Catalog of Courses and General Information

JOHNSON COUNTY COMMUNITY COLLEGE

www.jccc.edu/catalog

Spring/Summer 2013

Credit Course Catalog Spring 2013

JCCC offers a wide variety of degrees and certificates that provide students the opportunity to prepare for specific careers and enter the job market directly. Several of the career programs allow students to gain valuable work experience in the field while taking the career program courses.

A General Studies degree is also available. This degree does not require an academic major or an emphasis in a specific career program.

Students interested in any degree or certificate should contact a JCCC counselor or a career department office for more information and assistance with entrance requirements, course selection and sequence, and job or transfer possibilities.

Johnson County Community College Accreditation

Johnson County Community College is accredited by The Higher Learning Commission and a member of the North Central Association www.ncahlc.org, (312) 263-0456. In addition, individual programs are accredited by associated professional organizations:

- Accounting, Business Office Technology, Business Entrepreneurship, Business Administration and Marketing and Management, and Paralegal - Accreditation Council for Business Schools and Programs
- College Now - National Alliance of Concurrent Enrollment Partnerships
- Dental Hygiene - American Dental Association
- Dietary Manager – Association of Nutrition & Foodservice Professionals
- Early Childhood Education - National Association for the Education of Young Children
- Fire Service Administration - International Fire Service Accreditation Congress (IFSAC)
- Hospitality Food and Beverage and Chef Apprentice - American Culinary Federation
- Interior Design – National Kitchen and Bath Association
- Mobile Intensive Care Technician - Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP)
- Nursing - Kansas State Board of Nursing and National League for Nursing Accrediting Commission
- Paralegal and Legal Nurse Consulting - American Bar Association
- Police Academy - University of Kansas
- Polysomnography - Committee on Accreditation for Polysomnographic Technologist Education (CoAPSG)
- Practical Nursing - Approved by the Kansas State Board of Nursing
- Respiratory Care - Commission on Accreditation for Respiratory Care (CoARC)

Nondiscrimination

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 cannot be lawfully considered, to the extent specified by applicable federal and state laws.

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.

Ethics Report Line - A resource for college employees to report ethical issues in confidence.

College Policies - A detailed list of policies approved by the JCCC board of trustees.

Degrees and Certificates Spring 2013

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

To change your degree intent submit the Degree Intent Change form to the Student Success Center.

Accounting

Accounting, AAS

Administration of Justice/Law Enforcement

Administration of Justice, AA
Police Academy Certificate

Animation

Animation-Entertainment and Game Art Design, AAS

Automotive Technology

Automotive Technology, AAS

Biotechnology

Biotechnology, AAS
Biotechnology, AS
Biotechnology Certificate

Business Administration

Business Administration, AAS
Supervision Management Certificate

Business Logistics Management

Business-Logistics Mgt, AAS

Business Office Technology

Administrative Assistant, AAS
Administrative Assistant with Legal Emphasis, AAS
Administrative Assistant with Medical Emphasis, AAS
Administrative Support Specialist Certificate
Legal Administrative Assistant Certificate
Medical Coding Certificate
Medical Office Assistant Certificate
Medical Transcription Certificate
Office Careers Certificate

Civil Engineering Technology

Civil Engineering Technology, AAS

Computer Information Systems

Computer Information Systems, AAS
Database Certificate
Desktop Publishing Applications Specialist Certificate
Microcomputer Programmer Analyst Certificate
Personal Computer Applications Specialist Certificate
Web Applications Specialist Certificate
Web Developer Certificate

Construction Management

Construction Management Technology, AAS
Construction Management Certificate

Cosmetology

Advanced Esthetics Certificate
Cosmetology, AAS
Cosmetology Certificate
Cosmetology Instructor Training Certificate
Esthetics Certificate
Nail Technology Certificate

Dental Hygiene

Dental Hygiene, AAS

Drafting Technology

Computer-aided Drafting and Design Technology, AAS
Computer-aided Drafting Certificate

Early Childhood Education

Early Childhood Education, AS
Early Childhood Education Certificate

Electrical Technology

Commercial Electrical Design Certificate
Commercial Wiring Certificate
Electrical Technology, AAS
Electrical Technology Certificate
Industrial Electrical Wiring Certificate
Residential Electrical Design Certificate
Residential Wiring Certificate

Electronics Technology

Electronics Technology, AAS
Industrial Controls Certificate
Microcomputer Technical Support Certificate
Smart House Technology Integrator Certificate

Emergency Medical Science (EMS)

Emergency Medical Science, AAS
Mobile Intensive Care Technician Certificate
Emergency Medical Technician Certificate

Energy Performance & Resource Management

Energy Perform. & Resource Mgmt-Residential Auditing, AAS
Energy Auditing Technician-Residential Certificate

Entrepreneurship

Entrepreneurship, AAS
Entrepreneurship Certificate
Business Plan Certificate

Direct Sales Certificate
Family Business Certificate
Franchising Certificate

Fashion Merchandising and Design

Fashion Merchandising, AAS
Fashion Design, AAS
Alteration Advanced Certificate
Visual Merchandising Certificate

Fire Services Administration

Fire Services Administration, AA
Fire Services Administration Certificate

Game

Game Business Certificate
Game Development, AAS
Game Narrative Certificate
Game Programming Certificate

General Sciences

General Sciences, AS

General Studies

General Studies, AGS

Geographic Information Systems

Geographic Info Systems Cert

Graphic Design

Graphic Design, AAS

Health Care Interpreting

Health Care Interpreting Certificate

Health Information Systems

Health Information Management Redesign Specialist
Health Information Systems Specialist Certificate

Health Information Technology

Health Information Tech, AAS

Health Occupations

Certified Medication Aide Certificate
Certified Medication Aide Update Certificate
Certified Nurse Aide Certificate
Certified Nurse Aide Refresher Certificate
Dental Assisting, AAS
Dental Assisting Certificate
Home Health Aide Certificate
IV Therapy for LPN's Certificate
Occupational Therapy Asst, AAS
Physical Therapist Asst, AAS
Radiologic Technology, AAS
Rehabilitative Aide
Surgical Technology, AAS
Surgical Technology Cert

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, AAS
HVAC Commercial Service Technician Certificate
HVAC Installation Technician Certificate
HVAC Residential Service Technician, AAS
HVAC Residential Service Technician Certificate

Horticulture

Horticultural Sciences, AAS
Horticultural Sciences Certificate
Landscape Technician Certificate
Sustainable Agriculture Entrepreneurship Certificate

Hospitality Management

Chef Apprenticeship, AAS
Dietary Manager Certificate
Food and Beverage Management, AAS
Food and Beverage Certificate
Hotel & Lodging Management, AAS
Pastry/Baking Certificate

Industrial Maintenance

Industrial Maintenance, AAS
Industrial Maintenance Certificate

Information Technology

Information Technology - Networking, AAS

Interactive Media

Interactive Media, AAS
Interactive Media Certificate

Interior Design

Decorating Certificate
Floral Design Certificate
Interior Design, AAS
Interior Design Advanced Certificate
Interior Design Retail Sales/Manufacturing Rep Certificate
Interior Entrepreneurship, AAS
Interior Merchandising, AAS

Interpreter Training

Interpreter Training, AAS
American Sign Language Studies Certificate

Land Surveying

Land Surveying, AAS
Land Surveying Certificate

Legal Interpreting

Legal Interpreting Certificate

Legal Studies

Paralegal, AA
Legal Nurse Consultant Certificate
Paralegal Certificate

Liberal Arts

Liberal Arts, AA

Marketing and Management

Marketing and Management, AAS
Retail Sales Representative Certificate
Sales and Customer Relations Certificate

MCC Prog (Academic Bridges to Learning Effectiveness) (ABLE)

ABLE

Metal Fabrication/Welding

Metal Fabrication/Welding Technology, AAS
Metal Fabrication/Welding Technology Certificate
General Basic Welding Certificate
Introduction to Manufacturing Certificate

Nursing

Nursing - Registered Nurse, AAS
PN to RN Transition, AAS
Practical Nursing Certificate

Polysomnography/Sleep Technology

Polysomnography/Sleep Technology, AAS

Professional Paraeducator

Professional Paraeducator Program, AA

Railroad Electronics

Railroad Electronics, AAS
Railroad Electronics Certificate

Railroad Industrial Technology

Railroad Structural Welding Certificate
Railroad Track Welding Certificate

Railroad Operations

Railroad Operations - Conductor Option, AAS
Locomotive Electrical Certificate
Locomotive Mechanical Certificate
Railroad Freight Car Certificate
Railroad Conductor Certificate
Railroad Signal Certificate
Railroad Operations - General Option, AAS
Railroad Operations - Mechanical Option, AAS
Railroad Operations - Welding Option, AAS

Recording Arts

Recording Arts Certificate

Respiratory Care

Respiratory Care, AAS

Solar Technology

Solar Technician Certificate
Solar Technologies, AAS

Veterinary Technology

Veterinary Technology, AAS

Web Technologies

Web Technologies, AAS

Accounting, A.A.S. (Spring 2013)

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 is accredited by the Accreditation Council for 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 department chair or a JCCC counselor.

(Major Code 2400; State CIP Code 52.0302)

- Accounting

Associate of Applied Science Degree

First Semester

Code	Title	Hours
	Business Electives	3
	NOTE: Business electives are any courses with the BUS. ENTR. ECON or MKT prefix.	
ACCT 121	Accounting I	3
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
ACCT 131	Federal Income Taxes I	3
MATH 120	Business Mathematics	3
	Prerequisite: MATH 111 with a grade of "C" or higher or	
	OR	
MATH 171	College Algebra or higher	3

	Prerequisite: MATH 116 with a grade of "C" or higher or MATH 131 with a grade of "C" or higher or MATH 134 with a grade of "C" or higher or appropriate score on the math placement test	
BOT 101	Computerized Keyboarding	1

Total Semester Hours: 16

Second Semester

Code	Title	Hours
	Business Electives	3
	NOTE: Business electives are any courses with the BUS. ENTR. ECON or MKT prefix.	
ACCT 122	Accounting II	3
	Prerequisite: ACCT 121	
BUS 150	Business Communications	3
	Prerequisite: ENGL 121	
ACCT 135	Computerized Accounting Applications	3
	Prerequisite: ACCT 121 or ACCT 111	
BUS 225	Human Relations	3
BOT 115	Electronic Calculators	1

Total Semester Hours: 16

Third Semester

Code	Title	Hours
	ACCT Electives	6
ACCT 140	Computerized Accounting Problems	3
	Prerequisite or corequisite: ACCT 122	
BUS 261	Business Law I	3
PHIL 138	Business Ethics	1
HIST 141	U.S. History Since 1877	3

Total Semester Hours: 16

Fourth Semester

Code	Title	Hours
	Business Electives	8
	NOTE: Business electives are any courses with the BUS. ENTR. ECON or MKT prefix.	
	Social Science and/or Economics Elective	3
	Health and/or Physical Education Elective	1
ACCT 278	Accounting Internship	1
	Prerequisites: ACCT 121 plus 12 additional ACCT hours beyond ACCT 121 and department approval	
ACCT 285	Accounting Capstone	3
	Prerequisites: ACCT 121 and ACCT 122 plus 15 hours of accounting courses and department approval	

Total Semester Hours: 16

ACCT Electives

Code	Title	Hours
ACCT 215	Accounting for Non Profit Organization	3
	Prerequisite: ACCT 121	
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	
ACCT 232	Intermediate Accounting II	3
	Prerequisite: ACCT 122	

Total Program Hours: 64

Administration of Justice/Law Enforcement

Administration of Justice, A.A. (Spring 2013)

The Administration of Justice program offers courses which reflect a balanced approach to the criminal justice system. Courses in law enforcement, the courts, and corrections are available. This program prepares students to become a criminal justice professional or transition to a four-year degree. A full range of elective courses offer the student an ability to explore individual interests. The ADMJ faculty members are all experienced in an area of the criminal justice system; they bring real-world expertise to the classroom.

Important: Students graduating with an Administration of Justice degree must complete an approved cultural diversity course. Some of the approved courses are able to meet both the cultural diversity requirement and a general education requirement.

Cultural Diversity Course Requirement at JCCC
(Major Code 2120; State CIP Code 43.0107)

- Administration of Justice

Associate of Arts Degree

First Semester

Code	Title	Hours
	Humanities Course	3
	(cannot be a philosophy course)	
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
ADMJ 121	Introduction to Administration of Justice	3
ADMJ 124	Criminal Justice and Corrections	3
ADMJ 127	Criminology	3

Total Semester Hours: 15

Second Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
ENGL 122	Composition II	3
	Prerequisite: ENGL 121	
MATH 171	College Algebra or higher	3
	Prerequisite: MATH 116 with a grade of "C" or higher or MATH 131 with a grade of "C" or higher or MATH 134 with a grade of "C" or higher or appropriate score	
SPD 120	Interpersonal Communication	3
	OR	
SPD 121	Public Speaking	3
	OR	
SPD 125	Personal Communication	3
ADMJ 141	Criminal Law	3
	Prerequisite: ADMJ 121 or LAW 121	
	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.	
ADMJ 235	Community Based Corrections	3

Total Semester Hours: 16

Third Semester

Code	Title	Hours
	ADMJ Program Elective	3
	Science and/or Math Elective	3
PHIL 124	Logic and Critical Thinking	3
PSYC 130	Introduction to Psychology	3
ADMJ 226	Criminal Justice Interview and Report Writing	3
	Prerequisite: ENGL 122	
ADMJ 150	Criminal Procedure	3
	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.	
	Total Semester Hours: 18	

Fourth Semester

Code	Title	Hours
	ADMJ Program Elective	6
	Science course with Lab	4
	Social Science Elective	3
	(cannot be a psychology course)	
ADMJ 255	Ethics and Criminal Justice	3
	Total Semester Hours: 16	

ADMJ Program Electives

Code	Title	Hours
ADMJ 122	Police Operations	3
	Prerequisite: ADMJ 121	
ADMJ 130	Crime Prevention	3
ADMJ 133	Juvenile Delinquency	3
ADMJ 140	Constitutional Case Law	3
ADMJ 143	Crime Analysis	3
ADMJ 145	Fundamentals Private Security	3
ADMJ 146	Retail Security	3
ADMJ 148	Physical and Sexual Violence within the Family	3
ADMJ 154	Fundamentals of Criminal Investigation	3
ADMJ 170	Introduction to Substance Use and Abuse	3
ADMJ 180	Correctional Casework	3
	Prerequisite: ADMJ 124	
ADMJ 201	Police Interrogation	3
	Prerequisite: Suggested course: ENGL 121	
ADMJ 221	Forensic Science and Crime Scene Investigation	3
ADMJ 223	The World of Crime	3
	Prerequisite: ADMJ 121	
ADMJ 224	Introduction to Terrorism	3
ADMJ 230	Criminal Behavior	3
	Prerequisite: PSYC 130	
ADMJ 275	Police Management	3
	Prerequisite: ADMJ 121	
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	
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 department approval and a grade point average of 2.0 or higher	
	Total Program Hours: 65	

Police Academy Certificate (Spring 2013)

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; State CIP Code 43.0103)

Required Course

Code	Title	Hours
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	
	Total Semester Hours: 12	
	Total Program Hours: 12	

Animation

Animation-Entertainment and Game Art Design, AAS (Spring 2013)

The Associate of Applied Science Degree in Animation provides instruction for creating animation, 3D modeling and special effects for applications such as animated shorts, movies and games. Fundamental drawing skills, design concepts and the development of entertainment media assets will be covered. New classes in game art assets and level design will give students an employment advantage in the ever-growing game industry. 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; State CIP Code 10.0304)

- Animation

Associate of Applied Science Degree

Prerequisite for Required Courses

Code	Title	Hours
	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 (where applicable), or have obtained a waiver from the department.	
CDTP 135	Desktop Photo Manipulation I: Photoshop	1

First Semester

Code	Title	Hours
ANI 125	Introduction to 2D Animation	3
	Prerequisite or corequisite: ANI 123	
ANI 250	Game Art Assets	3
	Prerequisite or corequisite: CDTP 135	
ANI 123	Concept Art for Animation	3
ART 130	Drawing I	3
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
	Total Semester Hours: 15	

Second Semester

Code	Title	Hours
	Humanities Electives	3

ANI 245	Character Animation	3
	Prerequisite: ANI 250	
ENGL 140	Writing for Interactive Media	3
	Prerequisite: ENGL 121	
ANI 145	Introduction to 3D Animation	3
	Prerequisite or corequisite: ANI 250	
ANI 258	Game Level Design	3
	Prerequisite: ANI 250	
ART 231	Life Drawing I	3
	Prerequisite: ART 130	
	Total Semester Hours: 18	

Third Semester

Code	Title	Hours
	Animation Elective	3
	Health and/or Physical Education Elective	1
ANI 255	Advanced Animation and Effects	3
	Prerequisite: ANI 245	
MUS 156	MIDI Music Composition	3
BUS 141	Principles of Management	3
ANI 270	Visual Effects and Compositing	3
	Prerequisite: ANI 145	
	Total Semester Hours: 16	

Fourth Semester

Code	Title	Hours
	Animation Elective	3
	Science and/or Math Elective	3
	Social Science and/or Economics Elective	3
ANI 260	Animation Capstone	3
	Prerequisite: ANI 255	
ANI 273	Career Preparation	4
	Prerequisite or corequisite: ANI 260	
	Total Semester Hours: 16	

Animation Electives

Code	Title	Hours
ENGL 150	Digital Narratives	3
	Prerequisite: ENGL 121	
ART 129	Design Color	3
	Prerequisite or corequisite: CDTP 135	
ART 131	Drawing II	3
	Prerequisite: ART 130	
ART 135	Painting I	3
ART 138	Digital Imaging for Artists I	3
ART 145	Sculpture I	3
ART 232	Life Drawing II	3
	Prerequisite: ART 231	
ARTH 180	Art History: Ancient to Renaissance	3
ARTH 182	Art History: Renaissance to Modern	3
ARTH 184	Art History: 20th Century	3
ARTH 186	Art History: Introduction to Asian Art	3
ARTH 188	History of Photography	3
CIM 130	Interactive Media Concepts	2
	Prerequisite or corequisite: ENGL 121	
CIM 135	Digital Imaging and Video	3
	Prerequisite: CDTP 135, recommended: PHOT 121	
CIM 140	Interactive Media Assets	4
	Prerequisite: CDTP 135 and prerequisite or corequisite: CIM 130	
CIM 235	Advanced Digital Video	3
	Prerequisite: CIM 135	
	Total Program Hours: 65	

Automotive Technology

Automotive Technology, A.A.S. (Spring 2013)

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.

(Major Code 2420; State CIP Code 47.0604)

- Automotive

Associate of Applied Science Degree

First Semester

Code	Title	Hours
AUTO 125	Introduction to Automotive Shop Practices	3
AUTO 129	Brakes I	3
	Prerequisite or corequisite: AUTO 125 AND Corequisite: AUTO 131	
AUTO 131	Brakes II	1
	Prerequisite or corequisite: AUTO 125 AND Corequisite: AUTO 129	
AUTO 156	Electrical I	3
	Prerequisite or corequisite: AUTO 125	
AUTO 158	Steering and Suspension I	2
	Prerequisite or corequisite: AUTO 125 AND Corequisite: AUTO 159	
AUTO 159	Steering and Suspension II	2
	Prerequisite or corequisite: AUTO 125 AND Corequisite: AUTO 158	
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
	Total Semester Hours: 17	

Second Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
	Humanities Elective	3
INDT 125	Industrial Safety/OSHA 30	3
AUTO 166	Electrical II	2
	Prerequisite: AUTO 156	
AUTO 161	Engine Performance I	3
	Prerequisite: AUTO 156	
AUTO 165	Automotive Engine Repair	4
	Prerequisite or corequisite: AUTO 125 or department approval	
INDT 155	Workplace Skills	1
	Total Semester Hours: 17	

Third Semester

Code	Title	Hours
AUTO 208	Electrical III	3
AUTO 205	Engine Performance II	3
	Prerequisite: AUTO 161 and AUTO 165	
AUTO 209	Manual Drive Train and Axles	4

	Prerequisite: AUTO 156	
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
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	

Total Semester Hours: 16

Note: Students transferring to 4 year programs should take MATH 171 College Algebra.

Fourth Semester

Code	Title	Hours
	Technical/Related Electives	3
	Social Science and/or Economics Elective	3
AUTO 250	Automatic Transmissions and Transaxles	4
	Prerequisite: AUTO 166 and AUTO 205	
AUTO 215	Engine Performance III	3
	Prerequisite: AUTO 205	
AUTO 221	Heating and Air Conditioning	4
	Prerequisite: AUTO 156 and AUTO 165	

Total Semester Hours: 17

Technical/Related Electives

Code	Title	Hours
AUTO 120	Basic Automobile Operation and Maintenance	3
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: Department approval required	
AUTO 291	Independent Study	1-7
ENTR 142	Fast Trac Business Plan	3

Total Program Hours: 67

Biotechnology

Biotechnology, A.A.S. (Spring 2013)

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 65-67 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; State CIP Code 41.0101)

- Science

Associate of Applied Science Degree

First Semester

Code	Title	Hours
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
MATH 130	Technical Mathematics I or higher	3-5
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test.	
BIOL 135	Principles of Cell and Molecular Biology	4
CHEM 122	Principles of Chemistry	5

Total Semester Hours: 15-17

Second Semester

Code	Title	Hours
	Physical Education Elective	1
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 135 or higher	
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	

Total Semester Hours: 17

Third Semester

Code	Title	Hours
	Social Science/Economics Elective	3
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 department approval	
BIOL 205	General Genetics	4
	Prerequisite: BIOL 135 or BIOL 122 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 either CHEM 122 or (CHEM 124 and CHEM 125)or department approval	

Total Semester Hours: 18

Fourth Semester

Code	Title	Hours
	Humanities Elective	3
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 or BIOT 230	

	All prerequisites and corequisites require a grade of "C" or higher.	
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 department approval.	

Total Semester Hours: 15
Total Program Hours: 65-67

Biotechnology, A.S. (Spring 2013)

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 76-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.

IMPORTANT - Students planning to graduate with a Biotechnology degree must complete one of the approved cultural diversity courses. Some of the approved courses are able to meet both the cultural diversity requirement and a general education requirement.

Cultural Diversity Course Requirement at JCCC
(Major Code 2130; State CIP Code 41.0101)

- Science

Associate of Science Degree

First Semester

Code	Title	Hours
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
	Corequisite: CHEM 124	
	Students who withdraw from GENERAL CHEMISTRY I LECTURE must also withdraw from the corresponding laboratory GENERAL CHEMISTRY 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 Hours: 18

Second Semester

Code	Title	Hours
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 department approval	
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 Hours: 18

Summer

Code	Title	Hours
	Social Science/Economics Elective	3
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	

Total Semester Hours: 4

Third Semester

Code	Title	Hours
	Social Science/Economics Elective	3
	Physical Education Elective	1
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 135 or BIOL 122 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	

Total Semester Hours: 18

Fourth Semester

Code	Title	Hours
	Humanities Elective	3
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 or BIOT 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	
	Total Semester Hours: 18	

Optional Course

Code	Title	Hours
BIOT 265	Biotechnology Internship-Optional	4
	Prerequisites: BIOT 260 and either BIOT 160 or BIOL 160 and either BIOT 165 or BIOL 165 and department approval	
	Total Semester Hours: 4	
	Total Program Hours: 76	

With the OPTIONAL course: TOTAL PROGRAM HOURS.....80

Biotechnology Certificate (Spring 2013)

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; State CIP Code 41.0101)

- Gainful Employment - Biotechnology
- Science

First Semester

Code	Title	Hours
CHEM 122	Principles of Chemistry	5
	Total Semester Hours: 5	

Second Semester

Code	Title	Hours
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 130	Technical Mathematics I or higher	3-5
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
PHYS 133	Applied Physics	5
	Prerequisite: MATH 135 or higher	
	Total Semester Hours: 14-16	

Third Semester

Code	Title	Hours
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 160 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 or BIOT 230	
	All prerequisites and corequisites require a grade of "C" or higher	
CHEM 140	Principles of Organic & Biological Chemistry	5
	Prerequisites: BIOL 135 and either CHEM 122 or (CHEM 124 and CHEM 125)or department approval	
	Total Semester Hours: 16	

Fourth Semester (optional)

Code	Title	Hours
BIOT 265	Biotechnology Internship	4
	Prerequisites: BIOT 260 and either BIOT 160 or BIOL 160 and either BIOT 165 or BIOL 165 and department approval	
	Total Semester Hours: 4	
	Total Program Hours: 35-41	

Business Administration

Business Administration, A.A.S. (Spring 2013)

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 enhanced job opportunities.
(Major Code 2430; State CIP Code 52.0201)

- Business Administration

Associate of Applied Science Degree

First Semester

Code	Title	Hours
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 Hours: 16	

Second Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
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
	Total Semester Hours: 16	

Third Semester

Code	Title	Hours
ACCT 122	Accounting II	3
	Prerequisite: ACCT 121	
PHIL 138	Business Ethics	1
ECON 231	Economics II	3
MKT 230	Marketing	3
BUS 261	Business Law I	3
HUM 122	Introduction to Humanities	3
	Total Semester Hours: 16	

Fourth Semester

Code	Title	Hours
	Elective	1
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
	Total Semester Hours: 16	

Recommended Electives

Code	Title	Hours
BUS 120	Management Attitudes and Motivation	3
BUS 140	Principles of Supervision	3
	Total Program Hours: 64	

Supervision Management Certificate (Spring 2013)

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.

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

(Major Code 5280; State CIP Code 52.1401)

- Business Administration

First Semester

Code	Title	Hours
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 Hours: 15	

Second Semester

Code	Title	Hours
MKT 230	Marketing	3
BUS 150	Business Communications	3
	Prerequisite: ENGL 121	
MKT 202	Consumer Behavior	3
MKT 234	Services Marketing	3
	Prerequisite or corequisite: BUS 230 or MKT 230	
MKT 284	Marketing and Management Internship I	1
	Total Semester Hours: 13	
	Total Program Hours: 28	

Business Logistics Management

Business-Logistics Management, A.A.S. (Spring 2013)

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 http://mcckc.edu/main.asp?P=AtoZIndex#A

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.

(Degree granted by Metropolitan Community College)

Associate of Applied Science Degree

General Education Requirements-can be taken at JCCC

Code	Title	Hours
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

Code	Title	Hours
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

Code	Title	Hours
	Specific Program Electives	9
ACCT 121	Accounting I	3
BUS 141	Principles of Management	3
MKT 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

Code	Title	Hours
COLL 100	First Year Seminar	1
POLS 153	The Missouri Constitution	1
BSAD 210	Logistics Management	3
BSAD 211	Operations Management	3
BSAD 212	Transportation Operations and Management	3
BSAD 213	Warehousing and Distribution Centers	3
BSAD 290	Capstone	1

Specific Program Electives

Code	Title	Hours
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	
ACCT 232	Intermediate Accounting II	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

Total Program Hours: 66

Business Office Technology

Administrative Assistant, A.A.S. (Spring 2013)

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; State CIP Code 52.0401)

- Business Office Technology

Associate of Applied Science Degree

Prerequisite for Required Courses

Code	Title	Hours
	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 department.	
BOT 105	Keyboarding and Formatting I	3

First Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
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	
	Total Semester Hours: 17	

Second Semester

Code	Title	Hours
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
	Prerequisite: BOT 106 or experience using Microsoft Access	
BOT 180	Business Spreadsheet Applications	1
	Prerequisite: BOT 106	
	OR	
BOT 185	Business Database Applications	1
	Prerequisite: BOT 106	
	Total Semester Hours: 15	

Third Semester

Code	Title	Hours
	Humanities Elective	3
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
BUS 150	Business Communications	3
	Prerequisite: ENGL 121	
	Total Semester Hours: 15	

Fourth Semester

Code	Title	Hours
	BOT Electives	4
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 BOT 130 and BOT 255 (This capstone course should be taken near the end of the degree or certificate program)	
BOT 260	Desktop Publishing for the Office	3
	Prerequisite: BOT 155	
	Total Semester Hours: 17	

BOT Electives

Code	Title	Hours
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

4 hours - any four courses

Total Program Hours: 64

Administrative Assistant with Legal Emphasis, A.A.S. (Spring 2013)

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; State CIP Code 22.0301)

- Business Office Technology

Associate of Applied Science Degree

Prerequisite for Required Courses

Code	Title	Hours
	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

Code	Title	Hours
	Health and/or Physical Education Elective	1
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	
	Total Semester Hours: 17	

Second Semester

Code	Title	Hours
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
	Prerequisite: BOT 106 or experience using Microsoft Access	
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
BOT 180	Business Spreadsheet Applications	1
	Prerequisite: BOT 106	
	Total Semester Hours: 16	

Third Semester

Code	Title	Hours
	BOT Electives	
LAW 201	Advanced Legal Technology	3
	Prerequisite: LAW 134 or BOT 106. Paralegal students must take LAW 134 and BOT students must take 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	
	Total Semester Hours: 15	

Fourth Semester

Code	Title	Hours
	Humanities Electives	3
	Electives	3
ECON 132	Survey of Economics	3
	OR	
ECON 230	Economics I	3
BOT 265	Computerized Office Applications	3
	Prerequisites: BOT 106 and BOT 130 and BOT 255 (This capstone course should be taken near the end of the degree or certificate program)	
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
	Total Semester Hours: 16	

BOT Electives

Code	Title	Hours
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	
	Total Program Hours: 64	

Administrative Assistant with Medical Emphasis, A.A.S. (Spring 2013)

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; State CIP Code 51.0710)

- Business Office Technology

Associate of Applied Science Degree

Prerequisite for Required Courses

Code	Title	Hours
	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

Code	Title	Hours
	Health and/or Physical Education Elective	1
BOT 103	Business English	3
BOT 106	Intro to Business Computer Applications	3
	Prerequisite or corequisite: BOT 105	
HC 130	Medical Terminology for Healthcare Professions	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	
	Total Semester Hours: 16	

Second Semester

Code	Title	Hours
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 or HC 130	
BOT 150	Records Management	3
	Prerequisite: BOT 106 or experience using Microsoft Access	
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
BOT 180	Business Spreadsheet Applications	1
	Prerequisite: BOT 106	
	OR	
BOT 185	Business Database Applications	1
	Prerequisite: BOT 106	
	Total Semester Hours: 17	

Third Semester

Code	Title	Hours
	Humanities Electives	3
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	
	Total Semester Hours: 16	

Fourth Semester

Code	Title	Hours
	BOT Electives	2
ECON 132	Survey of Economics	3
	OR	
ECON 230	Economics I	3
BOT 165	Medical Transcription	3
	Prerequisites: AAC 130 or HC 130 and BOT 155	
BOT 265	Computerized Office Applications	3
	Prerequisites: BOT 106 and BOT 130 and BOT 255 (This capstone course should be taken near the end of the degree or certificate program)	
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
	Total Semester Hours: 15	

BOT Electives

Code	Title	Hours
BOT 118	Skillbuilding II	1
	Prerequisite: BOT 110	
BOT 141	Electronic Health Records	3
	Prerequisite or corequisite: BOT 105 or proficiency exam or BOT 105 waiver exam	
BOT 142	Legal and Ethical Issues in Healthcare	3
BOT 143	Standards of Diagnostic Coding (ICD-CM)	3
	Prerequisite: BOT 106 and BIOL 144 and AAC 130 or HC 130	
BOT 144	Standards of Procedural Coding (CPT)	3
	Prerequisite: BOT 106 and BIOL 144 and AAC 130 or HC 130	
BOT 145	Principles of Healthcare Reimbursement	2
	Prerequisites or corequisites: BOT 143 and BOT 144	
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	
	2 hours - any one or two courses	
	Total Program Hours: 64	

Administrative Support Specialist Certificate (Spring 2013)

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.

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

(Major Code 4690; State CIP Code 52.0401)

- Gainful Employment - Business Office Technology
- Business Office Technology

First Semester

Code	Title	Hours
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 Hours: 12	

Second Semester

Code	Title	Hours
BOT 110	Skillbuilding I	1
	Prerequisite: BOT 105	
BOT 115	Electronic Calculators	1
BOT 150	Records Management	3
	Prerequisite: BOT 106 or experience using Microsoft Access	
BOT 155	Word Processing Application I	2
	Prerequisites: BOT 105 and BOT 106	
BOT 125	Document Formatting	1
	Prerequisite: BOT 155	
BOT 180	Business Spreadsheet Applications	1
	Prerequisite: BOT 106	
	OR	
BOT 185	Business Database Applications	1
	Prerequisite: BOT 106	
BUS 225	Human Relations	3
	Total Semester Hours: 12	

Note: Students attempting to take BOT 155 and BOT 125 in the same semester should contact the department chair.

Third Semester

Code	Title	Hours
BOT 255	Word Processing Applications II	2
	Prerequisite: BOT 155	
BOT 260	Desktop Publishing for the Office	3
	Prerequisite: BOT 155	
	Total Semester Hours: 5	

Fourth Semester

Code	Title	Hours
BOT 265	Computerized Office Applications	3
	Prerequisites: BOT 106 and BOT 130 and BOT 255 (This capstone course should be taken near the end of the degree or certificate program)	
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 Hours: 4	
	Total Program Hours: 33	

Legal Administrative Assistant Certificate (Spring 2013)

This certificate program prepares students to work as a legal administrative assistant. The curriculum provides training for students in entry-level positions as well as for those who are upgrading existing skills.

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

(Major Code 5050; State CIP Code 22.0301)

- Business Office Technology

First Semester

Code	Title	Hours
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 Hours: 12	

Second Semester

Code	Title	Hours
BOT 110	Skillbuilding I	1
	Prerequisite: BOT 105	
BOT 150	Records Management	3
	Prerequisite: BOT 106 or experience using Microsoft Access	
BOT 155	Word Processing Application I	2
	Prerequisites: BOT 105 and BOT 106	
LAW 121	Introduction to Law	3
	Total Semester Hours: 9	

Third Semester

Code	Title	Hours
BOT 125	Document Formatting	1
	Prerequisite: BOT 155	
BOT 160	Legal Transcription	3
	Prerequisite: BOT 155	
BOT 255	Word Processing Applications II	2
	Prerequisite: BOT 155	
LAW 201	Advanced Legal Technology	3
	Prerequisite: LAW 134 or BOT 106. Paralegal students must take LAW 134 and BOT students must take BOT 106	
	Total Semester Hours: 9	

Fourth Semester

Code	Title	Hours
BOT 265	Computerized Office Applications	3
	Prerequisites: BOT 106 and BOT 130 and BOT 255 (This capstone course should be taken near the end of the degree or certificate program)	
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 Hours: 4	
	Total Program Hours: 34	

Medical Coding Certificate (Spring 2013)

This certificate is designed to prepare students to enter the health care field as a medical coder. In addition, students will have hands-on training using electronic health record (EHR) practice management, and encoder software.

Medical coding professionals work in a variety of healthcare settings, including inpatient and outpatient healthcare settings and non-provider settings such as third-party payers and healthcare software vendors.

The medical coding professional (or coder) is responsible for translating healthcare providers' diagnostic and procedural phrases into coded form. Coding professionals do this by reviewing and analyzing health records to identify relevant diagnoses and procedures for distinct patient encounters. This translation process requires interaction with the healthcare provider to ensure terms are translated correctly.

Delivering quality healthcare depends on capturing accurate and timely medical data. Students must possess strong computer skills and a thorough understanding of the health record's content in order to find information to support or provide specificity for coding. Medical coders are trained in the anatomy and physiology of the human body and disease processes in order to understand the etiology, pathology, symptoms, signs, diagnostic studies, treatment modalities, and simply locating diagnostic and procedural phrases in the coding manuals or with encoder software. It requires knowledge of disease processes and procedural techniques to consistently apply the correct codes. A medical coding professional works as part of a team to achieve the best quality patient care.

All medical coding courses must be completed with a grade of "C" or higher to progress to the next course and/or successfully complete the certificate. Successful completion of this certificate will prepare students to sit for national coding certification exams administered by AAPC or AHIMA*.

*Enrollment in certain courses may require a professional liability fee each academic year. Certain healthcare facilities may request background checks, proof of health insurance and current immunizations to be provided and paid for by the student.

(Major Code 4660; State CIP Code 51.0713)

- Business Office Technology

First Semester

Code	Title	Hours
BOT 105	Keyboarding and Formatting I	3
BOT 106	Intro to Business Computer Applications	3
	Prerequisite or corequisite: BOT 105	
BOT 141	Electronic Health Records	3
	Prerequisite or corequisite: BOT 105 or proficiency exam or BOT 105 waiver exam	
HC 130	Medical Terminology for Health Care Professions	3
BIOL 144	Human Anatomy and Physiology	5
	Total Semester Hours: 17	

Second Semester

Code	Title	Hours
BOT 142	Legal and Ethical Issues in Healthcare	3
BOT 143	Standards of Diagnostic Coding (ICD-CM)	3
	Prerequisites: BOT 106 and AAC 130 or HC 130 and BIOL 144	
BOT 144	Standards of Procedural Coding (CPT)	3
	Prerequisites: BOT 106 and AAC 130 or HC 130 and BIOL 144	
BOT 145	Principles of Healthcare Reimbursement	2
	Prerequisites or corequisites: BOT 143 and BOT 144	
BIOL 227	Human Pathophysiology	4
	Prerequisite: BIOL 144 or BIOL 225	
	Total Semester Hours: 15	
	Total Program Hours: 32	

Medical Office Assistant Certificate (Spring 2013)

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.

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

(Major Code 5400; State CIP Code 51.0710)

- Gainful Employment - Medical Administrative and Office Assistant
- Business Office Technology

First Semester

Code	Title	Hours
BOT 103	Business English	3
BOT 105	Keyboarding and Formatting I	3
BOT 106	Intro to Business Computer Applications Prerequisite or corequisite: BOT 105	3
HC 130	Medical Terminology for Healthcare Professions	3
	Total Semester Hours: 12	

Second Semester

Code	Title	Hours
BOT 110	Skillbuilding I Prerequisite: BOT 105	1
BOT 155	Word Processing Application I Prerequisites: BOT 105 and BOT 106	2
BOT 122	Medical Keyboarding Prerequisite: BOT 105	1
BOT 125	Document Formatting Prerequisite: BOT 155	1
BOT 130	Office Systems Concepts	3
BOT 170	Medical Coding and Billing Prerequisite: AAC 130 or HC 130	3
	Total Semester Hours: 11	

Note: Students attempting to take BOT 155 and BOT 125 in the same semester should contact the department chair.

Third Semester

Code	Title	Hours
BOT 165	Medical Transcription Prerequisites: AAC 130 or HC 130 and BOT 155	3
	Total Semester Hours: 3	
	Total Program Hours: 26	

Medical Transcription Certificate (Spring 2013)

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.

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

(Major Code 5410; State CIP Code 51.0708)

- Gainful Employment - Medical Transcription
- Business Office Technology

First Semester

Code	Title	Hours
BOT 103	Business English	3
BOT 105	Keyboarding and Formatting I	3
BOT 106	Intro to Business Computer Applications Prerequisite or corequisite: BOT 105	3
HC 130	Medical Terminology for Healthcare Professions	3
	Total Semester Hours: 12	

Second Semester

Code	Title	Hours
BOT 122	Medical Keyboarding Prerequisite: BOT 105	1
BOT 155	Word Processing Application I Prerequisites: BOT 105 and BOT 106	2
BOT 170	Medical Coding and Billing Prerequisite: AAC 130 or HC 130	3
BOT 220	Pharmacology Terminology Prerequisite: AAC 130 or HC 130	2
BIOL 140	Human Anatomy	4
	Total Semester Hours: 12	

Third Semester

Code	Title	Hours
BOT 165	Medical Transcription Prerequisites: AAC 130 or HC 130 and BOT 155	3
BOT 255	Word Processing Applications II Prerequisite: BOT 155	2
	Total Semester Hours: 5	

Fourth Semester

Code	Title	Hours
BOT 270	Advanced Medical Transcription Prerequisite: BOT 165	3
BOT 275	Office Internship I Prerequisite: Admission to the business office technology program. This course should be taken near the end of the BOT degree or certificate program.	1
	Total Semester Hours: 4	
	Total Program Hours: 33	

Office Careers Certificate (Spring 2013)

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.

Suggested/Sample Course Sequence

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

(Major Code 4900; State CIP Code 52.0401)

- Gainful Employment - Business Office Technology
- Business Office Technology

First Semester

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

Second Semester

Code	Title	Hours
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
	Prerequisite: BOT 155	
	Total Semester Hours: 6	

Note: Students attempting to take BOT 155 and BOT 125 in the same semester should contact the department chair.

Total Program Hours: 18

Civil Engineering Technology

Civil Engineering Technology, AAS (Spring 2013)

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 66 hours from the civil engineering technology curriculum will lead to an associate of applied science degree.

