worth, Texas.

### RRTD 276

**Railroad Dispatching Field Applications** (5 CR)

*Prerequisites: Admission to the JCCC railroad operations program, dispatcher option, and RRTD 272 with a grade of "C" or higher*

Railroad Dispatching Field Applications is a 10-week period in which students will observe and practice operations under the supervision of experienced dispatcher mentors in actual dispatching offices. Upon successful completion of this course, students will be able to apply skills learned in classroom-based dispatching instruction to those operations. Minimum 15 hrs. on-the-job training/wk. Class currently held at Tarrant County Junior College, Ft. Worth, Texas.

# Railroad Electronics (RREL)

### RREL 110

**Introduction to Railroad Signal Systems** (4 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This course is the first of a series of four designed to provide entry (apprentice) level training to new signal employees, or those seeking to enter this trade. Upon successful completion of this course, the student should be able to describe basic company organization, operating and safety rules pertaining to signalmen, basic principles of electricity and measurement as well as protective devices. Also he or she should have a basic understanding of signal systems, track circuits, and Federal Railroad Administration (FRA) rules. 44 hrs. lecture 16 hrs. instructional lab/total

### RREL 112

**Track Circuits and Systems** (4 CR)

*Prerequisites: Successful completion of RREL 110 and approval of the railroad training administrator and the JCCC program assistant dean*

This course is the second of a series of four designed to provide entry (apprentice) level training to new signal employees, or those seeking to enter this trade. Upon successful completion of this course, the student should be able to describe and explain the operation of various track circuits, relay and control circuits, traffic control systems, locks, and applicable rules and standards. 44 hrs. lecture 16 hrs. instructional lab studio/total

### RREL 114

**Traffic Control, Switch Machines & Locks** (4 CR)

*Prerequisite: RREL 112 and approval of the railroad training administrator and the JCCC program assistant dean*

This course is the third of a series of four designed to provide entry (apprentice) level training to new signal employees, or those seeking to enter this trade. Upon successful completion of this course the student should be able to describe and maintain automatic block signaling systems, centralized traffic systems, power switches and locks. He should also be familiar with ground testing and isolation, as well as applicable rules and standards. 44 hrs. lecture 16 hrs. instructional lab studio/total

### RREL 116

**Interlocking, Classification, Crossings & Gates** (4 CR)

*Prerequisite: RREL 114 and approval of the railroad training administrator and the JCCC program assistant dean*

This course is the last of a series of four designed to provide entry (apprentice) level training to new signal employees, or those seeking to enter this trade. Upon successful completion of this course, the student should be able to perform interlocking plant and route plant analysis, explain classification yards, grade crossing warning systems, gates, and other devices, as well as applicable rules and standards. 44 hrs. lecture 16 hrs instructional lab/total

### RREL 144

**Introduction to Programmable Logic Controllers** (2 CR)

*Prerequisites: Approval of the railroad training director and the JCCC program assistant dean*

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 should be able to identify the components of programmable controllers, configure and set up the controllers for specific operations, write and test basic programs, and apply troubleshooting procedures to locate problems. 1 hr. lecture, 1.5 hrs. lab/wk.

### RREL 172

**Programmable Logic Controllers Applications** (2 CR)

*Prerequisites: Approval of the railroad training director and the JCCC program assistant dean*

This course is designed for electricians and maintenance personnel. It is intended as an advanced course for people with basic knowledge in programmable logic controllers operation. Allen Bradley PLC-5 family of processors is used for hands-on-training. Upon successful completion of this course, the student should be able to use advanced PLC instructions such as file, block transfer, stack concepts/operations and sequences, and configure and operate a network of processors. 1 hr. lecture, 1.5 hrs. lab/wk.

### RREL 180

**Introduction to Railroad Electronics** (1 CR)

*Prerequisites: Approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to state basic safety procedures in electronics, explain basic principles of electronics,

perform basic electronic calculations and use basic electronic tools. 2.5 hrs. lecture, 2.5 hrs. lab/wk.

### RREL 181

**Circuit Analysis DC/AC** (6 CR)

*Prerequisites: RREL 180 and the approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed to meet the needs of the railroad electronic maintainers. Upon successful completion of this course, the student should be able to identify and use fundamental DC circuit concepts such as Kirchhoff's laws, power and energy formulas, Ohm's Law, Thevenin's Theorem and Norton's Theorem as they apply to resistive circuits. Also upon successful completion of this course, the student should be able to analyze circuits involving resistors, capacitors and inductors driven by time-variant sources. This analysis will involve both time and frequency responses. 3 hrs. lecture, 2 hrs. lab, 3 hrs. alternate deliver/wk.

### RREL 182

**Semiconductor Devices and Circuits** (6 CR)

*Prerequisites: RREL 181 and the approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to describe the characteristics of basic semiconductor devices, explain practical circuits using semiconductor devices and analyze these circuits for DC and AC quantities. 3 hrs. lecture, 2 hrs. lab., 3 hrs. alternate delivery/wk.

### RREL 183

**Digital Techniques** (6 CR)

*Prerequisites: RREL 182 and approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to analyze basic digital circuitry consisting of arrangements of gates and flip-flops using TTL and CMOS integrated circuits, as well as relay logic. This analysis will include the application of elementary Boolean algebra, truth tables and timing diagrams. 3 hrs. lecture, 2 hrs. lab., 3 hrs. alternate delivery/wk.

### RREL 284

**Electronic Communications** (6 CR)

*Prerequisites: RREL 183 and approval of the railroad training director and the JCCC program assistant dean*

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to state the principles of amplitude, frequency, phase and pulse modulation and describe the technologies of transmitters, receivers, antennas, local area networks, wide-area networks and telephone systems. 3 hrs. lecture, 2 hrs. lab, 3 hrs. activity/wk.

### RREL 285

**Microprocessor Techniques** (6 CR)

*Prerequisites: RREL 183 and approval of the railroad training director and the JCCC program assistant dean*

This course is designed to meet the needs of railroad electronic maintainers. Upon successful completion of this course, the student should be able to analyze and troubleshoot 6800 family microprocessor circuitry as well as microprocessor interface circuitry. 3 hrs. lecture, 2 hrs. lab, 3 hrs. activity/wk.

**RREL 286**

**Applied Microprocessors** (2 CR)

*Prerequisites: RREL 285 and approval of the railroad training director and the JCCC program assistant dean*

This course is designed to provide an introduction to advanced microcomputer concepts and applications. This course is a continuation of topics introduced in the microprocessor course, with specific applications in general-purpose microcomputers (PCs) and dedicated microprocessor-based control systems. Included are hardware and software training in operating systems, peripherals, monitors, processors, storage media, maintenance, diagnostics and troubleshooting. Analog and digital data acquisition and processing, as well as voice digitization and playback, will be demonstrated. Presentations and labs will include incorporation of these functions into a PC, Harmon HLC and the Servo 9000 hot box detector. 1 hr. lecture, 2 hrs. lab/wk.

# Railroad Industrial Technology (RRIT)

**RRIT 122**

**Elements of Welding** (3 CR)

*Prerequisites: Approval of the BNSF manager of track and roadway maintenance training and the JCCC program assistant dean*

Upon successful completion of this course, the student should be able to cut and weld using oxyfuel (OFC) and shielded metal arc welding (SMAW). OFC will cover straight-line cutting, beveling, piercing and gouging. The SMAW portion will cover flat position and will be limited to fillet welds. The student should be able to discuss electrical safety in shielded metal arc welding (SMAW), handle welding cables properly, understand eye hazards, list safe clothing requirements and discuss environmental safety. This knowledge will be evidenced by achieving the specified score on the unit test. 2 hrs. lecture, 3 hrs. lab/wk.