(Major Code 2210; State CIP Code 15.0201)

- Civil Engineering Technology

Associate of Applied Science Degree

First Semester

Code	Title	Hours
	Humanities Elective	3
DRAF 129	Interpreting Architectural Drawings	2
ENGR 131	Engineering Graphics I: AutoCAD	4
	Prerequisite or corequisite: MATH 133 or MATH 130 or MATH 171 or MATH 172 or MATH 173 or MATH 241	
MATH 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
CET 105	Construction Methods	3
CET 125	Construction Specifications	2
	Prerequisite or corequisite: CET 105 or equivalent	
	Total Semester Hours: 17	

Second Semester

Code	Title	Hours
CET 129	Construction Management	3
DRAF 225	Civil Drafting	3
	Prerequisite: DRAF 230 or ENGR 131 and Prerequisite or corequisite: MATH 134 or MATH 131	
DRAF 244	Civil 3D	2
	Prerequisite: DRAF 230 or ENGR 131 or department approval	
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
MATH 131	Technical Mathematics II	3
	Prerequisites: MATH 130 or MATH 133 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	
CET 140	Civil Engineering Materials	3
	Prerequisite or corequisite: MATH 133 or MATH 130	
	Total Semester Hours: 17	

Third Semester

Code	Title	Hours
	Health/Physical Education Elective	1
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
CET 211	Technical Statics and Design	3
	Prerequisite: MATH 134 or MATH 131 or MATH 172 or MATH 173 or MATH 241	
CET 160	Green Building Fundamentals	3
ENGR 180	Engineering Land Surveying I	3
	Prerequisite or corequisite: MATH 134 or MATH 131 or MATH 172	
DRAF 143	Introduction to BIM Building Information Modeling	2
	Prerequisite or corequisite: DRAF 129	
INDT 155	Workplace Skills	1
	Total Semester Hours: 16	

Fourth Semester

Code	Title	Hours
	Social Science/Economics Elective	3
CET 270	Fluid Mechanics	3
	Prerequisites: MATH 172 or MATH 134 or MATH 131	
DRAF 252	Structural Design and Drafting	3
	Prerequisite: DRAF 129 and DRAF 135 and DRAF 230 or DRAF 129 and	
	prerequisite or corequisite: MATH 134 or MATH 131 or	
	department approval	
CET 150	Construction Safety	3
CET 227	Construction Cost Estimating	3
	Prerequisites: CET 105 and CET 125 and	
	prerequisite or corequisite: DRAF 129 or	
	department approval	
PHIL 138	Business Ethics	1
	Total Semester Hours: 16	
	Total Program Hours: 66	

Computer Information Systems

Computer Information Systems, A.A.S. (Spring 2013)

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; State CIP Code 11.0201)

- Information Systems

Associate of Applied Science Degree

Prerequisite for Required Courses

Code	Title	Hours
	Prior to beginning the information systems program, the student must take the above prerequisite, or have taken an equivalent transfer course, or have passed the waiver test, or have obtained a waiver from the department.	
CIS 134	Programming Fundamentals	4

First Semester

Code	Title	Hours
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 131 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	
	OR	
	Any Precalculus/Calculus Course	3
	Total Semester Hours:	17

Second Semester

Code	Title	Hours
	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 CS 205	
SPD 125	Personal Communication	3
	OR	
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
	Total Semester Hours:	17

Third Semester

Code	Title	Hours
	CIS Elective	3
	Level Two Programming Language Option	4
	Humanities/Art Elective	3
	Social Science and/or Economic Electives	3
	Health and/or Physical Education Elective	1
CIS 258	Operating Systems	3
	Prerequisite: CIS 138 or CIS 162 or CS 200 or CS 201 or CS 205	
	OR	
CIS 204	UNIX Scripting and Utilities	3
	Prerequisite: CIS 134	
	Total Semester Hours:	17

Fourth Semester

Code	Title	Hours
	CIS Elective	3
	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	
	Total Semester Hours:	18

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

Level One Programming Language Options:

Code	Title	Hours
	Option in C++:	
CIS 235	Object-Oriented Programming Using C++	4
	Prerequisite: CS 200	
	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:

Code	Title	Hours
	Option in C++:	
CIS 235	Object-Oriented Programming Using C++	4
	Prerequisite: CS 200	
	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:

Code	Title	Hours
	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	

Recommended CIS Electives

Code	Title	Hours
	Six hours of computer information systems electives are to be selected from the following recommended electives AND/OR from the CIS electives list:	
CIS 138	Visual Basic .Net	4
	Prerequisite: CIS 134	
CIS 204	UNIX Scripting and Utilities	3
	Prerequisite: CIS 134	
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 270	Information Systems Internship	3
	Prerequisites: CS 250 or CS 255 or CIS 235 or CIS 238 or CIS 248 and department approval	

CIS Electives

Code	Title	Hours
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 206	Programming in PERL	4
	Prerequisites: CS 200 or CS 205 or CS 201 and CPCA 139	
CIS 208	Mobile Application Development	4
	Prerequisite: CS 205	
CIS 235	Object-Oriented Programming Using C++	4
	Prerequisite: CS 200	
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 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 269	GUI Programming	4
	Prerequisites: CIS 235 or CS 250	
CIS 275	Web-Enabled Database Programming	4
	Prerequisites: CS 200 or CS 201 or CS 205 or CIS 162 and either CPCA 139	
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 department approval	
CFOR 180	File Structure & Residual Artifacts	3
	Prerequisite: CFOR 150	
	Total Program Hours: 69	

Database Certificate (Spring 2013)

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; State CIP Code 11.0802)

- Gainful Employment - Database
- Computing Sciences and Information Technology

Prerequisites for Required Courses

Code	Title	Hours
	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

Code	Title	Hours
	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 Hours: 9	

Second Semester

Code	Title	Hours
	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 Hours: 8	

Third Semester

Code	Title	Hours
	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 Hours: 8	

Fourth Semester

Code	Title	Hours
	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 CS 205	
	Total Semester Hours: 7	
	Total Program Hours: 32	

Desktop Publishing Applications Specialist Certificate (Spring 2013)

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.

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.

(Major Code 4830; State CIP Code 11.0202)

- Computing Sciences and Information Technology

Prerequisites for Required Courses

Code	Title	Hours
	Prior to beginning this program students 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 Five Week Session

Code	Title	Hours
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

Code	Title	Hours
CPCA 134	Managing Your Macintosh	1
	Prerequisite: CPCA 106 or an appropriate score on an assessment test. Course offered in spring only.	
	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 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

Code	Title	Hours
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 ten courses:

Code	Title	Hours
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 104 or CWEB 105 or CWEB 106	
CWEB 140	Intermediate Flash	1
	Prerequisite: CWEB 130	
CWEB 150	Advanced Flash	1
	Prerequisite: CWEB 140	
	Total Program Hours: 14	

Microcomputer Programmer Analyst Certificate (Spring 2013)

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.

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

(Major Code 5030; State CIP Code 11.0201)

- Gainful Employment - Microcomputer Program Analyst
- Computing Sciences and Information Technology

Prerequisite for Required Courses

Code	Title	Hours
	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 department.	
CIS 134	Programming Fundamentals	4

First Semester

Code	Title	Hours
CS 200	Concepts of Programming Algorithms Using C++	4
	Prerequisite: CIS 134 or ENGR 171 or equivalent experience	
	Note: CS 200 students must take either CS 250 or CIS 235	
	OR	
CS 205	Concepts of Programming Algorithms using JAVA	4
	Prerequisite: CIS 134 or ENGR 171 or equivalent experience	
	Note: CS 205 students must take CS 255	
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 Hours: 11	

Second Semester

Code	Title	Hours
CIS 235	Object-Oriented Programming Using C++	4
	Prerequisite: CS 200	
	Note: CS 200 students must take either CS 250 or CIS 235	
	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	
	Note: CS 200 students must take either CS 250 or CIS 235	
	OR	
CS 255	Basic Data Structures using JAVA	4
	Prerequisite: CS 205	
	Note: CS 205 students must take CS 255	
CIS 242	Introduction to System Design and Analysis	3
	Prerequisite: CIS 138 or CS 200 or CS 201 or CS 205	
CIS 204	UNIX Scripting and Utilities	3
	Prerequisite: CIS 134	
	Total Semester Hours: 10	

Third Semester

Code	Title	Hours
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 Hours: 11	
	Total Program Hours: 32	

Personal Computer Applications Specialist Certificate (Spring 2013)

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.

Suggested/Sample Course Sequence Completion - Two Semesters
The sequence taken by the student may vary depending on prerequisites, course availability, and personal/professional responsibilities.

(Major Code 4730; State CIP Code 11.0202)

- Computing Sciences and Information Technology

Prerequisites for Required Courses

Code	Title	Hours
	Prior to beginning the personal computer applications 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

Option 1

Code	Title	Hours
	Suggested/Sample Course Sequence Completion - Two Semesters	
	The sequence taken by the student may vary depending on prerequisites, course availability, and	

personal/professional responsibilities.

OPTION 1: First Semester

Code	Title	Hours
	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 Hours: 6	

OPTION 1: Second Semester

Code	Title	Hours
	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 Hours: 5	

CPCA Electives

Code	Title	Hours
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.

Option 2

Code	Title	Hours
	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.	

OPTION 2: First Semester

Code	Title	Hours
	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	
	CPCA Elective	1
	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	
	Total Semester Hours: 11	

CPCA Electives

Code	Title	Hours
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.

Total Program Hours: 11

Web Applications Specialist Certificate (Spring 2013)

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; State CIP Code 11.0202)

- Computing Sciences and Information Technology

Prerequisite for Required Courses

Code	Title	Hours
	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

Code	Title	Hours
	First Five Week Session:	
	Elective from First Semester List of Electives	1
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	
	Second Five Week Session:	
CWEB 105	Introduction to Web Pages: Dreamweaver	1
	Prerequisite: CWEB 101	
CWEB 104	Introduction to Web Pages: Expression Web	1
	Prerequisite: CWEB 101	
	Third Five Week Session:	
	Elective from First Semester List of Electives	1
CWEB 111	Intermed Web Concepts/Techniques using Explorer	1
	Prerequisite: CWEB 101	
CWEB 114	Intermediate Web Pages: Expression Web	1
	Prerequisite: CWEB 104 OR	
CWEB 115	Intermediate Web Pages: Dreamweaver	1
	Prerequisite: CWEB 105	
	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 104 or CWEB 105 or CWEB 106	

Total Semester Hours: 7

Second Semester

Code	Title	Hours
	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:	
	Elective from Second Semester List of Electives	1
CWEB 136	Introduction to PHP	1
	Prerequisites: CWEB 101 and CPCA 114	
CWEB 240	Intermediate E-Commerce Applications	1
	Prerequisite: CWEB 230	
	Third Five Week Session:	
	Elective from Second Semester List of Electives	1
CWEB 146	PHP with MySQL	1
	Prerequisite: CWEB 136	
	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 104 or CWEB 105 or CWEB 106 or CPCA 161	

Total Semester Hours: 7
Total Program Hours: 14

Web Developer Certificate (Spring 2013)

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.

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

(Major Code 5150; State CIP Code 11.1004)

- Gainful Employment - Web Developer
- Computing Sciences and Information Technology

Prerequisites for Required Courses

Code	Title	Hours
	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 department.	
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 140	Desktop Publishing I: InDesign	1
	OR	
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	
	OR	
CS 255	Basic Data Structures using JAVA	4
	Prerequisite: CS 205	

First Semester

Code	Title	Hours
CIM 133	Screen Design	4
	Prerequisite: CDTP 135	
CIS 204	UNIX Scripting and Utilities	3
	Prerequisite: CIS 134	
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 Hours: 15

Second Semester

Code	Title	Hours
CIM 130	Interactive Media Concepts	2
	Prerequisite or corequisite: ENGL 121	
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 Hours: 14
Total Program Hours: 29

Construction Management

Construction Management Technology, AAS (Spring 2013)

The construction management technology degree prepares individuals to manage, coordinate, and supervise the construction process from concept development through project completion on timely and economic bases. Topics include construction processes and techniques; construction contracting; organization and scheduling; applicable codes and regulations; cost estimating; building information modeling (BIM); personnel management and labor relations; business skills; site safety; and sustainable building fundamentals.

Graduates are ready for work as managers, inspectors, field supervisors, and estimators in small and mid-size construction companies. An associate of applied science degree is awarded upon the successful completion of 64 credit hours.

(Major Code 2310; State CIP Code 52.2001)

- Civil Engineering Technology

Associate of Applied Science Degree

First Semester

Code	Title	Hours
	Program Elective	3
CET 105	Construction Methods	3
CET 125	Construction Specifications	2
	Prerequisite or corequisite: CET 105 or equivalent	
DRAF 129	Interpreting Architectural Drawings	2
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 an appropriate score on the math assessment test	

Total Semester Hours: 16

Second Semester

Code	Title	Hours
	Social Science and/or Economics Elective	3
ACCT 111	Small Business Accounting	3
	OR	
ACCT 121	Accounting I	3
CET 123	Building Codes	3
CET 129	Construction Management	3
CET 205	Advanced Construction Methods	3
	Prerequisite: CET 105	
INDT 155	Workplace Skills	1

Total Semester Hours: 16

Third Semester

Code	Title	Hours
	Health and/or Physical Education	1
CET 150	Construction Safety	3
CET 160	Green Building Fundamentals	3
CET 227	Construction Cost Estimating	3
	Prerequisites: CET 105 and CET 125 or department approval AND	
	Prerequisite or corequisite: DRAF 129 or department approval	
CET 229	Advanced Construction Management	3
	Prerequisites: CET 129 and MATH 116 or higher	
DRAF 143	Introduction to BIM Building Information Modeling	2
	Prerequisite or corequisite: DRAF 129	

Total Semester Hours: 15

Fourth Semester

Code	Title	Hours
	Program Elective	3
	Communications, Science, or Math Elective	3
	Humanities Elective	3
BUS 140	Principles of Supervision	3
CET 140	Civil Engineering Materials	3
	Prerequisite or corequisite: MATH 116 or higher	
CET 225	Construction Documents	2
	Prerequisite: CET 125	

Total Semester Hours: 17

Program Electives

Code	Title	Hours
BUS 120	Management Attitudes and Motivation	3
BUS 141	Principles of Management	3
BUS 145	Small Business Management	3
BUS 150	Business Communications	3
	Prerequisite: ENGL 121	
BUS 243	Human Resource Management	3
BUS 261	Business Law I	3
CPCA 105	Introduction to Personal Computers: Windows	1
CPCA 108	Word Processing I: MS Word	1
	Prerequisite: CPCA 105 or CPCA 128 or CIS 124 or an appropriate score on a waiver test	
CPCA 110	Spreadsheets I: MS Excel	1
	Prerequisite: CPCA 105 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 128 or CIS 124 or an appropriate score on a waiver test	
CPCA 128	PC Applications: MS Office	3
DRAF 130	Introduction to CAD Concepts - AutoCAD	3
	Prerequisite: DRAF 120 or department approval	
DRAF 132	Exploring AutoCAD	3
DRAF 222	Mechanical Design and Drafting	3
	Prerequisites: DRAF 123 and DRAF 135 and DRAF	

	145 and DRAF 230 AND	
	Prerequisite or Corequisite: MATH 134 or MATH 131	
DRAF 225	Civil Drafting	3
	Prerequisites: DRAF 230 or ENGR 131 AND	
	Prerequisite or Corequisite: MATH 134 or MATH 131	
DRAF 230	Intermediate CAD: AutoCAD	3
	Prerequisite: DRAF 130 or department approval	
DRAF 231	CAD 3-D	3
	Prerequisite: DRAF 230	
DRAF 238	Architectural Design and Drafting	3
	Prerequisites: DRAF 123 and DRAF 135 and DRAF 145 and DRAF 230	
DRAF 242	Topics in CAD II	2
	Prerequisite: DRAF 230 or department approval	
DRAF 243	Advanced BIM: Revit	2
	Prerequisites: DRAF 143 and DRAF 238 or department approval	
DRAF 244	Civil 3D	2
	Prerequisite DRAF 230 or ENGR 131 or department approval	
DRAF 245	Advanced Parametric Design: Inventor	2
	Prerequisites: DRAF 145 and DRAF 222 or department approval	
DRAF 250	Electrical Drafting	3
	Prerequisites: Either MATH 133 or MATH 130 and either DRAF 230 or ENGR 131	
DRAF 252	Structural Design and Drafting	3
	Prerequisites: DRAF 129 and DRAF 135 and DRAF 230 and ENGR 131 and	
	Prerequisite or Corequisite: MATH 134 or MATH 131 or department approval	
DRAF 264	CAD: Interior Design	3
	Prerequisites: ITMD 123 and ITMD 129 both with a grade of "C" or higher or department approval	
DRAF 271	Drafting Internship I	3
	Prerequisite: department approval	
DRAF 272	Drafting Internship II	3
	Prerequisite: DRAF 271 and department approval	
ELTE 122	National Electrical Code I	4
ENGR 131	Engineering Graphics I: AutoCAD	4
	Prerequisite or corequisite: MATH 133 or MATH 130 or MATH 171 or MATH 172 or MATH 173 or MATH 241	
ENGR 180	Engineering Land Surveying I	3
	Prerequisite or corequisite: MATH 134 or MATH 131 or MATH 172	
ENTR 120	Introduction to Entrepreneurship	2
ENTR 142	Fast Trac Business Plan	3
ENTR 180	Opportunity Analysis	2
EPRM 120	Introduction to Residential Energy	3
EPRM 142	Solar Thermal Systems	3
SPD 120	Interpersonal Communication	3
SPD 128	Business and Professional Speech	3
	Total Program Hours: 64	

Construction Management Certificate (Spring 2013)

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.

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

(Major Code 4750; State CIP Code 52.2001)

- Gainful Employment - Construction Management
- Civil Engineering Technology

First Semester

Code	Title	Hours
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 Hours: 13	

Second Semester

Code	Title	Hours
	Management Electives	2
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 department approval	
	AND	
	Prerequisite or corequisite: DRAF 129 or department approval	
CET 150	Construction Safety	3
INDT 155	Workplace Skills	1
	Total Semester Hours: 15	

Management Electives

Code	Title	Hours
BUS 141	Principles of Management	3
BUS 145	Small Business Management	3
BUS 243	Human Resource Management	3
	2 hours - any course from electives list.	
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
	Total Program Hours: 28	

Cosmetology

Advanced Esthetics Certificate (Spring 2013)

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; State CIP Code 12.0409)

- Cosmetology

Required Course

Code	Title	Hours
CO 218	Esthetics Essential Update	6
	Prerequisite: Must possess current esthetics license granted by the Kansas Board of Cosmetology, a current cosmetology license, or the minimum of 650 hours of esthetics training from an education institution.	
	Total Semester Hours: 6	
	Total Program Hours: 6	

Cosmetology, A.A.S. (Spring 2013)

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; State CIP Code 12.0401)

- Cosmetology

Associate of Applied Science Degree

Option 1 - No Professional Licensure

Code	Title	Hours
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

Code	Title	Hours
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

Code	Title	Hours
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

Code	Title	Hours
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	

General Education Requirements

Code	Title	Hours
	Communication Elective	3
	Humanities Elective	3
	Social Science and/or Economics Elective	3
	Science and/or Math Elective	3
	Electives	3
	Health and/or 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 Hours: 19	
	Total Program Hours: 64	

Cosmetology Certificate (Spring 2013)

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. Contact the salon at 913-469-2390, 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; State CIP Code 12.0401)

- Gainful Employment - Cosmetology
- Cosmetology

Option 1 - No Professional Licensure

Code	Title	Hours
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	
	Total Semester Hours: 45	

Option 2 - With Nail Technology Licensure

Code	Title	Hours
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	
	Total Semester Hours: 45	

Option 3 - With Esthetics Licensure

Code	Title	Hours
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	
	Total Semester Hours: 45	

Option 4 - With Both Nail Technology & Esthetics Licensure

Code	Title	Hours
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 Semester Hours: 45	
	Total Program Hours: 45	

Cosmetology Instructor Training Certificate (Spring 2013)

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; State CIP Code 12.0401)

- Cosmetology

Required Course

Code	Title	Hours
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 Semester Hours: 9	
	Total Program Hours: 9	

Esthetics Certificate (Spring 2013)

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 esthetics application, interview and a reading comprehension test. Contact the salon at 913-469-2390 for additional information.

This program requires a professional liability insurance fee to have been paid within the year. Students will be notified via their JCCC student e-mail account if they have not paid the required $16 fee. The dollar amount for fees is subject to change.

(Major Code 372A; State CIP Code 12.0409)

- Cosmetology

Fall Semester

Code	Title	Hours
CO 120	Esthetics	7
	Prerequisite: Admission to the esthetics program and Corequisites for part- and full-time students: CO 121 and CO 122.	
CO 121	Esthetics Lab	6
	Prerequisite: Selective admission approval and Corequisites for part- and full-time students: CO 120 and CO 122.	
CO 122	Esthetics Clinical	2
	Prerequisite: Selective admission approval and Corequisites for part- and full-time students: CO 120 and CO 121.	
	Total Semester Hours: 15	

Spring Semester

Code	Title	Hours
CO 127	Intermediate Esthetics	7
	Prerequisite for part- and full-time students: CO 120. Corequisites for part- and full-time students: CO 128 and CO 129.	
	All courses must have a grade of "C" or higher.	
CO 128	Intermediate Esthetics Lab	6
	Prerequisite for part- and full-time students: CO 121. Corequisites for part- and full-time students: CO 127 and CO 129.	
	All courses must have a grade of "C" or higher.	
CO 129	Intermediate Esthetics Clinical	2
	Prerequisite for part- and full-time students: CO 122. Corequisites for part- and full-time students: CO 127 and CO 128.	
	All courses must have a grade of "C" or higher.	
	Total Semester Hours: 15	

Summer Semester

Code	Title	Hours
CO 134	Esthetics Essentials	2
	Prerequisite for part- or full-time students: CO 127.	
	Corequisites for part-time students: CO 135 and CO 136.	
	Corequisites for full-time students: CO 135 and CO 136 and CO 141 and CO 142 and CO 143.	
	All courses must have a grade of "C" or higher.	
CO 135	Esthetics Essentials Lab	2
	Prerequisite for part- or full-time students: CO 128.	
	Corequisites for part-time students: CO 134 and CO 136.	
	Corequisites for full-time students: CO 134 and CO 136 and CO 141 and CO 142 and CO 143.	
	All courses must have a grade of "C" or higher.	
CO 136	Esthetics Essentials Clinical	1
	Prerequisite for part- or full-time students: CO 129.	
	Corequisites for part-time students: CO 134 and CO 135.	
	Corequisites for full-time students: CO 134 and CO 135 and CO 141 and CO 142 and CO 143.	
	All courses must have a grade of "C" or higher.	
	Total Semester Hours: 5	

Fall Semester

Code	Title	Hours
CO 141	Advanced Esthetics	5
	Prerequisite for part- or full-time students: CO 134.	
	Corequisites for part-time students: CO 142 and CO 143.	
	Corequisites for full-time students: CO 134 and CO 135 and CO 136 and CO 142 and CO 143.	
	All courses must have a grade of "C" or higher.	
CO 142	Advanced Esthetics Lab	2
	Prerequisite for part- or full-time students: CO 135.	
	Corequisites for part-time students: CO 141 and CO 143.	
	Corequisites for full-time students: CO 134 and CO 135 and CO 136 and CO 141 and CO 143.	
	All courses must have a grade of "C" or higher.	
CO 143	Advanced Esthetics Clinical	2
	Prerequisite for part- or full-time students: CO 136.	
	Corequisites for part-time students: CO 141 and CO 142.	
	Corequisites for full-time students: CO 134 and CO 135 and CO 136 and CO 141 and CO 142.	
	All courses must have a grade of "C" or higher.	
	Total Semester Hours: 9	
	Total Program Hours: 44	

Nail Technology Certificate (Spring 2013)

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 high school transcript or GED. Contact the Salon at 913-469-2390, 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; State CIP Code 12.0410)

- Cosmetology

Required Course

Code	Title	Hours
AVCO 102	Nail Technology	17
	Total Semester Hours: 17	
	Total Program Hours: 17	

Dental Hygiene

Dental Hygiene, A.A.S. (Spring 2013)

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 visiting Dental Hygiene Application Process.

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; State CIP Code 51.0602)

- Dental Hygiene

Associate of Applied Science Degree

Selective Admission Program with Limited Enrollment

Code	Title	Hours
	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 CHEM 124 and CHEM 125 or one year of high school chemistry	
BIOL 231	Microbiology Lab	2
	Prerequisite: BIOL 231 students must be currently enrolled in BIOL 230 or have successfully completed BIOL 230 within the last three years.	
	Note: CHEM 122 or BIOL 140 or BIOL 230/231 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

Code	Title	Hours
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	
	Prerequisite: Selective Admission Approval	
DHYG 125	Developmental Dentistry	2
	Prerequisites: Admission to Dental Hygiene Program and CHEM 122 and ENGL 121 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 Hours: 14

Second Semester

Code	Title	Hours
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
	Prerequisite: BIOL 140 or BIOL 144 and Prerequisites or corequisite: CHEM 122 or (CHEM 124 and CHEM 125)	
		Total Semester Hours: 15

Summer

Code	Title	Hours
	Humanities Elective	3
	Mathematics Elective	3
BIOL 235	General Nutrition	3
	Prerequisites: Choice CHEM 122 or (CHEM 124 and CHEM 125) and BIOL 144 or (BIOL 140 and BIOL 225 as prerequisite or corequisite)	
		Total Semester Hours: 9

Third Semester

Code	Title	Hours
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 Hours: 14

Fourth Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
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
		Total Semester Hours: 11
		Total Program Hours: 83

Drafting Technology

Computer-aided Drafting and Design Technology, A.A.S. (Spring 2013)

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 64 credit hours.

(Major Code 2220; State CIP Code 15.1302)

- Computer-Aided Drafting and Design

Associate of Applied Science Degree

Prerequisites for Required Courses

Code	Title	Hours
	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	3
	Prerequisite: DRAF 120 or department approval	

First Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
DRAF 129	Interpreting Architectural Drawings	2
DRAF 123	Interpreting Machine Drawings	2
	Prerequisite or corequisite: DRAF 120 or department approval	
DRAF 135	Graphic Analysis	3
	Prerequisites: DRAF 120 and DRAF 130 or department approval	
DRAF 230	Intermediate CAD: AutoCAD	3
	Prerequisite: DRAF 130 or department approval	
DRAF 143	Introduction to BIM Building Information Modeling	2
	Prerequisite or corequisite: DRAF 129	
MATH 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
	Total Semester Hours: 16	

Second Semester

Code	Title	Hours
DRAF 145	Introduction to Parametric Design: Inventor	2
	Prerequisite or corequisite: DRAF 123 or department approval	
DRAF 238	Architectural Design and Drafting	3
	Prerequisites: DRAF 129 and DRAF 135 and DRAF 143 and DRAF 230	
DRAF 225	Civil Drafting	3
	Prerequisite: DRAF 230 or ENGR 131 and	
	prerequisite or corequisite MATH 131 or MATH 134	
DRAF 244	Civil 3D	2
	Prerequisite: DRAF 230 or ENGR 131 or	
	department approval	
MATH 131	Technical Mathematics II	3
	Prerequisites: MATH 130 or MATH 133 with a grade of "C" or higher or an equivalent course 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 Semester Hours: 16	

Third Semester

Code	Title	Hours
	Technical Electives	2
DRAF 243	Advanced BIM: Revit	2
	Prerequisite: DRAF 143 and DRAF 238 or	
	department approval	
CET 211	Technical Statics and Design	3
	Prerequisite: MATH 134 or MATH 131 or MATH 172 or MATH 173 or MATH 241	
DRAF 222	Mechanical Design and Drafting	3
	Prerequisites: DRAF 123 and DRAF 135 and DRAF 145 and DRAF 230 and	
	Prerequisite and/or corequisite: MATH 134 or MATH 131	
DRAF 250	Electrical Drafting	3
	Prerequisites: Either MATH 133 or MATH 130 and either DRAF 230 or ENGR 131	
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
	Total Semester Hours: 16	

Fourth Semester

Code	Title	Hours
	Technical Electives	2
	Humanities Elective	3
	Social Science and/or Economics Elective	3
DRAF 252	Structural Design and Drafting	3
	Prerequisites: DRAF 129 and DRAF 135 and DRAF 230 or	
	DRAF 129 and ENGR 131 and	
	prerequisite or corequisite: MATH 134 or MATH 131 or	
	department approval	
DRAF 245	Advanced Parametric Design: Inventor	2
	Prerequisite: DRAF 145 and DRAF 222 or department approval	
CET 270	Fluid Mechanics	3
	Prerequisite: MATH 172 or MATH 134 or MATH 131	
	Total Semester Hours: 16	

Technical Electives

Code	Title	Hours
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: BIM / Revit	2
DRAF 151	Introduction to 3D Modeling: SketchUp	1
DRAF 242	Topics in CAD II	2
	Prerequisite: DRAF 230 or department approval	
DRAF 271	Drafting Internship I	3
	Prerequisite: department approval	
DRAF 272	Drafting Internship II	3
	Prerequisites: DRAF 271 and department approval	
CET 105	Construction Methods	3
CET 125	Construction Specifications	2
	Prerequisite or corequisite: CET 105 or equivalent	
CET 129	Construction Management	3
CET 150	Construction Safety	3
CET 160	Green Building Fundamentals	3
CET 227	Construction Cost Estimating	3
	Prerequisites: CET 105 and CET 125 and prerequisite or corequisite: DRAF 129 or department approval	
INDT 155	Workplace Skills	1
MFAB 152	Manufacturing Materials and Processes	3
MFAB 170	Basic Machine Tool Processes	4
ENGR 180	Engineering Land Surveying I	3
	Prerequisite or corequisite: MATH 134 or MATH 131 or MATH 172	

Total Program Hours: 64

Computer-aided Drafting Certificate (Spring 2013)

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.

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

(Major Code 4800; State CIP Code 15.1302)

- Computer-Aided Drafting and Design

Prerequisite for Required Course

Code	Title	Hours
DRAF 120	Introduction to Drafting	2
DRAF 135	Graphic Analysis	3
	Prerequisite: DRAF 120 and DRAF 130 or department approval	
	AND	
DRAF 129	Interpreting Architectural Drawings	2
DRAF 238	Architectural Design and Drafting	3
	Prerequisites: DRAF 129 and DRAF 135 and DRAF 143 and DRAF 230	
	OR	
DRAF 123	Interpreting Machine Drawings	2
	Prerequisite: DRAF 120 or department approval	
DRAF 222	Mechanical Design and Drafting	3
	Prerequisites: DRAF 123 and DRAF 135 and DRAF 145 and DRAF 230 and	
	Prerequisite or corequisite: MATH 131 or MATH 134	

First Semester

Code	Title	Hours
DRAF 130	Introduction to CAD Concepts - AutoCAD	3
	Prerequisite: DRAF 120 or department approval	

Total Semester Hours: 3

Second Semester

Code	Title	Hours
DRAF 230	Intermediate CAD: AutoCAD	3
	Prerequisite: DRAF 130 or department approval	
DRAF 143	Introduction to BIM Building Information Modeling	2
	Prerequisite or corequisite: DRAF 129	
	OR	
DRAF 145	Introduction to Parametric Design: Inventor	2
	Prerequisite or corequisite: DRAF 123 or department approval	

Total Semester Hours: 5

Third Semester

Code	Title	Hours
DRAF 243	Advanced BIM: Revit	2
	Prerequisites: DRAF 143 and DRAF 238 or department approval	
	OR	
DRAF 245	Advanced Parametric Design: Inventor	2
	Prerequisites: DRAF 145 and DRAF 222 or department approval	

Total Semester Hours: 2
Total Program Hours: 10

Early Childhood Education

Early Childhood Education, A.S. (Spring 2013)

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).

Associate of Science Degree

Important: Students graduating with an Early Childhood Education degree must complete an approved cultural diversity course. Some of the approved courses are able to meet both the cultural diversity requirement and a general education requirement.

Cultural Diversity Course Requirement at JCCC

(Major Code 2100; State CIP Code 19.0708)

- Education and Early Childhood

First Semester

Code	Title	Hours
	Math Elective	3
	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 131 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	
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	
PSYC 130	Introduction to Psychology	3
SPD 121	Public Speaking	3
		Total Semester Hours: 15

Second Semester

Code	Title	Hours
	Health/Physical Education	1-2
	Recommended HPER course if not certified in CPR:	
HPER 200	First Aid and CPR	2
	Science course with Lab	4-5
	See recommended courses for the science requirement below.	
EDUC 131	Early Childhood Curriculum I	3
	Prerequisite or corequisite: EDUC 130	
EDUC 250	Child Health, Safety and Nutrition	3
PSYC 215	Child Development	3
	Prerequisite: PSYC 130	
	OR	
PSYC 218	Human Development	3
	Prerequisite: PSYC 130	
		Total Semester Hours: 14-16

Summer Semester

Code	Title	Hours
	Humanities Elective	3
ENGL 122	Composition II	3
	Prerequisite: ENGL 121	
		Total Semester Hours: 6

Third Semester

Code	Title	Hours
	Science or Math	4-5
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
	(Meets Cultural Diversity requirement)	
	OR	
ANTH 125	Cultural Anthropology	3
	(Meets Cultural Diversity requirement)	
	OR	
SOC 131	Sociology of Families	3
		Total Semester Hours: 16-17

Fourth Semester

Code	Title	Hours
	Specialization courses	6
	Humanities Elective	3
EDUC 235	Parenting	2
	Prerequisite or corequisite: PSYC 215 or PSYC 218 or EDUC 270	
EDUC 284	Seminar: Early Childhood Education	3
	Prerequisite: Department approval	
	AND	
	Corequisite: EDUC 285	
EDUC 285	Student Teaching: Early Childhood Education	3
	Prerequisite: Department approval	
	AND	
	Corequisite: EDUC 284	
		Total Semester Hours: 17

Area of Specialization Select one:

Code	Title	Hours

Child Care Administration

Code	Title	Hours
ACCT 121	Accounting I	3
EDUC 280	Administration of Early Childhood Program	3

Children with Special Needs

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

Infant and Toddler Care and Education

Code	Title	Hours
EDUC 270	Early Childhood Development	3
EDUC 225	Infant and Toddler Education and Care	3
	Prerequisite: EDUC 130	

School-Age Programs

Code	Title	Hours
EDUC 240	School-Age Programs and Curriculum I	3
	Prerequisite: EDUC 130	
EDUC 245	School-Age Programs and Curriculum II	3
	Prerequisite: EDUC 240	

Recommended Courses for the Science Requirement

Code	Title	Hours
	Life Science	
BIOL 121	Introductory Biology for Non-Majors	4
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
	Total Program Hours: 69-70	

Early Childhood Education Certificate (Spring 2013)

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.

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

(Major Code 6600; State CIP Code 19.0708)

- Gainful Employment - Early Childhood Education
- Education and Early Childhood

First Semester

Code	Title	Hours
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 Hours: 15	

Summer Semester

Code	Title	Hours
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 Hours: 3	

Second Semester

Code	Title	Hours
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: Department 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 Hours: 15	
	Total Program Hours: 33	

Electrical Technology

Commercial Electrical Design Certificate (Spring 2013)

This three semester certificate provides the student the basic skills needed for employment as an electrical design technician for commercial electrical projects. The electrical design process for commercial construction includes design for three-phase electrical services, feeders, branch circuits, appliances, lighting, communication/data, fire safety, motors and control circuits.

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

(Major Code 5060; State CIP Code 46.0302)

- Electrical Technology

First Semester

Code	Title	Hours
DRAF 120	Introduction to Drafting	2
DRAF 130	Introduction to CAD Concepts - AutoCAD	3
	Prerequisite: DRAF 120 or department approval	
MATH 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
ELTE 123	Electromechanical Systems	4
	Total Semester Hours:	12

DRAF 120 and DRAF 130 are 8-week courses and are offered consecutively in the same semester, same time and days.

Second Semester

Code	Title	Hours
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	
DRAF 230	Intermediate CAD: AutoCAD	3
	Prerequisite: DRAF 130 or department approval	
ELTE 122	National Electrical Code I	4
	Total Semester Hours:	14

Third Semester

Code	Title	Hours
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
DRAF 250	Electrical Drafting	3
	Prerequisites: Either MATH 133 or MATH 130 and either DRAF 230 or ENGR 131	
ELTE 202	Electrical Estimating	3
	Prerequisites: ELTE 122 and ELTE 125 or ELTE 200 or department approval	
	Total Semester Hours:	9
	Total Program Hours:	**35**

Commercial Wiring Certificate (Spring 2013)

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.

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

(Major Code 4010; State CIP Code 46.0302)

- Gainful Employment - Electrical Technology
- Electrical Technology

First Option - Spring Semester

Code	Title	Hours
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 Semester Hours:	16

Second Option - Fall Semester

Code	Title	Hours
ELTE 122	National Electrical Code I	4
ELTE 123	Electromechanical Systems	4
INDT 155	Workplace Skills	1
	Total Semester Hours:	9

Second Option - Spring Semester

Code	Title	Hours
INDT 125	Industrial Safety	3
ELTE 200	Commercial Wiring Methods	4
	Prerequisite or corequisite: HVAC 123 or ELTE 123	
	Total Semester Hours:	7
	Total Program Hours:	**16**

Electrical Technology, A.A.S. (Spring 2013)

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

JCCC offers a 64-credit-hour associate of applied science degree program and a 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; State CIP Code 46.0302)

- Electrical Technology

Associate of Applied Science Degree

First Semester

Code	Title	Hours
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 Hours:	16

Second Semester

Code	Title	Hours
	Technical Electives	4
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 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
CPCA 105	Introduction to Personal Computers: Windows	1
	Total Semester Hours:	15

Third Semester

Code	Title	Hours
	Social Science and/or Economics Elective	3
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: department approval	
HPER 200	First Aid and CPR	2
		Total Semester Hours: 17

Fourth Semester

Code	Title	Hours
	Technical Electives	3
	Humanities Elective	3
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 department approval	
CET 105	Construction Methods	3
		Total Semester Hours: 16

Technical Electives

Code	Title	Hours
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	3
	Prerequisite: DRAF 120 or department approval	
DRAF 250	Electrical Drafting	3
	Prerequisites: Either MATH 133 or MATH 130 and either 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 department approval	
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
		Total Program Hours: 64

Electrical Technology Certificate (Spring 2013)

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.

Suggested/Sample Course Sequence

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

(Major Code 5200; State CIP Code 46.0302)

- Gainful Employment - Electrical Technology
- Electrical Technology

First Semester

Code	Title	Hours
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 Hours: 15

Second Semester

Code	Title	Hours
	Technical Electives	3
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: department approval	
INDT 155	Workplace Skills	1
		Total Semester Hours: 14

Technical Electives

Code	Title	Hours
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 department 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 department approval	
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	

Total Program Hours: 29

Industrial Electrical Wiring Certificate (Spring 2013)

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.

Suggested/Sample Course Sequence

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

(Major Code 4020; State CIP Code 46.0302)

- Gainful Employment - Electrical Technology
- Electrical Technology

First Semester

Code	Title	Hours
ELTE 123	Electromechanical Systems	4
ELEC 133	Programmable Controllers	3
INDT 125	Industrial Safety	3
INDT 155	Workplace Skills	1
	Total Semester Hours: 11	

Second Semester

Code	Title	Hours
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 department approval	
	Total Semester Hours: 15	
	Total Program Hours: 26	

Residential Electrical Design Certificate (Spring 2013)

This two semester certificate is designed to provide the student basic skills for employment as an electrical design technician for single family and multi-family housing. The electrical design process for residential construction includes design for single-phase electrical services, feeders, branch circuits, appliances, lighting, communication/data and fire safety. Suggested/Sample Course Sequence

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

(Major Code 5070; State CIP Code 46.0302)

- Electrical Technology

First Semester

Code	Title	Hours
DRAF 120	Introduction to Drafting	2
DRAF 130	Introduction to CAD Concepts - AutoCAD	3
	Prerequisite: DRAF 120 or department approval	
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	
	Total Semester Hours: 17	

Second Semester

Code	Title	Hours
DRAF 129	Interpreting Architectural Drawings	2
DRAF 230	Intermediate CAD: AutoCAD	3
	Prerequisite: DRAF 130 or department approval	
ELEC 123	Smart House Technology	3
ELTE 202	Electrical Estimating	3
	Prerequisites: ELTE 122 and ELTE 125 or ELTE 200 or department approval	
	Total Semester Hours: 11	
	Total Program Hours: 28	

Residential Wiring Certificate (Spring 2013)

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; State CIP Code 46.0302)

- Gainful Employment - Electrical Technology
- Electrical Technology

Fall Semester

Code	Title	Hours
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
	Total Program Hours: 16	

Electronics Technology

Electronics Technology, A.A.S. (Spring 2013)

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; State CIP Code 47.0101)

- Electronics Technology

Associate of Applied Science Degree

First Semester

Code	Title	Hours
ELEC 120	Introduction to Electronics	3
ELEC 126	Microcomputer A+ Preparation	4
ELEC 125	Digital Electronics I	4

MATH 130	Technical Mathematics I or higher	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an 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 Hours: 17	

Second Semester

Code	Title	Hours
	Humanities Elective	3
ELEC 122	Circuit Analysis I	3
	Prerequisites: ELEC 120 and either MATH 133 or MATH 130 or MATH 171	
ELEC 225	Digital Electronics II	3
	Prerequisite: ELEC 125	
MATH 131	Technical Mathematics II or higher	3
	Prerequisites: MATH 130 or MATH 133 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	
SPD 125	Personal Communication	3
	Total Semester Hours: 15	

Third Semester

Code	Title	Hours
	Technical Elective	3
	Social Science/Economics Elective	3
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 131 or MATH 172 or MATH 173)	
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
	Total Semester Hours: 16	

Fourth Semester

Code	Title	Hours
	Technical Elective	3
	Health and/or Physical Education Elective	1
ELEC 230	Electronic Devices II	3
	Prerequisite: ELEC 130	
ELEC 240	Electronic Communication Systems	4
	Prerequisite or corequisite: ELEC 230	
PHYS 133	Applied Physics or higher	5
	Prerequisite: MATH 135 or higher	
	Total Semester Hours: 16	

Technical Electives

Code	Title	Hours
ELEC 118	Mobile Auto Electronics Installation	3
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: department approval	
ELEC 272	Electronics Internship II	1
	Prerequisites: ELEC 271 and department approval	
	Total Program Hours: 64	

Industrial Controls Certificate (Spring 2013)

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.

Suggested/Sample Course Sequence

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

(Major Code 4720; State CIP Code 47.0101)

- Electronics Technology

First Semester

Code	Title	Hours
ELEC 131	Introduction to Sensors and Actuators	3
ELEC 133	Programmable Controllers	3
	Total Semester Hours: 6	

Second Semester

Code	Title	Hours
ELEC 165	Advanced Programmable Controllers	3
	Prerequisite: ELEC 133	
	Total Semester Hours: 3	
	Total Program Hours: 9	

Microcomputer Technical Support Certificate (Spring 2013)

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.

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

(Major Code 4980; State CIP Code 47.0104)

- Electronics Technology

First Semester

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

Second Semester

Code	Title	Hours
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 Hours: 9	
	Total Program Hours: 19	

Smart House Technology Integrator Certificate (Spring 2013)

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.

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

(Major Code 4400; State CIP Code 47.0199)

- Gainful Employment - Smart House Technology
- Electronics Technology

Fall Semester

Code	Title	Hours
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 Hours: 15	

Spring Semester

Code	Title	Hours
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 Hours: 11	
	Total Program Hours: 26	

Emergency Medical Science (EMS)

Emergency Medical Science, A.A.S. (Spring 2013)

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

The First Responder course meets the standards for Emergency Medical Responder (EMR) training and testing.

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 hrs.

TOTAL CREDIT HOURS - 5 hrs.

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 131 Emergency Medical Technician Course - 10 hrs.
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 - 10 hrs.

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

TOTAL CREDIT HOURS - 3 hrs.

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; State CIP Code 51.0904)

- Emergency Medical Science

Associate of Applied Science Degree

Prior to beginning professional courses

Code	Title	Hours
	Successful completion of an EMT course and successful completion of the following courses:	
	Electives	0-2
	Depending on which science class(es) are taken	
	Health/Physical Education Elective	1
BIOL 144	Human Anatomy and Physiology	5
	OR	
BIOL 140	Human Anatomy	4
	AND	
BIOL 225	Human Physiology	4
	Prerequisites: BIOL 140 or BIOL 144 and Prerequisites or corequisite: CHEM 122 or (CHEM 124 and CHEM 125)	
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
	Total Semester Hours: 17-18	

First Semester

Code	Title	Hours
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 Hours: 20	

Second Semester

Code	Title	Hours
EMS 230	MICT III Clinicals	12
	Prerequisite: EMS 225 with a grade of "C" or higher	
	Total Semester Hours: 12	

Third Semester

Code	Title	Hours
EMS 271	MICT IV Field Internship	15
	Prerequisite: EMS 230 with a grade of "C" or higher	
	Total Semester Hours: 15	

Total Program Hours: 64-65
Total Professional Credit Hours – 47

Mobile Intensive Care Technician Certificate (Spring 2013)

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; State CIP Code 51.0904)

- Gainful Employment - Mobile Intensive Care Technician (Paramedic)
- Emergency Medical Science

First Semester

Code	Title	Hours
EMS 220	MICT I	10
	Prerequisite: Admission to the MICT prog	
EMS 225	MICT II	10
	Prerequisite: EMS 220 with a grade of "C" or higher	
	Total Semester Hours: 10	

Second Session

Code	Title	Hours
EMS 230	MICT III Clinicals	12
	Prerequisite: EMS 225 with a grade of "C" or higher	
	Total Semester Hours: 12	

Third Semester

Code	Title	Hours
EMS 271	MICT IV Field Internship	15
	Prerequisite: EMS 230 with a grade of "C" or higher	
	Total Semester Hours: 15	
	Total Program Hours: 47	

Emergency Medical Technician Certificate (Spring 2013)

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. Students completing this course with a minimum grade of "C" will be allowed to sit for the Kansas EMT State Certification Examination and receive JCCC certificate of completion.

(Major Code 4760; State CIP 51.0904)

- Emergency Medical Science

Required Course

Code	Title	Hours
EMS 131	Emergency Medical Technician	10
	Prerequisite: EMS 128 or equivalent training as determined by the EMS department (military, other medical or fire department, verification of training will be required), associate's degree (transcription required).	
	Total Semester Hours: 10	
	Total Program Hours: 10	

Energy Performance & Resource Management

Energy Performance & Resource Management-Residential Auditing, A.A.S. (Spring 2013)

The energy performance and resource management program will prepare the student for entry into the rapidly emerging alternative energy technology field. Upon completion of the program, students will be able to demonstrate an understanding of the science behind active and passive energy systems, analyze energy system designs, and offer professional advice to consumers to improve energy systems' efficiency. Students will acquire the knowledge and skills to provide technical services in planning, designing and construction/installing appropriate energy technologies to manage energy utilization effectively.

(Major Code 2200; State CIP Code 15.0503)

- Energy Performance

Associate of Applied Science Degree

First Semester

Code	Title	Hours
EPRM 120	Introduction to Residential Energy	3
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
MATH 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
CPCA 105	Introduction to Personal Computers: Windows	1
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	
HVAC 125	Energy Alternatives	2
INDT 155	Workplace Skills	1
CET 105	Construction Methods	3
	Total Semester Hours: 17	

Second Semester

Code	Title	Hours
EPRM 123	Active & Passive Residential Systems	4
	Prerequisites: EPRM 120 or EPRM 121 or department approval	
PHYS 133	Applied Physics	5
	Prerequisite: MATH 135 or higher	
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
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	
DRAF 129	Interpreting Architectural Drawings	2
	Total Semester Hours: 15	

Third Semester

Code	Title	Hours
	Technical Electives	3
	Social Science and/or Economics Elective	3
EPRM 127	Residential Energy Data Collection and Input	3
	Prerequisite: ERPM 123	
BIOL 130	Environmental Science	3
BIOL 131	Environmental Science Lab	1
	Prerequisite or corequisite: BIOL 130	
CET 150	Construction Safety	3
	Total Semester Hours: 16	

Fourth Semester

Code	Title	Hours
	Technical Electives	4
	Humanities Elective	3
EPRM 130	Residential Energy Auditing Application	3
	Prerequisite or corequisite: EPRM 127	
PHIL 138	Business Ethics	1
BUS 140	Principles of Supervision	3
HPER 200	First Aid and CPR	2
	Total Semester Hours: 16	

Technical Electives

Code	Title	Hours
ELEC 123	Smart House Technology	3
ELEC 131	Introduction to Sensors and Actuators	3
ELTE 122	National Electrical Code I	4
HVAC 121	Basic Principles of HVAC	4
	Prerequisite or corequisite: HVAC 123 or ELTE 123	
HVAC 123	Electromechanical Systems	4

HVAC 271	HVAC Internship	3
	Prerequisite: Department approval required	

Total Program Hours: 64

Energy Auditing Technician-Residential Certificate (Spring 2013)

This course of study is to prepare students to perform residential energy audits. An energy audit will help customers make decisions about how to conserve energy and save money on utility bills. Customers will also benefit from an increase of comfort, health, safety, and the durability of their homes. The audit involves a visual inspection of the residence, a series of diagnostic tests, and a numerical analysis by means of a software package. Auditors inspect, measure, and test to decide what energy-saving retrofits are practical and cost-effective. An energy audit is also called a home energy analysis, a home performance analysis or an energy survey.

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

(Major Code 4300; State CIP Code 15.0503)

- Energy Performance

First Semester

Code	Title	Hours
EPRM 120	Introduction to Residential Energy	3
EPRM 123	Active & Passive Residential Systems	4
	Prerequisites: EPRM 120 or EPRM 121 or department approval	
CET 105	Construction Methods	3

Total Semester Hours: 10

Second Semester

Code	Title	Hours
DRAF 129	Interpreting Architectural Drawings	2
CET 150	Construction Safety	3
EPRM 127	Residential Energy Data Collection and Input	3
	Prerequisite: ERPM 123	
INDT 155	Workplace Skills	1
EPRM 130	Residential Energy Auditing Application	3
	Prerequisite or corequisite: EPRM 127	

Total Semester Hours: 12
Total Program Hours: 22

Entrepreneurship

Entrepreneurship, A.A.S. (Spring 2013)

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; State CIP Code 52.0701)

- Entrepreneurship

First Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
ENTR 120	Introduction to Entrepreneurship	2
ENTR 130	Entrepreneurial Mindset	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	
SPD 120	Interpersonal Communication	3

Total Semester Hours: 15

Second Semester

Code	Title	Hours
ENTR 180	Opportunity Analysis	2
MKT 134	Professional Selling	3
ACCT 111	Small Business Accounting	3
	OR	
ACCT 121	Accounting I	3
MKT 230	Marketing	3
BUS 175	Business Professional Skills	3
MKT 202	Consumer Behavior	3
ENTR 210	Entrepreneurship Internship I	1
	Prerequisite: department approval	

Total Semester Hours: 18

Third Semester

Code	Title	Hours
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
	OR	
ENTR 195	Franchising	3
	OR	
ENTR 185	Fundamentals of Direct Sales	3
BUS 150	Business Communications	3
	Prerequisite: ENGL 121	
ENTR 215	Entrepreneurship Internship II	1
	Prerequisites: ENTR 210 and department approval	
MKT 205	eMarketing	3
BUS 225	Human Relations	3

Total Semester Hours: 17

Fourth Semester

Code	Title	Hours
ENTR 220	Entrepreneurial Marketing	2
	Prerequisite: BUS 230 or MKT 230	
ENTR 142	Fast Trac Business Plan	3
ECON 132	Survey of Economics	3
	OR	
ECON 230	Economics I	3
	OR	
ECON 231	Economics II	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

Total Semester Hours: 15

Courses of Interest

Code	Title	Hours
	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 141 or an 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

Total Program Hours: 65

Entrepreneurship Certificate (Spring 2013)

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; State CIP Code 52.0701)

- Entrepreneurship

First Semester

Code	Title	Hours
MKT 230	Marketing	3
ACCT 121	Accounting I	3
	OR	
ACCT 111	Small Business Accounting	3
ENTR 120	Introduction to Entrepreneurship	2
ENTR 180	Introduction to Entrepreneurship	2
MKT 134	Professional Selling	3
ENTR 130	Entrepreneurial Mindset	3

Total Semester Hours: 16

Second Semester

Code	Title	Hours
BUS 175	Business Professional Skills	3
MKT 202	Consumer Behavior	3
ENTR 160	Legal Issues for Small Business	2
ENTR 131	Financial Management for Small Business	2
	Prerequisite: ACCT 111 or ACCT 121	
ENTR 220	Entrepreneurial Marketing	2
	Prerequisite: BUS 230 or MKT 230	
ENTR 142	Fast Trac Business Plan	3
ENTR 195	Franchising	3
	OR	
ENTR 225	Family Business	3
	OR	
ENTR 185	Fundamentals of Direct Sales	3

Total Semester Hours: 18
Total Program Hours: 34

Business Plan Certificate (Spring 2013)

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.

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

(Major Code 4810; State CIP Code 52.0701)

- Entrepreneurship

First Semester

Code	Title	Hours
ENTR 120	Introduction to Entrepreneurship	2
ENTR 180	Opportunity Analysis	2

Total Semester Hours: 4

Second Semester

Code	Title	Hours
ENTR 142	Fast Trac Business Plan	3

Total Semester Hours: 3
Total Program Hours: 7

Direct Sales Certificate (Spring 2013)

This fifteen credit hour certificate is designed to prepare students to achieve their entrepreneurial dream by becoming an independent contractor to one of the numerous companies in the Direct Selling Industry. As reported by the Direct Selling Association (DSA), in 2009 the United States direct retail sales reached $28.33 billion and reported 16,100,000 persons in the US generated all or part of their livelihood as independent contractors to direct sales companies. Successful completion of this certificate will provide the student the ability to develop, grow and sustain their career as an independent contractor in the direct sales industry. Coursework includes curriculum from both the Entrepreneurship (ENTR) and Marketing and Management (MKT) programs. This certificate development resulted from collaboration between the National Association of Community College Entrepreneurship (NACCE), the Direct Selling Association (DSA), and the Direct Selling Education Foundation (DSEF). It

is recommended that students also complete the 7-credit hour Business Plan Certificate (Major Code 4810).

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

(Direct Sales - Major Code 4630; State CIP Code 52.0799 and Business Plan - Major Code 4810; State CIP Code 52.0710)

- Entrepreneurship

Required Courses

Code	Title	Hours
ENTR 185	Fundamentals of Direct Sales	3
BUS 175	Business Professional Skills	3
MKT 134	Professional Selling	3
MKT 205	eMarketing	3
MKT 202	Consumer Behavior	3
	Total Semester Hours:	15

Additional Certificate

Code	Title	Hours
	Business Plan Certificate	7
	This certificate is designed for students who are interested in opening their own service business providing administrative assistance to businesses. Coursework focuses on fundamental knowledge necessary to own and operate an entrepreneurial venture, evaluating the feasibility of the business idea, and concludes with writing a business plan to start, grow and sustain a business venture. The business plan certificate is recommended for students to add to their Direct Sales certificate.	
	Total Program Hours: 15-22	

Family Business Certificate (Spring 2013)

This fourteen credit hour certificate is designed to prepare students to achieve their entrepreneurial dream by owning and operating a family business, joining an existing family owned business, and/or taking over leadership roles in an existing family business. The certificate will prepare the student to develop, grow and sustain their entrepreneurial family business by studying both the opportunities and challenges that face family businesses. By definition, a family business is defined as one in which more than one family member either owns or works in the business and there is intent to keep the business in the family. The Family Firm Institute reports that the leadership of 39% of family-owned businesses will change hands in the next five years. The future success and sustainability of these family-owned business throughout the nation will be enhanced with academic knowledge acquired by the family's next generation leaders. It is recommended that students also complete the 7-credit hour Business Plan Certificate (Major Code 4810).

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

(Family Business - Major Code 4640; State CIP Code 52.0799 and Business Plan - Major Code 4810; State CIP Code 52.0710)

- Entrepreneurship

Required Courses

Code	Title	Hours
ENTR 225	Family Business	3
ENTR 160	Legal Issues for Small Business	2
BUS 175	Business Professional Skills	3
BUS 243	Human Resource Management	3
PSYC 121	Applied Psychology	3
	Total Semester Hours:	14

Additional Certificate

Code	Title	Hours
	Business Plan Certificate	
	This certificate is designed for students who are interested in opening their own service business providing administrative assistance to businesses. Coursework focuses on fundamental knowledge necessary to own and operate an entrepreneurial venture, evaluating the feasibility of the business idea, and concludes with writing a business plan to start, grow and sustain a business venture. The business plan certificate is recommended for students to add to their Family Business certificate.	
	Total Program Hours: 14	

Franchising Certificate (Spring 2013)

This fourteen credit hour certificate is designed to prepare students to achieve their entrepreneurial dream by becoming a franchisee to one of the more than 5000 franchises in more than 85 different business sectors. These franchisers provide the purchaser (the franchisee) the right and obligation to use a proven business plan including systems and procedures to own and operate their own franchise business. Successful completion of this certificate will provide the student the ability to identify, develop, grow and sustain their career as an owner/operator of a franchise business. It is recommended that students also complete the 7-credit hour Business Plan Certificate (Major Code 4810).

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

(Franchising - Major Code 4650; State CIP Code 52.0702 and Business Plan - Major Code 4810; State CIP Code 52.0710)

- Entrepreneurship

Required Courses

Code	Title	Hours
ENTR 195	Franchising	3
ENTR 160	Legal Issues for Small Business	2
BUS 175	Business Professional Skills	3
MKT 202	Consumer Behavior	3
MKT 205	eMarketing	3
	Total Semester Hours:	14

Additional Certificate

Code	Title	Hours
	Business Plan Certificate	7
	This certificate is designed for students who are interested in opening their own service business providing administrative assistance to businesses. Coursework focuses on fundamental knowledge necessary to own and operate an entrepreneurial venture, evaluating the feasibility of the business idea, and concludes with writing a business plan to start, grow and sustain a business venture. The business plan certificate is recommended for students to add to their Franchising certificate.	
	Total Program Hours: 7-14	

Fashion Merchandising and Design

Fashion Merchandising, A.A.S. (Spring 2013)

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 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.

Students must complete all FASH courses with a “C” or higher to be awarded the AAS degree.

(Major Code 2520; State CIP Code 52.1902)

- Fashion

Associate of Applied Science Degree

First Semester

Code	Title	Hours
FASH 277	Fashion Seminar: Career Options	2
FASH 283	Fashion Internship I	1
FASH 121	Fashion Fundamentals	3
FASH 122	Aesthetics for Merchandising and 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 Hours: 16

Second Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
FASH 242	Consumer Product Evaluation	3
FASH 284	Fashion Internship II	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	
	OR	
ENGL 122	Composition II	3
	Prerequisite: ENGL 121	
		Total Semester Hours: 17

Third Semester

Code	Title	Hours
	Fashion Electives	3
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
		Total Semester Hours: 16

Fourth Semester

Code	Title	Hours
	Electives	2
	Humanities Elective	3
FASH 286	Fashion Internship IV	1
	Prerequisites: FASH 283 and FASH 284 and FASH 285 and 40 hours toward degree in Fashion Merchandising	
MKT 230	Marketing	3
FASH 231	Merchandising Planning and Control	3
	Prerequisite: MATH 120	
FASH 280	Capstone: Industry Topics	3
	Prerequisites: 40 credit hours toward Fashion Merchandising or Design degree to be approved by the department. Students must pass all FASH courses with a grade of "C" or higher	
		Total Semester Hours: 15

Fashion Electives

Code	Title	Hours
FASH 123	Apparel Construction I	4
FASH 130	Fashion Illustration I	3
	Prerequisite: ART 130	
FASH 265	Fashion Product Development	4
	Prerequisites: FASH 123 and FASH 131 and FASH 133 and FASH 130	
FASH 224	History of Costume	3
FASH 268	Field Study: The Market Center	3
	Prerequisite: FASH 121	
		Total Program Hours: 64

Fashion Design, A.A.S. (Spring 2013)

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 67-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.

Students must complete all FASH courses with a “C” or higher to be awarded the AAS degree.

(Major Code 2600; State CIP Code 50.0407)

- Fashion

Associate of Applied Science Degree

First Semester

Code	Title	Hours
FASH 121	Fashion Fundamentals	3
FASH 123	Apparel Construction I	4
FASH 122	Aesthetics for Merchandising and Design	3
ART 130	Drawing I	3
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
	Total Semester Hours: 16	

Second Semester

Code	Title	Hours
FASH 124	Apparel Construction II	4
	Prerequisite: FASH 123 or two years of high school apparel construction training or department approval	
FASH 130	Fashion Illustration I	3
	Prerequisite: ART 130	
FASH 131	Flat Pattern Development	4
	Prerequisite: FASH 123	
FASH 133	Computer Aided Apparel Design	3
	Prerequisite: FASH 122	
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	
	Total Semester Hours: 17	

Third Semester

Code	Title	Hours
	Humanities Electives	3
	Social Science and/or Economics Elective	3
FASH 265	Fashion Product Development	4
	Prerequisites: FASH 123 and FASH 131 and FASH 133 and FASH 130	
FASH 150	Textiles	3
FASH 283	Fashion Internship I	1
FASH 224	History of Costume	3
	Total Semester Hours: 17	

Fourth Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
FASH 279	Fashion Portfolio Development	2
	Prerequisites: FASH 121 and FASH 124 and FASH 265	
FASH 280	Capstone: Industry Topics	3
	Prerequisites: 40 credit hours toward Fashion Merchandising or Design degree to be approved by the department. Students must pass all FASH courses with a grade of "C" or higher	
FASH 284	Fashion Internship II	1
FASH 127	Computer Aided Pattern Development	4
	Prerequisite: FASH 131	
FASH 242	Consumer Product Evaluation	3
BUS 150	Business Communications	3
	Prerequisite: ENGL 121	
	OR	
ENGL 122	Composition II	3
	Prerequisite: ENGL 121	
	Total Semester Hours: 17	

Other Suggested Fashion Courses

Code	Title	Hours
FASH 125	Visual Merchandising	3
FASH 135	Image Management	1
FASH 143	Tailoring	4
	Prerequisite: FASH 124	
FASH 215	Field Study: MAGIC Trade Show	1
	Prerequisite: FASH 121	
FASH 230	Fashion Illustration II	3
	Prerequisite: FASH 130	
FASH 268	Field Study: The Market Center	3
	Prerequisite: FASH 121	
FASH 277	Fashion Seminar: Career Options	2
	Total Program Hours: 67	

Alteration Advanced Certificate (Spring 2013)

The certificate is designed for students who wish to work in the alteration service business. The skills being taught include but not limited to resizing, repairing, hems and hemmings, button replacement, zipper replacement and repair, wedding dress alteration, bridesmaid dress alteration, suit alteration, monogramming and fine tuning tailoring techniques.

This advanced certificate program can be completed in three semesters and will consist of three, four hour courses.

(Major Code 5000; State CIP Code 19.0999)

- Fashion

Prerequisites for Required Courses

Code	Title	Hours
	Students must have a Fashion Design, AAS, or have taken the equivalent courses, or have obtained a waiver from the department chair prior to the beginning of the advanced certificate.	

First Semester

Code	Title	Hours
FASH 143	Tailoring	4
	Prerequisite: FASH 124	
	Total Semester Hours: 4	

Second Semester

Code	Title	Hours
FASH 200	Garment Alterations I	4
	Prerequisite: FASH 143	
	Total Semester Hours: 4	

Third Semester

Code	Title	Hours
FASH 201	Garment Alterations II	4
	Prerequisite: FASH 200	
	Total Semester Hours: 4	
	Total Program Hours: 12	

Visual Merchandising Certificate (Spring 2013)

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.

Students must complete all FASH courses with a "C" or higher to be awarded the AAS degree.

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

(Major Code 7200; State CIP Code 52.1902)

- Gainful Employment - Visual Merchandising
- Fashion

First Semester

Code	Title	Hours
FASH 121	Fashion Fundamentals	3
FASH 125	Visual Merchandising	3
MKT 121	Retail Management	3
ITMD 127	Elements of Floral Design	1
	Total Semester Hours:	10

Second Semester

Code	Title	Hours
	Fashion Elective	3
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 Hours:	8

Fashion Electives

Code	Title	Hours
FASH 130	Fashion Illustration I	3
	Prerequisite: ART 130	
FASH 132	Marketing Communications	3
FASH 150	Textiles	3
FASH 242	Consumer Product Evaluation	3
	Total Program Hours:	**18**

Fire Services Administration

Fire Services Administration, A.A. (Spring 2013)

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 personnel during their 1st five years of employment and provide education for advancement to 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.

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

Selective application. For more information, call 913-895-8405.

Important: Students graduating with an Administration of Justice degree must complete an approved cultural diversity course. Some of the approved courses are able to meet both the cultural diversity requirement and a general education requirement.

Cultural Diversity Course Requirement at JCCC

Prerequisite

Prior to admission into any FIRE degree 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.

(Major Code 2320; State CIP Code 43.0203)

First Semester

Code	Title	Hours
	Social Science Elective	3
	Health and/or Physical Education Elective	1
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 131 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	
FIRE 162	Firefighting Tactics	3
	Prerequisite: FIRE 120	
	Total Semester Hours:	16

Second Semester

Code	Title	Hours
	Humanities Elective	3
	Physical Science, with lab	4
ENGL 122	Composition II	3
	Prerequisite: ENGL 121	
BUS 141	Principles of Management	3
FIRE 136	Fire and Emergency Management	3
	Prerequisite: FIRE 120	
	Total Semester Hours:	16

Third Semester

Code	Title	Hours
	Technical Electives	4
	Oral Communication	3
	Science and/or Math Elective	3

FIRE 220	Fire Management	3
	Prerequisite: FIRE 120	
FIRE 222	Fire Science Law	3
	Prerequisite: FIRE 120	

Total Semester Hours: 16

Fourth Semester

Code	Title	Hours
	Technical Electives	4
	Humanities Elective	3
	Social Science Elective	3
FIRE 201	Leadership in the Fire Service	3
	Prerequisite: FIRE 120	
FIRE 152	Codes/Detection and Suppression Systems	3
	Prerequisite: FIRE 120	

Total Semester Hours: 16

Technical Electives

Code	Title	Hours
FIRE 120	Fire Academy	12
	Prerequisite: HPER 240 and department approval. (Selective Application, call 913-895-8405 for more information.)	
EMS 128	EMS First Responder	5
EMS 131	Emergency Medical Technician	10
	Prerequisite: EMS 128 or equivalent training as determined by the EMS department (military, other medical or fire department, verification of training will be required), associate's degree (transcription required).	
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 CS 205	
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 Scripting and Utilities	3
	Prerequisite: CIS 134	
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 243	Human Resource Management	3
BUS 261	Business Law I	3
MKT 230	Marketing	3
POLS 245	Introduction to Public Administration	3

Total Program Hours: 64

Fire Services Administration Certificate (Spring 2013)

The certificate in Fire Service Administration is offered as a step in the process of receiving an Associate in Arts degree in Fire Services Administration. Those firefighters who have attained state certification as a firefighter will be able to continue their education by completing the certificate requirements.

All six courses that lead to the certificate provide knowledge that can be utilized immediately by the firefighter and provide their fire department with an employee that has significant education in areas that will be of immediate use to the organization.

When ready and available, the student will be able to complete their AA degree in a timely fashion.

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

Prerequisite
Prior to admission into any FIRE degree 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.

(Major Code 6650; State CIP Code 43.0203)

- Fire Science

First Semester

Code	Title	Hours
FIRE 162	Firefighting Tactics	3
	Prerequisite: FIRE 120	
FIRE 220	Fire Management	3
	Prerequisite: FIRE 120	
FIRE 222	Fire Science Law	3
	Prerequisite: FIRE 120	

Total Semester Hours: 9

Second Semester

Code	Title	Hours
FIRE 136	Fire and Emergency Management	3
	Prerequisite: FIRE 120	
FIRE 152	Codes/Detection and Suppression Systems	3
	Prerequisite: FIRE 120	
FIRE 201	Leadership in the Fire Service	3
	Prerequisite: FIRE 120	

Total Semester Hours: 9
Total Program Hours: 18

Game

Game Business Certificate (Spring 2013)

This certificate provides tangible evidence that a student has completed all the requirements to be an entry level game programmer or game business person.

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

(Major Code 4340; State CIP Code 50.0411)

- Computing Sciences and Information Technology

Prerequisites for Required Courses

Code	Title	Hours
	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 131 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 OR	
MATH 173	Precalculus	5
	Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math assessment test	

First Semester

Code	Title	Hours
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 Hours: 14	

Second Semester

Code	Title	Hours
CIS 242	Introduction to System Design and Analysis	3
	Prerequisite: CIS 138 or CS 200 or CS 201 or CS 205	
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 Hours: 11	

Third Semester

Code	Title	Hours
GAME 230	Game Programming II -3D	4
	Prerequisite: GAME 140	
CIS 262	Project Management	3
	Prerequisite: CIS 242	
	Total Semester Hours: 7	
	Total Program Hours: 32	

Game Development, A.A.S. (Spring 2013)

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; State CIP Code 50.0411)

- Computing Sciences and Information Technology

Associate of Applied Science Degree

Prerequisites for Required Courses

Code	Title	Hours
	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 department.	
CIS 134	Programming Fundamentals	4
CDTP 135	Desktop Photo Manipulation I: Photoshop	1

First Semester

Code	Title	Hours
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 131 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	
	OR	
	Any Precalculus/Calculus Course	3
	Total Semester Hours: 17	

Second Semester

Code	Title	Hours
GAME 140	Game Programming I - 2D	4
	Prerequisite: CS 200	
CIS 235	Object-Oriented Programming Using C++	4
	Prerequisite: CS 200	
	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 123	Concept Art for Animation	3
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 Hours: 18	

Third Semester

Code	Title	Hours
	Game Elective	3-4
	Health and/or Physical Education Elective	1
ENGL 150	Digital Narratives	3
	Prerequisite: ENGL 121	
GAME 230	Game Programming II -3D	4
	Prerequisite: GAME 140	
ANI 145	Introduction to 3D Animation	3
	Prerequisite or corequisite: ANI 250	
GAME 180	Artificial Intelligence for Games	3
	Prerequisite: CS 200	
	Total Semester Hours: 17-18	

Fourth Semester

Code	Title	Hours
	Social Science and/or Economics Elective	3
GAME 250	Game Programming III-Capstone	4
	Prerequisites: GAME 200 and GAME 230 and ANI 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
ENGL 140	Writing for Interactive Media	3
	Prerequisite: ENGL 121	
	Total Semester Hours: 17	

Game Electives

Code	Title	Hours
CIM 130	Interactive Media Concepts	2
	Prerequisite or corequisite: ENGL 121	
CIM 140	Interactive Media Assets	4
	Prerequisites: CDTP 135 AND prerequisite or corequisite CIM 130	
ANI 245	Character Animation	3
	Prerequisite: ANI 250	
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	
	Total Program Hours: 69-70	

Game Narrative Certificate (Spring 2013)

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.

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

(Major Code 4130; State CIP Code 50.0411)

- Gainful Employment - Game
- Computing Sciences and Information Technology

Prerequisites for Required Courses

Code	Title	Hours
	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 131 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	
	OR	
MATH 173	Precalculus	5
	Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math assessment test	

First Semester

Code	Title	Hours
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 semester only.	
ENGL 140	Writing for Interactive Media	3
	Prerequisite: ENGL 121	
GAME 101	Computer Game Creation	4
	Total Semester Hours: 14	

Second Semester

Code	Title	Hours
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 Hours: 14	

Third Semester

Code	Title	Hours
GAME 230	Game Programming II -3D	4
	Prerequisite: GAME 140	
	Total Semester Hours: 4	
	Total Program Hours: 32	

Game Programming Certificate (Spring 2013)

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.

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

(Major Code 4120; State CIP Code 50.0411)

- Gainful Employment - Game
- Computing Sciences and Information Technology

Prerequisites for Required Courses

Code	Title	Hours
	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 131 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	
	OR	
MATH 173	Precalculus	5
	Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math assessment test	

First Semester

Code	Title	Hours
GAME 101	Computer Game Creation	4
GAME 110	Flash Gaming	4
GAME 200	Game Design	3
	Total Semester Hours: 11	

Second Semester

Code	Title	Hours
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 Hours: 11	

Third Semester

Code	Title	Hours
GAME 230	Game Programming II -3D	4
	Prerequisite: GAME 140	
GAME 255	Mobile Game Programming	4
	Prerequisites: GAME 140 and GAME 200	
	Total Semester Hours: 8	
	Total Program Hours: 30	

General Sciences

General Sciences, A.S. (Spring 2013)

An Associate of Science in General Sciences degree provides students a broad range of courses that can be transferred to degree programs at a four-year college or university. This degree provides students with exposure to many different subjects and perspectives. It requires 64 college-level credit hours, with 34 hours of general education requirements and 30 hours of electives. Many students choose to earn an Associate of Science in General Sciences degree prior to transferring to a four-year college or university. (See sample degree program below.)

IMPORTANT - Students planning to graduate with a General Sciences degree must complete one of the approved cultural diversity courses. Some of the approved courses are able to meet both the cultural diversity requirement and a general education requirement. To see a complete list of approved courses, click on the link provided below.

Cultural Diversity Course Requirement at JCCC

(Major Code 1010; State CIP Code 24.0101)

Associate of Science Degree

First Semester

Code	Title	Hours
	Electives	7
	Communications Elective	3
	Humanities Elective	3
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
	Total Semester Hours: 16	

Second Semester

Code	Title	Hours
	Electives	6
	Social Science/Economics Elective	3
	Health/Physical Education	1
ENGL 122	Composition II	3
	Prerequisite: ENGL 121	
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 Hours: 16	

Third Semester

Code	Title	Hours
	Electives	9
	Humanities Elective	3
	Science course with Lab	4-5
	Total Semester Hours: 16-17	

Fourth Semester

Code	Title	Hours
	Electives	8
	Science and/or Mathematics Elective	4-5
	Social Science/Economics Elective	3
	Total Semester Hours: 15-16	
	Total Program Hours: 64	

Note: The Science and Mathematics area requires 12 hours, which must include at least one course in mathematics and at least one in a lab science.

General Studies

General Studies, A.G.S. (Spring 2013)

The associate of general studies degree from JCCC requires completion of 64 college-level credit hours within specified course categories with a 2.0 or higher GPA, and is designed for students who wish to receive a degree for completion of a more general program of study. The degree does not require an academic major or an emphasis in a specific career program. Courses may not be used to satisfy requirements in more than one category.

(Major Code 1050; State CIP Code 24.0101)

Associate of General Studies

First Semester

Code	Title	Hours
	Electives	7
	Communications Skills	3
	Global Issues/Diversity	3
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
	Total Semester Hours: 16	

Second Semester

Code	Title	Hours
	Electives	7
	Culture & Ethics-Historical Perspective	3
	Modes of Inquiry-Scientific	3
	Computer Skills	3
	Total Semester Hours: 16	

Third Semester

Code	Title	Hours
	Electives	8
	Health and/or Physical Education Elective	2
	Mathematics	3
	The Arts	3
	Total Semester Hours: 16	

Fourth Semester

Code	Title	Hours
	Electives	10
	Culture & Ethics-Cultural Perspective	3
	Modes of Inquiry-Social	3
	Total Semester Hours: 16	
	Total Program Hours: 64	

Geographic Information Systems

Geographic Info Systems Cert (Spring 2013)

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. Visit http://mcckc.edu/progs/gis/geographicinfo/certificates.asp

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.

Certificate granted by Metropolitan Community College

Specific Program Requirements-must be taken MCC

Code	Title	Hours
COLL 100	First Year Seminar	1
GEOG 120	Introduction to Geographic Information Systems	3
GEOG 220	Geographic Info Systems Database & Design	3
GEOG 224	Applications in Geographic Information Systems	3
GEOG 228	Administrative Issues in Geographic Info Systems	3
GEOG 230	Geographic Information Systems Internship	1-3
	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

Code	Title	Hours
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
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	

Specific Program Requirements-taken at JCCC or MCC

Code	Title	Hours
	Choose ONE course from the following list:	
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	
	OR	
CSIS 128	Web Development - MCC course	3
	OR	
CSIS 144	Introduction to SQL with Oracle - MCC course	3

Select two courses from the following list:

Code	Title	Hours
ADMJ 121	Introduction to Administration of Justice	3
BIOL 121	Introductory Biology for Non-Majors	4
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	
MKT 230	Marketing	3
DRAF 120	Introduction to Drafting	2
	AND	
DRAF 130	Introduction to CAD Concepts - AutoCAD	3
	Prerequisite: DRAF 120 or department approval	
	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 Hours: 34-42	

Graphic Design

Graphic Design, A.A.S. (Spring 2013)

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.

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.

(Major Code 2290; State CIP Code 50.0409)

- Graphic Design

Associate of Applied Science Degree

Qualifier Semester

Code	Title	Hours
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 Hours: 9	

Fall Semester

Code	Title	Hours
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 Hours: 15	

Spring Semester

Code	Title	Hours
	Humanities Electives	3
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	
	Total Semester Hours: 15	

Fall Semester

Code	Title	Hours
	Humanities Electives	3
	Social Science and/or Economics Elective	3

	Health and/or Physical Education Elective	1
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	

Total Semester Hours: 16

Spring Semester

Code	Title	Hours
	Technical/Studio Elective	1
	Science and/or Math Elective	3
GDES 236	Electronic Production	3
	Prerequisites: GDES 230 and GDES 231 and GDES 235	
GDES 244	Communication Systems	3
	Prerequisites: GDES 230 and 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.	

Total Semester Hours: 16

Technical/Studio Electives

Code	Title	Hours
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 104 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	
	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.	

Total Program Hours: 71

Health Care Interpreting

Health Care Interpreting Certificate (Spring 2013)

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.

Each year we accept up to **12 new full-time students** who are fluent in English and Spanish into the HCI program. This is primarily an evening program that students begin during the fall semester. We encourage you to contact Christina Wolff de Casquino if you have any questions about the selective process. Final selection for new HCI students is made in July.

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. Please note, however, that HCI 101 is not offered during the summer semester.

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.

REQUIREMENTS: All students who participate in shadowing and practicum assignments at Truman Medical Centers (TMC) must complete specific requirements. At the end of the fall semester, all students must complete the following information. 1) Paid background checks. These background checks are for GSA-Excluded Parties List, Family Care Registry Safety, ABS- Police/Criminal background check for Missouri and the OIG-U.S. Department of Human and Health Services List of Excluded Individuals/Entities. This background check is for GSA Excluded Parties Testing System, Police/Criminal Background Check for Missouri, and the U.S. Department of Human and Health Services List of Excluded Individuals/Entities. 2) Name and Social Security Number. 3)Proof of up-to-

date immunizations - records must include a TB test and Hepatitis B vaccinations. 4) HIPAA training - a printout that proves HIPAA training has been completed is required. 5) Test results - results from the Clinical Nurse Educator Orientation are required.

This program requires a professional liability insurance fee. Students will be notified via their JCCC student e-mail account when are required to pay a $16 fee. This fee needs to be paid once enrolled in HCI 180. The dollar amount for fees is subject to change.

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

(Major Code 4390; State CIP Code 16.0103)

- Health Care Interpreting

Fall Semester

Code	Title	Hours
HCI 110	Introduction to Interpreting Prerequisites: Interview and permission of the facilitator. Potential indicators of proficiency may be required.	3
HCI 120	Interpreting Skills I Prerequisite or corequisite: HCI 110 with a grade of "C" or higher	3
HC 101	Introduction to Health Care Delivery	3
	Total Semester Hours: 9	

Spring Semester

Code	Title	Hours
HCI 130	Interpreting Skills II Prerequisites: HCI 110 with a grade of "C" or higher and HCI 120 with a grade of "C" or higher	3
HCI 140	Spanish Medical Interpreting 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 or HC 130	3
HC 130	Medical Terminology for Healthcare Professions	3
	Total Semester Hours: 9	

Summer/Fall Semester

Code	Title	Hours
HCI 180	Medical Interpreting Practicum 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	2
	Total Semester Hours: 2	
	Total Program Hours: 20	

Health Information Systems

Health Information Management Redesign Specialist (Spring 2013)

The health information management redesign specialist certificate will prepare graduates to support the redesign of workflows within health care settings to gain the quality and efficiency benefits of electronic health record systems, while maintaining individual privacy and security.

(Major Code 4460; State CIP Code 51.0706)

Required Courses

Code	Title	Hours
HCIS 255	Introduction to Information and Computer Science Prerequisite: Department approval	2
HCIS 271	The Culture of Health Care Prerequisite: Department approval	2
HCIS 272	Terminology in Health Care Settings Prerequisite: Department approval	2
HCIS 273	Quality Improvement Prerequisite: Department approval	2
HCIS 274	Healthcare Workflow Process Analysis and Redesign Prerequisite: Department approval	2
HCIS 275	Health Information Systems Prerequisite: Department approval	2
HCIS 276	Usability and Human Factors Prerequisite: Department approval	2
	Total Semester Hours: 14	
	Total Program Hours: 14	

Health Information Systems Specialist Certificate (Spring 2013)

The health information systems specialist certificate program prepares graduates to support the technology deployed in clinical and public health settings on an ongoing basis. Graduates will learn to maintain health information systems through patching and upgrading of software and one-on-one support in a traditional "help desk" environment with specific considerations for health care information systems.

(Major Code 4450; State CIP Code 51.0709)

Required Courses

Code	Title	Hours
HCIS 255	Introduction to Information and Computer Science Prerequisite: Department approval	2
HCIS 261	Networking and Health Information Exchange Prerequisite: Department approval	2
HCIS 262	Customer Service in the Health Environment Prerequisite: Department approval	2
HCIS 263	Working with Health Information Technology Systems Prerequisite: Department approval	2
HCIS 264	Configuring Electronic Health Records Prerequisite: Department approval	2
HCIS 265	Installation and Maintenance of Health IT Systems Prerequisite: Department approval	2
HCIS 266	Vendor-Specific Electronic Health Systems Prerequisite: Department approval	2
	Total Semester Hours: 14	
	Total Program Hours: 14	

Health Information Technology

Health Information Technology, A.A.S. (Spring 2013)

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 816-604-4245 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.

Degree granted by Metropolitan Community College

Associate of Applied Science Degree

General Education Requirements-must be taken at JCCC

Code	Title	Hours
	Elective (Intro to Psych strongly recommended)	3
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

American Institutions

Code	Title	Hours
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

Code	Title	Hours
CIS 124	Introduction to Computer Concepts and Applications	3

Specific Program Requirements-taken at MCC-Penn Valley

Code	Title	Hours
COLL 100	First Year Seminar	1
POLS 153	The Missouri Constitution	1
HITE 101	Intro to Health Information Technology Profession	2
HITE 102	Health Records Systems, Analysis and Control	3.5
HITE 103	Medical Terminology for Health Records	3
HITE 106	Health Care Statistics	3
HITE 108	Legal Aspects of Health Info Tech Profession	2
HITE 109	Professional Practice I	2.5
HITE 110	Pharmacology	1.5
HITE 200	Introduction to Classification Systems	1
HITE 201	Quality Management	3
HITE 202	Class Systems/Nomenclatures/Indexes & Registers I	4
HITE 203	Professional Practice II	2
HITE 207	Class System/Nomenclatures/Indexes & Registers II	3
HITE 208	Professional Practice III	2
HITE 210	Class Systems/Nomenclatures for Ambulatory Care	3
HITE 211	Organization/Administration in Heath Information	3
HITE 214	Introduction to Healthcare Reimbursement	3
HITE 216	Technology for Health Information	3

Total Program Hours: 70.5

Health Occupations

Certified Medication Aide Certificate (Spring 2013)

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.

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; State CIP Code 51.2603)

Health Occupations - Nursing Related

Required Course

Code	Title	Hours
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 Semester Hours: 4
Total Program Hours: 4

Certified Medication Aide Update Certificate (Spring 2013)

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.