**RRIT 123**

**Basic Welding** (3 CR)

*Prerequisites: RRIT 122 or approval of the BNSF manager of engineering and maintenance training and the JCCC program assistant dean*

Upon successful completion of this course, the student should be able to properly use oxy-fuel cutting (OFC), shielded metal arc welding (SMAW) and air carbon arc cutting (CAC-A) equipment. The SMAW portion of the course will concentrate on 1G and 2F welds with bend tests being performed on selected weldments. 1 hr. lecture, 4 hrs. lab/wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $180 to $400.

**RRIT 127**

**Welding Processes** (2 CR)

*Prerequisites: Approval of the BNSF training director and the JCCC program assistant dean*

Upon successful completion of this course, the student should be able to identify various welding processes used by the railroad and other industries. Standard shop and maintenance welding processes will be taught and demonstrated. Welds will be tested and inspected according to industry standards. 1 hr. lecture, 1.5 hrs. lab/wk.

**RRIT 132**

**Thermite Welding** (3 CR)

*Prerequisites: Approval of the BNSF manager of engineering and*

*maintenance training and the JCCC program assistant dean*

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. It will include specific in-depth industrial training. Students will be required to make various rail alignments and to grind various new and worn rails. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 136**

**Rail and Switch Point Repair Welding** (3 CR)

*Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC program assistant dean*

Upon successful completion of this course, the student should be able to identify and/or produce in a safe manner high-quality welding repairs and correct welding techniques to railroad track components to include maintenance, grinding, welding and repairs of switches, track rail ends, track wheel burns, battered welds, rail transition ramp building methods, Pandrol weld on shoulders, proper placement of work piece connections, and approved switch point welding procedures, as specified by the Burlington Northern Santa Fe Railway. This course will involve the study of different welding processes, welding safety, proper grounding techniques, rail heater and metallurgy. The effects of heat in relationship to specific rail steel components will be discussed. Students will be required to experience all appropriate methods and processes including welding, cutting, grinding, straight edging rail steel and preparing switch points for proper mating surface according to current industry standards. Evaluation will be a classroom and laboratory setting. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 137**

**Structural Welding SMAW** (3 CR)

*Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC program assistant dean*

Upon successful completion of this course, the student should be qualified to weld with SMAW according to AWS D1.1.96 code. All welds will be made in the vertical (3G) and overhead (4G) positions. Passing or failing will be determined by the student's ability to successfully produce welds according to prescribed standards in AWS D1.1.96. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 138**

**Structural Welding FCAW** (3 CR)

*Prerequisites: RRIT 137 and approval of the BNSF manager of engineering and maintenance training and the JCCC program assistant dean*

Upon successful completion of this course, the student should be qualified to weld with FCAW according to AWS D1.1.96 code. All welding will be made in the vertical (3G and 3F) and overhead (4G and 4F) positions. Passing or failing will be determined by the student's ability to successfully produce welds according to prescribed standards in AWS D1.1.96. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 139**

**Structural Welding Pipe** (3 CR)

*Prerequisites: RRIT 137 and approval of the BNSF manager of engineering and maintenance training and the JCCC program assistant dean*

Upon successful completion of this course, the student should be qualified to weld on pipe using the SMAW process. All welding will be made in the vertical uphill fixed position (5G). Passing or failing will be determined by the student's ability to successfully produce test welds. 1 hr. lecture, 4 hrs. lab/wk.

**RRIT 140**

**Structural Quality SMAW** (3 CR)

*Prerequisites: RRIT 127 or approval of the BNSF training director and the JCCC program assistant dean*

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 up (3G) positions; limited thickness. Passing or failing will be determined by the student's ability to successfully produce welds according to prescribed American Welding Society (AWS) standards. The oxyfuel cutting (OFC) portion will include cutting metal to specific sizes and shapes. 1 hr. lecture, 4 hrs. lab/wk.

### RRIT 141

**Structural Quality GMAW** (3 CR)

*Prerequisites: RRIT 127 or approval of the BNSF training director and the JCCC program assistant dean*

Upon successful completion of this course, the student should be able explain the theory of gas metal arc (GMAW) 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 industry standards. Selected welding codes and specifications will be used as a reference for this class. The oxy-fuel (OFC) will be used to prepare mild steel for welding. 1 hr. lecture, 4 hrs. lab/wk.

### RRIT 142

**Structural Pile Welding** (3 CR)

*Prerequisites: RRIT 137 and RRIT 138 and approval of the BNSF manager of engineering and maintenance training and the JCCC program assistant dean*

Upon successful completion of this course, the student should be able to splice pipe and H-beam piling and install cap plate gussets according to Burlington Northern Santa Fe (BNSF) standard blueprints. This course shall make use of oxy-fuel cutting (OFC), grinding, shielded metal arc welding (SMAW), and flux cored arc welding (FCAW) to prepare, fit and weld piling. Selected welds will have test strips bent to check for soundness of welds. These strips should meet basic American Welding Society (AWS) test standards. Basic metallurgy will be discussed as it applies to the need for preheat and post heat in the building of railroad bridges. 1 hr. lecture, 4 hrs. lab/wk.

### RRIT 143

**Thermite Welding for Supervisors** (2 CR)

*Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC program assistant dean*

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 rails. The students 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** (3 CR)

*Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC program assistant dean*

Upon successful completion of this course, the student should be able to repair by welding a manganese frog casting according to Burlington Northern Santa Fe Railway standards. This course will involve the study of different welding and cutting processes, with emphasis on the FCAW process. Metallurgy and the effects of heat in relationship to austenitic manganese steel will be discussed. Students will be required to cut, grind, straight edge, dye penetrant test, weld and monitor heat input during the repair process on austenitic steel frog casting for evaluation in an actual laboratory setting. 1 hr. lecture, 4 hrs. lab/wk.

### RRIT 147

**Component Welding for Supervisors** (2 CR)

*Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC program assistant dean*

Upon successful completion of this course, the student should be able to describe methods and processes used to weld railroad track components. This course will introduce the student to various types of welding and cutting processes. Metallurgy and the effects of heat on rail steel and manganese frog castings will be discussed. Instructor demonstration and student hands-on experience will be provided regarding welding, cutting and grinding on rail steel, frog castings, carbon arc cutting with air (CAC-A), straight edging, temperature monitoring and dye penetrants on both rail steel and frog castings in an actual laboratory setting. 1.5 hrs. lecture, 1 hr. lab/wk.

### RRIT 155

**Railroad Welding Review** (2 CR)

*Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC program assistant dean*

Upon successful completion of this course, the student should be able to identify currently used rail, frogs, switch points, crossings, Conley's and insulated joint plugs. The student should be able to locate operating procedures in an approved manual and apply them to the appropriate component. In addition, the student should be able to describe the proper application of OFC, OFW, heating, SMAW, FCAW, CAC-A and thermite welding procedures. 1.5 hrs. lecture, 1 hr. lab/wk.

### RRIT 156

**Rail and Frog Welding Review** (3 CR)

*Prerequisites: Approval of BNSF manager of engineering maintenance training and the JCCC program assistant dean*

Upon successful completion of this course, the student should be able to identify currently used types and sizes of rail, frogs, switch points and insulated joints. The student should be able to locate operation procedures in an approved manual and apply them to the appropriate component. In addition, the student should be able to describe the proper application of oxygen fuel cutting (OFC), oxy-fuel heating, shielded metal arc welding (SMAW), flux core arch welding (FCAW), carbon arc cutting with air (CAC-A), thermite welding (TW) and grinding procedures. 3 hrs. lecture/wk.

### RRIT 271

**Railroad Welding Internship** (6 CR)

*Prerequisites: Admission to the JCCC railroad program, welding option, and successful completion of RRIT 122 and RRIT 123 and RRIT 136 and RRIT 145 and RRIT 132 with a grade of "C" or higher*

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 railroad industry. The work will be developed cooperatively with railroads, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. Minimum of 120 workdays required.

# Railroad Maintenance of Way (RRMW)

### RRMW 132

**Railroad Structures Layout** (3 CR)

*Prerequisites: Approval of the railroad training administrator and the JCCC*

*program assistant dean*

This is a beginning course for railroad maintenance-of-way personnel working with bridge and building personnel working with bridge and building construction. Students will learn to read construction blueprints used in railroad projects and perform layout work for railroad construction. Also, students will learn how to use basic surveying principles and equipment typically used at railroad construction sites. 2 hrs. lecture, 3 hrs. lab/wk.

### RRMW 135

**Concrete Technology** (2 CR)

*Prerequisites: Approval of the railroad training administrator and the JCCC program assistant dean*

This course contains information that will help experienced and inexperienced students understand the principles of quality concrete. The emphasis will be on allowing concrete to reach its highest level of durability through proper mix design, placing and finishing techniques, and curing methods. 1.5 hrs. lecture, 1 hr. lab/wk.

# Railroad Operations (RRT)

### RRT 120

**History of Railroading** (3 CR)

This course covers the history and traditions of railroading and the industry's role in North American economic development. Upon successful completion of this course, students will be able to list and explain the significance of major events in North American railroading. 3 hrs. lecture/wk.

### RRT 121

**Railroad Technical Careers** (3 CR)

This course includes information about technical careers in railroading, enabling students to choose suitable career paths. This course includes field trips that will demonstrate the relationships among technical work groups in day-to-day railroad operations. Upon successful completion of this course, students should be able to describe basic technical job functions, requirements and characteristics. 3 hrs. lecture/wk.

### RRT 150

**Railroad Operations** (3 CR)

This course includes information about the industry, its major assets, structure and typical operations. Upon successful completion of this course, students will be able to define the current North American railroading industry characteristics, basic operations components and processes, and industry structure and administrative processes. 3 hrs. lecture/wk.

### RRT 165

**Railroad Safety, Quality and Environment** (3 CR)

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 need 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.

# Railroad Operations-Mechanical (RRTM)

### RRTM 124

**Orientation to the Railroad Mechanical Craft** (2 CR)

*Prerequisite: Admission to the JCCC railroad operations program, mechanical option*

This course is designed to familiarize the student with work in railroad mechanical crafts. Upon successful completion of the course, students should be able to describe apprenticeship program structures, benefits, organizational goals, basic safety and quality principles, and other aspects of mechanical craftwork. 2.5 hrs. lecture/wk.

### RRTM 130

**Freight Car Yard Inspection** (3 CR)

*Prerequisites: Approval of the railroad training administrator and the JCCC program assistant dean*

This course is the first of a series of three for freight car training. It is designed to introduce the student to the safe inspection, testing, and repairing of freight cars in a repair track environment in accordance with Federal Railroad Administration (FRA), Association of American Railroads (AAR), and BNSF Railway procedures and policies. 32 hrs. lecture, 8 hrs. instructional lab/total

### RRTM 131

**Railroad Car Repair Track Inspector** (3 CR)

*Prerequisites: RRTM 130 and approval of the railroad training administrator and the JCCC program assistant dean*

This course is the second of a series of three for freight car training. It is designed to introduce the student to the safe inspection, testing, and repairing of freight cars in a repair track environment in accordance with Federal Railroad Administration (FRA), Association of American Railroads (AAR), and BNSF Railway procedures and policies. 32 hrs. lecture, 8 hrs. instructional lab/total

### RRTM 135

**Basic EMD Mechanical** (3 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This is the first in a series of four courses in Locomotive Mechanics. This course is designed to introduce the student to the basic operation, maintenance, repair requirements and trouble shooting for EMD diesel engines and support systems. 40 hrs. integrated lecture lab/total

### RRTM 136

**Basic GE Mechanical** (3 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This is the second in a series of four courses in Locomotive Mechanics. This course is designed to introduce the student to the basic operation, maintenance, repair requirements and trouble shooting for GE diesel engines and support systems. 40 hrs. integrated lecture lab/total

### RRTM 137

**Locomotive Air Brake** (3 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This course is the third in a series of four courses in Locomotive Mechanics. It

is designed to provide the student an introduction to the operation, testing, maintenance, and troubleshooting for 26L and 30 ACDW locomotive air brake systems. This course also emphasizes FRA air brake requirements applicable to locomotives. 40 hrs. integrated lecture lab/total

## RRTM 138

**Locomotive FRA** (3 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This course is the fourth in a series of four courses in Locomotive Mechanics. This course is designed to introduce the student to the Federal Railway Administration and Department of Transportation Code of Federal Regulations Title 49, Parts 209, 218, 229, 231, and 232. 40 hrs. integrated lecture lab/total

## RRTM 142

**Locomotive Electricity** (3 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This is the first in a series of four courses in Locomotive Electrical. This course is designed to introduce the student to the basic electrical theory and concepts related to locomotive electrical systems. 40 hrs. integrated lecture lab/total

## RRTM 143

**Low Horsepower Electrical** (3 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This is the second in a series of four courses in locomotive electrical. This course is designed to introduce the student to the operation, maintenance, and troubleshooting of EMD Low Horsepower locomotive electrical systems. 40 hrs. integrated lecture lab/total

## RRTM 144

**EMD Basic Electrical** (3 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This is the third in a series of four courses in Locomotive Electrical, this course is designed to introduce the student to the basic operation, maintenance, repair requirements and trouble shooting of EMD diesel engines and support systems. 40 hrs. integrated lecture lab/total

## RRTM 145

**GE Dash 8/9 Electrical Systems** (3 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This is the last in a series of four courses in Locomotive Electrical. This course is designed to introduce the student to the basic operation, maintenance, repair requirements and trouble shooting of GE Dash 8/9 locomotive systems. 40 hrs. integrated lecture lab/total

## RRTM 150

**Freight Car Open Top Loading Rules** (3 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant*

This course is designed to provide the student with a thorough knowledge of Freight Car Open Top Loading Rules as well as a firm understanding of other pertinent Association of American Railroads (AAR) and Federal Railroad Administration (FRA) requirements, with an emphasis on safe work practices. 40 hrs. integrated lecture lab/total

## RRTM 152

**Freight Car Air Brakes, Basic** (2 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed to provide the student with a basic working knowledge of Freight Car Air Brake Equipment as well as a firm understanding of both Association of American Railroads (AAR) and Federal Railroad Administration (FRA) rules and requirements with emphasis on safe work practices. 40 hrs. integrated lecture lab/total

## RRTM 154

**Freight Car Air Brakes, Adv** (2 CR)

*Prerequisite: RRTM 152 and approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed to provide the student with a thorough working knowledge and advanced diagnostic ability of Freight Car Air Brake Equipment as well as a firm understanding of both AAR and Federal rules and requirements with emphasis on safe work practices. 40 hrs. integrated lecture lab/total

## RRTM 156

**Freight Car AAR Billing** (2 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed to provide the student a thorough working knowledge of the Freight Car AAR Billing system (CRB), the use of Handheld Computers for billing purposes, preparation of Original Records of Repairs and a firm understanding of both AAR and Federal rules and requirements. 40 hrs. integrated lecture lab/total

## RRTM 158

**Freight Car Intermodal** (2 CR)

*Prerequisite: Approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed to provide the student a thorough working knowledge of Freight Car Intermodal Equipment as well as a firm understanding of both BNSF and Federal Railroad Administration (FRA) rules and requirements with emphasis on safe work practices. 40 hrs integrated lecture lab/total

## RRTM 160

**Freight Car Computer (Com C)** (2 CR)

*Prerequisite: Enrollment restricted to BNSF employees only. Approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed to provide a thorough working knowledge of computer programs used by BNSF Railway. Upon completion, the student should be able to navigate easily through both the TSS and MEMS computer programs used by BNSF Railway. 40 hrs. integrated lecture lab/total

## RRTM 170

**Railroad Mechanical Safety and Health** (2 CR)

*Prerequisites: Admission to the JCCC's railroad operations program, mechanical option, and completion of RRTM 124 with a grade of "C" or higher*

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** (2 CR)

*Prerequisites: Admission to the JCCC railroad operations program, mechanical option, and completion of RRTM 124 and RRTM 170 with a grade of "C" or higher*

This course teaches the principles of diesel engine operation. Upon successful completion of this course, students will be able to identify 2-cycle and 4-cycle diesel engine parts and describe how diesel engine lubricating, cooling and fuel systems operate. 1.5 hrs. lecture, 1 hr. lab/wk.