(Major Code 3600; State CIP Code 51.2603)

- Health Occupations - Nursing Related

Required Course

Code	Title	Hours
AVHO 108	Certified Medication Aide Update (CMA-U)	1
	Prerequisites: Proof of Kansas CMA certification and Proof of Kansas CNA Certification	

Total Semester Hours: 1
Total Program Hours: 1

Certified Nurse Aide Certificate (Spring 2013)

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.

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; State CIP Code 51.3902)

- Health Occupations - Nursing Related

Required Course

Code	Title	Hours
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 skin test - negative results within the last year.	
	Current CPR for Health Care Providers and a Social Security card.	

Total Semester Hours: 5
Total Program Hours: 5

Certified Nurse Aide Refresher Certificate (Spring 2013)

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.

(Major Code 3540; State CIP Code 51.3902)

- Health Occupations - Nursing Related

Required Course

Code	Title	Hours
AVHO 103	Certified Nurse Aide Refresher Course (CNA-R)	1
	Prerequisite: Kansas CNA Certification	

Total Semester Hours: 1
Total Program Hours: 1

Dental Assisting, A.A.S. (Spring 2013)

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 816-604-4237 for an application packet, which includes deadlines, program prerequisites and admission requirements. Visit http://mcckc.edu/main.asp?P=AtoZIndex#A

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.

Degree Granted by Metropolitan Community College

Associate of Applied Science

General Education Requirements-can be taken at JCCC

Code	Title	Hours
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

Code	Title	Hours
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

Code	Title	Hours
	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 department approval	
	OR	
BIOL 140	Human Anatomy	4
	AND	
BIOL 225	Human Physiology	4
	Prerequisites or corequisites: Either CHEM 122 or (CHEM 124 and CHEM 125) and either BIOL 140 or BIOL 144	
BIOL 230	Microbiology	3
	Prerequisite: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry	
BIOL 231	Microbiology Lab	2
	Prerequisite: 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

Code	Title	Hours
COLL 100	First Year Seminar	1
POLS 153	The Missouri Constitution	1
DENA 100	Introduction to Dental Assisting	1
DENA 101	Body Structure and Function	2
DENA 102	Head and Neck Anatomy	2
DENA 103	Dental Anatomy	2
DENA 104	Dental Emergencies and Pharmacology	1
DENA 105	Dental Materials I	2
DENA 108	Oral Microbiology and Infection Control	2
DENA 110	Chairside Assisting I	5
DENA 115	Dental Radiology I	4
DENA 125	Clinical Experience I	2
DENA 205	Dental Materials II	3
DENA 210	Chairside Assisting II	5
DENA 215	Dental Radiology II	2
DENA 225	Dental Office Management	2
DENA 230	Oral Pathology	1
DENA 250	Clinical Experience II	4
DENA 260	Dental Assisting Seminar	2
	Total Program Hours: 78-80	

Dental Assisting Certificate (Spring 2013)

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 816-604-4237 for an application packet, which includes deadlines, program prerequisites and admission requirements. Visit http://mcckc.edu/main.asp?P=AtoZIndex#A

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.

Certificate granted by Metropolitan Community College

Specific Program Requirements-must be taken at JCCC

Code	Title	Hours
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-must be taken at MCC-Pen Valley

Code	Title	Hours
COLL 100	First Year Seminar	1
DENA 100	Introduction to Dental Assisting	1
DENA 101	Body Structure and Function	2
DENA 102	Head and Neck Anatomy	2
DENA 103	Dental Anatomy	2
DENA 104	Dental Emergencies and Pharmacology	1
DENA 105	Dental Materials I	2
DENA 108	Oral Microbiology and Infection Control	2
DENA 110	Chairside Assisting I	5
DENA 115	Dental Radiology I	4
DENA 125	Clinical Experience I	2
DENA 205	Dental Materials II	3
DENA 210	Chairside Assisting II	5
DENA 215	Dental Radiology II	2
DENA 225	Dental Office Management	2
DENA 230	Oral Pathology	1
DENA 250	Clinical Experience II	4
DENA 260	Dental Assisting Seminar	2
	Total Program Hours: 52	

Home Health Aide Certificate (Spring 2013)

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; State CIP Code 51.2602)

- Health Occupations - Nursing Related

Required Course

Code	Title	Hours
AVHO 106	Home Health Aide (HHA) Prerequisites: Proof of Kansas CNA certification and appropriate Compass reading test score Documentation of current TB skin test - negative results within the last year. Current CPR for Health Care Providers card and Social Security Card.	1
	Total Semester Hours: 1	
	Total Program Hours: 1	

IV Therapy for LPNs Certificate (Spring 2013)

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. Enrollment in this course requires a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses, and is due prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC.

(Major Code 3640; State CIP Code 51.3901)

- IV Therapy for LPNs

Required Course

Code	Title	Hours
AVHO 115	IV Therapy For LPNs 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. JCCC Student Professional Liability Insurance	3
	Total Semester Hours: 3	
	Total Program Hours: 3	

Occupational Therapy Assistant, AAS (Spring 2013)

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 816-604-4235 for an application packet,

which includes deadlines, program prerequisites and admission requirements. Visit http://mcckc.edu/main.asp?P=AtoZIndex#A

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.

Degree granted by Metropolitan Community College

- Nursing

Associate of Applied Science Degree

General Education Requirements-must be taken at JCCC

Code	Title	Hours
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

Code	Title	Hours
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

Code	Title	Hours
CHEM 122	Principles of Chemistry	5
HC 130	Medical Terminology for Healthcare Professions	3

Specific Program Requirements-must be taken at JCCC

Code	Title	Hours
	Option 1	
BIOL 144	Human Anatomy and Physiology	5
	AND	
BIOL 145	Human Anatomy and Physiology Dissection	1
	Prerequisites: BIOL 144 and department 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 or corequisites: Either CHEM 122 or (CHEM 124 and CHEM 125) 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

Code	Title	Hours
COLL 100	First Year Seminar	1
POLS 153	The Missouri Constitution	1
EMS 100	Basic Emergency Patient Care	1
OTHA 100	Introduction to Occupational Therapy	2
OTHA 102	Documentation Guidelines	2
OTHA 103	Clinical Conditions	2
OTHA 106	Therapeutic Interventions I	4
OTHA 116	Level I Fieldwork I	1
OTHA 118	Assistive Technology	2
OTHA 120	Pediatrics	3
OTHA 121	Level I Fieldwork II	0.5
OTHA 130	Analysis of Physical Performance	3
OTHA 154	Applied Neurology	2
OTHA 201	Mental Health	2.5
OTHA 202	Physical Dysfunction	3
OTHA 203	Gerontology	3
OTHA 208	Therapeutic Interventions II	2
OTHA 212	Level I Fieldwork III	2
OTHA 217	Fieldwork Seminar	3
OTHA 222	Level II Fieldwork	12
	Total Program Hours: 78-80	

Physical Therapist Assistant, A.A.S (Spring 2013)

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 816-604-4241 for an application packet, which includes deadlines, program prerequisites and admission requirements. Visit http://mcckc.edu/main.asp?P=AtoZIndex#A

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.

Degree granted by Metropolitan Community College

Associate of Applied Science Degree

General Education Requirements-must be taken at JCCC

Code	Title	Hours
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

Code	Title	Hours
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

Code	Title	Hours
CHEM 122	Principles of Chemistry	5
HC 130	Medical Terminology for Healthcare Professions	3

Specific Program Requirements-must be taken at JCCC

Code	Title	Hours
	Option 1	
	Note: BIOL 144 must be taken first	
BIOL 144	Human Anatomy and Physiology	5
	AND	
BIOL 145	Human Anatomy and Physiology Dissection	1
	Prerequisites: BIOL 144 and department approval	
	Option 2	
	Note: BIOL 140 and CHEM 122 must be taken before BIOL 225.	
BIOL 140	Human Anatomy	4
	AND	
BIOL 225	Human Physiology	4
	Prerequisites or corequisites: Either CHEM 122 or (CHEM 124 and CHEM 125) 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

Code	Title	Hours
COLL 100	First Year Seminar	1
POLS 153	The Missouri Constitution	1
PTHA 151	Introduction to Physical Therapy	2
EMS 100	Basic Emergency Patient Care	1
PTHA 152	Physical Therapy Fundamentals I	4
PTHA 153	Kinesiology	4
PTHA 154	Applied Neurology	2
PTHA 155	Rehabilitation	4
PTHA 158	Therapeutic Exercise	4
PTHA 159	Orthopedic Pathology	2
PTHA 160	Medical Diseases	2
PTHA 161	Physical Therapy Fundamentals II	4
PTHA 162	Clinical Experience I	2
PTHA 164	Pediatrics and Gerontology	2
PTHA 170	Clinical Experience II	2
PTHA 171	Clinical Seminar	2
PTHA 172	Clinical Experience II	12
	Total Program Hours: 77-79	

Radiologic Technology, A.A.S. (Spring 2013)

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 816-604-4243 for an application packet, which includes deadlines, admission requirements and options for meeting academic criteria.Visit http://mcckc.edu/main.asp?P=AtoZIndex#A

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.

Degree granted by Metropolitan Community College

Associate of Applied Science Degree

Program Prerequisites

Code	Title	Hours
BIOL 140	Human Anatomy (course must be taken at JCCC)	4
	Note: must pass with a "C" or higher	
MATH 116	Intermediate Algebra (course must be taken at JCCC)	3
	Prerequisite: MATH 115 with a grade of "C" or higher or appropriate score on the math placement test	
	Note: must pass with a "C" or higher	
RATE 150	Introduction to Radiologic Technology (course must be taken at MCC)	2
	Note: KS students must pay MCC's tuition rate for this course and must pass with a "C" or higher	

General Education Requirements-must be taken at JCCC

Code	Title	Hours
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

Code	Title	Hours
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 Requirement-must be taken at JCCC

Code	Title	Hours
HC 130	Medical Terminology	3

Specific Program Requirements-taken at MCC-Penn Valley

Code	Title	Hours
COLL 100	First Year Seminar	1
POLS 153	The Missouri Constitution	1
RATE 160	Fundamentals of Radiologic Technology	2
RATE 165	Patient Care	3
RATE 171	Radiographic Imaging I	3
RATE 172	Radiographic Procedures I	3
RATE 173	Clinical Practice I	3
RATE 174	Radiographic Imaging II	2
RATE 175	Clinical Practice II	4
RATE 176	Radiographic Procedures II	3
RATE 178	Clinical Practice III	4
RATE 180	Digital Imaging Environment	2
RATE 270	Radiation Biology and Protection	3
RATE 278	Radiologic Pathology	2
RATE 279	Radiographic Procedures III	2
RATE 280	Clinical Practice IV	5
RATE 281	Radiation Physics	3
RATE 282	Clinical Practice V	5
RATE 283	Final Seminar	2
RATE 285	Imaging Modalities	2

Total Program Hours: 79

Rehabilitative Aide (Spring 2013)

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.

(Major Code 3620; State CIP Code 51.2604)

- Health Occupations - Nursing Related

Required Course

Code	Title	Hours
AVHO 112	Rehabilitative Aide (RA)	2
	Prerequisite: Proof of current Kansas CNA certification	

Total Semester Hours: 2
Total Program Hours: 2

Surgical Technology, A.A.S. (Spring 2013)

The Surgical Technology Certificate program is granted by Metropolitan Community College, but coordinated at JCCC

Surgical technologists work closely with surgeons, anesthesiologists and RNs in hospital operating rooms and outpatient surgery centers. They prepare operating rooms for surgery, make sure surgical equipment works properly, respond to the needs of the surgical team and ensure safe and sterile operating conditions.

Our program features skills labs with state-of-the-art equipment. You'll learn procedures, sterilization techniques, instrument set-ups, vital signs, patient-care techniques, assessment and treatment of emergencies, basic principles of medicine and surgery, trauma emergencies and more. And you'll get real-world clinical experience at area hospitals.

This program prepares you for national certification, Certified Surgical Technologist (CST).

Accreditation: The Commission on Accreditation of Allied Health Education Program (CAAHEP).

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 816-604-4664 for an application packet, which includes deadlines, program prerequisites, and admission requirements. Visit http://mcckc.edu/main.asp?P=AtoZIndex#A

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.

Degree granted by Metropolitan Community College

Associate of Applied Science Degree

The following courses should be taken first at JCCC

Code	Title	Hours
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 or corequisites: Either CHEM 122 or (CHEM 124 and CHEM 125) and either BIOL 140 or BIOL 144	
BIOL 230	Microbiology	3
	Prerequisite: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry	
BIOL 231	Microbiology Lab	2
	Prerequisite: BIOL 231 students must be currently enrolled in BIOL 230 or have successfully completed BIOL 230 within the last three years.	
HC 130	Medical Terminology for Healthcare Professions	3
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
	OR	

American Institutions

Code	Title	Hours
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	

Specific Program Requirements-taken at MCC-Penn Valley

Code	Title	Hours
COLL 100	First Year Seminar	1
POLS 153	The Missouri Constitution	1
STNU 100	Introduction to Surgical Technology	2
STNU 101	Care of the Surgical Patient	3
STNU 102	Principles of Surgical Technology I	5
STNU 103	Principles of Surgical Technology II	4
STNU 105	Pharmacology for the Surgical Technologist	2
STNU 120	Surgical Procedures I	4
STNU 121	Clinical Procedures I	
STNU 130	Surgical Procedures II	4
STNU 131	Clinical Procedures II	2
STNU 140	Surgical Procedures III	4
STNU 141	Clinical Procedures III	2
	Total Program Hours: 66-69	

Surgical Technology Cert (Spring 2013)

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 816-604-4664 for an application packet, which includes deadlines, program prerequisites, and admission requirements. Visit http://mcckc.edu/progs/stnu/degreeinfo/certs.asp.

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.

Certificate granted by Metropolitan Community College

(Major Code 8190)

The following courses should be taken first at JCCC

Code	Title	Hours
BIOL 144	Human Anatomy and Physiology	5
	OR	
BIOL 140	Human Anatomy	4
	AND	
BIOL 225	Human Physiology	4
	Prerequisites or corequisites: Either CHEM 122 or (CHEM 124 and CHEM 125) and either BIOL 140 or BIOL 144	
CHEM 122	Principles of Chemistry	5
HC 130	Medical Terminology for Healthcare Professions	3
BIOL 230	Microbiology	3
	Prerequisite: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry	
BIOL 231	Microbiology Lab	2
	Prerequisite: BIOL 231 students must be currently enrolled in BIOL 230 or have successfully completed BIOL 230 within the last three years.	

Specific Program Requirements-taken at MCC-Penn Valley

Code	Title	Hours
COLL 100	First Year Seminar	1
STNU 100	Introduction to Surgical Technology	2
STNU 101	Care of the Surgical Patient	3
STNU 102	Principles of Surgical Technology I	5
STNU 103	Principles of Surgical Technology II	4
STNU 105	Pharmacology for the Surgical Technologist	2
STNU 120	Surgical Procedures I	4
STNU 121	Clinical Procedures I	2
STNU 130	Surgical Procedures II	4
STNU 131	Clinical Procedures II	2
STNU 140	Surgical Procedures III	4
STNU 141	Clinical Procedures III	2
	Total Program Hours: 53-56	

Heating, Ventilation and Air Conditioning Technology

General Basic HVAC Certificate (Spring 2013)

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; State CIP Code 47.0201)

- HVAC

Required Courses

Code	Title	Hours
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 Hours: 10
Total Program Hours: 10

General Basic HVAC Installation and Duct Fabrication Cert. (Spring 2013)

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 19 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.

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

(Major Code 3780; State CIP Code 47.0201)

- Gainful Employment - HVAC
- HVAC

First Semester

Code	Title	Hours
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 Hours: 10

Second Semester

Code	Title	Hours
INDT 125	Industrial Safety	3
HVAC 167	Sheet Metal Layout and Fabrication	3
MATH 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	

Total Semester Hours: 9
Total Program Hours: 19

General Basic HVAC Maintenance Certificate (Spring 2013)

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.

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

(Major Code 3790; State CIP Code 47.0201)

- Gainful Employment - HVAC
- HVAC

First Semester

Code	Title	Hours
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 Hours: 13

Second Semester

Code	Title	Hours
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 Hours: 10
Total Program Hours: 23

General Basic HVAC Sales, Design and Estimating Cert. (Spring 2013)

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.

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

(Major Code 3800; State CIP Code 47.0201)

- Gainful Employment - HVAC
- HVAC

First Semester

Code	Title	Hours
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 Hours: 10

Second Semester

Code	Title	Hours
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 Hours: 10
Total Program Hours: 20

HVAC Commercial Service Technician, A.A.S. (Spring 2013)

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; State CIP Code 47.0201)

- HVAC

Associate of Applied Science Degree

First Semester

Code	Title	Hours
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 Hours: 18	

Second Semester

Code	Title	Hours
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 Hours: 14	

Third Semester

Code	Title	Hours
	Social Science and/or Economic Elective	3
MATH 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
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 Hours: 15	

Fourth Semester

Code	Title	Hours
	Technical Elective	3
	General Education Elective	3
	Humanities Elective	3
HVAC	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	
	Total Semester Hours: 17	

Technical Electives

Code	Title	Hours
HVAC 125	Energy Alternatives	2
HVAC 271	HVAC Internship	3
	Prerequisite: Department 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

Code	Title	Hours
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
SPD 120	Interpersonal Communication	3

Total Program Hours: 64

HVAC Commercial Service Technician Certificate (Spring 2013)

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.

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

(Major Code 6250; State CIP Code 47.0201)

- Gainful Employment - HVAC
- HVAC

Fall Semester

Code	Title	Hours
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 Hours: 14	

Spring Semester

Code	Title	Hours
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 Hours: 11

Fall Semester

Code	Title	Hours
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 Hours: 14
		Total Program Hours: 39

HVAC Installation Technician Certificate (Spring 2013)

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.

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

(Major Code 6270; State CIP Code 47.0201)

- Gainful Employment - HVAC
- HVAC

First Semester

Code	Title	Hours
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 Hours: 15

Second Semester

Code	Title	Hours
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 Hours: 13
		Total Program Hours: 28

HVAC Residential Service Technician, A.A.S. (Spring 2013)

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; State CIP Code 47.0201)

- HVAC

Associate of Applied Science Degree

First Semester

Code	Title	Hours
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 Hours: 18

Second Semester

Code	Title	Hours
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 Hours: 15

Third Semester

Code	Title	Hours
	Technical Electives	4
	Social Science and/or Economics Elective	3
MATH 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
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	

Total Semester Hours: 17

Fourth Semester

Code	Title	Hours
	Technical Electives	4
	General Education Elective	3
	Humanities Elective	3
HVAC 235	Residential Heat Pump Systems	4
	Prerequisites: HVAC 121 and either HVAC 123 or ELTE 123	

Total Semester Hours: 14

Technical Electives

Code	Title	Hours
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: Department approval required	
HVAC 291	Independent Study	1-7

General Education Electives

Code	Title	Hours
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
SPD 120	Interpersonal Communication	3

Total Program Hours: 64

HVAC Residential Service Technician Certificate (Spring 2013)

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.

Suggested/Sample Course Sequence
The sequence taken by the student may vary depending on prerequisites, course availability, and personal/ professional responsibilities.
(Major Code 6260; State CIP Code 47.0201)

- Gainful Employment - HVAC
- HVAC

Fall Semester

Code	Title	Hours
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 Hours: 14

Spring Semester

Code	Title	Hours
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 Hours: 13

Fall Semester

Code	Title	Hours
	Technical Electives	3-4
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	

Total Semester Hours: 11-12

Technical Electives

Code	Title	Hours
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: Department approval required	
HVAC 291	Independent Study	1
CPCA 105	Introduction to Personal Computers: Windows	1
INDT 125	Industrial Safety	3

Total Program Hours: 38-39

Horticulture

Horticultural Sciences, A.A.S. (Spring 2013)

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.

(Horticultural Sciences - Major Code 2150; State CIP Code 01.0601 and Business Plan - Major Code 4810; State CIP Code 52.0710)

- Science

Associate of Applied Science

First Semester

Code	Title	Hours
HORT 201	Introduction to Horticultural Science	4
HORT 214	Woody Plants I, Deciduous	3
BIOL 125	General Botany	5
HORT 220	Herbaceous Plants	3
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
	Total Semester Hours: 18	

Second Semester

Code	Title	Hours
	Social Science/Economics Elective	3
	Health and/or Physical Education Elective	1
HORT 205	Plant Propagation	3
	Prerequisite: HORT 201 or department approval	
HORT 215	Woody Plants II, Evergreens	3
HORT 260	Horticulture Soils	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 Semester Hours: 16	

Third Semester

Code	Title	Hours
	Electives (see list below)	6-8
	Humanities/Art Elective	3
HORT 140	Turfgrass I	3
HORT 235	Landscape Maintenance and Techniques	3
	Total Semester Hours: 15-17	

Fourth Semester

Code	Title	Hours
	Horticulture Electives	6-8
HORT 160	Garden Center Operations	3
HORT 225	Plant Problems	3
	Prerequisites: HORT 214 and HORT 220 or department approval	
HORT 270	Horticulture Internship	3
	Prerequisite: Department approval	
	Total Semester Hours: 15-17	

Horticulture Electives

Code	Title	Hours
HORT 135	Landscape Design	3
HORT 240	Turfgrass II	3
	Prerequisite: HORT 140	
HORT 265	Landscape Construction	3
HORT 165	Arboriculture	3
HORT 255	Pest Control Management	3
FLR 130	Principles of Traditional Design	3
FLR 150	Contemporary Design Styles	3

List of Electives

Code	Title	Hours
BUS 140	Principles of Supervision	3
BUS 150	Business Communications	3
	Prerequisite: ENGL 121	
FL 130	Elementary Spanish I	5
BIOL 121	Introductory Biology for Non-Majors	4
CHEM 122	Principles of Chemistry	5
HORT 150	Fruits, Vegetables and Herb Crops	2

Additional Certificate

Code	Title	Hours
	Business Plan Certificate	7
	This certificate is designed for students who are interested in opening their own service business providing administrative assistance to businesses. Coursework focuses on fundamental knowledge necessary to own and operate an entrepreneurial venture, evaluating the feasibility of the business idea, and concludes with writing a business plan to start, grow and sustain a business venture. The business plan certificate is recommended for students to add to their Horticultural Sciences degree.	

Total Program Hours: 64-75

Horticultural Sciences Certificate (Spring 2013)

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 31-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.

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

(Horticultural Sciences - Major Code 6180; State CIP Code 01.0601 and Business Plan - Major Code 4810; State CIP Code 52.0710)

- Gainful Employment - Horticulture
- Science

First Semester

Code	Title	Hours
HORT 140	Turfgrass I	3
HORT 214	Woody Plants I, Deciduous	3
HORT 220	Herbaceous Plants	3
HORT 201	Introduction to Horticultural Science	4
HORT 235	Landscape Maintenance and Techniques	3
	Total Semester Hours: 16	

Second Semester

Code	Title	Hours
	Elective	3
HORT 215	Woody Plants II, Evergreens	3
HORT 225	Plant Problems	3
	Prerequisites: HORT 214 and HORT 220 or department approval	
HORT 135	Landscape Design	3

HORT 205	Plant Propagation	3
	Prerequisite: HORT 201 or department approval	

Total Semester Hours: 15

Elective (choose one course)

Code	Title	Hours
BUS 121	Introduction to Business	3
BUS 145	Small Business Management	3
HORT 160	Garden Center Operations	3
HORT 255	Pest Control Management	3
HORT 260	Horticulture Soils	3
HORT 270	Horticulture Internship	3
	Prerequisite: Department approval	
SPD 128	Business and Professional Speech	3

Additional Certificate

Code	Title	Hours
	Business Plan Certificate	7
	This certificate is designed for students who are interested in opening their own service business providing administrative assistance to businesses. Coursework focuses on fundamental knowledge necessary to own and operate an entrepreneurial venture, evaluating the feasibility of the business idea, and concludes with writing a business plan to start, grow and sustain a business venture. The business plan certificate is recommended for students to add to their Horticultural Sciences certificate.	

Total Program Hours: 31-38

Landscape Technician Certificate (Spring 2013)

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.

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

(Landscape Technician - Major Code 6190; State CIP Code 01.0605 and Business Plan - Major Code 4810; State CIP Code 52.0710)

- Science

First Semester

Code	Title	Hours
HORT 201	Introduction to Horticultural Science	4
HORT 214	Woody Plants I, Deciduous	3
HORT 140	Turfgrass I	3
HORT 220	Herbaceous Plants	3
HORT 235	Landscape Maintenance and Techniques	3

Total Semester Hours: 16

Second Semester

Code	Title	Hours
	Landscape Elective (see list below)	3
HORT 215	Woody Plants II, Evergreens	3
HORT 225	Plant Problems	3
	Prerequisites: HORT 214 and HORT 220 or department approval	
HORT 135	Landscape Design	3
HORT 265	Landscape Construction	3

Total Semester Hours: 15

Landscape Electives

Code	Title	Hours
HORT 205	Plant Propagation	3
	Prerequisite: HORT 201 or department approval	
HORT 260	Horticulture Soils	3
HORT 240	Turfgrass II	3
	Prerequisite: HORT 140	
HORT 270	Horticulture Internship	3
	Prerequisite: Department approval	
SPD 128	Business and Professional Speech	3
BUS 121	Introduction to Business	3
BUS 145	Small Business Management	3

Additional Certificate

Code	Title	Hours
	Business Plan Certificate	7
	This certificate is designed for students who are interested in opening their own service business providing administrative assistance to businesses. Coursework focuses on fundamental knowledge necessary to own and operate an entrepreneurial venture, evaluating the feasibility of the business idea, and concludes with writing a business plan to start, grow and sustain a business venture. The business plan certificate is recommended for students to add to their Horticultural Sciences certificate.	

Total Program Hours: 31-38

Sustainable Agriculture Entrepreneurship Certificate (Spring 2013)

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.

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.

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

(Major Code 4430; State CIP Code 01.0601)

- Science

Fall Semester

Code	Title	Hours
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 Hours: 9

Spring Semester

Code	Title	Hours
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 Hours: 11

Summer Semester

Code	Title	Hours
HORT 255	Pest Control Management	3
HORT 276	Sustainable Agriculture Summer Practicum	2
HMGT 167	Local Food Production	3
		Total Semester Hours: 8

Courses of Interest

Code	Title	Hours
	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 department approval	
ENTR 160	Legal Issues for Small Business	2
ENTR 220	Entrepreneurial Marketing	2
	Prerequisite: BUS 230 or MKT 230	
ENTR 131	Financial Management for Small Business	2
	Prerequisite: ACCT 111 or ACCT 121	
ENTR 225	Family Business	3
		Total Program Hours: 28

Hospitality Management

Chef Apprenticeship, A.A.S. (Spring 2013)

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; State CIP Code 12.0503)

- Hospitality Management

Associate of Applied Science Degree

First Semester

Code	Title	Hours
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 department approval	
		Total Semester Hours: 12

Second Semester

Code	Title	Hours
CPCA	Computer Elective	1
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
HMGT 282	Culinary Arts Practicum II	2
	Prerequisite: HMGT 281	
		Total Semester Hours: 12

Summer

Code	Title	Hours
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 Hours: 6

Third Semester

Code	Title	Hours
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 Hours: 11

Fourth Semester

Code	Title	Hours
HMGT 226	Garde Manager	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 Hours: 11

Fifth Semester

Code	Title	Hours
HMGT 231	Advanced Food Preparation	4
	Prerequisites: HMGT 230 and department 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 Hours: 12

Sixth Semester

Code	Title	Hours
	Humanities Elective	3
HMGT 128	Supervisory Management	3
HMGT 228	Advanced Hospitality Management	3
	Prerequisite: Department approval	
HMGT 288	Culinary Arts Practicum VI	2
	Prerequisites: HMGT 287 and hospitality management department approval	
		Total Semester Hours: 11

Hospitality Program Electives

Code	Title	Hours
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	
		Total Program Hours: 75

Dietary Manager Certificate (Spring 2013)

Upon completion of this certificate, the students will be eligible to take the credentialing exam to become a Certified Dietary Manager. This certificate is accredited by the Association of Nutrition & Foodservice Professionals. Certified dietary managers supervise and oversee dietetic services in long-term care facilities, hospitals, schools, correctional institutions and other non-commercial foodservice settings. They are trained to understand the basic nutritional needs of their clientele. Dietary managers work in partnerships with registered dietitians. The dietary manager is responsible for purchasing, sorting, preparing, and delivering balanced nutritional meals. They provide menu variety while maintaining nutritional requirements within cost/profit objectives. The curriculum is separated into four major classroom components: Nutrition and Medical Nutrition Therapy, Management of Foodservices, Human Resource Management, Sanitation and Food Safety. The program will be completed in two semesters.

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

(Major Code 6210; State CIP Code 51.3103)

First Semester

Code	Title	Hours
HMEC 151	Nutrition and Meal Planning	3
HMGT 120	Food Service Sanitation	1
HMGT 128	Supervisory Management	3
HMGT 123	Professional Cooking I	3
	Prerequisite or corequisite: HMGT 120	
HMGT 169	Foodsevice Management Dietary Managers Seminar	4
		Total Semester Hours: 14

Second Semester

Code	Title	Hours
HMGT 269	Medical Nutrition Therapy Seminar	4
	Prerequisite: HMEC 151	
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	
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
HMGT 207	Hospitality Human Resource Management	3
	Prerequisite: HMGT 128	
	Total Semester Hours: 13	
	Total Program Hours: 27	

Food and Beverage Management, A.A.S. (Spring 2013)

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; State CIP Code 12.0504)

- Hospitality Management

Associate of Applied Science Degree

First Semester

Code	Title	Hours
CPCA	Computer Elective	1
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	

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 Hours: 14

Second Semester

Code	Title	Hours
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 Hours: 15

Summer

Code	Title	Hours
	Humanities Requirement	3
PSYC 121	Applied Psychology	3
	OR	
PSYC 130	Introduction to Psychology	3
		Total Semester Hours: 6

Third Semester

Code	Title	Hours
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 Hours: 15

Fourth Semester

Code	Title	Hours
	Hospitality Program Elective	3
HMGT 126	Food Management	4
	Prerequisites: HMGT 123 and HMGT 230 and HMGT 277 and admission to the hospitality management program	
HMGT 228	Advanced Hospitality Management	3
	Prerequisite: Department approval	
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 Hours: 16

Hospitality Program Electives

Code	Title	Hours
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	
		Total Program Hours: 66

Food and Beverage Certificate (Spring 2013)

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.

Gainful Employment Data

(Major Code 4840; State CIP Code 12.0504)

- Hospitality Management

First Semester

Code	Title	Hours
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 Hours: 16

Second Semester

Code	Title	Hours
HMGT 230	Professional Cooking II	3
	Prerequisites: HMGT 120 and HMGT 123	
HMGT 126	Food Management	4
	Prerequisites: HMGT 123 and HMGT 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
HMGT 275	Seminar in Hospitality Management: Internship	3
	Prerequisite: Admission to the hospitality management program	
		Total Semester Hours: 16
		Total Program Hours: 32

Hotel & Lodging Management, A.A.S. (Spring 2013)

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; State CIP Code 52.0904)

- Hospitality Management

Associate of Applied Science

First Semester

Code	Title	Hours
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 Hours: 15	

Second Semester

Code	Title	Hours
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 Hours: 15	

Summer

Code	Title	Hours
CPCA	Computer Elective	1
HMGT 275	Seminar in Hospitality Management: Internship	3
	Prerequisite: Admission to the hospitality management program	
	Total Semester Hours: 4	

Third Semester

Code	Title	Hours
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 Hours: 15	

Fourth Semester

Code	Title	Hours
HMGT	Hospitality Program Elective	3
	Humanities Requirement	3
HMGT 228	Advanced Hospitality Management	3
	Prerequisite: Department approval	
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 Hours: 15	

Hospitality Program Electives

Code	Title	Hours
HMEC 151	Nutrition and Meal Planning	3
HMGT 126	Food Management	4
	Prerequisites: HMGT 123 and HMGT 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	
	Total Program Hours: 64	

Pastry/Baking Certificate (Spring 2013)

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. There is a selection process for this program that is online at http://www.jccc.edu/home/depts/1205/site/hospitalityMgmtDegrees/VC-PASTRYBAK . This program only starts in 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; State CIP Code 12.0501)

- Gainful Employment - Pastry Baking
- Hospitality Management

Prerequisites for Required Courses

Code	Title	Hours
	All Students must complete the two prerequisite 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

Code	Title	Hours
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 Hours: 15

Spring Semester Only

Code	Title	Hours
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 Hours: 15
Total Program Hours: 30

Industrial Maintenance

Industrial Maintenance, A.A.S. (Spring 2013)

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; State CIP Code 47.0303)

- Electrical Technology

Associate of Applied Science Degree

First Semester

Code	Title	Hours
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 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	

Total Semester Hours: 15

Second Semester

Code	Title	Hours
	Technical Electives	6
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

Total Semester Hours: 17

Third Semester

Code	Title	Hours
	Related Electives	3
	Technical Electives	4
ECON 132	Survey of Economics	3
MFAB 124	Introduction to Welding	3
SPD 120	Interpersonal Communication	3

Total Semester Hours: 16

Fourth Semester

Code	Title	Hours
	Related Electives	3
	Technical Electives	9
	Humanities Elective	3
EMS 121	CPR I - Basic Life Support for Healthcare Provider	1

Total Semester Hours: 16

Technical Electives

Code	Title	Hours
AUTO 165	Automotive Engine Repair	4
	Prerequisite or corequisite: AUTO 125 or department approval	
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: department 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	Basic Principles of HVAC	4
	Prerequisite or corequisite: HVAC 123 or ELTE 123	
HVAC 223	Commercial Systems: Heating	4
	Prerequisite: HVAC 123 or ELTE 123	
HVAC 271	HVAC Internship	3
	Prerequisite: Department approval required	
MFAB 128	Basic Machine Tool Technology	3
MFAB 140	Maintenance Repair Welding	3
	Prerequisites: MFAB 121 or MFAB 131 and MFAB 130 or MFAB 133 and MFAB 136 or MFAB 160	
MFAB 240	Metallurgy	2
MFAB 271	Metal Fabrication Internship	3
	Prerequisite: Department approval	

Related Electives

Code	Title	Hours
BUS 140	Principles of Supervision	3
BUS 141	Principles of Management	3

CET 129	Construction Management	3
CET 140	Civil Engineering Materials	3
	Prerequisite or corequisite: MATH 116 or higher	
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	

Total Program Hours: 64

Industrial Maintenance Certificate (Spring 2013)

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.

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.

(Major Code 5210; State CIP Code 47.0303)

- Gainful Employment - Industrial Maintenance
- Electrical Technology

First Semester

Code	Title	Hours
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/OSHA 30	3
MFAB 124	Introduction to Welding	4
	Total Semester Hours:	12

Second Semester

Code	Title	Hours
	Technical Electives	12
	Total Semester Hours:	12

Technical Electives

Code	Title	Hours
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 140	Maintenance Repair Welding	3
	Prerequisite: MFAB 121 or MFAB 131 and MFAB 130 or MFAB 133 and MFAB 136 or MFAB 160	
MFAB 128	Basic Machine Tool Technology	3
MFAB 240	Metallurgy	2
INDT 155	Workplace Skills	1

Total Program Hours: 24

Information Technology

Information Technology - Networking, A.A.S. (Spring 2013)

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, Linux and Cisco.

(Major Code 2330; State CIP Code 11.0901)

- Information Technology

Associate of Applied Science Degree

First Semester

Code	Title	Hours
	Social Science and/or Economics Elective	3
IT 140	Networking Fundamentals	4
IT 205	Implementing Windows Client	3
IT 230	Linux Fundamentals	3
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
	Total Semester Hours:	16

Second Semester

Code	Title	Hours
IT 221	Windows Server	3
	Prerequisites: IT 205	
IT 209	LAN Switching	4
	Prerequisite: IT 140 or IT 200	
IT 145	Routing Protocols and Concepts	3
	Prerequisites: IT 200 or IT 140	
MATH 171	College Algebra or higher	3
	Prerequisite: MATH 116 with a grade of "C" or higher or MATH 131 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	
ENGL 122	Composition II	3
	Prerequisite: ENGL 121	
	OR	
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
	Total Semester Hours:	16

Third Semester

Code	Title	Hours
	Technical Elective	3
	Humanities Elective	3
	Health and/or Physical Education Elective	1
IT 225	Windows Active Directory Services	3

	Prerequisite: IT 221	
IT 231	Linux Administration	3
	Prerequisite: IT 230	
IT 247	Accessing Wide Area Networks	3
	Prerequisites: IT 209 and (IT 145 or IT 246)	
		Total Semester Hours: 16

Fourth Semester

Code	Title	Hours
	Technical Electives	6
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
		Total Semester Hours: 16

Technical Elective

Code	Title	Hours
CIS 134	Programming Fundamentals	4
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	
ELEC 126	Microcomputer A+ Preparation	4
ELEC 150	Introduction to Telecommunications	3
ELEC 185	LAN Cabling and Installation	3
ELEC 250	Microcomputer Maintenance	3
	Prerequisite: ELEC 126	
IT 203	Voice Over IP Fundamentals	4
	Prerequisite: IT 145	
IT 227	SQL Server Administration	3
	Prerequisite: IT 221	
IT 228	Exchange Server	3
	Prerequisite: IT 225	
IT 232	Linux Networking	4
	Prerequisite: IT 231	
IT 233	Linux Advanced Administration	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	
	Prerequisite: IT 247	
IT 254	Remote Access Networks	3
	Prerequisite: IT 247	
IT 255	Wireless Security	4
	Prerequisite: IT 247	
IT 256	Windows Security	4
	Prerequisites: IT 225 and IT 245	
IT 271	Information Technology Internship I	3
	Prerequisites: IT 210 or IT 221 or IT 230 and department approval	
IT 272	Information Technology Internship II	3
	Prerequisites: IT 271 and department approval	
		Total Program Hours: 64

Interactive Media

Interactive Media, A.A.S. (Spring 2013)

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.

(Major Code 2410; State CIP Code 09.0702)

- Interactive Media

Associate of Applied Science Degree

Prerequisite for Required Courses

Code	Title	Hours
	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 (where applicable), or have obtained a waiver from the program administrator.	
CDTP 135	Desktop Photo Manipulation I: Photoshop	1

Fall Semester

Code	Title	Hours
	Elective	3
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
	Prerequisite or corequisite: ENGL 121	
CIM 140	Interactive Media Assets	4
	Prerequisites: CDTP 135 AND prerequisite or corequisite CIM 130	
CIM 133	Screen Design	4
	Prerequisite: CDTP 135	
		Total Semester Hours: 16

Spring Semester

Code	Title	Hours
	Humanities Elective	3
ENGL 140	Writing for Interactive Media	3
	Prerequisite: ENGL 121	
CIM 156	Interactive Authoring I	4
	Prerequisite: CIM 130 and prerequisite or corequisite: CIM 140	
CIM 200	Interactive Communication Form	3
	Prerequisite or corequisite: CIM 130	
CIM 135	Digital Imaging and Video	3
	Prerequisite: CDTP 135 Recommended: PHOT 121	
		Total Semester Hours: 16

Fall Semester

Code	Title	Hours
	Interactive Media Elective	3
CIM 254	Interact Authoring II	4
	Prerequisite: CIM 156	
CIM 230	Interactive Media Development	4
	Prerequisite: CIM 156 AND prerequisite or corequisite CIM 254 AND corequisite: CIM 250	
CIM 250	Interface Design	4

	Prerequisite: CIM 156 AND prerequisite or corequisite: CIM 254 AND corequisite: CIM 230	
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	
	Total Semester Hours: 18	

Spring Semester

Code	Title	Hours
	Interactive Media Elective	3
	Social Science and/or Economic Elective	3
	Health and/or Physical Education	1
CIM 270	Interactive Media Project	4
	Prerequisites: CIM 230 and CIM 250 and CIM 254	
CIM 273	Career Preparation	4
	Prerequisites: CIM 230 and CIM 250 and prerequisite or corequisite: CIM 270	
	Total Semester Hours: 15	

Interactive Media Elective List

Code	Title	Hours
ANI 123	Concept Art for Animation	3
ANI 145	Introduction to 3D Animation	3
	Prerequisite or corequisite: ANI 250	
BUS 141	Principles of Management	3
CIM 235	Advanced Digital Video	3
	Prerequisite: CIM 135	
CIS 134	Programming Fundamentals	4
CIS 162	Database Programming	4
	Prerequisite: CIS 134 or the equivalent	
ENGL 150	Digital Narratives	3
	Prerequisite: ENGL 121	
ENTR 120	Introduction to Entrepreneurship	2
ENTR 180	Opportunity Analysis	2
ENTR 142	Fast Trac Business Plan	3
MUS 156	MIDI Music Composition	3
SPD 120	Interpersonal Communication	3
SPD 121	Public Speaking	3
SPD 125	Personal Communication	3
	Total Program Hours: 65	

Interactive Media Certificate (Spring 2013)

These two certificates are designed to prepare students to open their own business providing Web design services. They provide 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.

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.