### RRTM 253

**Freight Car Fundamentals** (2 CR)

*Prerequisites: Admission to the JCCC's railroad operations program, mechanical option, and completion of RRTM 124 and RRTM 170 with a grade of "C" or higher*

This course teaches the basic types and purposes of railroad freight cars. Upon successful completion of this course, students will 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, l hr. lab/wk.

### RRTM 254

**Basic Locomotive Electricity and Electronics** (2 CR)

*Prerequisites: Admission to the JCCC's railroad operations program, mechanical option and completion of RRTM 124 and RRTM 170 with a grade of "C" or higher*

This course teaches the theory and operation of electrical and electronic circuitry on board modem locomotives and complements EMD and GE electrical systems classes. Upon successful completion of this course, students will be able to describe the theory and purpose of the processes and operation of locomotive electrical system components and maintenance techniques. 1.5 hrs. lecture, 1 hr. lab/wk.

# Railroad Work Equipment (RRWE)

### RRWE 136

**Basic Electronics** (2 CR)

*Prerequisites: Approval of the railroad training director and the JCCC program assistant dean*

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 electronic devices, schematics, basic electronic formulas and programmable logic controllers. 1 hr. lecture, 1.5 hrs. lab/wk.

### RRWE 138

**Work Equipment Symbols** (2 CR)

*Prerequisites: Approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed to introduce the mechanic to the different types of symbols found on railroad track equipment. Major symbols families that will be discussed include mechanical, hydraulic, pneumatic, ladder and logic devices. At the end of each major topic, several small projects will be assigned to ensure that understanding has been achieved. As a final project, students

will be assigned a project that will test their ability to use correctly several different families of symbols in one complete working drawing. 1 1/2 hrs. lecture, 1 hr. lab/wk.

### RRWE 146

**Hydraulic Principles** (2 CR)

*Prerequisites: Approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed for operators and maintenance personnel who use hydraulic systems in their work. Upon successful completion of this course, the student should be able to apply hydraulic principles to improve operational availability of equipment. Students will learn to read hydraulic diagrams and perform preventive maintenance and troubleshooting. In order to explain component operation, there will be extensive use of cut-away components. 1 hr. lecture, 1.5 hrs. lab/wk.

### RRWE 148

**Electronic Principles** (2 CR)

*Prerequisites: Approval of the railroad training administrator and the JCCC program assistant dean*

This introductory course is designed to familiarize the student with the basic principles of electricity/electronics, the proper usage of a VOM or DMM, the reading of electrical prints in performing basic troubleshooting and the ability to identify basic hardware found in electrical circuits on maintenance-of-way equipment. 1 hr. lecture, 1.5 hrs. lab/wk.

### RRWE 157

**Fluid Power Systems** (2 CR)

*Prerequisites: Approval of the railroad training administrator and the JCCC program assistant dean*

This course is designed to introduce the field of fluid power. Major topics that will be discussed include the two types of fluid power systems, major parts in a fluid power system and their purpose, the calculations needed to size motors and cylinders, the proper preventive maintenance procedures needed to keep the system operating at peak efficiency, and the troubleshooting methods used to isolate the problem in a system that is not working correctly. 2 hrs. lecture/wk.

### RRWE 190

**Advanced Hydraulic Principles** (2 CR)

*Prerequisites: RRWE 146 and the approval of the railroad training administrator and the JCCC program assistant dean*

This advanced course contains information on hydraulic components found on the more complex maintenance-of-way equipment. Upon successful completion of this course, the student should be able to understand symbols, describe the theory of operation of and perform basic troubleshooting tasks on these components. 1 hr. lecture, 1.5 hrs. lab/wk.

### RRWE 192

**Advanced Electronic Principles** (2 CR)

*Prerequisites: RRWE 146 and the approval of the railroad training administrator and the JCCC program assistant dean*

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 of and perform basic troubleshooting tasks on these components. 1 hr. lecture, 1.5 hrs. lab/wk.

# Reading (RDG)

**RDG 125**

**Fundamentals of Reading** (3 CR)

*Prerequisite: Appropriate assessment score*

This is a mandatory reading course based on JCCC assessment results, and successful completion of the course (defined as a "C" or higher) is required for students to progress in the assessment mandated sequence of reading courses. It is designed for students who need to improve their understanding of written expression. The focus is on the development of vocabulary, dictionary usage, comprehension and written communication. The next course, RDG 126 Reading Skills Improvement, is also required to complete the mandatory reading program. RDG 125 does not fulfill degree requirements. 3 hrs./wk. Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

**RDG 126**

**Reading Skills Improvement** (3 CR)

*Prerequisites: Appropriate test score, or either RDG 125 or EAP 093 and EAP 115 with a grade of "C" or higher*

This is the final mandatory reading course based on JCCC assessment scores, and successful completion of this course (defined as a grade of "C" or higher) is required to exit the assessment mandated 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 higher-level comprehension and vocabulary skills. Students use news articles and other materials to apply and practice skills learned in the class and to provide a background for written assignments. This course does not fulfill degree requirements. 3 hrs./wk. Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

**RDG 127**

**College Reading Skills** (3 CR)

*Prerequisite: RDG 126 or appropriate assessment score*

In this advanced course, designed for students who wish to further improve their reading, students will develop critical reading skills, expand background knowledge through reading, increase vocabulary, develop flexible reading techniques, and improve study and writing skills. Students use selected periodicals to apply and practice skills learned in the class and to provide a background for written assignments and class discussions. 3 hrs./wk. Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $2 to $5.

# Religion (REL)

**REL 120**

**Exploring World Religions** (3 CR)

This course is a comparative study of the world's major religious traditions. The basic beliefs of Hinduism, Buddhism, Confucianism, Daoism, 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.

**REL 125**

**Religions of the East** (3 CR)

Religions of the East is a detailed examination of the rich and diverse religious traditions of India, Tibet, China and Japan. Students will explore the histories, mutual influences, beliefs, and practices of Hinduism, Buddhism, the Jain religion, the Sikh religion, Confucianism, Daoism, the Tibetan religions, and Shinto, stressing the characteristics they share, as well as those that differentiate them from each other and from Western religions. Primary and secondary texts, as well as the iconographic and artistic traditions of these religions, will be examined as appropriate. 3 hrs. lecture/wk.

**REL 126**

**Religions of the West** (3 CR)

Religions of the West is a detailed examination of the rich and diverse religious traditions that originated in the ancient Near East (Judaism, Christianity, Islam), examples of indigenous traditions of Africa and North America, and examples of "alternative religions" of modern/contemporary Western culture. The student will explore the histories, cultural influences, beliefs and practices of these religions, stressing the characteristics that they share and those that differentiate them, both from one another and from the religious traditions of South and East Asian cultures. The primary texts, as well as the iconographic and artistic traditions of these religions, will be examined as appropriate. 3 hrs. lecture/wk.

**REL 150**

**Islam: Religion & Civilization** (3 CR)

This course covers the context in which Islam arose; the career of the Prophet Muhammad; the main teachings and practices of the religion; the Qur'an and other early Islamic literature; subsequent political developments in the religion and its spread; its main religious branches; its history during the Middle Ages; the Christian crusades and their consequences; the major components of Islamic civilization including law, the arts, literature, philosophy, science, and mathematics; Sufi; the effects of Western imperialism upon Islamic states; major developments in Islamic thought and practice since the seventeenth century; the Islamic diaspora; and Islam today. REL 150 is the same course as HIST 150 and HUM 150; enroll in one only. 3 hrs. lecture/wk.

# Respiratory Care (RC)

**RC 125**

**Beginning Principles of Respiratory Care** (4 CR)

*Prerequisite: Admission to the respiratory care program*

This is an introduction to the basic therapeutic modalities used in respiratory care, including patient safety and comfort considerations, infection control and standard precautions, medical gas delivery, humidity and aerosol therapy, basic respiratory pharmacology, secretion clearance techniques and lung expansion therapy. Emphasis is on patient assessment, clinical application of therapies, therapy evaluation and communication techniques. The roles of respiratory care in the health care system and basic respiratory care service scope, organization and operation are also introduced. Students will have the opportunity to work with patients after two to three weeks of introductory lecture and lab demonstration and practice. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 6 hrs. lecture, 16 hrs. lab/wk. Summer. Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $150 to $250.

**RC 130**

**Respiratory Care Equipment** (4 CR)

*Prerequisite: Admission to the respiratory care program*

This course is an introduction to basic respiratory care equipment. The operation, function, calibration, troubleshooting and maintenance for oxygen

administration devices, aerosol generators, humidifiers and hyperinflation devices will be addressed. Medical gas production and storage will also be addressed. 6 hrs. lecture, 8 hrs. lab/wk. Summer

## RC 135

**Cardiopulmonary Medicine I** (1 CR)

*Prerequisite: Admission to the respiratory care program*

This is the first of three courses that provide a detailed review of the respiratory and cardiac system anatomy and physiology and the clinical implications of normal and abnormal function. 2 hrs./wk. Summer.

## RC 220

**Cardiopulmonary Physiology** (2 CR)

*Prerequisite: Successful completion of the summer Prerequisite: Successful completion of the summer sequence of respiratory care courses sequence of respiratory care courses*

This is a comprehensive study of the physiology and pathophysiology of the pulmonary, cardiovascular and renal systems as they relate to respiratory care. 2 hrs./wk. Fall.

## RC 230

**Clinical Topics and Procedures I** (4 CR)

*Prerequisite: Successful completion of the summer sequence of respiratory care courses*

This course supplements the fall clinical experiences. Concepts, techniques and procedures learned in the summer semester are reinforced. The student will develop new understandings and skills in the acute care, basic emergency care and introductory-level critical care settings. Emphasis will be on arterial blood gas procurement and analysis, cardiac rhythm assessment and management, airway equipment and management procedures, patient management of obstructive lung disorders, perioperative care and chest trauma. In addition, basic mechanical ventilation concepts and techniques will be addressed as they relate to physiologic effects, ventilator commitment, management and basic troubleshooting. 3 hrs. lecture, 3 hrs. lab/wk. Fall

## RC 231

**Clinical Topics and Procedures II** (4 CR)

*Prerequisite: Successful completion of the fall sequence of respiratory care courses*

This course supplements the spring clinical experiences. Concepts, techniques and procedures learned in the fall semester are reinforced. The student will refine understandings of and skills in the acute care, basic emergency care and critical care settings. Emphasis will be on ventilator management of patients with specific lung insults, neurological compromise and cardiac problems. Advanced mechanical ventilation concepts and techniques will be addressed as they relate to physiologic effects, management and troubleshooting. Home care, pulmonary rehabilitation, physician-assisted procedures, cardiopulmonary stress testing, patient case management and department management will be addressed. 3 hrs. lecture, 3 hrs. lab/wk. Spring.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $600.

## RC 233

**Respiratory Care of Children** (2 CR)

*Prerequisite: RC 230*

The focus will be on the respiratory care of neonatal and pediatric patients, with emphasis on the management of cardiopulmonary disease states unique to children. Information will be based on developmental anatomy and physiology, pathology, diagnostic/laboratory assessments, and associated patient management in the acute, critical, emergency care, transport and home care

settings. 2 hrs./wk. Spring.

## RC 235

**Cardiopulmonary Medicine II** (2 CR)

*Prerequisite: Successful completion of the summer sequence of respiratory care courses*

This is the second in a series of three courses that provide a detailed review of the physical and diagnostic assessments of the cardiopulmonary patient and the related clinical implications of the assessment finding. 2 hrs. lecture/wk. Fall

## RC 236

**Cardiopulmonary Medicine III** (2 CR)

*Prerequisite: Successful completion of the fall sequence of respiratory care courses*

This is the third in a series of three courses that provide a detailed review of pulmonary disorders, their pathology and their management. 2 hrs. lecture/wk. Spring

## RC 240

**Cardiopulmonary Pharmacology** (2 CR)

*Prerequisite: Successful completion of the summer sequence of respiratory care courses*

This course acquaints the student with general principles of pharmacology and provides a comprehensive review of all drugs and drug groups that are either administered by respiratory-care practitioners or play an integral part in the management of patients they may encounter. Emphasis is on the clinical application of pharmacological agents, their therapeutic effects, mechanism of action and adverse effects, rather than the biochemistry involved. 2 hrs. lecture/wk. Fall.

## RC 271

**Clinical Practice I** (6 CR)

*Prerequisite: Successful completion of the summer sequence of respiratory care courses*

This course is the clinical application of respiratory care therapeutic and diagnostic procedures. Students will have the opportunity to work with patients under close supervision to further develop their skill and understanding of basic respiratory care procedures for adults and children. The course objectives progress throughout the semester to involve the student initially in basic care of the less critically ill patient. As their comfort level and exposures progress, students are allowed to work with the more critically ill patients. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the fee is due and instructions on how to pay the fee. 24 hrs./wk. Fall.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $100 to $200.

## RC 272

**Clinical Practice II** (6 CR)

*Prerequisite: Successful completion of the fall sequence of respiratory care courses*

This course is the clinical application of respiratory care therapeutic and diagnostic procedures. Students will have the opportunity to work with patients under close supervision to further develop their skill and understanding of critical respiratory care procedures for adults and children. Students will also be involved in specialty activities to include physician rounds, pulmonary rehabilitation, home care, pulmonary function and cardiopulmonary stress testing. Enrollment in certain courses may require a professional liability fee of $16.00. Students will be notified via their JCCC student e-mail account if the

fee is due and instructions on how to pay the fee. 24 hrs./wk. Spring.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $200 to $600.

# Sociology (SOC)

### SOC 122

**Introduction to Sociology** (3 CR)

Introduction to Sociology introduces students to sociology, the "science of society," and its approach to human social life. The course shows students how sociologists conduct research, and it describes the basic concepts and theories sociologists use to explain the social world. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

### SOC 125

**Social Problems** (3 CR)

Selected social problems will be analyzed. Problems associated with race, gender, class, deviance, crime and ecology will be examined as perennial issues in contemporary society. In addition, other topics will be analyzed as they arise or as the instructor and students determine them to be significant. The history and development of each problem, as well as possible solutions, will be examined from a variety of perspectives. 3 hrs. lecture/wk.

### SOC 127

**Criminology** (3 CR)

This class will explore various explanations for criminal behavior including choice, biosocial, psychological, social structure and social process theories. Society's responses to crime will also be examined. 3 hrs. lecture/wk. ADMJ 127 and SOC 127 are the same course. Do not enroll in both.

### SOC 131

**Marriage and the Family** (3 CR)

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. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details.

### SOC 146

**Introduction to Social Work and Social Welfare** (3 CR)

This course will introduce the student to the profession of social work and to the history and development of social welfare and social service systems in the United States. This is a required introductory course in the sequence of study leading to a professional degree (BSW, MSW or DSW) in social work. 3 hrs./wk.