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

(Interactive Media - Major Code 6410; State CIP Code 09.0702 and Business Plan - Major Code 4810; State CIP Code 52.0710)

- Gainful Employment - Interactive Media
- Interactive Media

Prerequisite for Required Course

Code	Title	Hours
	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 (where applicable), or have obtained a waiver from the program administrator:	
CDTP 135	Desktop Photo Manipulation I: Photoshop	1

Fall Semester

Code	Title	Hours
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
	Prerequisite or corequisite: ENGL 121	
CIM 140	Interactive Media Assets	4
	Prerequisites: CDTP 135 AND prerequisite or corequisite CIM 130	
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	
	Total Semester Hours: 12	

Spring Semester

Code	Title	Hours
CIM 133	Screen Design	4
	Prerequisite: CDTP 135	
CIM 156	Interactive Authoring I	4
	Prerequisite: CIM 130 and prerequisite or corequisite: CIM 140	
CIM 200	Interactive Communication Form	3
	Prerequisite or corequisite: CIM 130	
	Total Semester Hours: 11	

Fall Semester

Code	Title	Hours
CIM 254	Interact Authoring II	4
	Prerequisite: CIM 156	
CIM 230	Interactive Media Development	4
	Prerequisite: CIM 156 AND prerequisite or corequisite CIM 254 AND corequisite: CIM 250	
CIM 250	Interface Design	4
	Prerequisite: CIM 156 AND prerequisite or corequisite: CIM 254 AND corequisite: CIM 230	
	Total Semester Hours: 12	

Spring Semester

Code	Title	Hours
CIM 270	Interactive Media Project	4
	Prerequisites: CIM 230 and CIM 250 and CIM 254	
	Total Semester Hours: 4	

Additional Certificate

Code	Title	Hours
	Business Plan Certificate	7
	This certificate is designed for students who are interested in opening their own service business providing administrative assistance to businesses. Coursework focuses on fundamental knowledge necessary to own and operate an entrepreneurial venture, evaluating the feasibility of the business idea, and concludes with writing a business plan to start, grow and sustain a business venture. The business plan certificate is recommended for students to add to their Family Business certificate.	
	Total Program Hours: 39	

Interior Design

Decorating Certificate (Spring 2013)

The decorating certificate is a 13-credit hour program designed for students seeking basic knowledge of interior design. The required courses are already included in the approved curriculum of the interior design program.

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

(Major Code 6520; State CIP Code 50.0408)

- Interior Design

First Semester

Code	Title	Hours
ITMD 121	Interior Design	3
ITMD 125	Interior Textiles	3
ITMD 132	Materials and Resources	3
	Total Semester Hours: 9	

Second Semester

Code	Title	Hours
ITMD 143	Accessory Fundamentals	1
	Prerequisite: ITMD 121 with a grade of "C" or higher	
ITMD 231	Furniture & Ornamentation Renaissance to 20th	3
	OR	
ITMD 133	Furniture & Ornamentation/Antiquity to Renaissance	3
	Total Semester Hours: 4	
	Total Program Hours: 13	

Floral Design Certificate (Spring 2013)

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.

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

(Major Code 4420; State CIP Code 01.0608)

- Interior Design

First Semester

Code	Title	Hours
	Electives	3
FLR 130	Principles of Traditional Design	3
FLR 150	Contemporary Design Styles	3
ACCT 111	Small Business Accounting	3
	Total Semester Hours: 12	

Second Semester

Code	Title	Hours
	Electives	4-6
FLR 220	Wedding Design	3
	Prerequisites: FLR 130 or FLR 150	
FLR 200	Plants for Interior Design	3
FLR 250	Sympathy Flowers	3
	Prerequisites: FLR 130 or FLR 150	
	Total Semester Hours: 13-15	

Third Semester

Code	Title	Hours
FLR 270	Retail Flower Shop Operations	3
	Prerequisites: FLR 200 and FLR 220 and FLR 250	
	Total Semester Hours: 3	

Electives

Code	Title	Hours
BUS 145	Small Business Management	3
HORT 201	Introduction to Horticultural Science	4
HORT 220	Herbaceous Plants	3
MKT 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 or MKT 230	
MATH 120	Business Mathematics	3
	Prerequisite: MATH 111 with a grade of "C" or higher or appropriate score on the math assessment test	
	Total Program Hours: 28-30	

Interior Design, A.A.S. (Spring 2013)

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.

Note: Some prerequisite courses for the Interior Design programs require a “C” or higher to be awarded the AAS degrees and certificates.

(Major Code 2750; State CIP Code 50.0408)

- Interior Design

Associate of Applied Science Degree

First Semester

Code	Title	Hours
ITMD 121	Interior Design	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 Hours: 18	

Second Semester

Code	Title	Hours
ITMD 123	Space Planning	3
	Prerequisites: ITMD 121 with "C" or higher and DRAF 164 with a grade of "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	
ITMD 132	Materials and Resources	3
MKT 134	Professional Selling	3
ITMD 231	Furniture & Ornamentation Renaissance to 20th Century	3
BUS 150	Business Communications	3
	Prerequisite: ENGL 121	
	Total Semester Hours: 18	

Third Semester

Code	Title	Hours
DRAF 264	CAD:Interior Design	3
	Prerequisites: ITMD 123 and ITMD 129 both with a grade of grade of "C" or higher, or department approval	
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 Hours: 16	

Fourth Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
ITMD 221	Residential Design	3
	Prerequisites: DRAF 264 with a grade of "C" or higher AND prerequisite or corequisite ITMD 271 with a grade of "C" or higher	
ITMD 273	Interiors Seminar: Practices and Procedures	2
	Prerequisite: 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 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 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
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: Department approval	
	Total Semester Hours: 16	

Courses of Interest

Code	Title	Hours
	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 department approval	
ITMD 296	Interior Design: the Orient	3
	Total Program Hours: 68	

Interior Design Advanced Certificate (Spring 2013)

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.

Note: Some prerequisite courses for the Interior Design programs require a “C” or higher to be awarded the AAS degrees and certificates.

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

(Major Code 4100; State CIP Code 50.0408)

- Gainful Employment - Interior Design
- Interior Design

First Semester

Code	Title	Hours
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 department approval	
	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 Hours: 9

Second Semester

Code	Title	Hours
	Art Elective	3
	Interior Design Elective	3
ITMD 219	Issues in Interior Design	3
	Prerequisite: ITMD 221 with a grade of "C" or higher	
ITMD 234	Kitchen and Bath: Planning and Design	3
	Prerequisites: DRAF 264 with a grade of "C" or higher and ITMD 123 with a grade of "C" or higher	

Total Semester Hours: 12

Art/Art History Electives

Code	Title	Hours
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	

3 hours - any course

Interior Design Electives

Code	Title	Hours
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 department approval	
ITMD 296	Interior Design: the Orient	3

3 hours - any course or combination of courses totaling 3 or more hours

Total Program Hours: 21

Interior Design Retail Sales/Manufacturing Rep Certificate (Spring 2013)

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.

Note: Some prerequisite courses for the Interior Design programs require a “C” or higher to be awarded the AAS degrees and certificates.

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

(Major Code 6510; State CIP Code 50.0408)

- Gainful Employment - Interior Design
- Interior Design

First Semester

Code	Title	Hours
ITMD 121	Interior Design	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 Hours: 17

Second Semester

Code	Title	Hours
ITMD	Elective	3
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	

Total Semester Hours: 13

List of ITMD Electives

Code	Title	Hours
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 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 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 123 with a grade of "C" or higher	

Total Program Hours: 30

Interior Entrepreneurship, A.A.S. (Spring 2013)

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.

Note: Some prerequisite courses for the Interior Design programs require a "C" or higher to be awarded the AAS degrees and certificates.

(Major Code 2770; State CIP Code 50.0408)

- Interior Design

Associate of Applied Science Degree

First Semester

Code	Title	Hours
ITMD 121	Interior Design	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 Hours: 18	

Second Semester

Code	Title	Hours
	Interiors Elective	3
ITMD 123	Space Planning	3
	Prerequisites: ITMD 121 with "C" or higher and DRAF 164 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 Hours: 18	

Third Semester

Code	Title	Hours
	Interiors Elective	3
	Business/Marketing/Entrepreneurship Electives	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
	Total Semester Hours: 16	

Fourth Semester

Code	Title	Hours
	Interiors Elective	3
	Business/Marketing/Entrepreneurship Electives	6
	Physical Education Elective	1
ITMD 273	Interiors Seminar: Practices and Procedures	2
	Prerequisite: 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 237	Capstone: Merchandising and Entrepreneurship	2
	Prerequisite: Department approval	
ITMD 180	Leadership in Design	1
	Prerequisite: ITMD 123 with a grade of "C" or higher	
	Total Semester Hours: 16	

Interiors Electives

Code	Title	Hours
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 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 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
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 department approval	
ITMD 296	Interior Design: the Orient	3

Business/Marketing/Entrepreneurship Electives

Code	Title	Hours
ACCT 111	Small Business Accounting	3
	OR	
ACCT 121	Accounting I	3
MKT 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
	Total Program Hours: 68	

Interior Merchandising, A.A.S. (Spring 2013)

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.

Note: Some prerequisite courses for the Interior Design programs require a “C” or higher to be awarded the AAS degrees and certificates.

(Major Code 2760; State CIP Code 50.0408)

- Interior Design

Associate of Applied Science Degree

First Semester

Code	Title	Hours
ITMD 121	Interior Design	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 Hours: 18	

Second Semester

Code	Title	Hours
	Interiors Elective	3
ITMD 123	Space Planning	3
	Prerequisites: ITMD 121 with "C" or higher and DRAF 164 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 Hours: 18	

Third Semester

Code	Title	Hours
	Interiors Elective	3
	Business/Marketing 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
	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	
ARTH 180	Art History: Ancient to Renaissance	3
ECON 132	Survey of Economics	3
	OR	
ECON 230	Economics I	3
	Total Semester Hours: 16	

Fourth Semester

Code	Title	Hours
	Interiors Elective	3
	Business/Marketing Elective	3
	Physical Education Elective	1
ITMD 273	Interiors Seminar: Practices and Procedures	2
	Prerequisite: 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	
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: Department approval	
	Total Semester Hours: 16	

Interior Electives

Code	Title	Hours
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 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 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
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 department approval	
ITMD 296	Interior Design: the Orient	3

Business/Marketing Electives

Code	Title	Hours
BUS 145	Small Business Management	3
MKT 230	Marketing	3
MKT 121	Retail Management	3
MKT 221	Sales Management	3
	Prerequisite: MKT 134	
	Total Program Hours: 68	

Interpreter Training

Interpreter Training, A.A.S. (Spring 2013)

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; State CIP Code 16.1603)

- Interpreter Training

Associate of Applied Science Degree

Prerequisites

Code	Title	Hours
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. All prerequisites require 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	

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

Code	Title	Hours
	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.	
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.	
	Humanities Elective	3
	Science and/or Math Elective	3
	Health and/or Physical Educ Elect	1
SPD 121	Public Speaking	3
ENGL 122	Composition II	3
	Prerequisite: ENGL 121	
	Total Semester Hours: 19	

First Semester

Code	Title	Hours
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 Hours: 13	

Second Semester

Code	Title	Hours
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 147 with a grade of "C" or higher Corequisites: INTR 123 and INTR 131 and INTR 135 and INTR 248 all with a grade of "C" or higher	

INTR 248	Deaf Community Ethnography 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	3
	Total Semester Hours: 13	

Third Semester

Code	Title	Hours
INTR 181	Interpreting Practicum I Prerequisites: INTR 130 and INTR 145 with a grade of "C" or higher and Corequisites: INTR 223 and INTR 226 and INTR 250 all with a grade of "C" or higher	1
INTR 223	Advanced American Sign Language 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	3
INTR 226	Specialized and Technical Vocabulary 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	2
INTR 250	Interpreting I 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	6
	Total Semester Hours: 12	

Fourth Semester

Code	Title	Hours
INTR 251	Interpreting II 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	2
INTR 262	Seminar on Interpreting 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	3
INTR 282	Interpreting Practicum II 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	6
AAC 150	Job Search Skills	1
	Total Semester Hours: 12 **Total Program Hours: 69**	

American Sign Language Studies Certificate (Spring 2013)

The American Sign Language (ASL) Studies sequence of courses has been developed based on the need for professionals and community members to develop conversational proficiency in ASL and understanding of Deaf culture. This program is intended as supplementary education only and does not prepare the learner to work as an interpreter.

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; State CIP Code 16.1603)

- Gainful Employment - Sign Language Studies
- Interpreter Training

First Semester

Code	Title	Hours
	Health/Physical Education Elective	1
ASL 120	Elementary American Sign Language I	3
ASL 145	Introduction to the Deaf Community Prerequisites or Corequisite: INTR 120 or ASL 120 or FL 180 with a grade of "C" or higher	3
ENGL 121	Composition I Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	3
	Total Semester Hours: 10	

Second Semester

Code	Title	Hours
	Social Science or Economics Elective	3
ASL 121	Elementary American Sign Language II Prerequisite: INTR 120 or ASL 120 or FL 180. All prerequisites require a grade of "C" or higher	3
ENGL 122	Composition II Prerequisite: ENGL 121	3
	Total Semester Hours: 9	

Third Semester

Code	Title	Hours
	Math Elective	3
ASL 122	Intermediate American Sign Language I Prerequisites: INTR 121 or ASL 121 or FL 181. All prerequisites require a grade of "C" or higher	3
ASL 147	Fingerspelling I Prerequisites: INTR 121 or ASL 121 or FL 181 with a grade of "C" or higher	2
	Total Semester Hours: 8	

Fourth Semester

Code	Title	Hours
ASL 123	Intermediate American Sign Language II Prerequisites: INTR 122 or ASL 122 or FL 270. All prerequisites require a grade of "C" or higher	3
ASL 135	Intro to American Sign Language Linguistics Prerequisites: INTR 122 or ASL 122 or FL 270. All prerequisites require a grade of "C" or higher	3
ASL 150	American Sign Language Literature Prerequisite: INTR 122 or ASL 122 with a grade of "C" or higher	3
	Total Semester Hours: 9	

Math Elective

Code	Title	Hours
MATH 115	Elementary Algebra Prerequisite: MATH 111 with a grade of "C" or higher or appropriate score on the math assessment test	3
MATH 116	Intermediate Algebra Prerequisite: MATH 115 with a grade of "C" or higher or appropriate score on the math assessment test	3
MATH 118	Geometry Prerequisite: MATH 115 with a grade of "C" or higher or appropriate score on the math assessment test	3
MATH 120	Business Mathematics Prerequisite: MATH 111 with a grade of "C" or higher or appropriate score on the math assessment test	3
MATH 122	Mathematics in Our Culture Prerequisite: MATH 111 with a grade of "C" or higher or appropriate score on the math assessment test	3
MATH 130	Technical Mathematics I Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	3
MATH 131	Technical Mathematics II Prerequisites: MATH 130 or MATH 133 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	3
MATH 165	Finite Mathematics Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math assessment test	3

MATH 171	College Algebra	3
	Prerequisite: MATH 116 with a grade of "C" or higher or MATH 131 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	
MATH 172	Trigonometry	3
	Prerequisite: MATH 171 with a grade of "C" or higher or appropriate score on the math assessment test	
MATH 173	Precalculus	5
	Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math assessment test	
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: Either (MATH 171 and 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 254	Differential Equations	4
	Prerequisite: MATH 243 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	
	Total Program Hours: 36	

Land Surveying

Land Surveying, A.A.S. (Spring 2013)

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. Visit http://mcckc.edu/main.asp?P=AtoZIndex#A

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.

Degree Granted by Metropolitan Community College

Associate of Applied Science Degree

General Education Requirements-must be taken at JCCC

Code	Title	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	
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 131 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	
	AND	
MATH 172	Trigonometry	3
	Prerequisite: MATH 171 with a grade of "C" or higher or appropriate score on the math assessment test	
	OR	
MATH 173	Precalculus	5
	Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math assessment test	
	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
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

Code	Title	Hours
ENGR 180	Engineering Land Surveying I	3
	Prerequisite or corequisite: MATH 134 or MATH 131 or MATH 172	
ENTR 142	Fast Trac Business Plan	3

Specific Program Requirements-taken at MCC-Longview

Code	Title	Hours
COLL 100	First Year Seminar	1
POLS 153	The Missouri Constitution	1
ETEC 152	Engineering Graphics & CADD I	5
GEOG 120	Introduction to Geographic Information Systems	3
SRVY 137	Subdivision Planning and Layout	3
SRVY 235	Advanced Surveying	3
SRVY 236	Boundary Control and Legal Principles	3
SRVY 237	Evidence and Procedures for Boundary Location	3
SRVY 244	Fundamentals of GPS Surveying	3

Specific Program Requirements-taken at JCCC or MCC-Longview

Code	Title	Hours
	Choose TWO courses from the following list:	
ACCT 121	Accounting I	3
DRAF 230	Intermediate CAD: AutoCAD	3
	Prerequisite: DRAF 130 or department approval	
	OR	
ETEC 269	CADD II - MCC course	4
SRVY 220	GIS Database and Design - MCC course	3
	Total Program Hours: 64-67	

Land Surveying Certificate (Spring 2013)

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. Visit http://mcckc.edu/main.asp?P=AtoZIndex#A

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.

Certificate granted by Metropolitan Community College

Specific Program Requirements-must be taken at JCCC

Code	Title	Hours
MATH 171	College Algebra	3
	Prerequisite: MATH 116 with a grade of "C" or higher or MATH 131 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	
	AND	
MATH 172	Trigonometry	3
	Prerequisite: MATH 171 with a grade of "C" or higher or appropriate score on the math assessment test	
	OR	
MATH 173	Precalculus	5
	Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math assessment test	
ENGR 180	Engineering Land Surveying I	3
	Prerequisite or corequisite: MATH 134 or MATH 131 or MATH 172	

Specific Program Requirements-taken at MCC-Longview

Code	Title	Hours
COLL 100	First Year Seminar	1
ETEC 152	Engineering Graphics & CADD I	5
SRVY 137	Subdivision Planning and Layout	3
SRVY 235	Advanced Surveying	3
SRVY 236	Boundary Control and Legal Principles	3
SRVY 237	Evidence and Procedures for Boundary Location	3
	Total Program Hours: 26-27	

Legal Interpreting

Legal Interpreting Certificate (Spring 2013)

The Legal Interpreting (LI) certificate is a 20 credit hour program. It is designed to be completed in three semesters, although there is enough flexibility in the curriculum to extend the time period for 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 seven courses and is designed to give bilingual (English and Spanish) students the awareness, knowledge and skills necessary to serve as entry-level interpreters and translators in legal settings, including courts, law offices and similar environments. Employment opportunities may also be available with professional employed freelance interpreters. Although the emphasis of the program is legal interpreting, the skills gained could be applied to other interpreting and translating settings in the community, such as conference interpreting and translation of written documents.

Candidates for the Legal Interpreting certificate will be tested in order to measure knowledge and fluency in both English and Spanish, with a requirement of ACTFL Superior (ILR level 3) level in both languages for admission to the program.

(Major Code 5220; State CIP Code)

- Health Care Interpreting

First Semester

Code	Title	Hours
LI 130	Introduction to Legal Interpreting	3
	Prerequisite: director approval AND	
	Corequisite: LI 140 AND	
	Prerequisite or corequisite: LAW 121	

LI 140	Legal Interpreting Skills I Corequisite: LI 130 AND Prerequisite or corequisite: LAW 121	3
LAW 121	Introduction to Law	3
		Total Semester Hours: 9

Second Semester

Code	Title	Hours
LI 150	Legal Interpreting Skills II Prerequisites: LI 130 and LI 140 and LAW 121 AND Corequisite: LI 160 AND Prerequisite or corequisite: LI 170	3
LI 160	Spanish Legal Interpreting Prerequisites: LI 130 and LI 140 and LAW 121 AND Corequisite: LI 150 AND Prerequisite or corequisite: LI 170	3
LI 170	Legal Procedures and Ethics Prerequisite: LAW 121	3
		Total Semester Hours: 9

Third Semester

Code	Title	Hours
LI 180	Legal Interpreting Practicum Prerequisites: LI 150 and LI 160 and LI 170	2
		Total Semester Hours: 2
		Total Program Hours: 20

Legal Studies

Paralegal, A.A. (Spring 2013)

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. Please contact Anita Tebbe for more information at atebbe@jccc.edu. The Legal Studies Program is accredited by the Accreditation Council for Business Schools and Programs (ACBSP).

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

IMPORTANT - Students planning to graduate with a Paralegal degree must complete one of the approved cultural diversity courses. Some of the approved courses are able to meet both the cultural diversity requirement and a general education requirement. To see a complete list of approved courses, click on the link provided below.

Cultural Diversity Course Requirement

Suggested Sample Course Sequence
Students may take any number of courses each semester that will also allow them to fulfill their other personal and professional responsibilities.

(Major Code 264A; State CIP Code 22.0302)

- Paralegal

Associate of Arts Degree

Prerequisites: Prior to admission

Code	Title	Hours
ENGL 121	Composition I Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	3
LAW 121	Introduction to Law	3
LAW 123	Paralegal Professional Studies	1
		Total Semester Hours: 7

First Semester

Code	Title	Hours
	Humanities Elective	3
	Social Science and/or Economics Electives	3
	Science and Mathematics Electives	3
LAW 125	Introduction to Legal Research Prerequisite: Admission to the paralegal program or department chair approval.	1
SPD 120	Interpersonal Communication	3
	OR	
SPD 121	Public Speaking	3
	OR	
SPD 125	Personal Communication	3
		Total Semester Hours: 13

Second Semester

Code	Title	Hours
	Following admission to the paralegal program:	
	Paralegal Electives	3
ENGL 122	Composition II Prerequisite: ENGL 121	3
LAW 134	Introduction to Legal Technology Prerequisite: Admission as a student to the paralegal program or department chair approval	3
LAW 132	Civil Litigation Prerequisites: paralegal students or legal nurse consultant students - admission to the program and LAW 121 or department chair approval	3
		Total Semester Hours: 12

Third Semester

Code	Title	Hours
	Paralegal Electives	6
	Humanities Elective	3
	Science and Mathematics Elective	3
	Health and/or Physical Education Elective	1
LAW 205	Legal Analysis and Writing Prerequisite: Admission to the legal studies program or department chair approval	3
		Total Semester Hours: 16

Fourth Semester

Code	Title	Hours
	Paralegal Electives	2
	Science and Mathematics Electives	3
	Social Science and/or Economics Electives	3
LAW 271	Legal Ethics, Interviewing and Investigation Prerequisite: Paralegal program students - admission to the paralegal program or department chair approval Legal Nurse Consultant students - admission to the legal nurse consultant program or department chair approval	3
LAW 210	Advanced Legal Research Prerequisite: Admission to the paralegal program and	3

	LAW 125 and LAW 205 or department chair approval	
LAW 201	Advanced Legal Technology	3
	Prerequisite: LAW 134 or BOT 106. Paralegal students must take LAW 134 and BOT students must take BOT 106	

Total Semester Hours: 17

Paralegal Electives

Code	Title	Hours
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 department approval. Legal nurse consultant students - LAW 225 and LAW 121	
LAW 162	Family Law	3
	Prerequisites: Paralegal program students - admission to paralegal program or department approval. Legal nurse consultant students - LAW 225 and LAW 121	
LAW 165	Forensic Science and the Law	3
LAW 171	Law Office Management	3
	Prerequisites: Paralegal program students - admission to the paralegal program or department approval. Legal nurse consultant students - LAW 225 and LAW 121	
LAW 175	Environmental Policy and Law	3
LAW 212	Business Organizations	3
	Prerequisites: Paralegal program students - admission to the paralegal program or department 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 department 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 department 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 department 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 department approval. Legal nurse consultant students - LAW 121 and LAW 225	
LAW 269	Bankruptcy Law	3
	Prerequisites: Paralegal program students - admission to the paralegal program or department chair 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	

Total Program Hours: 65

Legal Nurse Consultant Certificate (Spring 2013)

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. Please contact Anita Tebbe for more information at atebbe@jccc.edu.

LEGAL NURSE CONSULTANTS MAY NOT PROVIDE LEGAL SERVICES DIRECTLY TO THE PUBLIC, EXCEPT AS PERMITTED BY LAW.

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

(Major Code 5450; State CIP 22.0302)

- Gainful Employment - Paralegal, Legal Nurse Consultant
- Legal Nurse Consulting

First Semester

Code	Title	Hours
LAW 225	Legal Nurse Consultant Profession	1
	Prerequisite: Admission to the legal nurse consultant program or department chair approval	
LAW 121	Introduction to Law	3

Total Semester Hours: 4

Second Semester

Code	Title	Hours
	LAW Electives	6
LAW 250	Medicolegal Research and Writing	3
	Prerequisites: Admission to the legal nurse consultant program or department chair approval	
LAW 132	Civil Litigation	3
	Prerequisites: paralegal students or legal nurse consultant students - admission to the program and LAW 121 or department chair approval	
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 - admission to the paralegal program or department chair approval Legal Nurse Consultant students - admission to the legal nurse consultant program or department chair approval	

Total Semester Hours: 18

LAW Electives

Code	Title	Hours
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 department approval.	
	Legal nurse consultant students - LAW 225 and LAW 121	
LAW 162	Family Law	3
	Prerequisites: Paralegal program students - admission to paralegal program or department approval.	
	Legal nurse consultant students - LAW 225 and LAW 121	
LAW 165	Forensic Science and the Law	3
LAW 171	Law Office Management	3
	Prerequisites: Paralegal program students - admission to the paralegal program or department approval.	
	Legal nurse consultant students - LAW 225 and LAW 121	
LAW 175	Environmental Policy and Law	3
LAW 212	Business Organizations	3
	Prerequisites: Paralegal program students - admission to the paralegal program or department 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 department 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 department 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 department 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 department approval.	
	Legal nurse consultant students - LAW 121 and LAW 225	
LAW 269	Bankruptcy Law	3
	Prerequisites: Paralegal program students - admission to the paralegal program or department chair approval	
	Legal nurse consultant students - LAW 121 or LAW 225	
		Total Program Hours: 22

Paralegal Certificate (Spring 2013)

You must have completed a two-year associate of arts 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 from at least 3 of the 4 following disciplines: humanities, social science, and natural science or mathematics.

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. Please contact Anita Tebbe for more information at atebbe@jccc.edu.

PARALEGALS MAY NOT PROVIDE LEGAL SERVICES DIRECTLY TO THE PUBLIC, EXCEPT AS PERMITTED BY LAW.

Students must earn a grade of “C” or higher in all LAW courses.

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.

(Major Code 489A; State CIP Code 22.0302)

- Gainful Employment - Paralegal, Legal Nurse Consultant
- Paralegal

Prerequisites: Prior to admission

Code	Title	Hours
LAW 121	Introduction to Law	3
LAW 123	Paralegal Professional Studies	1
		Total Semester Hours: 4

First Semester

Code	Title	Hours
	Paralegal Electives	7
LAW 125	Introduction to Legal Research	1
	Prerequisite: Admission to the paralegal program or department chair approval.	
LAW 134	Introduction to Legal Technology	3
	Prerequisite: Admission as a student to the paralegal program or department chair approval	
LAW 132	Civil Litigation	3
	Prerequisites: paralegal students or legal nurse consultant students - admission to the program and LAW 121 or department chair approval	
		Total Semester Hours: 14

Second Semester

Code	Title	Hours
	Paralegal Electives	4
LAW 205	Legal Analysis and Writing	3
	Prerequisite: Admission to the legal studies program or department chair approval	
LAW 201	Advanced Legal Technology	3
	Prerequisite: LAW 134 or BOT 106. Paralegal students must take LAW 134 and BOT students must take BOT 106	
		Total Semester Hours: 10

Third Semester

Code	Title	Hours
LAW 210	Advanced Legal Research	3
	Prerequisite: Admission to the paralegal program and LAW 125 and LAW 205 or department chair approval	
LAW 271	Legal Ethics, Interviewing and Investigation	3
	Prerequisite: Paralegal program students - admission	

	to the paralegal program or department chair approval Legal Nurse Consultant students - admission to the legal nurse consultant program or department chair approval	

Total Semester Hours: 6

Paralegal Electives

Code	Title	Hours
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 department approval. Legal nurse consultant students - LAW 225 and LAW 121	
LAW 162	Family Law	3
	Prerequisites: Paralegal program students - admission to paralegal program or department approval. Legal nurse consultant students - LAW 225 and LAW 121	
LAW 165	Forensic Science and the Law	3
LAW 171	Law Office Management	3
	Prerequisites: Paralegal program students - admission to the paralegal program or department approval. Legal nurse consultant students - LAW 225 and LAW 121	
LAW 175	Environmental Policy and Law	3
LAW 212	Business Organizations	3
	Prerequisites: Paralegal program students - admission to the paralegal program or department 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 department 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 department 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 department 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 department approval. Legal nurse consultant students - LAW 121 and LAW 225	
LAW 269	Bankruptcy Law	3
	Prerequisites: Paralegal program students - admission to the paralegal program or department chair 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	

Total Program Hours: 34

Liberal Arts

Liberal Arts, A.A. (Spring 2013)

An Associate of Arts in Liberal Arts degree provides students a broad range of courses that can be transferred to degree programs at a four-year college or university. This degree provides students with exposure to many different subjects and perspectives. It requires 64 college-level credit hours, with 31 hours of general education requirements and 33 hours of electives. Many students choose to earn an Associate of Arts in Liberal Arts degree prior to transferring to a four-year college or university. (See sample degree program below.)

Associate of Arts - Students planning to graduate with a Liberal Arts degree must complete one of the approved cultural diversity courses. Some of the approved courses are able to meet both the cultural diversity requirement and a general education requirement. To see a complete list of approved courses, click on the link provided below. Cultural Diversity Course Requirement at JCCC.

(Major Code 1000; State CIP Code 24.0101)

Associate of Arts

First Semester

Code	Title	Hours
	Electives	7
	Oral Communication	3
	Humanities Elective	3
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	

Total Semester Hours: 16

Second Semester

Code	Title	Hours
	Electives	6
	Social Science Elective	3
	Health and/or Physical Education Elective	1
ENGL 122	Composition II	3
	Prerequisite: ENGL 121	
MATH 171	College Algebra or higher	3
	Prerequisite: MATH 116 with a grade of "C" or higher or MATH 131 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	

Total Semester Hours: 16

Third Semester

Code	Title	Hours
	Electives	9
	Humanities Elective	3
	Science course with Lab	4

Total Semester Hours: 16

Fourth Semester

Code	Title	Hours
	Electives	10
	Science and/or Mathematics Elective	3
	Social Science Elective	3

Total Semester Hours: 16

Total Program Hours: 64

Marketing and Management

Marketing and Management, A.A.S. (Spring 2013)

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 capstone course, you learn the latest in business and consumer marketing 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 eMarketing, interpersonal communications and consumer behavior.

The marketing skills taught are immediately applicable to your job and career. 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 business 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; State CIP Code 52.1401)

- Marketing and Management

Associate of Applied Science Degree

First Semester

Code	Title	Hours
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
MKT 230	Marketing	3
	Total Semester Hours: 15	

Second Semester

Code	Title	Hours
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 240	Advertising and Promotion	3
MKT 284	Marketing and Management Internship I	1
	Total Semester Hours: 16	

Third Semester

Code	Title	Hours
MKT 205	eMarketing	3
ECON 132	Survey of Economics	3
	OR	
ECON 230	Economics I	3
ACCT 111	Small Business Accounting	3
	OR	
ACCT 121	Accounting 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 286	Marketing and Management Internship II	1
	Prerequisite: MKT 284	
	Total Semester Hours: 17	

Fourth Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
MKT 221	Sales Management	3
	Prerequisite: MKT 134	
MKT 290	Capstone: Marketing and Management Case Studies	3
	Prerequisites: BUS 141 and MKT 284 and MKT 286 and (BUS 230 or MKT 230) or department approval	
BUS 261	Business Law	3
HIST 141	U.S. History Since 1877	3
MKT 234	Services Marketing	3
	Prerequisite or corequisite: BUS 230 or MKT 230	
	Total Semester Hours: 16	
	Total Program Hours: 64	

Retail Sales Representative Certificate (Spring 2013)

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

(Major Code 5260; State CIP Code 52.1803)

- Gainful Employment - Retail Sales Representative
- Marketing and Management

Required Courses

Code	Title	Hours
MKT 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
	Prerequisite or corequisite: BUS 230 or MKT 230	
MKT 284	Marketing and Management Internship I	1
	Total Program Hours: 17	

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 (Spring 2013)

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.

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

(Major Code 4920; State CIP Code 52.1804)

- Marketing and Management

First Semester

Code	Title	Hours
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 Hours: 17	

Second Semester

Code	Title	Hours
BUS 150	Business Communications	3
	Prerequisite: ENGL 121	
MKT 221	Sales Management	3
	Prerequisite: MKT 134	
MKT 234	Services Marketing	3
	Prerequisite or corequisite: BUS 230 or MKT 230	
MKT 230	Marketing	3
MKT 240	Advertising and Promotion	3
MKT 286	Marketing and Management Internship II	1
	Prerequisite: MKT 284	
	Total Semester Hours: 16	
	Total Program Hours: 33	

MCC Prog (Academic Bridges to Learning Effectiveness) (ABLE)

ABLE (Spring 2013)

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 Metropolitan Community College-Longview ABLE program, 816-604-2053. For information visit www.mcckc.edu/ABLE .

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.

Metal Fabrication/Welding

Metal Fabrication/Welding Technology, A.A.S. (Spring 2013)

The Metal Fabrication/Welding Technology program offers two distinct career path options. The Structural option is designed to train students to operate welding equipment to weld structural metal components/members. The Manufacturing option is designed to train students to operate welding equipment to weld metal components in a manufacturing environment.

The student will be required to choose either the Structural or Manufacturing option for their third and fourth semester classes.

(Major Code 2460; State CIP Code 48.0508)

- Metal Fabrication Technology

Associate of Applied Science Degree

First Semester

Code	Title	Hours
MFAB 180	Blueprint and Symbols Reading for Welders	2
MFAB 124	Introduction to Welding	3
MFAB 240	Metallurgy	2
MATH 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an 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	
MFAB 128	Basic Machine Tool Technology	3
	Total Semester Hours: 16	

Second Semester

Code	Title	Hours
	Social Science Elective	3
MFAB 131	Shielded Metal Arc Welding (SMAW) I	3
	Prerequisite: MFAB 120 or MFAB 124 or MFAB 127	
MFAB 133	Gas Metal Arc Welding (GMAW) I	3
	Prerequisite: MFAB 120 or MFAB 124 or MFAB 127	
MFAB 136	Gas Tungsten Arc Welding (GTAW) I	3
	Prerequisite: MFAB 120 or MFAB 124 or MFAB 127	
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
HPER 200	First Aid and CPR	2
	Total Semester Hours: 17	

Third Semester (Structural Option)

Code	Title	Hours
MFAB 205	Shielded Metal Arc Welding (SMAW) II	3
	Prerequisite: MFAB 121 or MFAB 131	
MFAB 210	Gas Metal Arc Welding (GMAW) II	3

	Prerequisite: MFAB 130 or MFAB 133	
MFAB 215	Fabrication Practices I	3
	Prerequisites: MFAB 121 or MFAB 131 and MFAB 130 or MFAB 133 and MFAB 136 or MFAB 160	
INDT 155	Workplace Skills	1
MFAB 220	Flux Core Arc Welding (FCAW)	3
	Prerequisite: MFAB 130 or MFAB 133	
INDT 125	Industrial Safety/OSHA 30	3
	OR	

Total Semester Hours: 16

Third Semester (Manufacturing Option)

Code	Title	Hours
MFAB 205	Shielded Metal Arc Welding (SMAW) II	3
	Prerequisite: MFAB 121 or MFAB 131	
MFAB 210	Gas Metal Arc Welding (GMAW) II	3
	Prerequisite: MFAB 130 or MFAB 133	
MFAB 255	Advanced Machine Tool Technology	3
	Prerequisite: MFAB 128 or MFAB 170	
INDT 155	Workplace Skills	1
MFAB 241	Gas Tungsten Arc Welding (GTAW) II	3
	Prerequisite: MFAB 136 or MFAB 160	
INDT 125	Industrial Safety/OSHA 30	3

Total Semester Hours: 16

Fourth Semester (Structural Option)

Code	Title	Hours
	Humanities Elective	3
	Related Electives Note: CET 150 is strongly recommended as an elective	6
MFAB 259	Shielded Metal Arc Welding (SMAW) III	3
	Prerequisite: MFAB 125 or MFAB 205	
MFAB 250	Fabrication Practices II	3
	Prerequisite: MFAB 215 or MFAB 260	
	OR	

Total Semester Hours: 15

Fourth Semester (Manufacturing Option)

Code	Title	Hours
	Humanities Elective	3
	Related Electives Note: CET 150 is strongly recommended as an elective	6
MFAB 152	Manufacturing Materials and Processes	3
MFAB 140	Maintenance Repair Welding	3
	Prerequisites: MFAB 121 or MFAB 131 and MFAB 130 or MFAB 133 and MFAB 136 or MFAB 160	

Total Semester Hours: 15

Related Electives

Code	Title	Hours
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
CET 150	Construction Safety Note: CET 150 is strongly recommended as an elective	
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 131	Technical Mathematics II Prerequisite: MATH 130 or MATH 133 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	3
MFAB 140	Maintenance Repair Welding Prerequisite: MFAB 121 or MFAB 130	3
MFAB 152	Manufacturing Materials and Processes	3
MFAB 203	Introduction to Ornamental Iron Prerequisites: MFAB 121 or MFAB 131 and MFAB 130 or MFAB 133 and MFAB 136 or MFAB 160	3
MFAB 215	Fabrication Practices I Prerequisites: MFAB 121 or MFAB 131 and MFAB 130 or MFAB 133 and MFAB 136 or MFAB 160	3
MFAB 220	Flux Core Arc Welding (FCAW) Prerequisite: MFAB 130 or MFAB 133	3
MFAB 241	Gas Tungsten Arc Welding (GTAW) II Prerequisite: MFAB 136 or MFAB 160	3
MFAB 250	Fabrication Practices II Prerequisite: MFAB 215 or MFAB 260	3
MFAB 255	Advance Machine Tool Technology Prerequisite: MFAB 128 or MFAB 170	3
MFAB 259	Shielded Metal Art Welding (SMAW) III Prerequisite: MFAB 125 or MFAB 205	3
MFAB 271	Metal Fabrication Internship Prerequisite: department approval	3

Total Program Hours: 64

Metal Fabrication/Welding Certificate (Spring 2013)

The metal fabrication/welding certificate teaches welding skills in the areas of shielded metal arc welding (SMAW), gas metal arc welding (GMAW), flux core arc welding (FCAW), gas and tungsten arc welding (GTAW), oxy-fuel welding (OFW), oxy-fuel cutting (OFC), and plasma arc cutting (PAC). The students also will receive training in safety and basic blueprint reading, and metallurgy. This certificate gives the student the skills needed to successfully enter the field of welding.

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

(Major Code 4790; State CIP Code 48.0508)

- Gainful Employment - Metal Fabrication (Welding)
- Metal Fabrication Technology

First Semester

Code	Title	Hours
INDT 125	Industrial Safety	3
MFAB 180	Blueprint and Symbols Reading for Welders	2
MFAB 240	Metallurgy	2
MFAB 124	Introduction to Welding	3
INDT 155	Workplace Skills	1

Total Semester Hours: 11

Second Semester

Code	Title	Hours
MFAB 131	Shielded Metal Arc Welding (SMAW) I	3
	Prerequisite: MFAB 120 or MFAB 124 or MFAB 127	
MFAB 133	Gas Metal Arc Welding (GMAW) I	3
	Prerequisite: MFAB 120 or MFAB 124 or MFAB 127	
MFAB 136	Gas Tungsten Arc Welding (GTAW) I	3
	Prerequisite: MFAB 120 or MFAB 124 or MFAB 127	

Total Semester Hours: 9

Third Semester

Code	Title	Hours
MFAB 205	Shielded Metal Arc Welding (SMAW) II	3
	Prerequisite: MFAB 121 or MFAB 131	
MFAB 210	Gas Metal Arc Welding (GMAW) II	3
	Prerequisite: MFAB 130 or MFAB 133	
MFAB 220	Flux Core Arc Welding (FCAW)	3
	Prerequisite: MFAB 130 or MFAB 133	

Total Semester Hours: 9
Total Program Hours: 29

General Basic Welding Certificate (Spring 2013)

This certificate is the recommended first step to employment in the welding field.

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; State CIP Code 48.0508)

- Metal Fabrication Technology

First Semester

Code	Title	Hours
MFAB 124	Introduction to Welding	3
MFAB 180	Blueprint and Symbols Reading for Welders	2
INDT 155	Workplace Skills	1
INDT 125	Industrial Safety	3

Total Semester Hours: 9

Second Semester

Code	Title	Hours
MFAB 131	Shielded Metal Arc Welding (SMAW) I	3
	Prerequisite: MFAB 120 or MFAB 124 or MFAB 127	
MFAB 133	Gas Metal Arc Welding (GMAW) I	3
	Prerequisite: MFAB 120 or MFAB 124 or MFAB 127	

Total Semester Hours: 6
Total Program Hours: 15

Introduction to Manufacturing Certificate (Spring 2013)

This certificate exposes the students to the manufacturing industry. Topics covered include manufacturing equipment, processes, materials and safety.

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

(Major Code 4320; State CIP Code 48.0599)

- Metal Fabrication Technology

Required Courses

Code	Title	Hours
MFAB 124	Introduction to Welding	3
MFAB 152	Manufacturing Materials and Processes	3
INDT 125	Industrial Safety/OSHA 30	3
CPCA 105	Introduction to Personal Computers: Windows	1
INDT 155	Workplace Skills	1
MFAB 271	Metal Fabrication Internship	3
	Prerequisite: department approval	
	OR	
MFAB 128	Basic Machine Tool Technology	3

Total Semester Hours: 14
Total Program Hours: 14

Nursing

Nursing - Registered Nurse, A.A.S. (Spring 2013)

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.

Students must earn a grade of “C” or higher in all coursework.

Note: Kansas CNA certification is required for application to the nursing program.

NOTE: Students admitted to the nursing program SPRING 2013 and after will be required to have completed BOTH BIOL 140 Human Anatomy (4 credit hours) and BIOL 225 Human Physiology (4 credit hours). (BIOL 144 Human Anatomy and Physiology WILL NO LONGER satisfy this requirement. IF BIOL 144 is completed, this course will be used as a substitute for BIOL 140 Human Anatomy.)

(Major Code 235A; State CIP Code 51.3801)

- Registered Nurse (RN)

Associate of Applied Science Degree

Prerequisites: Prior to enrolling in NURS 124

Code	Title	Hours
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 Hours: 8

First Semester

Code	Title	Hours
BIOL 144	Human Anatomy and Physiology	5
	OR	
BIOL 140	Human Anatomy	4
	AND	

BIOL 225	Human Physiology	4
	Prerequisites or corequisites: Either CHEM 122 or (CHEM 124 and CHEM 125) 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 Hours: 17-20

Second Semester

Code	Title	Hours
	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 and corequisite: Communications elective 3 cr hrs.	

Total Semester Hours: 15

Summer

Code	Title	Hours
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	

Total Semester Hours: 3

Third Semester

Code	Title	Hours
NURS 228	Nursing Care of the Childbearing Family	5
	Prerequisites: ENGL 121 and PSYC 218 and NURS 126 and Prerequisite or Corequisites: BIOL 230 and NURS 230 and either SOC 122 or SOC 125	
NURS 230	Nursing Care of Children	5
	Prerequisites: ENGL 121 and PSYC 218 and NURS 126 and Prerequisite or Corequisites: BIOL 230 and NURS 228 and either SOC 122 or SOC 125	
SOC 122	Introduction to Sociology	3
	OR	
SOC 125	Social Problems	3
BIOL 230	Microbiology	3
	Prerequisite: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry	

Total Semester Hours: 16

Fourth Semester

Code	Title	Hours
	Humanities Elective	3
	Health and/or Physical Education Elective	1
NURS 232	Complex Patient Care Management	9
	Prerequisites: NURS 228 and NURS 230	

Total Semester Hours: 13
Total Program Hours: 72-75

PN to RN Transition, A.A.S. (Spring 2013)

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.

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.

(Major Code 235A; State CIP Code 51.1601)

- Nursing

Associate of Applied Science Degree

Prerequisite: Prior to enrolling in NURS 228 and NURS 230

Code	Title	Hours
	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	
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	

Total Semester Hours: 25

Summer

Code	Title	Hours
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	

Total Semester Hours: 6
Note: NURS 136 is not added into the total program hours.

Third Semester

Code	Title	Hours
NURS 228	Nursing Care of the Childbearing Family	5
	Prerequisites: ENGL 121 and PSYC 218 and NURS 126 and Prerequisite or Corequisites: BIOL 230 and NURS 230 and either SOC 122 or SOC 125	
NURS 230	Nursing Care of Children	5
	Prerequisites: ENGL 121 and PSYC 218 and NURS 126 and Prerequisite or Corequisites: BIOL 230 and NURS 228 and either SOC 122 or SOC 125	
SOC 122	Introduction to Sociology	3
	OR	
SOC 125	Social Problems	3
BIOL 230	Microbiology	3
	Prerequisite: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry	

Total Semester Hours: 16

Fourth Semester

Code	Title	Hours
	Humanities Elective	3
	Health and/or Physical Education Elective	1
NURS 232	Complex Patient Care Management	9
	Prerequisites: NURS 228 and NURS 230	

Total Semester Hours: 13
Note: Total Program Hours include 18 hours APL for NURS 124/126
Total Program Hours: 72

Practical Nursing Certificate (Spring 2013)

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 $36,000-$38,000.

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 full time program, which can be completed in 10 months, provides 880 clock hours of instruction. This includes classroom and clinical laboratory experiences in many areas of nursing. The application deadline is March 15th for every year and has an August start date. Admission to this program requires successful completion of several prerequisites.

FULL TIME 10-MONTH PROGRAM - GENERAL SCHEDULE*

Monday and Tuesday 8:30 a.m. - 3:45 p.m.

Wednesday and Thursday 6:30 a.m. - 2:00 p.m.

Friday 9:00 a.m. - 1:00 p.m.

*Clinical days and times may vary

The Evening-Weekend Program, which can be completed in 24 months, provides approximately 880 clock hours of instruction. This includes classroom and clinical laboratory experiences in many areas of nursing. Application deadline will be October 15th every year and has a January start date. Admission to this program requires successful completion of several prerequisites.

EVENING/WEEKEND 24-MONTH PROGRAM - GENERAL SCHEDULE*

Tuesday and Thursday 5:00 p.m. - 9:00 p.m.

Every other weekend (Sat. & Sun.) 6:30 a.m. - 2:30 p.m.

*Clinical days and times may vary

The practical nursing programs 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.

Students must “pass” all clinical courses and maintain a grade of “C” or higher in all non-clinical courses to remain in the program.

Prerequisites BEFORE Beginning Professional Courses

Admission to the Practical Nursing Program; Current Certification in Kansas as a Nursing Assistant and Cardiopulmonary Resuscitation (CPR) for Healthcare Providers.

(Major Code 366A; State CIP Code 51.3901)

- Gainful Employment - Practical Nurse
- Nursing

Prerequisite Courses

Code	Title	Hours
BIOL 144	Human Anatomy and Physiology	5
PSYC 130	Introduction to Psychology	3
PSYC 218	Human Development Prerequisite: PSYC 130	3
	Total Semester Hours: 11	

First Semester

Code	Title	Hours
PN 120	Introduction to Practical Nursing Prerequisites: Admission to the Practical Nursing Program; current certification in Kansas as Certified Nursing Assistant (CNA); cardiopulmonary Resuscitation Certification (CPR) for Health Care Providers; and BIOL 144 and PSYC 130 and PSYC 218 with a grade of "C" or higher. Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	2
PN 125	KSPN Foundations of Nursing Prerequisite or corequisites: PN 120 and Corequisite: PN 126. Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	4
PN 126	KSPN Foundations of Nursing Clinical Prerequisite or corequisites: PN 120 and Corequisite: PN 125. Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	2
PN 130	KSPN Medical Surgical Nursing I Prerequisite or corequisites: PN 125 and PN 126 and Corequisite: PN 131 Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	4
PN 131	KSPN Medical Surgical Nursing I Clinical Prerequisite or corequisites: PN 125 and PN 126 and Corequisite: PN 130. Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	3
PN 135	KSPN Pharmacology Prerequisite or corequisites: PN 125 and PN 126. Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	3
	Total Semester Hours: 18	

Second Semester

Code	Title	Hours
PN 140	KSPN Maternal Child Nursing Prerequisites: PN 130 and PN 131 and PN 135 and Corequisite: PN 141. Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	2
PN 141	KSPN Maternal Child Clinical Prerequisites: PN 130 and PN 131 and PN 135 and Corequisite: PN 140. Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical courses to remain in the program.	1
PN 145	KSPN Mental Health Nursing Prerequisites: PN 130 and PN 131 and PN 135 and Corequisite: PN 146. Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	2

PN 146	Mental Health Nursing Clinical	1
	Prerequisites: PN 130 and PN 131 and PN 135 and Corequisite: PN 145.	
	Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	
PN 150	KSPN Medical Surgical Nursing II	4
	Prerequisites: PN 130 and PN 131 and PN 135 and Corequisite: PN 151.	
	Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	
PN 151	KSPN Medical Surgical Nursing II Clinical	3
	Prerequisites: PN 130 and PN 131 and PN 135 and Corequisite: 150.	
	Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	
PN 155	KSPN Gerontology Nursing	2
	Prerequisites: PN 130 and PN 131 and PN 135	
	Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical courses to remain in the program.	
PN 160	Applied Pharmacology	2
	Prerequisites: PN 130 and PN 131 and PN 135.	
	Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical PN courses to remain in the program.	
PN 165	Transition to Nursing Practice	2
	Prerequisites: PN 130 and PN 131 and PN 135.	
	Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical courses to remain in the program.	

Total Semester Hours: 19
Total Program Hours: 48

Polysomnography/Sleep Technology

Polysomnography/Sleep Technology, A.A.S. (Spring 2013)

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.

The Polysomnography program is accredited by 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 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.

Students must “pass” all clinical courses and maintain a grade of “C” or higher in all non-clinical courses to remain in the program.

(Major Code 236A; State CIP Code 51.0917)

- Polysomnography

Associate of Applied Science Degree

Prior to beginning professional courses

Code	Title	Hours
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 or corequisites: Either CHEM 122 or (CHEM 124 and CHEM 125) and either BIOL 140 or BIOL 144	
	Total Semester Hours: 13-16	

First Semester

Code	Title	Hours
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
HC 130	Medical Terminology for Healthcare Professions	3
	OR	
	Satisfactory completion of a health related degree or certificate	
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
PSG 125	Introduction to Sleep Medicine	4
	Prerequisite: Admission to the polysomnography program Corequisite: Current AHA BLS Health Care Provider Certification	
PSG 130	Physiology of Sleep Medicine	3
	Prerequisite: Admission to the polysomnography	
	Total Semester Hours: 11-14	

Second Semester

Code	Title	Hours
	Communications Elective	3
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 140 with a grade of "C" or higher and PSG 145 with a grade of "C" or higher	

Total Semester Hours: 15

Third Semester

Code	Title	Hours
	Social Science/Economics Elective	3
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	

Total Semester Hours: 13

Fourth Semester

Code	Title	Hours
	Humanities/Art Elective	3
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	

Total Semester Hours: 12
Total Program Hours: 64-70

Professional Paraeducator

Professional Paraeducator Program, A.A. (Spring 2013)

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.

IMPORTANT - Students graduating with a Professional Paraeducator degree must complete an approved cultural diversity course. Some of the approved courses are able to meet both the cultural diversity requirement and a general education requirement. To see a complete list of courses, click on the link provided below.

Cultural Diversity Course Requirement

(Major Code 2390; State CIP Code 13.1501)

Associate of Arts

First Semester

Code	Title	Hours
	Humanities Elective	3
	Science course with Lab	4-5
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

Total Semester Hours: 16-17

Second Semester

Code	Title	Hours
	PSYC Elective	3
	(Note: Any PSYC course will meet this requirement not already required in program.)	
	Social Science/Economics Elective	3
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 131 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	

Total Semester Hours: 18

Third Semester

Code	Title	Hours
	Education Elective	3
	Humanities Elective	3
	Science and/or Mathematics Elective	3
EDUC 243	Issues and Skills for Paraeducators	3
PSYC 225	Educational Psychology	3
	Prerequisite: PSYC 130	

Total Semester Hours: 15

Fourth Semester

Code	Title	Hours
	Oral Communication	3
	Social Science/Economics Elective	3
	Health and/or Physical Education Elective	2
	(Recommend HPER 200-First Aid and CPR)	
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

Total Semester Hours: 15

Education Electives

Code	Title	Hours
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	Prerequisite: EDUC 240	3
EDUC 250	Child Health, Safety and Nutrition	3

Total Program Hours: 64-65

Railroad Electronics

Railroad Electronics, A.A.S. (Spring 2013)

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. Hover your cursor over the "New Careers" tab and choose from the list.

(Major Code 2820; State CIP Code 49.0208)

Associate of Applied Science Degree

First Semester

Code	Title	Hours
	Elective	3
	Science and/or Mathematics Elective	3
RREL 180	Introduction to Railroad Electronics	1
	Prerequisites: Approval of the railroad training administrator and the JCCC department approval	
RREL 181	Circuit Analysis DC/AC	6
	Prerequisites: RREL 180 and the approval of the railroad training administrator and the JCCC department approval	
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
	Total Semester Hours:	16

Second Semester

Code	Title	Hours
	Humanities Elective	3
RREL 182	Semiconductor Devices and Circuits	6
	Prerequisites: RREL 181 and the approval of the railroad training administrator and the JCCC department approval	
RREL 183	Digital Techniques	6
	Prerequisites: RREL 182 and approval of the railroad training administrator and the JCCC department approval	
	Total Semester Hours:	15

Third Semester

Code	Title	Hours
	Technical Electives	6
	Social Science/Economics Elective	3
RREL 284	Electronic Communications	6
	Prerequisites: RREL 183 and approval of the railroad training director and the JCCC department approval	
	Total Semester Hours:	15

Fourth Semester

Code	Title	Hours
	Technical Electives	6
	Communications Elective	3
	Health and/or Physical Education Elective	1
RREL 285	Microprocessor Techniques	6
	Prerequisites: RREL 183 and approval of the railroad training director and the JCCC department approval	
RREL 286	Applied Microprocessors	2
	Prerequisites: RREL 285 and approval of the railroad training director and the JCCC department approval	
	Total Semester Hours:	18

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

Technical Electives

Code	Title	Hours
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
	Prerequisite: BOT 106 or experience using Microsoft Access	
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 department approval	
DRAF 129	Interpreting Architectural Drawings	2
DRAF 132	Exploring AutoCAD	3
DRAF 140	Topics in CAD I: BIM / REVIT	2
DRAF 238	Architectural Design and Drafting	3
	Prerequisites: DRAF 129 and DRAF 135 and DRAF 143 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	2
HVAC 143	Reading Blueprints and Ladder Diagrams	2
HVAC 146	Plumbing Systems Applications	3
HVAC 150	Refrigerant Management and Certification	1
HVAC 155	Workplace Skills	1
HVAC 167	Sheet Metal Layout and Fabrication	3
INDT 125	Industrial Safety	3
INDT 140	Quality Improvement Using SPC	2
INDT 155	Workplace Skills	2
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 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
	Total Program Hours: 64	

Railroad Electronics Certificate (Spring 2013)

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. Hover your cursor over the "New Careers" tab and choose from the list.

(Major Code 4540; State CIP Code 49.0208)

Required Courses

Code	Title	Hours
RREL 180	Introduction to Railroad Electronics	1
	Prerequisites: Approval of the railroad training administrator and the JCCC department approval	
RREL 181	Circuit Analysis DC/AC	6
	Prerequisites: RREL 180 and the approval of the railroad training administrator and the JCCC department approval	
RREL 182	Semiconductor Devices and Circuits	6
	Prerequisites: RREL 181 and the approval of the railroad training administrator and the JCCC department approval	
RREL 183	Digital Techniques	6
	Prerequisites: RREL 182 and approval of the railroad training administrator and the JCCC department approval	
RREL 284	Electronic Communications	6
	Prerequisites: RREL 183 and approval of the railroad training director and the JCCC department approval	
RREL 285	Microprocessor Techniques	6
	Prerequisites: RREL 183 and approval of the railroad training director and the JCCC department approval	
RREL 286	Applied Microprocessors	2
	Prerequisites: RREL 285 and approval of the railroad training director and the JCCC department approval	
	Total Semester Hours: 33	
	Total Program Hours: 33	

Railroad Industrial Technology

Railroad Structural Welding Certificate (Spring 2013)

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; State CIP Code 49.0208)

- Railroad

Required Courses

Code	Title	Hours
RRIT 122	Elements of Welding	3
	Prerequisites: Approval of the BNSF manager of track and roadway maintenance training and the JCCC department approval	
RRIT 123	Basic Welding	3
	Prerequisites: RRIT 122 or approval of the BNSF manager of engineering and maintenance training and the JCCC department approval	
RRIT 137	Structural Welding SMAW	3
	Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC department approval	
RRIT 138	Structural Welding FCAW	3
	Prerequisites: RRIT 137 and approval of the BNSF manager of engineering and maintenance training and the JCCC department approval	
RRIT 139	Structural Welding Pipe	3
	Prerequisites: RRIT 137 and approval of the BNSF manager of engineering and maintenance training and the JCCC department approval	
	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 department approval	
	Total Program Hours: 15	

Railroad Track Welding Certificate (Spring 2013)

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; State CIP Code 49.0299)

- Railroad

Required Courses

Code	Title	Hours
RRIT 122	Elements of Welding	3
	Prerequisites: Approval of the BNSF manager of track and roadway maintenance training and the JCCC department approval	
RRIT 123	Basic Welding	3
	Prerequisites: RRIT 122 or approval of the BNSF manager of engineering and maintenance training and the JCCC department approval	
RRIT 132	Thermite Welding	3
	Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC department approval	
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 department approval	
RRIT 145	Frog Welding	3
	Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC department approval	
	Total Semester Hours: 15	
	Total Program Hours: 15	

Railroad Operations

Railroad Operations - Conductor Option, A.A.S. (Spring 2013)

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. Hover your cursor over the "New Careers" tab and choose from the list.

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; State CIP Code 49.0208)

Associate of Applied Science Degree

First Semester

Code	Title	Hours
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 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
PHIL 124	Logic and Critical Thinking	3
RRT 120	History of Railroading	3
	Total Semester Hours: 15	

Second Semester

Code	Title	Hours
	Technical Electives	2
	Health and/or Physical Education Elective	1
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
MATH 131	Technical Mathematics II	3
	Prerequisites: MATH 130 or MATH 133 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	
PHYS 133	Applied Physics	5
	Prerequisite: MATH 135 or higher	
RRT 121	Railroad Technical Careers	3
	Total Semester Hours: 17	

Third Semester

Code	Title	Hours
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 Hours: 16	

Fourth Semester

Code	Title	Hours
RRTC 123	Introduction to Conductor Service	4
	Prerequisite: Admission to the JCCC railroad operations program, conductor option	
	Prerequisite: BNSF/JCCC Training Director Approval	
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 and BNSF/JCCC Training Director Approval	
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 and BNSF/JCCC Training Director Approval	
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 and BNSF/JCCC Training Director Approval	
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 and BNSF/JCCC Training Director Approval	
	Total Semester Hours: 16	

Technical Electives

Code	Title	Hours
AUTO 125	Introduction to Automotive Shop Practices	3
AUTO 165	Automotive Engine Repair	4
	Prerequisite or corequisite: AUTO 125 or department approval	
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 department approval	
DRAF 129	Interpreting Architectural Drawings	2
ELEC 120	Introduction to Electronics	3
ELEC 126	Microcomputer A+ Preparation	3
ELEC 133	Programmable Controllers	3
ELEC 150	Introduction to Telecommunications	3
ENGR 180	Engineering Land Surveying I	3
	Prerequisite or corequisite: MATH 134 or MATH 131 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 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
	Total Program Hours: 64	

Locomotive Electrical Certificate (Spring 2013)

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; State CIP Code 49.0299)

Required Courses

Code	Title	Hours
RRTM 142	Locomotive Electricity	3
	Prerequisite: Approval of the railroad training administrator and the JCCC department approval	
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 department approval	
RRTM 145	GE Dash 8/9 Electrical Systems	3
	Prerequisite: Approval of the railroad training administrator and the JCCC department approval	
	Total Semester Hours: 12	
	Total Program Hours: 12	

Locomotive Mechanical Certificate (Spring 2013)

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; State CIP Code 49.0299)

Required Courses

Code	Title	Hours
RRTM 135	Basic EMD Mechanical	3
	Prerequisite: Approval of the railroad training administrator and JCCC department approval	
RRTM 136	Basic GE Mechanical	3
	Prerequisite: Approval of the railroad training administrator and the JCCC department approval	
RRTM 137	Locomotive Air Brake	3
	Prerequisite: Approval of the railroad training administrator and the JCCC department approval	
RRTM 138	Locomotive FRA	3
	Prerequisite: Approval of the railroad training administrator and the JCCC department approval	
	Total Semester Hours: 12	
	Total Program Hours: 12	

Railroad Freight Car Certificate (Spring 2013)

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. Hover your cursor over the "New Careers" tab and choose from the list.

Students must earn a grade of "C" or higher in all coursework.

(Major Code 4360; State CIP Code 49.0208)

Required Courses

Code	Title	Hours
RRTM 130	Freight Car Yard Inspection	3
	Prerequisites: Approval of the railroad training administrator and JCCC department approval	
RRTM 131	Freight Car Repair Track Inspector	3
	Prerequisites: RRTM 130 and approval of the railroad training administrator and JCCC department approval	
RRIT 122	Elements of Welding	3
	Prerequisites: Approval of the BNSF manager of track and roadway maintenance training and JCCC department approval	

RRTM 152	Freight Car Air Brakes, Basic	2
	Prerequisite: Approval of the railroad training administrator and JCCC department approval	

Total Program Hours: 11

Railroad Conductor Certificate (Spring 2013)

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. Hover your cursor over the "New Careers" tab and choose from the list.

(Major Code 4410; State CIP Code 49.0208)

Required Courses

Code	Title	Hours
RRTC 123	Introduction to Conductor Service	4
	Prerequisite: Admission to the JCCC railroad operations program, conductor option	
	Prerequisite: BNSF/JCCC Training Director Approval	
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 and BNSF/JCCC Training Director Approval	
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 and BNSF/JCCC Training Director Approval	
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 and BNSF/JCCC Training Director Approval	
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 and BNSF/JCCC Training Director Approval	

Total Semester Hours: 16

Total Program Hours: 16

Railroad Signal Certificate (Spring 2013)

This certificate is designed to prepare the student for an exciting and well-paying career as a railroad signalman by exposure to the basic information and skills necessary to perform assigned duties of a signalman in a safe and professional manner.

Signaling plays a vital role in railroading operations. As signaling technology has increased in complexity, so has the need for a more qualified employee. Signalmen must be proficient at designing, installing, maintaining and troubleshooting mechanical, electrical and electronic equipment, as well as entire computerized signal systems.

Enrollment is subject to approval of the BNSF Railway training director or NARS director and JCCC division administrator.

For information visit the National Academy of Railroad Sciences. Hover your cursor over the "New Careers" tab and choose from the list.

(Major Code 5300; State CIP Code 49.0208)

Required Courses

Code	Title	Hours
RREL 110	Introduction to Railroad Signal Systems	4
	Prerequisite: Approval of the railroad training administrator and the JCCC department approval	
RREL 112	Track Circuits and Systems	4
	Prerequisites: Successful completion of RREL 110 and approval of the railroad training administrator and the JCCC department approval	
RREL 114	Traffic Control, Switch Machines & Locks	4
	Prerequisite: RREL 112 and approval of the railroad training administrator and the JCCC department approval	
RREL 116	Interlocking, Classification, Crossings & Gates	4
	Prerequisite: RREL 114 and approval of the railroad training administrator and the JCCC department approval	

Total Semester Hours: 16

Railroad Operations - General Option, A.A.S. (Spring 2013)

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.

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. Hover your cursor over the "New Careers" tab and choose from the list.

(Major Code 2800; State CIP Code 49.0208)

First Semester

Code	Title	Hours
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 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
PHIL 124	Logic and Critical Thinking	3
RRT 120	History of Railroading	3

Total Semester Hours: 15

Second Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
MATH 131	Technical Mathematics II	3

	Prerequisites: MATH 130 or MATH 133 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	
PHYS 133	Applied Physics	5
	Prerequisite: MATH 135 or higher	
RRT 121	Railroad Technical Careers	3
		Total Semester Hours: 15

Third Semester

Code	Title	Hours
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 Hours: 16

Fourth Semester

Code	Title	Hours
	Business/Related Electives	6
	Technical/Related Electives	10
INDT 140	Quality Improvement Using SPC	2
		Total Semester Hours: 18

Business/Related Electives

Code	Title	Hours
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 243	Human Resource Management	3
BUS 261	Business Law I	3
MKT 230	Marketing	3
ENGL 210	Technical Writing II	3
	Prerequisite: ENGL 123	
BOT 101	Computerized Keyboarding	1

Technical/Related Electives

Code	Title	Hours
AUTO 125	Introduction to Automotive Shop Practices	3
AUTO 165	Automotive Engine Repair	4
	Prerequisite or corequisite: AUTO 125 or department approval	
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 department approval	
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
	Prerequisite or corequisite: MATH 134 or MATH 131 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
		Total Program Hours: 64

Railroad Operations - Mechanical Option, A.A.S. (Spring 2013)

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. Hover your cursor over the "New Careers" tab and choose from the list.

(Major Code 2840; State CIP Code 49.0208)

Associate of Applied Science Degree

Prerequisites for Required Courses

Code	Title	Hours
	Prior to beginning the program, the student must take one of the following prerequisite courses, or have obtained a waiver from the department or may contact the Testing Center for prior learning credit.	
MFAB 120	MFAB Tools and Equipment	2
	OR	
MFAB 127	Welding Processes	2

First Semester

Code	Title	Hours
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 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
PHIL 124	Logic and Critical Thinking	3
RRT 120	History of Railroading	3
		Total Semester Hours: 15

Second Semester

Code	Title	Hours
	Technical Electives	2
	Health and/or Physical Education Elective	1
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
MATH 131	Technical Mathematics II	3
	Prerequisites: MATH 130 or MATH 133 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	
PHYS 133	Applied Physics	5
	Prerequisite: MATH 135 or higher	
RRT 121	Railroad Technical Careers	3
	Total Semester Hours: 17	

Third Semester

Code	Title	Hours
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

Fourth Semester

Code	Title	Hours
RRIT 122	Elements of Welding	3
	Prerequisites: Approval of the BNSF manager of track and roadway maintenance training and the JCCC department approval	
	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 department approval	
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 Hours: 16	

Technical Electives

Code	Title	Hours
AUTO 125	Introduction to Automotive Shop Practices	3
AUTO 165	Automotive Engine Repair	4
	Prerequisite or corequisite: AUTO 125 or department approval	
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 department approval	
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
	Prerequisite or corequisite: MATH 134 or MATH 131 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 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
	Total Program Hours: 64	

Railroad Operations - Welding Option, A.A.S. (Spring 2013)

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. Hover your cursor over the "New Careers" tab and choose from the list.

(Major Code 2850; State CIP Code 49.0208)

First Semester

Code	Title	Hours
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 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math assessment test	
PHIL 124	Logic and Critical Thinking	3
RRT 120	History of Railroading	3
	Total Semester Hours: 13	

Second Semester

Code	Title	Hours
	Health and/or Physical Education Elective	1
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	

INDT 125	Industrial Safety	3
PHYS 133	Applied Physics	5
	Prerequisite: MATH 135 or higher	
RRT 121	Railroad Technical Careers	3

Total Semester Hours: 15

Third Semester

Code	Title	Hours
	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 Hours: 15

Fourth Semester

Code	Title	Hours
RRIT 122	Elements of Welding	3
	Prerequisites: Approval of the BNSF manager of track and roadway maintenance training and the JCCC department approval	
RRIT 123	Basic Welding	3
	Prerequisites: RRIT 122 or approval of the BNSF manager of engineering and maintenance training and the JCCC department approval	
RRIT 132	Thermite Welding	3
	Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC department approval	
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 department approval	
RRIT 145	Frog Welding	3
	Prerequisites: RRIT 123 and approval of the BNSF manager of engineering and maintenance training and the JCCC department approval	
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 Hours: 21

Technical/Related Electives

Code	Title	Hours
AUTO 125	Introduction to Automotive Shop Practices	3
AUTO 165	Automotive Engine Repair	4
	Prerequisite or corequisite: AUTO 125 or department approval	
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 department approval	
DRAF 129	Interpreting Architectural Drawings	2
ELEC 126	Microcomputer A+ Preparation	4
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 240	Metallurgy	2
RRIT 160	Mechanical Basic Welding	3
	Prerequisite: Approval of Burlington Northern Santa Fe (BNSF) Training Director	
RRIT 162	Mechanical Welding Structural Stick	3
	Prerequisite: Approval of Burlington Northern Santa Fe (BNSF) Training Director	
RRIT 164	Mechanical Welding Structural Wire	3
	Prerequisite: Approval of Burlington Northern Santa Fe (BNSF) Training Director	

Total Program Hours: 64

Recording Arts

Recording Arts Certificate (Spring 2013)

This certificate is designed to prepare students to work in the creative field of digital audio technology. Students will develop traditional recording studio skills along with skills needed to work with current digital audio technology. Students who successfully complete the program will have a good foundation to find work as an audio engineer, a studio musician, a music producer, or as a songwriter or composer. There is no prerequisite for this certificate.

(Major Code 5090; State CIP Code 24.0101)

First Semester

Code	Title	Hours
MUS 156	MIDI Music Composition	3

Total Semester Hours: 3

Second Semester

Code	Title	Hours
MUS 157	Introduction to Digital Audio	3
	Prerequisite: MUS 155 or MUS 156	

Total Semester Hours: 3

Third Semester

Code	Title	Hours
MUS 158	Digital Audio Techniques I	4
	Prerequisite: MUS 157	

Total Semester Hours: 4

Fourth Semester

Code	Title	Hours
MUS 159	Recording Studio II	4
	Prerequisites: MUS 158	

Total Semester Hours: 4

Total Program Hours: 14

Respiratory Care

Respiratory Care, A.A.S. (Spring 2013)

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 for Respiratory Care (CoARC www.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 website or 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.
Students must "pass" all clinical courses and maintain a grade of "C" or higher in all non-clinical courses to remain in the program.

(Major Code 237A; State CIP Code 51.0908)

- Respiratory Care

Summer

Code	Title	Hours
	Social Science/Economics Elective	3
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
	This prerequisite course must be completed before the clinic-year. Not completing the course clinic-year will delay credentialing eligibility.	
	Total Semester Hours: 6	

First Semester

Code	Title	Hours
	Humanities/Art Elective	3
BIOL 140	Human Anatomy	4
	This prerequisite course must be completed before the clinic-year. Not completing the course clinic-year will delay credentialing eligibility.	
CHEM 122	Principles of Chemistry	5
	This prerequisite course must be completed before the clinic-year. Not completing the course clinic-year will delay credentialing eligibility.	
MATH 116	Intermediate Algebra	3
	Prerequisite: MATH 115 with a grade of "C" or higher or appropriate score on the math assessment test	
	This prerequisite course must be completed before the clinic-year. Not completing the course clinic-year will delay credentialing eligibility.	
	OR	
MATH 171	College Algebra or Higher	3
	Prerequisite: MATH 116 with a grade of "C" or higher or MATH 131 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	
	Total Semester Hours: 15	

Second Semester

Code	Title	Hours
	Communications Elective	3
BIOL 225	Human Physiology	4
	Prerequisites or corequisites: Either CHEM 122 or (CHEM 124 and CHEM 125) and either BIOL 140 or BIOL 144	
	This prerequisite course must be completed before the clinic-year. Not completing the course clinic-year will delay credentialing eligibility.	
BIOL 230	Microbiology	3
	Prerequisite: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry	
	This prerequisite course must be completed before the clinic-year. Not completing the course clinic-year will delay credentialing eligibility.	
BIOL 231	Microbiology Lab	2
	Prerequisite: 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
	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.	
	Total Semester Hours: 11-16	

Summer (clinic-year)

Code	Title	Hours
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 Hours: 9	

Third Semester

Code	Title	Hours
RC 220	Cardiopulmonary Physiology	2
	Prerequisite: Successful completion of the summer 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 Hours: 16	

Fourth Semester

Code	Title	Hours
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 Hours: 14	
	Total Program Hours: 71-73	
	WITH HC ELECTIVE COURSE.....74-76	

Solar Technology

Solar Technician Certificate (Spring 2013)

This certificate targets those who wish to enter the job market prepared to design and install state of the art solar energy systems. Students will prepare to sit for the North American Board of Certified Energy Practitioners (NABCEP), Entry Level Solar Thermal and Entry Level Solar Photovoltaic (PV) Installer exams. Additionally the program will provide opportunities for the participants to gain necessary field experience for full NABCEP Solar Thermal and PV Installer Certification.

(Major Code 4470; State CIP Code 15.0505)

- Solar Technology

First Semester

Code	Title	Hours
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
EPRM 142	Solar Thermal Systems	3
	Total Semester Hours: 15	

Second Semester

Code	Title	Hours
	Technical Elective	3
CET 105	Construction Methods	3
EPRM 252	Solar Electric Systems	3
	Prerequisite: ELTE 125 or ELTE 200	
EPRM 256	Solar Electric Systems Lab	1
	Prerequisite or corequisite: EPRM 252	
ELTE 210	Code Certification Review	3
CET 150	Construction Safety	3
	OR	
INDT 125	Industrial Safety	3
INDT 155	Workplace Skills	1
	Total Semester Hours: 17	

Technical Electives

Code	Title	Hours
BUS 140	Principles of Supervision	3
BUS 145	Small Business Management	3
CPCA 128	PC Applications: MS Office	3
CET 150	Construction Safety	3
ELEC 120	Introduction to Electronics	3
ELEC 131	Introduction to Sensors and Actuators	3
ELEC 133	Programmable Controllers	3
ENTR 142	Fast Trac Business Plan	3
EPRM 120	Introduction to Residential Energy	3
INDT 125	Industrial Safety	3
	Total Program Hours: 32	

Solar Technologies, AAS (Spring 2013)

The future of US energy prosperity rests on developing a portfolio of technologies and practices that can address America's energy needs--technologies that increase and diversify domestic energy supply, while having little or no effect on the environment. To that end the Solar Technologies AAS is structured to train professional designers, technicians and installers in a full spectrum of solar hardware, software, and best practices. The degree program targets those who see the AAS as a terminal degree and will enter the market prepared to design and install state of the art solar energy systems. The program is also adaptable to the needs of a student who is considering a four year degree option in technology or engineering. Students will prepare to sit for the North American Board of Certified Energy Practitioners (NABCEP), Entry Level Solar Thermal and Entry Level Solar Photovoltaic (PV) Installer exams. Additionally the program will provide opportunities for the participants to gain necessary field experience for full NABCEP Solar Thermal and PV Installer Certification.
(Major Code 2190; State CIP Code 15.0505)

- Solar Technology

Associate of Applied Science

First Semester

Code	Title	Hours
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
CET 150	Construction Safety	3
	OR	
INDT 125	Industrial Safety	3
INDT 155	Workplace Skills	1
	Total Semester Hours: 16	

Second Semester

Code	Title	Hours
HPER 200	First Aid and CPR	2
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
EPRM 120	Introduction to Residential Energy	3
EPRM 142	Solar Thermal Systems	3
HVAC 125	Energy Alternatives	2
MATH 130	Technical Mathematics I	3
	Prerequisite: MATH 111 with a grade of "C" or higher or and appropriate score on the math assessment test	
	Total Semester Hours: 16	

Third Semester

Code	Title	Hours
	Social Science and/or Economics Elective	3
DRAF 129	Interpreting Architectural Drawings	2
EPRM 252	Solar Electric Systems	3
	Prerequisite: ELTE 125 or ELTE 200	
EPRM 256	Solar Electric Systems Lab	1
	Prerequisite or corequisite: EPRM 252	
ELTE 210	Code Certification Review	3
	Prerequisite: ELTE 122	
ELTE 271	Electrical Internship I	3
	Prerequisite: department approval	
	Total Semester Hours: 15	

Fourth Semester

Code	Title	Hours
	Technical Electives	5
	Humanities Elective	3
ELTE 202	Electrical Estimating	3
	Prerequisite: ELTE 122 or ELTE 125 or ELTE 200 or department approval	
ENGL 123	Technical Writing I	3
	Prerequisite: ENGL 121	
CET 105	Construction Methods	3
	Total Semester Hours: 17	

Technical Electives

Code	Title	Hours
BUS 140	Principles of Supervision	3
BUS 145	Small Business Management	3
CET 150	Construction Safety	3
CPCA 128	PC Applications: MS Office	3
DRAF 130	Introduction to CAD Concepts - AutoCAD	3
	Prerequisite: DRAF 120 or department approval	
DRAF 250	Electrical Drafting	3
	Prerequisites: MATH 133 or MATH 130 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 200	Commercial Wiring Methods	4
	Prerequisite or corequisite: HVAC 123 or ELTE 123	
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 department approval	
ENTR 142	Fast Trac Business Plan	3
HVAC 121	General Principles of HVAC	4
	Prerequisite or corequisite: HVAC 123 or ELTE 123	
INDT 125	Industrial Safety	3
	Total Program Hours: 64	

Veterinary Technology

Veterinary Technology, A.A.S. (Spring 2013)

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.

Degree granted by Metropolitan Community College

Associate of Applied Science Degree

General Education Requirements-must be taken at JCCC

Code	Title	Hours
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
	Total Semester Hours: 3-5	

American Institutions

Code	Title	Hours
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

Code	Title	Hours
BIOL 127	General Zoology	5
BIOL 230	Microbiology	3
	Prerequisite: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry	
BIOL 231	Microbiology Lab	2
	Prerequisite: 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

Code	Title	Hours
COLL 100	First Year Seminar	1
POLS 153	The Missouri Constitution	1
VETT 108	Clinical Math for Veterinary Technicians	1
VETT 100	Introduction to Veterinary Technology	2
VETT 101	Principles of Animal Science I	3
VETT 110	Principles of Animal Science II	3
VETT 111	Sanitation and Animal Care	2
VETT 200	Veterinary Hospital Technology I	3
VETT 201	Clinical Pathology Techniques I	4
VETT 202	Veterinary Anatomy	5
VETT 203	Laboratory Animal Technology	2
VETT 209	Equine Medicine and Management	3
VETT 210	Veterinary Hospital Technology II	3
VETT 211	Clinical Pathology Techniques II	5
VETT 212	Large Animal Technology	4
VETT 213	Radiology and Electronic Procedures	2
VETT 214	Veterinary Technician Internship	6

General Education Electives

Code	Title	Hours
ARTH 180	Art History: Ancient to Renaissance	3
ARTH 182	Art History: Renaissance to Modern	3
ARTH 184	Art History: Twentieth Century	3
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 122	Composition II	3
	Prerequisite: ENGL 121	
	NOTE: ENGL 122 is highly recommended.	
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	Sociology of Families	3
SPD 120	Interpersonal Communication	3
	Total Program Hours: 80-82	

Web Technologies

Web Technologies, A.A.S. (Spring 2013)

Today's web developers have a huge audience for their work, thanks in large part to the Internet, as well as numerous employment possibilities. The various applications of the World Wide Web are limited only by human creativity. Email gave way to instant messaging and social networking. Early e-commerce led to online banking and trading. Where once it took minutes for a single picture to load onto a Web site, today you can watch TV and movies online and download DVDs. The driving force behind all of these advances is Web application developers, who are responsible for all technical aspects of a Web site.

Johnson County Community College's Web Technology program focuses on "real world"/hands-on and interactive learning. Web developers fuel the Internets explosive growth by identifying and developing new applications for the Web, as well as refining existing uses, making Internet use simpler and more seamless. Web developers make the Web interface perform as it was designed and intended.

Associates of Applied Science in Web Technology program prepares students for current software and industry practices, application development specifically for the World Wide Web and applications for the mobile web. The core courses provide a broad foundation of software and industry skills. Students can then use the elective courses to tailor their AAS degree and develop their portfolio for specific work areas such as web programming, rich media applications, and mobile web applications. This program prepares students for entry-level positions and/or preparation for transfer to a four-year degree program at a college or university.

Graduates may work as Web Developers, Web Developer Consultants, Rich Media Applications Developers, Mobile Web Technologists/Developers, Web-based Game Developers, Smart Phone Application Developers, E-Commerce Developers, and entrepreneurs. Graduate's employment opportunities include a wide range of companies that are interested in using the Internet to market and/or sell their products and services or companies that provide Web development and maintenance as a contracted service.