### SOC 147

**Social Work and Social Justice** (3 CR)

The history of social movements in the United States will be integrated into exploration of current economic, political, religious and psychosocial issues, at micro and macro practice levels, relevant to the professional practice of social work at the BSW or MSW level of practice. This course is designed to support the National Association of Social Workers (NASW) Code of Ethics and Council of Social Work Education (CSWE) requirements for culturally competent practice. 3 hrs./wk.

### SOC 152

**Perspectives on Aging** (3 CR)

Social aspects of aging will be identified. Areas of special interest will include research themes and demographic trends; aging and its relationship to family, the economy, politics, religion and education; the effect of cultural values on behavior; and the future of the elderly. 3 hrs./wk.

### SOC 165

**Chinese Society: Past and Present** (3 CR)

An introduction to Chinese society since 1949, this course examines Chinese society and culture and focuses on contemporary social change while tracing the historical roots of Chinese culture and institutions. Social processes such as social movements, institutional development, political change, social organization and conflict are examined and analyzed. 3 hrs. lecture/wk. This course is typically offered in the spring semester.

### SOC 200

**Intercultural Applications** (3 CR)

*Prerequisite or corequisite: SPD 180*

This course will provide students with direct experience with people from other cultures and in community organizations. Through their work with international representatives and service agencies, students will gain experiential and reflective knowledge of various cultures, social institutions and social issues and will develop skills needed to successfully negotiate intercultural settings. Enrollment in the course requires participation in a weekend retreat and some additional hours in activities outside the classroom. 3 hrs. lecture/wk. This course is typically offered in the spring semester.

### SOC 205

**Sociology of Food** (3 CR)

Through this exploration of food in society, students will discover the fundamental significance of the relationships between people and food. In studying the ways food is produced and consumed, we will also discover the ways food shapes and expresses relationships among people. This most basic of human needs is easily taken for granted by those who have plenty, while the causes of hunger are easily dismissed or misunderstood. This course will address such misunderstandings, as well as issues of culture, meaning, identity, power, and ecology, all through a focus on food. 3 hrs. lecture/wk.

### SOC 210

**Methodology in Social Sciences** (3 CR)

*Prerequisite: PSYC 130 or SOC 122 or ECON 230*

This course deals with scientific research methods utilized in the social sciences, especially psychology, sociology, political science, and anthropology. The course examines a wide range of data collection methodologies including observation, questionnaire construction, and controlled experimentation. The course will be beneficial for analyzing and evaluating the quality of research findings reported in both the popular and academic press. It will also be useful to those who plan to engage in occupations requiring the use of research methodology. 3 hrs. lecture/wk. SOC 210, PSYC 210 and POLS 210 are the same course. Do not enroll in more than one of these courses.

# Speech/Debate (SPD)

### SPD 120

**Interpersonal Communication** (3 CR)

This course focuses on the principles of effective speech communication in small group and one-to-one relationships. Theory and practice of interpersonal communication are studied and applied to a variety of life situations. The

course focuses on perception, self-concept, listening, conflict, language, nonverbal communication and culture as they relate to interpersonal relationships. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $1 to $5.

## SPD 121

### Public Speaking (3 CR)

This course is designed to meet the needs of people who wish to improve their ability to prepare and deliver effective oral presentations before an audience. This fundamental speech course emphasizes creation of ideas, research techniques, outlining, audience analysis, organization and delivery techniques. Students will deliver a variety of speech types including informative and persuasive. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $1 to $5.

## SPD 125

### Personal Communication (3 CR)

This course is concerned with the most frequently used human communication skills, interpersonal communication and public speaking. The course demonstrates the natural relationships between communicating one-to-one and in public, showing that skills in one can be employed in the other and giving practice in both. Focus is on communication theory, listening, concepts of self, language, research techniques, perception and various types of public speaking, such as impromptu, group panel, informative and persuasive. 3 hrs./wk.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $1 to $5.

## SPD 128

### Business and Professional Speech (3 CR)

Students will improve their verbal communication skills both formally and informally by studying interviewing, delivering effective presentations, working in groups, negotiating, practicing listening, 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.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $1 to $5.

## SPD 130

### Elementary Debate (3 CR)

This course is designed for those students interested in participating in competitive intercollegiate debate. Through the course, students will learn debate theory, debate skills and techniques, and methods of becoming successful intercollegiate competitors. Students are expected to travel to tournaments in order to develop skills in research, argument construction, debate format, intercollegiate debate speaking style and refutation. Students enrolling in this course will be required to participate as members of the intercollegiate debate team and will attend an appropriate number of weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

## SPD 132

### Intermediate Debate I (3 CR)

*Prerequisite: SPD 130 or the equivalent*

This course is designed for those students interested in participating in competitive intercollegiate debate. Through the course, students will learn debate theory, debate skills and techniques, and methods of becoming successful intercollegiate competitors. Students are expected to travel to tournaments in order to develop skills in research, argument construction,

debate format, intercollegiate debate speaking style and refutation. Students enrolling in this course will be required to participate as members of the intercollegiate debate team and will attend an appropriate number of weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

## SPD 140

### Oral Interpretation of Literature (3 CR)

The student will develop techniques for effective spoken performance of literature. Using poetry, fiction and nonfiction, students will create literary interpretations and then master both the verbal and nonverbal methods necessary for effective spoken expression of those interpretations. This course includes topics such as selecting literary works for performance, interpretation of literary works, audience analysis and performance. Skills acquired in this course will be essential to actors, broadcast journalists, educators and other public speakers. 3 hrs./wk.

## SPD 141

### Voice and Speech (3 CR)

The student will develop techniques to expand breath support, vocal range and dynamics; develop precise articulation; and strengthen the connection between thought and sound. Through the use of exercises to free, develop and strengthen the voice, the student will be better able to communicate the full range of human emotion and all the nuances of thought. Skills acquired in this course are essential for actors, broadcast journalists, educators and other public speakers. 3 hrs./wk.

## SPD 180

### Intercultural Communication (3 CR)

The intercultural communication course is concerned with communication theory as it relates to cross-culture interactions. This course utilizes concepts drawn from sociology, psychology, anthropology and communication. Focus is on identifying the cultural bases of beliefs, attitudes, values and behaviors. Objectives include recognizing commonalities across cultures, tolerating ambiguity in a variety of situations, developing a more global multicultural perspective, identifying and appreciating other cultural orientations, and recognizing and assigning cultural explanations to specific behaviors. 3 hrs/wk.

## SPD 230

### Intermediate Debate II (3 CR)

*Prerequisite: SPD 132 or the equivalent*

This course is designed for students interested in participating in competitive intercollegiate debate. Through the course, students will learn debate theory, debate skills and techniques, and methods of becoming successful intercollegiate competitors. Students are expected to travel to tournaments in order to develop skills in research, argument construction, debate format, intercollegiate debate speaking style and refutation. Students enrolling in this course will be required to participate as members of the intercollegiate debate team and will attend an appropriate number of weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

## SPD 235

### Advanced Debate (3 CR)

*Prerequisite: SPD 230 or the equivalent*

This course is designed for students interested in participating in competitive intercollegiate debate. Through the course, students will learn debate theory, debate skills and techniques, and methods of becoming successful intercollegiate competitors. Students are expected to travel to tournaments in order to develop skills in research, argument construction, debate format, intercollegiate debate speaking style and refutation will be developed. Students enrolling in this course will be required to participate as members of the intercollegiate debate team and will attend an appropriate number of weekend intercollegiate debate tournaments a semester. 3 hrs./wk.

# Surgical Technology (KST)

### KST 100

**Introduction to Surgical Technology** (2 CR)

Explores historical aspects of surgery, health care facilities, and organizations. Includes the roles, duties, and responsibilities of the surgical team members. Ethical, legal and moral issues in health care and surgery are addressed. Focuses on effective communication skills, accurate medical terminology, and the impact of transcultural psychosocial outcomes for clients in the surgical setting. 4 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of surgical technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KST 102

**Introduction to Fundamentals I** (5 CR)

*Prerequisites: The student must meet the entrance requirements and be accepted into the surgical technology program.*

Applies principles of medical and surgical asepsis. Focuses on preparation 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. 6 hrs. lecture, 15 hrs. clinical/wk. Practices maintaining a safe client environment and includes the responsibilities and duties of surgery personnel. Common surgical techniques and procedures. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of surgical technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KST 103

**Introduction to Fundamentals II** (6 CR)

A description is not available for this course.