(Major Code 2300; State CIP Code 11.0801)

- Information Systems

Associate of Applied Science

First Semester

Code	Title	Hours
	Full Semester Courses:	
CWEB 110	XHTML and CSS	3
CWEB 103	Professional Skills for the Digital Developer	3
CIS 134	Programming Fundamentals	4
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	
	First Five Week Session:	
CWEB 101	Introduction to the Web using Internet Explorer	1
	Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or appropriate score on an assessment test	
CWEB 105	Introduction to Web Pages: Dreamweaver	1
	Prerequisite or corequisite: CWEB 101	
	OR	
CWEB 104	Introduction to Web Pages: Expression Web	1
	Prerequisite or corequisite: CWEB 101	
	Second Five Week Session:	
CWEB 160	Introduction to JavaScript	1
	Prerequisite: CWEB 104 or CWEB 105 or CWEB 106 or CPCA 161	
	Total Semester Hours: 16	

Second Semester

Code	Title	Hours
	Full Semester Courses:	
	Health and/or Physical Education Elective	1
CWEB 212	Technical Interface Skills	3
	Prerequisite: CWEB 110	
CWEB 166	Introduction to eXtensible Markup Language	3
	Prerequisite: CWEB 160	
IT 140	Networking Fundamentals	4
	First Five Week Session:	
CWEB 130	Introduction to Flash	1
	Prerequisite: CPCA 161 or CWEB 104 or CWEB 105 or CWEB 106	
CWEB 126	Survey of Web Technologies	2
	Prerequisite or corequisite: CWEB 101	
	Second Five Week Session:	
CWEB 140	Intermediate Flash	1
	Prerequisite: CWEB 130	
CWEB 167	Introduction to Asynchronous JavaScript and XML	1
	Prerequisite: CWEB 160	
	Third Five Week Session:	
CWEB 150	Advanced Flash	1
	Prerequisite: CWEB 140	
	Total Semester Hours: 17	

Third Semester (Mobile Web Option)

Code	Title	Hours
	Full Semester Courses:	
	Humanities/Art Elective	3
	Social Science and/or Economic Elective	3
ENGL 140	Writing for Interactive Media Prerequisite: ENGL 121	3
CWEB 121	Introduction to Mobile Media Prerequisite: CWEB 110	3
CWEB 221	Design and Development for Mobile Web Prerequisite or corequisite: CWEB 121	3
	Second Five Week Session:	
CPCA 114	Database I: Access Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on a waiver test	1
	Third Five Week Session:	
CWEB 136	Introduction to PHP Prerequisites: CWEB 101 and CPCA 114	1

Total Semester Hours: 17

Third Semester (Rich Media Applications Option)

Code	Title	Hours
	Full Semester Courses:	
	Humanities/Art Elective	3
	Social Science and/or Economic Elective	3
ENGL 140	Writing for Interactive Media Prerequisite: ENGL 121	3
CS 205	Concepts of Programming Algorithms using JAVA Prerequisite: CIS 134 or ENGR 171	4
CWEB 250	Rich Internet Applications I Prerequisite: CIS 134	3
	Third Five Week Session:	
CWEB 190	ActionScript for Flash Prerequisite: CWEB 150	1

Total Semester Hours: 17

Third Semester (Web Programming Option)

Code	Title	Hours
	Full Semester Courses	
	Humanities/Art Elective	3
	Social Science and/or Economic Elective	3
ENGL 140	Writing for Interactive Media Prerequisite: ENGL 121	3
CWEB 260	CSS Techniques & Projects Prerequisite: CWEB 110	3
	First Five Week Session:	
CPCA 114	Database I: Access Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on a waiver test	1
	Second Five Week Session:	
CWEB 115	Intermediate Web Pages: Dreamweaver Prerequisite: CWEB 105	1
	OR	
CWEB 114	Intermediate Web Pages: Expression Web Prerequisite: CWEB 104	1
CWEB 136	Introduction to PHP Prerequisites: CWEB 101 and CPCA 114	1
	Third Five Week Session:	
CWEB 125	Introduction to Dynamic Web Pages: Dreamweaver Prerequisites: CWEB 115 and CPCA 114	1
CWEB 190	ActionScript for Flash Prerequisite: CWEB 150	1

Total Semester Hours: 17

Fourth Semester (Mobile Web Option)

Code	Title	Hours
	Full Semester Courses:	
	Science and/or Math Elective	3
	Program Electives	7
CWEB 250	Rich Internet Applications I Prerequisite: CIS 134	3
CWEB 290	Web Technologies Capstone Prerequisites: CWEB 270 or CWEB 221 or CWEB 250	3
	Third Five Week Session	
CWEB 146	PHP with MySQL Prerequisite: CWEB 136	1

Total Semester Hours: 17

Fourth Semester (Rich Media Applications Option)

Code	Title	Hours
	Full Semester Courses:	
	Science and/or Math Elective	3
	Program Electives	7
CIS 208	Mobile Application Development Prerequisite: CS 205	4
CWEB 290	Web Technologies Capstone Prerequisites: CWEB 270 or CWEB 221 or CWEB 250	3

Total Semester Hours: 17

Fourth Semester (Web Programming Option)

Code	Title	Hours
	Full Semester Courses:	
	Science and/or Math Elective	3
	Program Electives	7
CWEB 270	Web Analytics Prerequisite: CWEB 110	3
CWEB 290	Web Technologies Capstone Prerequisites: CWEB 270 or CWEB 221 or CWEB 250	3
	Third Five Week Session:	
CWEB 146	PHP with MySQL Prerequisite: CWEB 136	1

Total Semester Hours: 17

Program Electives

Code	Title	Hours
BUS 150	Business Communications Prerequisite: ENGL 121	3
CDTP 135	Desktop Photo Manipulation I: Photoshop	1
CDTP 155	Desktop Photo Manipulation II: Photoshop Prerequisite: CDTP 135	1
CDTP 175	Desktop Photo Manipulation III: Photoshop Prerequisite: CDTP 155	1
CDTP 140	Desktop Publishing I: InDesign	1
CDTP 160	Desktop Publishing II: InDesign Prerequisite: CDTP 140	1
CDTP 168	Desktop Publishing III: InDesign Prerequisite: CDTP 160	1
CDTP 145	Desktop Illustration I: Illustrator	1

CDTP 165	Desktop Illustration II: Illustrator	1
	Prerequisite: CDTP 145	
CDTP 185	Desktop Illustration III: Illustrator	1
	Prerequisite: CDTP 165	
CS 205	Concepts of Programming Algorithms Using JAVA	4
	Prerequisite: CIS 134 or ENGR 171 or equivalent experience	
CIS 162	Database Programming	4
	Prerequisite: CIS 134 or the equivalent	
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 139	UNIX	1
	Prerequisite: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on a waiver test	
CWEB 104	Introduction to Web Pages: Expression Web	1
	Prerequisite: CWEB 101	
CWEB 105	Introduction to Web Pages: Dreamweaver	1
	Prerequisite: CWEB 101	
CWEB 114	Intermediate Web Pages: Expression Web	1
	Prerequisite: CWEB 104	
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 165	Introduction to Adobe Acrobat	1
CWEB 250	Rich Internet Applications I	3
	Prerequisite: CIS 134	
CWEB 292	Special Topics	1-3
	Prerequisite: Department approval	
ENTR 120	Introduction to Entrepreneurship	2
IT 221	Windows Server	3
	Prerequisite: IT 205	
IT 230	Linux Fundamentals	3

Total Program Hours: 67

Credit Course Descriptions (Spring 2013)

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 AAC, 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 and is not federal aid eligible. 20 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. $2 to 5.

AAC 101

Study Skills Mini-Course (1 CR)
This class is a regularly scheduled class 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. This course does not fulfill degree requirements and is not federal aid eligible.
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 and is not federal aid eligible. 16 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. $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 and is not federal aid eligible. 20 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. $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 AAC. 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 and is not federal aid eligible. 20 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. $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 AAC 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 and is not federal aid eligible. 20 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. $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 AAC 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 and is not federal aid eligible. 20 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. $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 AAC. 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 requirementsand is not federal aid eligible. 20 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. $2 to 5.

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 AAC, students will master a variety of concepts, including the terminology of mathematics and algebra, simplifying open expressions, solving algebraic equations and other concepts. An Academic Achievement Center instructor 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 and is not federal aid eligible. 20 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. $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 AAC, students will master a variety of concepts, including chemical symbols and formulas, valences, chemical equations, the metric system, units and dimensions, temperature, numbers in exponent form, significant figures, electrical charges, acids, bases, salts and solubility. An Academic Achievement Center instructor is available to work with the student to establish specific instructional goals, administer tests and provide individualized instruction needed to complete the student's program. This course does not fulfill degree requirements and is not federal aid eligible. 20 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. $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 and is not federal aid eligible.

AAC 120

Individualized Study (1 CR)
This self-instructional course is designed for students who want to improve in any of the following AAC 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 AAC. 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 and is not federal aid eligible. 20 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. $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 AAC 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 AAC. 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 and is not federal aid eligible. 40 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. $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 and is not federal aid eligible. 60 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. $2 to 5.

AAC 125

College/Life Success (3 CR)
This is a course designed to introduce the skills necessary for college and career success. The purpose is to assist students in identifying and integrating strengths, individual personality type, learning style and study strategies into their college and life experiences. 3 hrs. lecture/wk.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ACCT 122

Accounting II (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ACCT 135

Computerized Accounting Applications (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ACCT 140

Computerized Accounting Problems (3 CR)
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)
This course will teach students basic information 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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ACCT 231

Intermediate Accounting I (3 CR)
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)
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)
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)
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. It is strongly advised that the student secure the internship position before enrolling in this course. Searching for the position, applying for it, and being accepted to work are three important aspects of the coursework that must be completed during the first few weeks of the course, if not completed before the course begins.

ACCT 285
Accounting Capstone (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ADMJ 122
Police Operations (3 CR)
This course examines the major components involved in police operations. The students examine the role of police in society and the application of key concepts to policing scenarios. Focus is placed on patrol, investigative activities, communications, routine and emergency police calls, specialized police operations, police operations in culturally diverse communities, legal restraints, stress in police work, and ethical responsibilities. 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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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
Physical and Sexual Violence within the Family (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 150
Criminal Procedure (3 CR)
Criminal Procedure is an exploration of the structure of the judicial process, the sources and constitutional development of criminal procedure, criminal investigation, remedies for violations of constitutional rights, the pretrial and trial process, sentencing and appeals, and counter-terrorism. 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 patterns that require the student to apply the knowledge they have gained. 3 hrs. lecture/wk.

ADMJ 154
Fundamentals of Criminal Investigation (3 CR)
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
Drugs and Crime (3 CR)
This course explores the relationship between drugs and crime. Students will analyze how drugs impact criminal activity at the local, state, federal, and international level. Local, state and federal laws regulating substance use will also be examined. Students will become familiar with the effects of drugs on the body. Interventions for individuals harmfully involved with drug use will be explored. 3 hrs. lecture/wk.

ADMJ 180
Correctional Casework (3 CR)
This course helps prepare students for positions in correctional agencies. Students will learn how corrections officials, parole officers, probation officers, facility based caseworkers and treatment providers perform their roles. Students will examine various types of offenders housed in correctional facilities. 3 hrs. lecture/wk.

ADMJ 201
Police Interrogation (3 CR)
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 221
Forensic Science and Crime Scene Investigation (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 223
The World of Crime (3 CR)
This course provides the study of crime and the criminal justice systems of countries other than the United States, and with issues related to crime throughout the world. Emphasis will be placed on a comparison of the three main aspects of the criminal justice system (police, courts, corrections) between specific countries. 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 226
Criminal Justice Interview and Report Writing (3 CR)
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. Focus will be on gathering pertinent information and then, recording that information by writing a variety of report narratives. 3 hrs. lecture/wk.

ADMJ 230
Criminal Behavior (3 CR)
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, reentry 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 255
Ethics and Criminal Justice (3 CR)
This course explores the study of ethics, particularly as it applies to the field of criminal justice. Focus is placed on providing a basic framework for understanding morality and ethics, then applying those concepts to the development of critical thinking and decision-making skills as they relate to the field of criminal justice. 3 hrs. lecture/wk.

ADMJ 265
Advanced Police Training (0 CR)
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 275
Police Management (3 CR)
This class will assist students in developing an understanding through practical analysis of modern criminal justice administration theory as well as supervisory and management principles. Students will apply these principles to the unique operating problems of contemporary criminal justice organizations. 3 hrs. lecture/wk.

ADMJ 280
Criminal Justice and the Public (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ADMJ 281
Readings in Police Science (3 CR)
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)
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)
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)
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.

ASL 123
Intermediate American Sign Language II (3 CR)
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.

ASL 135
Intro to American Sign Language Linguistics (3 CR)
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.

ASL 145
Introduction to the Deaf Community (3 CR)
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.

ASL 147
Fingerspelling I (2 CR)
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)
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.

Animation (ANI)

ANI 123
Concept Art for Animation (3 CR)
This basic concept art course is designed for graphic artists, animators, and game artists. 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, vehicles, architecture, and landscape environments. 6 hrs. integrated lecture-studio/wk.

ANI 125

Introduction to 2D Animation (3 CR)
In this course students will learn all aspects of traditional 2D animation, including flipbook, cell, puppet and claymation. Students will create a 2D character, write a story, fabricate a simple puppet and take it through a series of exercises. Experimental animation will be integrated into the course using paper cutouts, replacement animation and stop motion. 6 hrs. integrated lecture studio/wk.

ANI 145

Introduction to 3D Animation (3 CR)
This introductory course will provide a historical background and general design and production issues for 3D animation. 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. Students will also be introduced to motion graphics, and generate basic animation, compositing, and effects. 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 245

Character Animation (3 CR)
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.

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 250

Game Art Assets (3 CR)
This course provides an introduction to making game art assets, and animations for next generation games. Students create high polygon, and low polygon 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, rigging, light assets, animations, and export them into an existing game engine. 6 hrs. integrated lecture-studio/wk.

ANI 255

Advanced Animation and Effects (3 CR)
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 258

Game Level Design (3 CR)
This course provides an introduction to game level design and how to create interior and exterior levels using the same state of the art editing tools that are used in ultra high-end video games. Students learn to build white box levels first and then populate the level with detailed original game artwork. Students will create terrain maps, textures and interactively place static meshes into the game editor to enhance the visual aspects of the level. Students explore how to build a map that is purposeful and exciting to play 6 hrs. integrated lecture-studio/wk.

ANI 260

Animation Capstone (3 CR)
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 270

Visual Effects and Compositing (3 CR)
This course emphasizes the importance of breaking down visual effects shots for effective compositing. Advanced topics will include correct use of garbage mattes, 2D/3D visual effects, blue screen or green screen removal, traveling mattes, image correction, lighting and shading. An introduction to the production pipeline used in professional film and TV work will also be covered. 6 hrs. integrated lecture-studio/wk.

ANI 272

Animation Internship (1 CR)
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 animation program. Student interns will be required to complete a minimum of 180 hours of on-the-job training. ANI 272 is the same course as CIM 272; 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)
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.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 153
The Anthropology of the Paranormal & Supernatural (3 CR)
This introductory course will employ various Western and non-Western perspectives, including scientific and popular culture theories, to critically and comparatively examine a wide array of phenomena classified as paranormal or supernatural. Topics to be covered include extra-sensory perception, witchcraft and magic, ghosts, extra-terrestrial beings, and cryptozoological organisms. Lectures, discussions, readings, and films will be used to accomplish the aforementioned, as well as optional trips to local locations associated with the paranormal and supernatural. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. This course is only offered in the spring semester. 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. This course is only offered in the fall semester. 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)
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. This course is only 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. $100 to 300.

ARCH 140
Architectural Design (3 CR)
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. This course is only offered in the spring semester. 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 152
Architectural Professional Practice (1 CR)
Architectural Professional Practice will elaborate on the concepts presented in ARCH 120 Introduction to Architecture and ARCH 123 Architectural Principles. This course will expand on the concepts of ethics in professional practice and how they relate to all aspects of design and construction. Topics will include the architectural practice as it relates to education, internship, emerging professionals, licensure and registration. This course is only offered in the spring semester.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. $25 to 100.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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.

ARCH 245
Architectural History: Modern (3 CR)
This course will investigate the architecture of the Modern Era. The focus of this course is on the principles of design, education of the architect, artistic forces and concepts of the built environment within its historical context. The work of prominent architects and their architectural theories will be covered and analyzed. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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)
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)
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)
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)
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 I (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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
Students will study advanced casting and construction techniques. Projects should show a higher degree of design and function. 6 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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)
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)
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)
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 238
Digital Imaging for Artists II (3 CR)
This course is a continued study of skills learned in Digital Imaging for Artists. Students will concentrate on creating personal imagery using digital media. 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 200.

ART 244
Ceramics Workshop I (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ASTR 214

Introduction to Teaching Math and Science (1 CR)
This course allows math and science students to explore and develop an appreciation for teaching as a career. To support their learning, students will be introduced to the theory and practice that is necessary to design and deliver quality instruction. They will plan and implement lessons of an inquiry-based curriculum in an elementary classroom during the semester. ASTR 214, MATH 214, BIOL 214, CHEM 214, GEOS 214, PHYS 214 and PSCI 214 are the same course; enroll in only one. 1 hrs. lecture/wk.

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 course is an introductory course required for all students in the Automotive Technology program. 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. Emphasis will be placed on learning basic skills needed to enter advanced automotive classes. The student will be required to provide American National Standards Institute (ANSI) Z87 safety glasses and is 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 129

Brakes I (3 CR)
Students will perform system pressure and travel calculations utilizing Pascal's Law, complete service work orders, determine appropriate system pressure tests utilizing service specifications, determine brake system concerns and necessary actions, diagnose poor stopping, pulling or dragging concerns caused by malfunctions in the hydraulic system, determine how to inspect, fabricate and/or replace brake lines and hoses, determine the service specifications pertaining to the removal, cleaning and refinishing procedures on brake drums, apply drum brake repair and replacement procedures, diagnose poor stopping, noise, vibration, pulling, grabbing, dragging or pedal pulsation concerns on disc-brake vehicles, determine disc brake repair and replacement procedures, determine how to accomplish caliper piston retractions, diagnose wheel bearing noise, wheel shimmy and vibration concerns, and determine how to remove, inspect and replace bearing and hub assemblies through a variety of classroom and lab/shop learning and assessment activities. 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. $400.

AUTO 130

Diesel Fundamentals (2 CR)
Upon successful completion of this course, the student should be able to identify diesel engine components and parts, troubleshoot and service all external components with an 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 131
Brakes II (1 CR)
Students will determine necessary brake system correction, conduct system pressure tests utilizing service specifications, perform diagnosis and correction for poor stopping, pulling or dragging concerns caused by malfunctions in the hydraulic system, conduct inspection, fabrication and/or replacement of brake lines and hoses, diagnose poor stopping noise vibration, pulling, grabbing, dragging or pedal pulsation concerns, perform service specifications pertaining to the removal, cleaning and refinishing procedures on brake drums, perform drum brake repair and replacement procedures, diagnose poor stopping noise vibration, pulling, grabbing, dragging or pedal pulsation concerns, perform disc brake repair and replacement procedures, machine rotor according to service specifications, perform caliper piston retraction where applicable, inspect and test power assist systems, determine necessary action on wheel bearing noise, wheel shimmy and vibration concern diagnoses, and perform the removal, inspection and replacement of bearing and hub assemblies. 3 hrs. instruction 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 400.

AUTO 156
Electrical I (3 CR)
Students will complete service work orders; describe the relationship between voltage, ohms and amperage; perform basic electrical circuit repairs; identify electrical system faults; identify basic wiring diagram symbols, components, and legend information; perform basic electrical circuit measurements using a DVOM; describe basic circuit characteristics of series, parallel and series parallel circuits through a variety of classroom and shop learning and assessment activities. 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. $0 to 400.

AUTO 158
Steering and Suspension I (2 CR)
In this course students will document fundamental suspension system concerns, perform fundamental diagnostics of steering systems, perform fundamental repairs of steering systems, perform fundamental diagnostics of suspension systems, perform fundamental repairs of suspension systems, determine the need for wheel alignment and adjustment, perform fundamental diagnostics of wheel and tire systems, and perform fundamental repairs of wheel and tire systems. 1 hr. 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. $0 to 400.

AUTO 159
Steering and Suspension II (2 CR)
Upon successful completion of this course, students should be able to perform complex diagnostics and repair on steering and suspension systems. Additionally, students will perform pre-alignment inspection and complex repairs of wheel and tire systems. 1 hr. lecture, 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 400.

AUTO 161
Engine Performance I (3 CR)
In this learning plan students will: complete work order and check history; identify engine mechanical integrity; explore the fundamentals of fuel system theory; identify fuel system concerns; explore the fundamentals of ignition theory; identify ignition system concerns; identify induction system concerns; identify exhaust system concerns; identify engine mechanical integrity through a variety of learning and assessment activities. 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. $0 to 400.

AUTO 165
Automotive Engine Repair (4 CR)
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 166
Electrical II (2 CR)
Upon completion of this course, the student should be able to perform battery diagnosis, perform battery service, perform starting system diagnosis, perform starting system repair, perform charging system diagnosis, perform charging system repair, and identify current flow on starting and charging system diagrams. 1 hr. 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. $0 to 400.

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 205
Engine Performance II (3 CR)
Upon successful completion of this course, the student should be able to describe the operation of engine management systems to include: general engine diagnosis, computerized engine controls diagnosis and repair, fuel, air induction, and exhaust diagnosis and repair, and emissions control systems diagnosis and repair. The student will be required to provide ANSI Z87 safety glasses and will be expected to provide other basic hand tools and/or equipment. 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. $0 to 400.

AUTO 206
Automotive Retailing Sales (3 CR)
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 208
Electrical III (3 CR)
Upon successful completion of this course, the student should be able to diagnose general electrical system problems, diagnose and repair lighting systems, gauges, warning devices, horns, wiper and washer systems, and accessories. The student will be required to provide ANSI Z87 safety glasses and will be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 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. $0 to 400.

AUTO 209

Manual Drive Train and Axles (4 CR)
Upon successful completion of this course, the student should be able to work safely in the shop; perform manual transmission/transaxle diagnosis and repair; clutch diagnosis and repair; drive shaft, half-shaft, universal and constant velocity joint diagnosis and repair; and four wheel drive/all wheel drive diagnosis and repair. 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. instructional lab

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 400.

AUTO 210

Advanced Engine Repair (3 CR)
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 215

Engine Performance III (3 CR)
Upon successful completion of this course, the student should be able to service and repair fuels systems, ignition systems, and exhaust systems. The student will be required to provide ANSI Z87 safety glasses and will be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. instructional lab

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 400.

AUTO 221

Heating and Air Conditioning (4 CR)
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. 3 hrs. lecture, 3 hrs. instructional lab

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 400.

AUTO 250

Automatic Transmissions and Transaxles (4 CR)
Upon completion of this course, the student should be able to diagnose, service and repair various automatic transmissions and automatic transaxles, both on vehicle and off vehicle, 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. 2 hrs. lecture, 6 hrs. instructional lab

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)
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)
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)
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, impact on the environment, and longevity. Students will analyze the composition of their diets and develop a plan of action to improve their eating behaviors. This course integrates sustainability concepts.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 121

Introductory Biology for Non-Majors (4 CR)
This course introduces non-majors to selected concepts and principles that form the foundation of an understanding of how biological systems operate. The importance of scientific methods and processes will be explored. Biological systems will be investigated at a variety of levels, from the chemical to the biosphere, and the unity of diversity of life will be examined in light of evolutionary and genetic processes. 3 hrs. lecture & 2 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. $0 to 15.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 128
Environmental Ethics (3 CR)
This course provides a survey of environmental ethics. It focuses on the emergence of environmental issues as a topic of careful philosophical study and its connection to the political and legal considerations of environmental problems. It also examines various theories and traditional approaches developed in Western and Eastern philosophy as well as major world religions to understanding the value and status of nature. Lastly, this course looks at specific controversies pertaining to the conservation, use and value of natural resources. BIOL 128 is the same course as PHIL 128; enroll in only one. 3 hrs. lecture/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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BIOL 131
Environmental Science Lab (1 CR)
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 132
Introduction to Public Health (3 CR)
This is an introductory course in public health. It provides a background in many areas of public health with an emphasis on the health system and understanding and measuring health, disease and illness. Epidemiology, food safety and animal health will also be examined. Public health emergency preparedness, the public health workforce and public health administration will also be studied. Students will learn about public health nursing, public health education and the role of law and government in public health. Students will also examine environmental and occupational health. The different types of public health professional occupations and future challenges for public health will be examined. 3 hrs lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BIOL 134
Principles of Sustainability (3 CR)
Principles of Sustainability introduces students to the social, economic and environmental dimensions of sustainability and sustainable development. The course will critically examine the use of sustainable principles to guide decision making and problem solving in personal, campus, community and global contexts. Students will engage in a variety of individual, group, campus and community activities and collaborate with campus and community offices and agencies in order to identify, assess and address local sustainability needs. Students will be required to present their projects at a public sustainability forum. 3 hrs. lecture/wk.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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.Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BIOL 145
Human Anatomy and Physiology Dissection (1 CR)
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)
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
Bioethics (3 CR)
This course introduces students to the scientific, ethical and legal issues relevant to the discipline of biology and those raised by the rapid development of new biological technologies. Students will examine the major theories of ethics, including deontology, utilitarianism, and select others. Topics include: beginning of life issues such as contraception, abortion, and nontraditional methods of human reproduction; end of life issues such as advance healthcare directives and physician-assisted suicide; and other issues such as experimentation on human and animal subjects and human environmental impacts. 3 hrs. lecture/wk. BIOL 155 and PHIL 155 are the same courses; only enroll in one.

BIOL 205
General Genetics (4 CR)
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, 3 hrs. lab/wk.

BIOL 214
Introduction to Teaching Math and Science (1 CR)
This course allows math and science students to explore and develop an appreciation for teaching as a career. To support their learning, students will be introduced to the theory and practice that is necessary to design and deliver quality instruction. They will plan and implement lessons of an inquiry-based curriculum in an elementary classroom during the semester. MATH 214, ASTR 214, BIOL 214, CHEM 214, GEOS 214, PHYS 214 and PSCI 214 are the same course; enroll in only one. 1 hrs. lecture/wk.

BIOL 225
Human Physiology (4 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BIOL 227
Human Pathophysiology (4 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BIOL 231
Microbiology Lab (2 CR)
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.

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 235
General Nutrition (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BIOL 240
General Pharmacology (3 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

Biotechnology (BIOT)

BIOT 160
Introduction to Biotechnology (2 CR)
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)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BIOT 265
Biotechnology Internship (4 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BUS 175
Business Professional Skills (3 CR)
Upon successful completion of this course, the student will learn the important characteristics of business success variables found among business leaders and entrepreneurs -- their skillfulness in creating rapport and relating well with others, as well as their reputation for honesty and ethical behavior. Business leaders in our society are faced with daily opportunities to make decisions, negotiate, resolve conflict, and build trust. Students will demonstrate awareness and effective application of these skills understanding its dramatic affects on morale, teamwork, productivity, employee retention, customer relations, and the bottom line. 3 hrs. lecture/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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 global marketing and international human resource management practices will be examined as well. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BUS 240
Legal Environment of International Business (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BUS 263
Business Law II (3 CR)
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, insurance and environmental law will be introduced. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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)
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)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BOT 141
Electronic Health Records (3 CR)
This course prepares students to effectively use electronic health record and practice management software used in medical practices. Emphasis will be placed on handling patient records and transactions including insurance and claim processing. Students will manage related administrative tasks; such as, scheduling appointments, posting payments, and creating statements and reports. 3 hrs. lecture/wk.

BOT 142
Legal and Ethical Issues in Healthcare (3 CR)
Designed on the basic constructs of the US legal system this course is an introduction to the process of legal/ethical interactions with healthcare professionals including but are not limited to law enforcement, malpractice, negligence and privacy acts (HIPAA). 3 hrs. lecture/wk.

BOT 143
Standards of Diagnostic Coding (ICD-CM) (3 CR)
This course gives a comprehensive instruction of the ICD-CM diagnosis coding and classification system. Students will become familiar with its uses in contemporary healthcare settings and its critical role in facilitating accurate reimbursement for providers. Students will learn the role of coding conventions, official coding guidelines, and ethical considerations through practical examples and course work. 3 hrs. lecture/wk.

BOT 144
Standards of Procedural Coding (CPT) (3 CR)
This course prepares students to perform accurate procedural code assignment using the CPT classification system. Emphasis is placed on the value of correct and ethical coding and adhering to coding guidelines. Students will become proficient at procedural coding for all ambulatory healthcare types, including outpatient surgery, physician's offices, radiology, anesthesia, and pathology/laboratory services. 3 hrs. lecture/wk.

BOT 145
Principles of Healthcare Reimbursement (2 CR)
This course will prepare students in all aspects of medical insurance, including plan options, payer requirements, state and federal regulations, abstracting of source documents, accurate completion of claims, and coding of diagnoses and procedures/services. Emphasis will be placed on accurate and ethical practices to ensure that maximum reimbursement is obtained through coding, billing, and collection for all services rendered. 2 hrs. lecture/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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BOT 155
Word Processing Application I (2 CR)
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)
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)
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)
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)
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)
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)
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 only. 2 hrs. lecture/wk.

BOT 255
Word Processing Applications II (2 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BOT 260
Desktop Publishing for the Office (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BOT 265
Computerized Office Applications (3 CR)
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 only. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

BOT 270
Advanced Medical Transcription (3 CR)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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)
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)
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)
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)
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 214
Introduction to Teaching Math and Science (1 CR)
This course allows math and science students to explore and develop an appreciation for teaching as a career. To support their learning, students will be introduced to the theory and practice that is necessary to design and deliver quality instruction. They will plan and implement lessons of an inquiry-based curriculum in an elementary classroom during the semester. MATH 214, ASTR 214, BIOL 214, CHEM 214, GEOS 214, PHYS 214 and PSCI 214 are the same course; enroll in only one. 1 hrs. lecture/wk.

CHEM 220
Organic Chemistry I (5 CR)
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)
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)
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)
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 123
Building Codes (3 CR)
This course examines the organization, intent and use of building codes in general and the International Building Code in particular. Students will cover the reasons codes exist and how they form an integral part of the design criteria for every building project. Additional topics include building types, fire protection, accessibility, roofs, foundations, and interiors/exteriors. This course is offered in the spring semester. 3 hrs. lecture/wk.

CET 125
Construction Specifications (2 CR)
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)
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, including attendance and grade requirements, the student may be eligible for the OSHA Construction Health and Safety Training card. 3 hr. lecture/wk.

CET 160
Green Building Fundamentals (3 CR)
This course introduces the student to sustainable design and green building practices used in the construction industry. The goal of the course is to improve the energy and environmental performance of buildings through a better understanding of standard practices used by industry professionals, as well as, to provide students preparation for the Leadership in Energy and Environmental Design (LEED) Professional Accreditation Exam. Course content will focus on sustainable practices as prescribed in the LEED Green Building Rating System. 3 hrs. lecture/wk. This course is typically offered in the fall semester.

CET 205
Advanced Construction Methods (3 CR)
This course explores various building materials and how they are assembled during the construction process. Topics include wood, brick masonry, steel, concrete, and sustainable construction. Emphasis is placed on field construction techniques over building materials, which is presented in the introductory construction methods course. This course is offered in the spring semester. 3 hrs. lecture/wk.

CET 211
Technical Statics and Design (3 CR)
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 225
Construction Documents (2 CR)
This course covers general documents used before, during, and after construction. Topics include document submittals, procurement, bidding, negotiating, and addenda. Modifications, claims, disputes, and payment are also addressed. This course is offered in the spring semester. 2 hrs. lecture/wk.

CET 227
Construction Cost Estimating (3 CR)
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. 2 hrs. lecture & 3 hrs lab/wk.

CET 229
Advanced Construction Management (3 CR)
This course builds on the introductory construction management course. The emphasis is on using sustainability to safely and efficiently manage a commercial construction job. Topics include earthmoving and heavy equipment; concrete, masonry, and steel construction; and construction process management. By building with the environment in mind, we can produce buildings that use our limited resources efficiently and provide a healthier environment for the occupants. This course is offered in the fall semester. 3 hrs. lecture/wk.

CET 270
Fluid Mechanics (3 CR)
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, hydrology, and stormwater best management practices (BMP.) 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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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 Scripting and Utilities (3 CR)
This course will cover the concepts and principles related to scripting for the multi-user, multi-tasking UNIX operating system and its utilities. Students will complete projects in UNIX ranging from using simple commands to writing shell scripts automating repetitive tasks. 3 hrs. lecture/wk.

CIS 208
Mobile Application Development (4 CR)
In this course, students will utilize effective design and structured programming techniques to build mobile applications. Topics will include designing interfaces for small screens and varied architectures, processing user events, retrieving and storing data, communicating via the Internet, and deploying applications. 3 hrs. lecture, 2 hrs open lab/wk.

CIS 235
Object-Oriented Programming Using C++ (4 CR)
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)
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)
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)
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)
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)
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)
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)
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)
Characteristics and objectives of database management systems (DBMS) versus traditional file management systems are discussed. Topics include database environments, data modeling using the entity-relational model, normalization, logical and physical design, SQL, data quality, database administration, and various advanced topics. Students will use a relational DBMS (currently Oracle). 3 hrs. lecture, 2 hrs. lab/wk.

CIS 262

Project Management (3 CR)
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)
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)
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)
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)
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)
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)
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)
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.

CIS 292

Special Topics: (1 CR)
This course periodically presents specialized topics in computer information systems that are not available in the regularly offered curriculum. Special Topics may be repeated for credit, but only on different topics. Total contact hours vary with topic.
Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. Varies.

Computer Personal Computer Applications (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 computing skills and concepts through a hands-on approach. Topics include an introduction to computer terminology, hardware, system software, application software, e-mail, and the Internet. 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)
This course provides an introduction to the concepts and real-world applications of microcomputer word processing software. Foundational word processing competencies, including 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, will be covered. Students will also create multiple-page reports and incorporate desktop publishing concepts and features. 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)
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)
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)
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)
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)
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)
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)
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 overall locations, 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)
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)
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 working with templates, creating and modifying styles, customizing themes, creating a table of contents, using mail merge, linking and embedding objects, creating web pages, creating and editing macros, and customizing Word and automating parts of a document.. 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 the current version of 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 the current version of MS Office Suite, word processing, spreadsheet, and presentation graphics 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)
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)
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)
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)
This course will introduce the student to the commands and techniques required to effectively access the resources of the Internet. Students will use Windows applications to browse the Internet, locate and retrieve information and send and receive electronic mail and address security issues on the internet. 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)
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)
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)
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 200

Concepts of Programming Algorithms Using C++ (4 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

CS 211

Discrete Structures II (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

CS 236

Object-Oriented Programming Using C# (4 CR)
This course prepares students to develop object-oriented, C# applications that solve a variety of problems. Students will apply object-oriented concepts including inheritance, function overloading, and polymorphism and will utilize available classes as well as design their own. Event-driven programming, Windows applications, web development, common data structures, database access, and frameworks will be presented. 3 hrs. lecture, 2 hrs. instructional lab/wk.

CS 250

Basic Data Structures using C++ (4 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

CS 255

Basic Data Structures using JAVA (4 CR)
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)
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 103

Professional Skills for the Digital Developer (3 CR)
Upon successful completion of this course, the student will be able to demonstrate effective communications and professional skills important to a career in digital development. Topics covered include the use of technology to achieve effective written and verbal communication skills, team management, project management, and problem solving skills. Current and relevant legal, ethical, and governmental issues important to a career in digital development are also 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. $10.

CWEB 104

Introduction to Web Pages: Expression Web (1 CR)
This course will cover the commands and techniques required to create and revise web pages using Expression Web. Topics to be covered will include researching, planning, and creating a web site, identifying the purpose of Extensible Hypertext Markup Language (XHTML) and Cascading Style Sheets (CSS), inserting background color, inserting and editing images, creating lists,

creating and applying style sheets, inserting files, creating internal and external links, and publishing a web site. 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.

CWEB 105

Introduction to Web Pages: Dreamweaver (1 CR)
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 107

Web Tools: Microsoft Office (1 CR)
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 110

XHTML and CSS (3 CR)
This course will cover the essential skills needed to create Web sites, with a focus on using Extensible Hypertext Markup Language (XHTML) and Cascading Style Sheets (CSS). Students will be introduced to the concepts, foundations, syntax and structure of XHTML. Additional topics include the use of File Transfer Protocol (FTP) as a way to publish a web site, validation, and Web standards established by the World Wide Web Consortium (W3C) and other organizations. 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 111

Intermed Web Concepts/Techniques using Explorer (1 CR)
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 114

Intermediate Web Pages: Expression Web (1 CR)
This course is a continuation of CWEB 104, Introduction to Web Pages: Expression Web, and will cover intermediate-level commands and techniques required to create and enhance web sites using Expression Web. Topics to be covered will include creating and modifying dynamic links, working with tables, creating forms, and using templates to design 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.

CWEB 115

Intermediate Web Pages: Dreamweaver (1 CR)
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 120

Internet Applications: Fireworks I (1 CR)
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 121

Introduction to Mobile Media (3 CR)
Mobile devices outnumber desktop and laptop computers three to one worldwide. This course will cover practical guidelines, standards, techniques and best practices for building mobile products from start to finish, including basic design and development principles for all mobile devices and platforms. 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 125

Introduction to Dynamic Web Pages: Dreamweaver (1 CR)
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 126

Survey of Web Technologies (2 CR)
This course introduces students to the careers, technologies, and skills used in the field of Web technology. Students will also publish files to Web servers and start a professional Web-based portfolio. 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.

CWEB 130
Introduction to Flash (1 CR)
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)
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)
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)
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)
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)
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 166
Introduction to eXtensible Markup Language (3 CR)
This course will introduce and explain the use of XML(eXtensible Markup Language) documents to encapsulate and transfer data across the Internet. Students will learn to use document type definitions, attributes and entities, and XML schemas to build valid and useful XML documents. CSS(Cascading Style Sheets) will be introduced to format the XML documents. JavaScript will be used to incorporate programming instructions into the XML document. 3 hrs. lecture/wk.

CWEB 167
Introduction to Asynchronous JavaScript and XML (1 CR)
This course will introduce and explain the use of AJAX technology. AJAX is a loose acronym for Asynchronous JavaScript and XML(eXtensible Markup Language). AJAX is not a technology itself but is a combination of XHTML(eXtended Hypertext Markup Language), CSS(Cascading Style Sheets) and JavaScript?s use of the DOM (Document Object Model). Students will use AJAX to build dynamically load data into a web page, to build lists on the fly, include auto complete functionality and other interactive features to a web page. 1 hr. lecture/wk.

CWEB 170
Intermediate JavaScript (1 CR)
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)
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)
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)
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)
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 212
Technical Interface Skills (3 CR)
This course will cover the skills needed to successfully develop Information Architecture (IA) blueprints from concept to completion. Students will use fundamental visual principles, perception, color, composition and typography to analyze and modify existing IA plans while keeping consistent structure. They will create complementary visuals that maintain a client?s brand while working through the modification process. Students will review and memorize the critical universal usability rules and basic visual design principles quintessential of a design team and to implement an aesthetic vision through every step of development. 3 hrs. lecture/wk.

CWEB 221
Design and Development for Mobile Web (3 CR)
This course provides practical knowledge to effectively plan, engineer, and deliver websites for Mobile devices, such as phones, PDA's, Blackberry's, etc. Students will combine XHTML and CSS (Cascading Style Sheets) to create accessible Mobile websites. 3 hrs. lecture/wk.

CWEB 230
Introductory E-Commerce Applications (1 CR)
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)
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.

CWEB 250
Rich Internet Applications I (3 CR)
This course provides students with hands-on, practical experience to build functional, well architected front-end for a Rich Internet Application (RIA). Students will build complex applications using industry-accepted best practices. 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 260
CSS Techniques & Projects (3 CR)
Students will apply Cascading Style Sheet (CSS) techniques through the use of professional, advanced Web site development projects. Industry-standard Hypertext Markup Language (HTML) semantic markup practices and presentation separation through CSS is emphasized. CSS topics include professional syntax practices, formatting, and layout skills. Advanced CSS skills for float, positioning, alignment, and image formatting are covered. 3 hrs. lecture/wk.

CWEB 270
Web Analytics (3 CR)
Upon successful completion of this course, students should be able to implement and apply web analytics techniques. Topics to be covered include web traffic analysis, data collection methodologies, report analysis, best-practices configuration, and search engine optimization. 3 hr. lecture/wk.

CWEB 290
Web Technologies Capstone (3 CR)
This is the capstone course in the Web Technologies AAS degree program. In this course, students will explore the latest trends in web technology. Students will also review materials and practice skills from their previous courses in the program in order to create a flexible portfolio web presence which will showcase their expertise in web technologies. In addition to creating the portfolio, students will explore career opportunities in web technology and practice resume-writing and interviewing skills. 3 hrs. lecture/wk.

CWEB 292
Special Topics: (1 CR)
This course periodically presents specialized topics in Web Technologies and Interactive Media that are not available in the regularly offered curriculum. Special Topics may be repeated for credit, but only on different topics. 1 - 3 hrs. lecture/wk.

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. 350 contact hrs. For enrollment information, call 913-469-8500 ext. 2390. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. This course is not federal aid eligible.

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)
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. 500 contact hrs. For enrollment information, call 913-469-8500 ext. 2390. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

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)
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. Total. 500 contact hrs. For enrollment and tuition information, call 913-469-8500, ext.2390. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

AVCO 114
Advanced Cosmetology (12 CR)
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. Total. 500 contact hrs. For enrollment and tuition information, call 913-469-8500, ext. 2390. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

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)
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. 85 lecture hrs, 30 lab hrs, 205 clinical hrs. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

AVCO 116
Cosmetology with Esthetics License (12 CR)
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. 85 hrs. lecture, 30 lab, 235 clinical. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

AVCO 212
Cosmetology Instructor Training (9 CR)
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. 300 contact hrs. For enrollment information call 913-469-8500 ext. 2390. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. This course is not federal aid eligible.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $90 to 100.

Cosmetology-Esthetics (CO)

CO 120
Esthetics (7 CR)
This course provides class instruction in skin care. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, business practices and state law. This class meets 100 lecture hours of the 1,000 contact hours required by the Kansas State Board of Cosmetology. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

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 30.

CO 121
Esthetics Lab (6 CR)
This course provides skill instruction of skin care in a lab setting. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, business practices and state law. This class meets 135 hours of instructoinal laboratory. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

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.

CO 122

Esthetics Clinical (2 CR)
This course provides skill instruction and practical application of skin care in a clinical setting. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, business practices and state law. This class meets 64 clinical hours. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

CO 127

Intermediate Esthetics (7 CR)
This course provides class instruction in skin care. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, business practices and state law. This class meets 93 lecture hours. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

CO 128

Intermediate Esthetics Lab (6 CR)
This class meets 131 laboratory hours of the 1,000 contact hours required by Kansas State Board of Cosmetology. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

CO 129

Intermediate Esthetics Clinical (2 CR)
This course provides skill instruction and practical application of skin care in a clinical setting. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, business practices and state law. This class meets 112 clinical hours of the 1,000 contact hours required by the Kansas State Board of Cosmetology. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

CO 134

Esthetics Essentials (2 CR)
This course provides class instruction in skin care. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, business practices and state law. This class meets 35 lecture hours of the 1,000 contact hours required by the Kansas State Board of Cosmetology. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

CO 135

Esthetics Essentials Lab (2 CR)
This course provides skill instruction of skin care in a lab setting. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, business practices and state law. This class meets 38 laboratory hours of the 1,000 contact hours required by Kansas State Board of Cosmetology. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

CO 136

Esthetics Essentials Clinical (1 CR)
This course provides skill instruction and practical application of skin care in a clinical setting. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, business practices and state law. This class meets 48 clinical hours of the 1,000 contact hours required by Kansas State Board of Cosmetology. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

CO 141

Advanced Esthetics (5 CR)
This course provides class instruction in skin care. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, business practices and state law. This class meets 63 lecture hours of the 1,000 contact hours required by the Kansas State Board of Cosmetology. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

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 250.