### KST 104

**Body Structure and Function** (2 CR)

*Prerequisites: Students must meet entrance requirements and must be accepted into the surgical technology program.*

Introduces students to the major structures and functions of the human body. Is taught according to body systems. Laboratory time is used to introduce and reinforce classroom instruction. 1 hr. lecture, 1 hr. lab/wk. Course taught at Penn Valley Community College. Students should contact the Penn Valley coordinator of surgical technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KST 105

**Pharmacology for the Surgical Technologist** (2 CR)

Development of knowledge and understanding of the metric, apothecary, household, and linear systems of measurement. The conversion of equivalents from one system to another. 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, post-anesthesia client care, and care in emergencies. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of surgical technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KST 106

**Microbiology for the Surgical Technologist** (3 CR)

Study of structure, function and pathogenicity of micro-organisms, immune and infectious responses. An emphasis is placed on principles of sterilization, disinfecting, environmental sanitation, and practices that promote optimal healing. 3 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of surgical technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KST 109

**Surgical Procedures I** (8 CR)

Focus is 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. 4 hrs. lecture, 12 hrs clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of surgical technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KST 110

**Surgical Procedures II** (8 CR)

Focus is on diagnosis, pathology and surgical sequence of general surgery, gynecological surgery, genitourinary surgery and laparoscopic surgery. Included is a discussion of postoperative care and complications. 3 hrs. lecture, 12 hrs. clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of surgical technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KST 111

**Career Development for the Surgical Technologist** (2 CR)

Resume development, interviewing techniques and introduction to the current health care market. Emphasis is on self-evaluation of professional skills and their application to the health care market. 2 hrs. lecture/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of surgical technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

### KST 114

**Surgical Procedures III** (8 CR)

Focus is on diagnosis, pathology and surgical sequence with complex surgical specialties: neurosurgery, cardiovascular and peripheral vascular, thoracic, pediatric, geriatric, trauma and surgery. Included is discussion of postoperative care and complications. 4 hrs. lecture, 9 hrs. clinical/wk. Course taught at MCC-Penn Valley Community College. Students should contact the Penn Valley coordinator of surgical technology about the class meeting times and beginning and ending dates of classes. Call 816-759-4000.

# Theater (THEA)

### THEA 120

**Introduction to Theater** (3 CR)

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 the Theater** (2 CR)

*Prerequisite: THEA 130*

The student will be introduced to theater improvisation, which will emphasize

creative stage activities not requiring a written script. Participation in activities of this course will release and enhance the work of serious acting students and show the students how to approach characterization viscerally rather than intellectually, spontaneously rather than intentionally. 2 hrs. lecture/wk.

## THEA 130

### Acting I (3 CR)

The fundamentals of acting will be studied in this class. Emphasis will be on discovering and expanding creative potential through exercises in self-awareness, posture, movement, voice and personality projection. Students will complete a minimum of three in-class performances. 3 hrs./wk. plus rehearsals and performances.

## THEA 131

### Voice and Speech (3 CR)

The student will develop techniques to expand breath support, vocal range and dynamics; learn precise articulation; and strengthen the connection between thought and sound. Through the use of exercises to free, develop and strengthen the voice, the student will be better able to communicate the full range of human emotion and all the nuances of thought. Skills acquired in this course are essential for actors, broadcast journalists, educators and other public speakers. 3 hrs. lecture/wk. This course is typically taught in the fall semester.

## THEA 133

### Technical Practicum I (1 CR)

Students gain practical experience in technical theater in this course. The student completes the course objectives by working in the theatre department's productions and/or working in the scene/costume shop during the semester. 2 hrs. lab/wk.

## THEA 134

### Performance Practicum I (1 CR)

This course will enable students to gain practical experience in performance-related aspects of college theater productions. Admission may be granted upon being cast in a JCCC production. 2 hrs. lab/wk.

## THEA 135

### Stage Makeup (2 CR)

An introductory course designed to provide an understanding of, and practical skill in, the design and application of makeup for theatrical performance. 1 hr. lecture, 1 hr. lab/wk. This course is typically taught in the spring semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $30 to $60.

## THEA 136

### Basic Costuming (3 CR)

This is a survey of the theory, techniques and skills used in costume creation for the theater and film. Areas of study and practice include basic construction, patterning and cutting; fabrics, design and realization; millinery; craftwork; and organization. 2 hrs. lecture, 2 hrs. lab/wk. This course is typically taught in the fall semester.

## THEA 137

### Movement for the Stage (3 CR)

The student will develop techniques to expand kinesthetic awareness, flexibility, physical freedom and the language of movement. Through the use of exercises to free, develop and strengthen physical vocabulary, the student will be better able to communicate the physical life of a character. Skills acquired in this course will include mime, stage combat, commedia, improvisation and circus techniques. 3 hrs. lecture/wk. This course is typically

taught in the spring semester.

## THEA 138

### Oral Interpretation of Literature (3 CR)

The student will develop techniques for effective spoken performance of literature. Using poetry, fiction and nonfiction, students will create literary interpretations and then master both the verbal and nonverbal methods necessary for effective spoken expression of those interpretations. This course includes topics such as selecting literary works for performance, interpretation of literary works, audience analysis and performance. Skills acquired in this course will be essential to actors, broadcast journalists, educators and other public speakers. 3 hrs. lecture/wk. This course is typically taught in the fall semester.

## THEA 140

### Basic Stagecraft (3 CR)

This course introduces the general student and theater major to basic stagecraft. Through lectures, in-class demonstrations and hands-on experiences, the student will gain a working and appreciative knowledge of technical theater. The course includes 15 lab hours and attendance at two live theatrical productions. 2 hrs. lecture, 2 hrs. lab/wk. This course is typically offered in the fall semester.

## THEA 145

### Introduction to Theater Design (3 CR)

This lecture and studio class introduces the theory and practice of theater design and the graphics and standards of entertainment technology. Emphasis will be on the processes and practices used in designing for the performing arts. Using course-taught computer and hand-based drawing techniques, the student will create a portfolio of his or her work through in-class projects. 2 hrs. lecture, 2 hrs. lab/wk. This course is typically offered in the spring semester.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $20 to $80.

## THEA 209

### Script Analysis (3 CR)

Script Analysis introduces students to those methods used in the theater for the study and/or analysis of plays. Directors, actors and designers use script analysis during their preparatory work and then continue to use it through the rehearsal process until, and sometimes even after, the production has finished. This course is of value to the student because it focuses on the crucial elements of a play encountered during the production process including dramatic structure, content and meaning. 3 hrs. lecture/wk. This course is typically offered in the fall semester only.

## THEA 225

### Reader's Theater (3 CR)

Students will combine acting, interpretation and rhetoric as they analyze and perform poetry, prose and dramatic literature and present public performances. Through the process of reading, studying, investing, rehearsing and performing literary and nonliterary works, the student will learn to pay particular attention to the voice embodied in a given text and the cultural and social context within which that voice speaks. 3 hrs./wk. plus rehearsals. This course is typically taught in the spring semester.

## THEA 230

### Acting II (3 CR)

*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** (1 CR)

*Prerequisite: THEA 133*

Students gain practical experience in technical theater in this course. The student completes the course objectives by working on the theatre department's productions and/or working in the scene/costume shop during the semester. 4 hrs.lab/wk.

### THEA 234

**Performance Practicum II** (1 CR)

*Prerequisite: THEA 134*

This course will enable students to gain further practical experience in the performance-related aspects of college theater productions. Admission may be granted upon being cast in a JCCC production. 2 hrs.lab/wk.

### THEA 235

**Technical Practicum III** (2 CR)

*Prerequisite: Permission of the instructor*

Students will gain professional technical theater experience in this course by working as an apprentice for the theater department and an outside professional performing arts agency. While on campus and/or on location, students will build and install a stage and/or scenery as they work alongside theater professionals to execute theatrical productions. 4 hrs. lab/wk. This course is offered in summer only; permission from instructor is required to enroll.

### THEA 240

**Costuming** (1 CR)

A 16-week course designed to introduce basic techniques in costume design and research and to provide an overview of the scope and impact of costume as a technical and artistic aspect of theater and film. 1 hr. lecture, 1 hr. lab/wk. This course is typically taught in the spring semester.

### THEA 275

**Selected Topics in Theatre I** (3 CR)

*Prerequisite: Permission of instructor*

This course periodically offers specialized or advanced discipline-specific content related to performance, not normally taught in the curriculum, to interested and qualified students within the program. 3 hrs. lecture/wk.

### THEA 276

**Selected Topics in Theatre II** (3 CR)

*Prerequisite: Permission of instructor*

This course periodically offers specialized or advanced discipline-specific content related to technical theatre and theatre design, not normally taught in the curriculum, to interested and qualified students within the program. 3 hrs. lecture/wk.

# Veterinary Technology (KSAH)

### KSAH 100

**Introduction to Veterinary Technology** (2 CR)

Orientation to career opportunities available in veterinary technology.

Professional ethics, public relations and the psychological adjustment of the student in terms of understanding the need for physical treatment and care of animals. Client relations, vaccination programs, regulatory organizations, receptionist duties, breeds and breed characteristics neutering, puppy care, diets and hospital management. 2 hrs. lecture/wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 101

**Principles of Animal Science I** (3 CR)

Principles of handling, housing and management of animals. Basic dietary and sanitation requirements. Restraint and handling, administration of medications, bathing, skin scraping, and basic laboratory tests. Emphasis on animal physiology including the cell, muscle, nervous, respiratory and cardiovascular systems. Introduction to anesthesia and general animal nursing. 2 hrs. lecture, 2 hrs. lab/wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 108

**Clinical Mathematics for Veterinary Technicians** (1 CR)

*Prerequisites: Admission into the Veterinary Technician Program*

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. Course taught at Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 110

**Principles of Animal Science II** (3 CR)

*Prerequisite: KSAH 101*

Anesthesia and the physiology of the digestive, urinary, endocrine and reproductive systems. Blood and specimen collection, basic bandaging and introduction to surgical preparation and radiographic processing. 2 hrs. lecture, 2 hrs. lab/wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 111

**Sanitation and Animal Care** (2 CR)

Introduction to microorganisms, sanitation, disinfectants, sterilization and Zoonotic diseases and public health problems. Introduction to parasitology, vermin control, specimen preservation, instrument identification, cleaning and sterilization, and sanitary procedures in patient care. 1 hr. lecture, 2 hrs. lab/wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 200

**Veterinary Hospital Technology I** (3 CR)

*Prerequisites: KSAH 101 and KSAH 110*

Administration of anesthetics and surgical assisting, bandaging, casting, blood transfusions, surgical preparations and postoperative procedures, parenteral fluid administration, and intravenous hookups. Introduction to orthopedics, electrocardiography, bone marrow cytology, and pharmacology. 1 hr. lecture, 4 hrs. lab/wk. Course taught at MCC-Maple Woods Community College.

Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 201

**Clinical Pathology Techniques I** (4 CR)

Introduction to laboratory procedures including preparation of blood smears, cell identification, fecal analysis and parasitology. Urinalysis and urine sediment valuation. 1 hr. lecture, 6 hrs. lab. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 202

**Veterinary Anatomy** (5 CR)

*Prerequisite: BIOL 101 (Maple Woods) or BIOL 127 and KSAH 101 and 110*

Basic principles of anatomy using a systemic approach. Physiology as it relates to anatomy and applicable pathology involving the animal body systems. Comparison of the animal species using the cat for dissection. 3 hrs. lecture, 4 hrs. lab/wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 203

**Laboratory Animal Technology** (2 CR)

*Prerequisites: KSAH 101, KSAH 110 and KSAH 201*

Restraint and handling of laboratory animals and birds. Blood collection, restraint, identification, medicating, anesthesia and specimen collection. Technical skills for laboratory animal research. 1 hr. lecture, 2 hrs. lab /wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 209

**Equine Medicine and Management** (3 CR)

*Prerequisite: KSAH 212*

Breeds and types of horses and their use. A study of 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, equine diseases and their prevention. Laboratory procedures. 2 hrs. lecture, 2 hrs. lab/wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 210

**Veterinary Hospital Technology II** (3 CR)

*Prerequisite: KSAH 200*

Introduction of anesthetics, surgical assisting, bandaging, casting, blood transfusions, surgical preparations and postoperative care. Administration of parenteral fluid and emergency treatments. Introduction to ophthalmology and dermatology. 1 hrs. lecture, 4 hrs. lab/wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 211

**Clinical Pathology Techniques II** (5 CR)

*Prerequisite: KSAH 201*

Theory and performance in hematologic, urinalysis, clinical chemistry and parasitology. Introduction to simple immunologic tests, blood coagulation tests, and bone marrow evaluation. Emphasis on hematology and hemoparasites. 2 hrs. lecture, 6 hrs. lab/wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 212

**Large Animal Technology** (4 CR)

*Prerequisites: KSAH 101 and KSAH 110*

Techniques necessary to assist the veterinarian in a large animal or mixed practice and in research facilities. Bovine, porcine, ovine and caprine medicine and management, including restraint, blood collection, medicating and nursing techniques. 2 hrs. lecture, 4 hrs. lab/wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 213

**Radiology and Electronic Procedures** (2 CR)

Intensive study and practice in radiological techniques, radiographic exposure techniques, film processing, contrast radiography and machine electronics. 1 hr. lecture, 2 hrs. lab/wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

### KSAH 214

**Veterinary Technician Internship** (6 CR)

*Prerequisite: Two semesters of first-year veterinary technology courses*

Supervised intensive clinical study under the direction of a cooperating veterinarian to provide 420 hours of actual work experience. 40 hrs. field study/wk. Course taught at MCC-Maple Woods Community College. Students should contact the Maple Woods coordinator of veterinary technology about the class meeting times and beginning and ending dates of classes. Call 816-437-3000.

# Women and Gender Studies (WGS)

### WGS 201

**Global Women's Studies** (3 CR)

The course is intended to increase student understanding of the history and experiences of women. It principally focuses on the ways in which gender interacts with race/ ethnicity, social class, sexual orientation, religion, age, nationality and other cultural identities to create differences and similarities in gendered lives. Students will critically examine and compare through a multidisciplinary approach the voices and experiences of women representing both domestic and global diversities. Selected topics may include: gender socialization; the female body and the sociopolitical context of reproduction, body image, appearance and of sexuality; similarities and differences between the genders; marriage and the family; work roles, inequalities and the global economy; health issues; violence against and by women; women in religion and politics; and, an historical and contemporary look at global feminism. 3 hrs. lecture/wk.

### WGS 220

**The Many Women of Islam** (3 CR)

This course introduces students to Islam and the many ways in which Islam views women. It explores the relationship of the ideal teachings of the Qur'an

to the everyday realities of marriage, family, divorce, education, religious participation, health, reproduction, violence, body image, economics, the workplace, political participation, and other topics in the context of the many nations and cultures in which Muslim women reside. Underlying the unity of the Islamic world is a diversity of interpretations and practices that are mediated by those many nations and cultures which compose it. This diversity within unity is reflected in the lives of the many women of Islam. 3 hrs. lecture/wk.

# Index of Credit Career and Certificate Programs