CO 142

Advanced Esthetics Lab (2 CR)
This course provides skill instruction of skin care in a lab setting. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, business practices and state law. This class meets 53 laboratory hours of the 1,000 contact hours required by the Kansas State Board of Cosmetology. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

CO 143

Advanced Esthetics Clinical (2 CR)
This course provides skill instruction and practical application of skin care in a clinical setting. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, business practices and state law. This class meets 128 clinical hours of the 1,000 contact hours required by the Kansas State Board of Cosmetology. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

CO 218

Esthetics Essential Update (6 CR)
This 100-contact-hour course is designed to meet the updated techniques for estheticians in the cosmetology sciences and the needs of students who desire exposure to advanced esthetics techniques. Students will attend 100 hours of lecture/demonstration and lab practice. Topics covered include body treatments, theory on the day spa, advanced makeup techniques, microdermabrasion and manual lymphatic drainage. For enrollment information, call 913-469-2390.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 - 25.

Dental Hygiene (DHYG)

DHYG 121
Clinical Dental Hygiene I: Pre-Clinic (5 CR)
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, principles of infection control. 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. $4500.00.

DHYG 125
Developmental Dentistry (2 CR)
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)
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)
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)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

DHYG 148
Dental Health Education (2 CR)
This course is designed to provide students with a knowledge base in oral health promotion; disease prevention and control; the scientific research process; evaluation of research articles; goal and objective writing; cultural competency in oral health care; client assessment; evidence based decision making and product evaluation. Students will learn to apply this knowledge using educational methodology for individuals and groups, with special emphasis on behavior modification, compliance, communication and motivation. 1 hr. lecture, 2 hrs. lab/wk

DHYG 221
Clinical Dental Hygiene III (6 CR)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 2 hrs. lecture, 16 hrs. clinic/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 275.

DHYG 225
Pathology (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

DHYG 230
Dental Therapeutics (3 CR)
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)
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.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $95 to 115.

DHYG 245
Nitrous Oxide Analgesia (1 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

DHYG 250
Clinical Dental Hygiene IV (6 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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, measuring, geometric construction, sketching, isometrics, orthographic views, section views, dimensioning and auxiliary views. 1 hr. lecture, 2 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. 1hr. lecture, 2hrs. 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. $45 to 60.

DRAF 123
Interpreting Machine Drawings (2 CR)
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 (3 CR)
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
Exploring AutoCAD (3 CR)
This course is for non-drafting students/users who wish to casually use Autodesk?s AutoCAD (computer aided drafting) software. It provides a basic knowledge of how to manipulate AutoCAD commands on a Windows or Mac platform to create drawings. Covered topics include 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. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 135
Graphic Analysis (3 CR)
This course expands on introductory knowledge in drafting and CAD. Upon successful completion of this course, the student will 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 143
Introduction to BIM Building Information Modeling (2 CR)
This course introduces students to the concepts and usage of BIM: Building Information Modeling in the building construction field. Students will use Building Information Modeling software to interact with a virtual building model. Upon successful completion of this course, students will manipulate the software interface to model, interpret, access data, and view the building model. The student will use the software to model and access plan views, elevations, sections, 3-D views, structural elements, schedules and support files found in a 3-D building model. The REVIT software package is currently used. 2 hrs. lecture/wk.

DRAF 145
Introduction to Parametric Design: Inventor (2 CR)
This course is an introduction to parametric design. The course will cover parametric modeling fundamentals, solid geometry concepts, parametric constraints fundamentals and geometric construction tools. Basic software commands will also be covered to give the student ability to demonstrate parametric modeling knowledge. 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.

DRAF 151
Introduction to 3D Modeling: SketchUp (1 CR)
Students will be introduced to a popular modeling/presentation software package used in architecture, engineering, and design firms. Topics include how to model buildings from floor plans, how to incorporate geolocation information from Google Earth in those models, and how to utilize the Google 3D Warehouse. Software used is the most current version of (free) SketchUp. 1 hr. lecture/wk.

DRAF 164
Architectural Drafting/Residential Interior Design (3 CR)
Upon completion of this course the student should be able to interpret and draft residential architectural drawings and utilize industry references and resources. Drawings studied include floor plans, elevations, sections, reflected ceiling plans and schedules. Students will draft on a variety of relevant materials. 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 Design and Drafting (3 CR)
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. Students will use the Machinery's Handbook, and other technical publications, to research and design projects. Project assignments will be completed using computer-aided drafting (CAD) 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)
Upon successful completion of this course, the student should be able to apply drafting techniques used in civil engineering offices. Topics covered include the surveying process, property legal descriptions, topographic maps, plan and profile drawings, roadway cross sections, and earthwork calculations. The student will use CAD software in drawing projects. This course is typically taught in the spring semester. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 230
Intermediate CAD: AutoCAD (3 CR)
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 242
Topics in CAD II (2 CR)
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. For special topics, check the section note on the credit class search site.

DRAF 243
Advanced BIM: Revit (2 CR)
This course introduces the student to advanced Building Information Modeling (BIM) concepts used by many architectural and engineering design firms. Topics include advanced modeling and documentation tools, project setup and the design process. Students will model commercial buildings and produce architectural drawings. Emphasis will be placed on the hands-on application of the current software to industrial projects. 2 hrs. lecture and lab/wk.

DRAF 244
Civil 3D (2 CR)
This course introduces the student to the Civil 3D software used by many land planning, civil engineering and surveying firms. Topics include software commands, project setup and the design process. Survey points, surfaces, topography, road layout, and soil volumes are covered in this course. 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
Advanced Parametric Design: Inventor (2 CR)
This course uses the Inventor Parametric design 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 design knowledge or have taken DRAF 222, Mechanical Drafting. 2 hrs. lecture and lab/wk.

DRAF 250
Electrical Drafting (3 CR)
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 Design and Drafting (3 CR)
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. The student will use industry standard references and perform design calculations. 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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 271
Drafting Internship I (3 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

Education and Early Childhood (EDUC)

EDUC 121
Introduction to Teaching (3 CR)
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. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 3 hrs. lecture/wk.

EDUC 131
Early Childhood Curriculum I (3 CR)
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)
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. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 3 hrs. lecture/wk.

EDUC 210
Creative Experiences for Young Children (3 CR)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.. 2 hrs. lecture, 3 hrs. lab/wk.

EDUC 231
Early Childhood Curriculum II (3 CR)
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)
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)
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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 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. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 2 hrs. lecture, 3 hrs. lab/wk.

EDUC 283

Prof. Competencies: Early Childhood Education (1 CR)
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)
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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.

EDUC 290

Leadership in Early Childhood Education (3 CR)
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)
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)
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)
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, 2 hrs lab/wk.

ELTE 205
Industrial Electrical Wiring (4 CR)
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)
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)
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)
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 118
Mobile Auto Electronics Installation (3 CR)
This course covers after-market AM-FM and HD radios, audio amplifiers, security systems, DVD video systems and GPS navigation systems. Other topics covered will include how to determine the customers? requirements and then advising them of the best equipment to purchase. Students will receive hands-on instruction on installing and configuring mobile electronics systems. 2 hrs. lecture & 3 hrs. instructional lab/wk.

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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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. This course will meet the general education requirement for Health and/or Physical Education.

EMS 125

CPR II-Basic CPR Instructor (1 CR)
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. The First Responder course meets the standards for Emergency Medical Responder (EMR) training and testing. 6 hrs. lecture, 6.5 hrs. lab/wk. for 8 wks. (average).

EMS 131

Emergency Medical Technician (10 CR)
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 and receive JCCC certificate of completion. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 5.5 hrs. lecture, 7 hrs. instructional lab/wk.

EMS 133

Emergency Medical Technician Practicum (3 CR)
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. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 2 hrs. lecture, 10 hrs. lab/wk. This course is only offered in the summer.

EMS 140

Basic Cardiology and EKG Recognition (3 CR)
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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 7 hrs. lecture, 5 hrs. lab, 10 hrs. clinical/field experience/wk.

EMS 206

Training Officer I (1 CR)
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)
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)
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)
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 10-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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 192 hrs. integrated lecture/lab.

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)
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 10-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. 314 hrs. integrated lecture/lab/field experience.

EMS 230

MICT III Clinicals (12 CR)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 622 hrs. integrated lecture/lab and field/clinical experience.

EMS 271

MICT IV Field Internship (15 CR)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 810 hrs. integrated lecture/ lab and field/clinical experience.

Energy Performance and Resource Management (EPRM)

EPRM 120

Introduction to Residential Energy (3 CR)
Upon successful completion of this course, the student should be able to evaluate energy usage of the past and the future, describe the energy picture of today's world, identify the priorities for energy efficiency, and describe the purpose of a residential energy audit. Competencies will include knowing energy and the laws of thermodynamics; heat transfer through building envelope; sources of internal heat gain and heat loss calculations; energy transformation and heat flow; efficiency of HVAC systems, water heating systems, and appliances; and basic electrical wiring, lighting, and components of a residence. 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 35.

EPRM 123

Active & Passive Residential Systems (4 CR)
This is a course to explain how active and passive systems work together in a residence, and to discuss the energy efficiency of each system. Upon successful completion of this course, the student will be able to identify the components of the building shell and their relationship to air-conditioning systems, heating systems, hot water heating, lighting, appliances, occupants, and the electrical or gas systems that supply energy. Topics will include heat laws, refrigeration cycle, electrical theory, various types of furnaces, air conditioners, hot water heaters, lighting, windows and doors, and various types of controls. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment.

EPRM 127

Residential Energy Data Collection and Input (3 CR)
Upon successful completion of this course, the student will be able to identify techniques and procedures used in the residential construction industry to determine the construction details of the residence, the size and type of HVAC equipment, and other appliances as it relates to a residential energy audit. The student will be required to complete field data collection forms and record detailed information of the components of a residence. This data will be entered into various computer modeling programs. The output from the software will help determine what recommendations should be made to the homeowner to improve the energy efficiency of their residence. 2 hrs. lecture, 2 hrs instructional lab.

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 45.

EPRM 130

Residential Energy Auditing Application (3 CR)
This course outlines a complete energy audit procedure that will ensure consistent data collection for a residence. Topics include diagnostic procedures to evaluate the building shell, doors and windows, air leakage, and other residential energy inefficiencies. The course includes recommendations the auditor can make to increase the energy efficiency and functionality of a client's home based on the audit. Analysis of residential heating and cooling systems and appliances, as well as performing a combustion appliance zone test is included in the course. A major focus of the course is the use of appropriate test equipment, such as a blower door, duct blaster, and other hand-held evaluation and measuring devices necessary to conduct effective energy audits. Information from the audit will be entered into modeling software to determine energy efficiency measures for the residence being audited. Students 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 instructional lab/wk.

EPRM 142

Solar Thermal Systems (3 CR)
Solar Thermal Systems presents the key components of thermal conversion systems to absorb and use heat from sunlight. Solar module types and properties, balance of system components, energy management, and economics for a variety of solar thermal system applications are studied. The course includes details of design, installation, operation, and evaluation of solar thermal systems. The course prepares students for the NABCEP (North American Board of Certified Energy Practitioners) Entry Level Solar Thermal exam. 4 hours of 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. $30.

EPRM 252

Solar Electric Systems (3 CR)
Solar Electric Systems presents the key components of photovoltaic (PV) conversion systems to produce electricity from sunlight. Solar module types and properties, balance of system components, stand-alone and utility interface, energy management, and economics for a variety of PV applications are studied. The course includes details of design, installation, operation, and evaluation of photovoltaic systems. The course prepares students for the NABCEP (North American Board of Certified Energy Practitioners) Entry Level PV exam. 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.

EPRM 256

Solar Electric Systems Lab (1 CR)
Solar Electric Systems Lab presents practice in the use of the key components of photovoltaic (PV) conversion systems to produce electricity from sunlight. Solar module types and properties, balance of system components, stand-alone and utility interface PV applications are installed. The course includes hands-on details of design, installation, and operation. The course prepares students for the NABCEP (North American Board of Certified Energy Practitioners) Entry Level PV exam. 2 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. $15 to 30.

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:AutoCAD (4 CR)
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)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ENGR 254
Dynamics (3 CR)
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 may be included. This course is typically offered in the spring semester. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

English (ENGL)

ENGL 102
Writing Strategies (3 CR)
English 102 is designed to give students a solid foundation in grammar and punctuation, helping students overcome obstacles in mechanics that have in the past interfered with their ability to communicate clearly. This sentence-level work soon leads to short paragraphs that offer students the opportunity to practice and refine their writing process. Students in English 102 will learn to view their writing within a rhetorical context of author, message, and audience. Clear, well-organized, well-developed, and mechanically sound foundational writing is the ultimate objective of Writing Strategies. This course is a prerequisite in a sequence of courses leading to ENGL 121.

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. After registering for this course, the student should contact the Writing Center. This course does not fulfill degree requirements and is not federal aid eligible.

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 and is not federal aid eligible.

ENGL 106
Introduction to Writing (3 CR)
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. This course is in a sequence of courses leading to ENGL 121.

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. After registering for this course, the student should contact the Writing Center. This course does not fulfill degree requirements and is not federal aid eligible.

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. After registering for this course, the student should contact the Writing Center. This course does not fulfill degree requirements and is not federal aid eligible.

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. After registering for this course, the student should contact the Writing Center. This course does not fulfill degree requirements and is not federal aid eligible.

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. After registering for this course, the student should contact the Writing Center. This course does not fulfill degree requirements and is not federal aid eligible.

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. After registering for this course, the student should contact the Writing Center. This course does not fulfill degree requirements and is not federal aid eligible.

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. After registering for this course, the student should contact the Writing Center. This course does not fulfill degree requirements and is not federal aid eligible.

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 and is not federal aid eligible.

ENGL 121

Composition I (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ENGL 122

Composition II (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ENGL 123

Technical Writing I (3 CR)
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 125

Scientific Writing (3 CR)
This course focuses on developing skills in scientific writing for students interested in or majoring in the sciences. Students will employ the writing process and audience awareness to construct correspondence, job application materials, PowerPoint presentations, lab reports, and long reports requiring research, analysis, and explanation of scientific processes, procedures, and data. Accuracy is emphasized in scientific writing and specifically entails the need for students to adhere to rules of grammar, mechanics, and consistent application of applicable scientific principles. 3 hrs. lecture/wk.

ENGL 130

Introduction to Literature (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ENGL 140

Writing for Interactive Media (3 CR)
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, support materials, simulations, social networking 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)
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. 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 205
Bible as Literature (3 CR)
This course introduces students to the literary aspects of Bible. Students will read extracts from both the Hebrew and Greek portions of the Bible in translation. They will learn to analyze these readings as representatives of the Bible's many literary forms. Students will also sample from later literary works that draw on biblical sources for their inspiration. Students will write essays demonstrating their understanding of the works studies. 3 hrs. lecture/wk.

ENGL 210
Technical Writing II (3 CR)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ENGL 222
Advanced Composition (3 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ENGL 231
American Prose (3 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
This course introduces students to the analysis of plays as literature. Beginning with the Greek dramatists and ending with the contemporary scene, students will read full-length plays and the comments of playwrights, directors, actors and critics. They will analyze drama from psychological, historical, philosophical, structural and dramatic perspectives. Students will write essays demonstrating their understanding of the works studied. 3 hrs./wk.

ENGL 236

British Literature I (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ENGL 237

British Literature II (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ENGL 243

Literature of Science Fiction (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ENGL 244

Literature of American Popular Music (3 CR)
Students read, analyze, evaluate and discuss the literature surrounding American popular music. No less than any other form of literature , all genres of American popular music are intertwined, engaged in dialogue, and revealing of the American experience. By engaging with, comparing and evaluating the conversations between popular music and fiction, poetry, and criticism, students will explore the social, historical, political, and cultural contexts relevant to the literature. Through this process, students will discover, analyze, synthesize and evaluate the ongoing negotiations between a great diversity of cultural aesthetics, political interests and public opinions in the shaping of American identity. 3 hrs. lecture/wk.

ENGL 245

Writing Literature for Children (3 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ENGL 254

Masterpieces of the Cinema (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ENGL 256

American Poetry (3 CR)
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.

ENGL 292
Special Topics (3 CR)
English 292 is a 200-level thematic literature and writing course. In this class, students will have the opportunity to refine their critical reading and writing skills by investigating in depth a single important theme, topic or genre (e.g. environmental literature, the literature of illness, detective fiction, travel literature, the documentary film tradition, creative non-fiction). Students will engage with a wide range of texts, including those from print, film, and other media. The course may also include selections drawn from various national literatures in translation and a range of historical periods. Special Topics in Literature and Composition may be repeated for credit but only on different topics. 3 hrs. lecture/wk.

English for Academic Purposes (EAP)

EAP 101
Writing and Grammar I (3 CR)
This course provides English Language Learning (ELL) students an integrated communicative experience at the beginning college level. Students will learn effective writing techniques and grammatical structures 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 leading to ENGL 121. 3 hrs lecture/wk.

EAP 103
Writing and Grammar II (3 CR)
This course provides English Language Learning (ELL) students an integrated communicative experience. Students will focus on using American English in writing at the paragraph level along with grammatical structures to help ensure students success. The course will also focus on learning and study strategies to enhance writing. This course does not fulfill degree requirements. This course is the second writing and grammar course in the sequence of courses leading to ENGL 121. 3 hrs. lecture/wk.

EAP 105
Speaking and Pronunciation I (3 CR)
This course provides English Language Learning (ELL) 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. This course does not fulfill degree requirements. This course is a prerequisite in a sequence of courses leading to ENGL 121. 3 hrs. lecture/wk.

EAP 107
Speaking and Pronunciation II (3 CR)
This course provides English Language Learning (ELL) 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. This course does not fulfill degree requirements. This course is a prerequisite in a sequence of courses leading to ENGL 121. 3 hrs lecture/wk.

EAP 111
Writing and Grammar III (3 CR)
This course provides English Language Learning (ELL) students an integrated communicative experience at the intermediate level. Students will focus on developing fluency in writing using American English at the paragraph and multi-paragraph level along with grammatical structures to support writing. This course does not fulfill degree requirements. This course is the third writing and grammar course in the sequence of courses leading to ENGL 121. 3 hrs. lecture/wk.

EAP 113
Writing and Grammar IV (3 CR)
This course provides English Language Learning (ELL) 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 also focuses on grammar activities including editing strategies for effective writing. This course is the fourth writing and grammar course in the sequence of courses. This course does not fulfill degree requirements. 3 hrs. lecture/wk.

EAP 115
Speaking and Pronunciation III (3 CR)
This course provides English Language Learning (ELL) 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. This course is a prerequisite in a sequence of courses leading to ENGL 121. 3 hrs. lecture/wk.

EAP 117
Speaking and Pronunciation IV (3 CR)
This course offers English Language Learning (ELL) 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 literature, media, and 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)
This course provides English Language Learning (ELL) students an integrated communication experience on the high beginning college level. Students will learn effective techniques for reading, studying and using American English in an academic setting. This course does not fulfill degree requirements. This is the first reading course in the sequence of courses leading to ENGL 121. 3 hrs. lecture/wk.

EAP 121
Reading/Vocabulary II (3 CR)
This course provides English Language Learning (ELL) students the opportunity to develop reading fluency, comprehension and vocabulary on the low intermediate college level. 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 course does not fulfill degree requirements. This is the second reading course in the sequence of courses leading to ENGL 121. 3 hrs. lecture/wk.

EAP 122
Reading and Vocabulary III (3 CR)
This course provides English Language Learning (ELL) students an integrated communicative experience at the intermediate college level. Students will develop reading fluency, comprehension, and vocabulary. 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 does not fulfill degree requirements. This course is the third reading course in the sequence of courses leading to ENGL 121.

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 130
Entrepreneurial Mindset (3 CR)
Upon successful completion of this course, the student will be introduced to the entrepreneurial mindset in its true economic and social context by studying the unlimited opportunities that an entrepreneurial mindset can provide. The student will study the skills, attitudes and behaviors that successful entrepreneurs have historically possessed, as well as the issues, circumstances and obstacles that shaped their time. Additionally, the student will analyze modern-day successful entrepreneurs who faced hardship and adversity by embracing an entrepreneurial mindset. The characteristics of the entrepreneurial mindset will be dissected and applied to the student's own mindset and entrepreneurial potential. 3 hrs. lecture/wk.

ENTR 131
Financial Management for Small Business (2 CR)
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 185
Fundamentals of Direct Sales (3 CR)
Upon successful completion of this course, the student will learn the history of the direct sales industry as well as its current status and economic impact. Trends, both historic and current, will be reviewed and analyzed. Students will research a variety of direct sales companies to include their history, leadership, products, and methods of operation. Students will demonstrate an understanding of the industry, the role of the direct sales independent contractors working within this industry, and the impact of this industry on today's economy. 3 hrs. lecture/wk.

ENTR 195
Franchising (3 CR)
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)
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)
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)
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.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FASH 122
Aesthetics for Merchandising and Design (3 CR)
Upon successful completion of this course, the student should be able to demonstrate an understanding and apply the concept of aesthetics as it relates to the different roles of the apparel industry and the development, selection and promotion of apparel and textile products. The student will incorporate the principles and elements of design into projects designed to apply their aesthetic knowledge. 3 hrs. lecture/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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FASH 127
Computer Aided Pattern Development (4 CR)
Upon successful completion of this course, the student will be able to apply the use of flat pattern techniques in developing computerized patterns for original apparel designs using the Gerber Pattern Design System technology. Students will digitize basic slopers/blocks and manipulate them into original apparel designs on the computer. This class will use a combination of lecture, demonstration and hands-on computer experience to teach the skills needed for ceating digital patterns. 2 hrs. lecture, 4 hrs. lab/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 130
Fashion Illustration I (3 CR)
Upon completion of this course, the student will be able to create fashion illustrations using several different types of media and begin to develop content for their fashion portfolio. The student will be able to express and apply color, mood, detail and form in representing a variety of different types of apparel. This class includes a study of all types of fashion drawing including technical drawings, garment detail drawings and development of a full cohesive collection. 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. $100 to 200.

FASH 131
Flat Pattern Development (4 CR)
Upon successful completion of this course, students should be able to apply the use of flat pattern methods in developing patterns for original apparel designs. Students will hand draft a set of both standard size and custom slopers/blocks for manipulation into original pattern designs. Students will plan, develop patterns, create pattern instructions and prepare muslin samples of their designs. The class will use a combination of lecture, demonstration and hands on experience to teach the skills necessary in manual pattern development. 2 hrs. lecture 4 hrs. instructional lab/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FASH 133
Computer Aided Apparel Design (3 CR)
Upon successful completion of this course, students should be able to apply Adobe Photoshop and Illustrator computer skills to create original textile and apparel designs. Students will learn a variety of different techniques to create portfolio ready compositions specific to fashion design. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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.

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 143
Tailoring (4 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FASH 200
Garment Alterations I (4 CR)
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 of 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. 6 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 $200.

FASH 201
Garment Alterations II (4 CR)
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 formal wear and/or evening garments in need of 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 formal and evening garments to a particular body. 6 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 $200.

FASH 215
Field Study: MAGIC Trade Show (1 CR)
Upon successful completion of this course, the student will be able to explain the importance of the MAGIC trade show in the fashion industry and explain the different segments of the show. Students should be able to identify different types of attendees and their objectives at the show as well as attend a minimum of two conference seminars and one fashion show.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $550 to 600.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FASH 225
Store Planning (3 CR)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FASH 265
Fashion Product Development (4 CR)
Upon successful completion of this course, students should be able to develop original garment design ideas from initial concept through to production. This includes translating market trend research, creating inspiration and concept presentation boards and continuing the design process through fabric selection and developing original patterns for first samples using flat pattern drafting and draping techniques. Students will calculate costing for their garments and develop detailed specification packages. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 268
Field Study: The Market Center (3 CR)
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)
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)
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)
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 120
Fire Academy (12 CR)
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, and physical agility (CPAT). Upon successful completion of the cognitive examinations and all psychomotor skills evaluations, students will be allowed to sit for the Kansas Fire Fighter I and II state certification examinations, which are administrated by the University of Kansas, Fire and Rescue Training Institute. 8 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. $350.

FIRE 136
Fire and Emergency Management (3 CR)
Managing resources is a part of every incident. The ability to manage these resources is crucial in safely and effectively mitigating the incident. Organizations must have a system in place prior to the incident, which will facilitate the management of resources. Federal legislation mandates organizations, which respond to hazardous materials incidents, use an incident management system. This course provides information about incident management systems, as well as pursues issues wherein it needs to be utilized. 3 hrs. lecture/wk. This course is typically taught in the spring semester.

FIRE 152
Codes/Detection and Suppression Systems (3 CR)
This course will provide a basis for students to become familiar with and utilize fire codes that are in use today. It will also provide students with basic knowledge of detection and suppression systems that are an ever increasing part of fire control today. 3 hrs. lecture/wk. This course is typically taught in the spring semester.

FIRE 162
Firefighting Tactics (3 CR)
Strategy and tactics are essential competencies required to mitigate fires. This course is designed to prepare a fire officer to be able to provide tactics at a structure fire, fully utilizing available resources in a safe and efficient manner. 3 hrs./wk. This course is typically taught in the fall semester.

FIRE 201
Leadership in the Fire Service (3 CR)
This is a course that will delve into leadership as defined and utilized in the fire service setting. It will review many types of leaders and the qualities that make them leaders. It will also provide students insight into the type of leaders they may see in the fire service as well as provide them with role models for their use as future fire service leaders. 3 hrs. lecture/wk. This course is typically taught in the spring semester.

FIRE 220
Fire Management (3 CR)
This course will involve the student in learning proper methods of supervision and the duties of a fire department first line manager. It will encompass supervisory techniques as well as various management theories. This course will assist the student in the application of techniques and the practical use of management theories in the role as a fire service manager. 3 hrs. lecture/wk. This course is typically taught in the fall semester.

FIRE 222
Fire Science Law (3 CR)
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.

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)
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)
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)
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. 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 280
Floral Design Internship (3 CR)
Student will 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 Floral Design 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 Floral Design focus and career goals. Minimum 200 hrs. per semester field study.

Foreign Language (FL)

FL 110
Elementary Ancient Greek (5 CR)
In this course, students will learn the basic vocabulary, grammar, and syntax of Classical Greek as represented in fifth-century Athens. Students will develop proficiency in grammatical and syntactical concepts and terminology, gain an appreciation for the cultural, political, and artistic achievements of ancient Athenian society, and be able to recognize the lasting etymological influence of ancient Greek on the English language. 5 hrs./wk.

FL 111
Ancient Greek Readings and Grammar (5 CR)
This course is a continuation of Elementary Ancient Greek. It is designed to strengthen students' basic vocabulary, their comprehension of grammar and syntax, and their ability to read simple Greek texts. 5 hrs./wk

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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 123
Elementary Hebrew I (5 CR)
In this basic course, students will study the four areas of Hebrew language acquisition: listening, speaking, reading and writing. This course requires intensive classroom interaction as well as additional out-of-class assignments. Exposure to aspects of Israeli culture will be integrated into this course. 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 17.

FL 124
Elementary Hebrew II (5 CR)
In this course, students will continue to develop skills in Hebrew: listening, speaking, reading and writing. This course is designed to encourage students to engage in classroom dialogue facilitating comfort with the spoken language. Exposure to aspects of Israeli culture will be integrated into the course. 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 17.

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)
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: can be taken at the Testing Center. 5 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Placement test recommended: can be taken at the Testing Center. 5 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 141
Elementary French II (5 CR)
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: can be taken at the Testing Center. 5 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 151
Elementary Russian II (5 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 171
Elementary Japanese II (5 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 179
Intermediate Russian II (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 ASL 120 are the same course. Do not enroll in both.

FL 181
Elementary American Sign Language II (3 CR)
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 ASL 121 are the same course. Do not enroll in both.

FL 182
Intermediate Japanese I (5 CR)
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)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 195
Intermediate Arabic I (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 196
Intermediate Arabic II (3 CR)
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)
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)
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: can be taken at the Testing Center. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 221
Intermediate German II (3 CR)
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: can be taken at the Testing Center. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 223
Conversational German (2 CR)
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: can be taken at the Testing Center. 2 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 230
Intermediate Spanish I (3 CR)
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 at the Testing Center. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 231
Intermediate Spanish II (3 CR)
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 at the Testing Center. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 234
Conversational Spanish (2 CR)
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. 2 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 240
Intermediate French I (3 CR)
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: can be taken at the Testing Center. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 241
Intermediate French II (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 243
Conversational French (2 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 248
Conversational Arabic (2 CR)
This course is designed to enhance students? ability to express themselves orally in Arabic through vocabulary building and reiteration of essential grammatical structures. 2 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

FL 249
Conversational Chinese (2 CR)
This course is designed to enhance the ability of students to express themselves orally in Chinese through vocabulary building and reiteration of essential grammatical structures. The vocabulary will stress everyday situations and current events. 2 hrs. lecture/wk.

FL 250
Conversational French: Cinema (2 CR)
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. 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. $40 to 60.

FL 270
Intermediate American Sign Language I (3 CR)
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)
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: learning how to build games with a game development environment, the basic ideas of game design, introduction to building 3D levels, a brief survey of the game business and game careers. Typical tasks will include: building a variety of games, learning how to include sound effects and simple animation effects in games, using simple analysis tools to evaluate games, building a 3D level, creating an original game as a term project. 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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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)
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)
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.

Geosciences (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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

GEOS 141
Physical Geography Lab (2 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

GEOS 214
Introduction to Teaching Math and Science (1 CR)
This course allows math and science students to explore and develop an appreciation for teaching as a career. To support their learning, students will be introduced to the theory and practice that is necessary to design and deliver quality instruction. They will plan and implement lessons of an inquiry-based curriculum in an elementary classroom during the semester. MATH 214, ASTR 214, BIOL 214, CHEM 214, GEOS 214, PHYS 214 and PSCI 214 are the same course; enroll in only one. 1 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)
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.

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 131
Drawing and Media Methods 2 (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 132
Typography (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 134
Layout Design (3 CR)
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.

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 140
Technical Processes (3 CR)
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.

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 230
Drawing and Media Methods 3 (3 CR)
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.

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 231
Advanced Typography (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 235
Production Methods (3 CR)
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.

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 236
Electronic Production (3 CR)
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.

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 244
Communication Systems (3 CR)
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)
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)
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)
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, Physical Education and Recreation (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. This course will meet the general education requirement for Health and/or Physical Education.

HPER 101
Basketball (Intermediate) (1 CR)
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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will not meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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. 2 hrs. activity/wk. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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)
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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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)
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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

HPER 118
Power Volleyball (Intermediate) (1 CR)
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. This course will meet the general education requirement for Health and/or Physical Education.

HPER 124
Tai Chi I (1 CR)
The class will introduce students to the practice of tai chi. Students will learn the basic structure, footwork, and breathing involved in the execution of routines consisting of a variety of postures. 2 hrs. activity/wk. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

HPER 135
Weight Training (Intermediate) (1 CR)
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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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)
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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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)
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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

HPER 152
Aerobics (Intermediate) (1 CR)
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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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)
A continuation of Beginning Ballet, this progressive ballet system explores multilayered ballet movement in simple dance combinations. 2 hrs./wk. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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)
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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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)
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. 2 hrs./wk. This course will meet the general education requirement for Health and/or Physical Education.

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)
Students will have the opportunity to achieve higher levels of proficiency, routines, kumite (sport/free fighting) and self-defense. 2 hrs./wk. This course will meet the general education requirement for Health and/or Physical Education.

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)
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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will not meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

HPER 177
Self Defense II (1 CR)
This class will build on techniques introduced in Self Defense I, adding new techniques, combining techniques, and applying the techniques in a variety of scenarios. Emphasis remains on the principles that apply at any range as well as drills to develop proper structure and mechanics. 2 hrs. activity/wk. This course will meet the general education requirement for Health and/or Physical Education.

HPER 180
Fencing (Intermediate) (1 CR)
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. This course will meet the general education requirement for Health and/or Physical Education.

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. 2 hr./wk. This course will meet the general education requirement for Health and/or Physical Education.

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)
Students in intermediate swimming will learn more advanced swimming strokes, skills and safety information along with increasing personal fitness levels through continuous endurance swimming. 2 hr./wk. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will not meet the general education requirement for Health and/or Physical Education.

HPER 197
Sports Conditioning (Intermediate) (1 CR)
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./wk. This course will meet the general education requirement for Health and/or Physical Education.

HPER 198
Athletic Training Practicum I (1 CR)
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. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html.16 hrs. lecture, 112 hrs. practicum This course will not meet the general education requirement for Health and/or Physical Education.

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, cardiopulmonary resuscitation and Automated External Defibrillators (AED). 2 hrs./wk. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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. This course will not meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

HPER 207
Athletic Training Practicum 2 (2 CR)
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. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 16 lecture 304 practicum hrs. This course will not meet the general education requirement for Health and/or Physical Education.

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. This course will not meet the general education requirement for Health and/or Physical Education. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. This course will not meet the general education requirement for Health and/or Physical Education.

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. This course will not meet the general education requirement for Health and/or Physical Education.

HPER 224
Outdoor Recreation (3 CR)
This course introduces the student to activities that create interaction between the individual and elements of the outdoor recreational setting. Outdoor Recreation Students study the fundamental basics of governmental, private, and public control of recreational lands. Outdoor recreation projects include a variety of outdoor activities, such as camping, hiking, nature observation, biking, rock climbing, canoeing, skiing, map & compass, outdoor safety and how to dress and pack for outdoor adventures. The course is typically a full semester course that can be offered online and/or face-to-face 3 hrs./wk. This course will not meet the general education requirement for Health and/or Physical Education.

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. The Lifetime Fitness and Wellness manual will emphasize the value of developing a total lifetime fitness attitude with optional lectures available to enhance the student's knowledge of the benefits of a lifetime fitness program. This course requires an initial orientation. After the orientation, the class becomes an open-lab format. Three 40 minute visits/wk. This course will meet the general education requirement for Health and/or Physical Education.

HPER 241
Lifetime Fitness II (1 CR)
This course is a continuation and expansion of Lifetime Fitness I. Three 40 minute visits/wk., open-lab format by arrangement. This course will meet the general education requirement for Health and/or Physical Education.

HPER 242
Lifetime Fitness III (1 CR)
This course is a continuation and expansion of Lifetime Fitness II. Three 40 minute visits/wk., open-lab format by arrangement. This course will meet the general education requirement for Health and/or Physical Education.

HPER 243
Lifetime Fitness IV (1 CR)
This course is a continuation and expansion of Lifetime Fitness III. Three 40 minute visits/wk., open-lab format by arrangement. This course will meet the general education requirement for Health and/or Physical Education. This course may be repeated for credit towards graduation.

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, activities and games related to elementary physical education. The course will include observation and teaching. 3 hrs./wk. This course will not meet the general education requirement for Health and/or Physical Education.

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. This course will meet the general education requirement for Health and/or Physical Education.

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.

HC 130
Medical Terminology for Healthcare Professions (3 CR)
This course will introduce the student to a systematic method for learning, understanding and applying medical terminology. The course will provide an overview regarding the development of medical terms; and, outline medical terminology pertaining to each of the body systems; selected illnesses; diagnostic procedures and pharmacology. This course is designed for the student who is interested in any facet of the healthcare industry; and, is a required course for several certificate programs. Some portions of this course will require computer utilization and independent online work. There will be two to three mandatory meet times per week. 3 hrs. lecture/wk.

Health Care Information Systems (HCIS)

HCIS 255
Introduction to Information and Computer Science (2 CR)
This course provides a basic overview of computing concepts with periodic ties to the healthcare sector. Topics include computing terms; computer architecture; data organization, representation, and structure; structure of programming languages; and networking and data communication. The design and development of a large computing system, such as one for an electronic health record, is also discussed. 2 hrs. lecture/wk.

HCIS 261
Networking and Health Information Exchange (2 CR)
This course provides an in-depth analysis of data mobility. The hardware infrastructure (wired, wireless, and devices supporting them), the International Organization for Standards (ISO) stack, standards, Internet protocols, federations and grids, the Nationwide Health Information Network (NHIN), and other nationwide approaches are discussed. 2 hrs. lecture/wk.

HCIS 262
Customer Service in the Health Environment (2 CR)
This course introduces the skills necessary to communicate effectively across the full range of roles that will be encountered in healthcare and public health settings. Appropriate customer service skills, effective written and oral communication, and ethical and cultural awareness are emphasized. 2 hrs. lecture/wk.

HCIS 263
Working with Health Information Technology Systems (2 CR)
This course provides an opportunity to work with a real or simulated health information technology (HIT) system. Course topics include information exchange and standards as well as system usability, security, and integration. 2 hrs. lecture/wk.

HCIS 264
Configuring Electronic Health Records (2 CR)
This course addresses configuring electronic health records (EHRs) to meet the specific needs of customers. Topics also include system selection, implementation, and meaningful use. 2 hrs. lecture/wk.

HCIS 265
Installation and Maintenance of Health IT Systems (2 CR)
This course covers the installation and maintenance of health information technology (HIT) systems, including testing prior to implementation. It introduces principles underlying system configuration and helps students plan system installation. 2 hrs. lecture/wk.

HCIS 266
Vendor-Specific Electronic Health Systems (2 CR)
This course provides an overview of the most popular electronic health systems. System features are evaluated and compared as they would relate to practical deployments. Key factors such as cost, licensing, and staffing are also discussed. 2 hrs. lecture/wk.

HCIS 271
The Culture of Health Care (2 CR)
This course introduces students to job expectations in healthcare settings. Topics also include the organization of care inside a practice setting, privacy laws, and professional and ethical issues. 2 hrs. lecture/wk.

HCIS 272
Terminology in Health Care Settings (2 CR)
This course introduces students to terminology and clinical procedures associated with body systems. It also covers terminology related to health information management (HIM), health information technology (HIT), and public health. 2 hrs. lecture/wk.

HCIS 273
Quality Improvement (2 CR)
This course introduces the concepts of health information technology (HIT) and practice workflow redesign as instruments of quality improvement (QI). Students will learn methods to establish a culture that supports increased quality and safety. Approaches to assessing patient safety issues and implementing quality management and reporting through electronic systems will be discussed. 2 hrs. lecture/wk.

HCIS 274
Healthcare Workflow Process Analysis and Redesign (2 CR)
This course introduces health workflow process analysis and redesign as a necessary component of complete practice automation. The topics of process validation and change management are also covered. 2 hrs. lecture/wk.

HCIS 275
Health Information Systems (2 CR)
This course addresses concepts of information systems specific to healthcare and public health applications. Students will be introduced to health information technology (HIT) standards, health-related data structures, software applications, and enterprise information architecture in healthcare and public health organizations. 2 hrs. lecture/wk.

HCIS 276
Usability and Human Factors (2 CR)
This course discusses human factors associated with designing and implementing health information systems. Concepts of usability and the effects of new technology and workflow redesign on downstream processes will be covered. 2 hrs. lecture/wk.

Health Care Interpreting (HCI)

HCI 110
Introduction to Interpreting (3 CR)
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 only.

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)
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 only.

HCI 130
Interpreting Skills II (3 CR)
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 only.

HCI 140
Spanish Medical Interpreting (3 CR)
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 only.

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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 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 Occupations (AVHO)

AVHO 102
Certified Nurse Aide – Face to Face Class (5 CR)
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. 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. For more information, go to http://www.jccc.edu/nursing/nurse-aide/. Enrollment in this course requires a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses, and is due prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/.

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 110.

AVHO 103
Certified Nurse Aide Refresher Course (CNA-R) (1 CR)
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. 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. For more information, go tohttp://www.jccc.edu/nursing/nurse-aide/index.html . Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. This course is not federal aid eligible.

AVHO 104
Certified Medication Aide (CMA) (4 CR)
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. 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. For more information, go to http://www.jccc.edu/nursing/nurse-aide/index.html. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/. This course is not federal aid eligible.

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 110.

AVHO 106

Home Health Aide (HHA) (1 CR)
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. 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. For more information, go to http://www.jccc.edu/nursing/nurse-aide/index.html. This course is not federal aid eligible.

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 55.

AVHO 108

Certified Medication Aide Update (CMA-U) (1 CR)
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. 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. For more information, go to http://www.jccc.edu/nursing/nurse-aide/index.html. This course is not federal aid eligible.

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 (RA) (2 CR)
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. 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. For more information, go to http://www.jccc.edu/nursing/nurse-aide/index.html . This course is not federal aid eligible.

AVHO 115

I V Therapy For LPNs (3 CR)
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. 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.edu/nursing/practicalnurse/iv-therapy.html. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/. This course is not federal aid eligible.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $55.

Heating, Ventilation, Air Conditioning (HVAC)

HVAC 121

Basic Principles of HVAC (4 CR)
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)
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. This course is the same as EPRM 124; do not enroll in both. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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)
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)
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)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 1 hr. lecture, minimum 15 hrs. on-the-job training/wk.

History (HIST)

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. 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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 the 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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

HIST 143
Ancient Greece, the Near East and Egypt (3 CR)
This course will present the background to the rise of Ancient Greece by examining first its Near-Eastern and Egyptian predecessors. Then it will examine Greece's historical development from the early Aegean phase through its Dark, Archaic, classical and Hellenistic phases. In addition to political, military, and social and economic developments, Greek literature and art will also be highlighted. 3 hrs. lecture/wk.

HIST 145
History of Ancient Rome (3 CR)
This course will cover Roman civilization and history from its emergence until the fifth century C.E. In addition to political, military, and social and economic developments, Roman literature and art will also be highlighted. Rome's significance for later western civilization will be noted. 3 hrs. lecture/wk.

HIST 149
History of India (3 CR)
This course is a broad and thematic introduction to the history of India. The course covers Indian culture and civilizations from the ancient Indus River Valley Civilization to the present nation state of India. Multiple modes of inquiry and source materials are important for historical analysis, and this course considers literature, art, architecture and other forms of cultural aesthetics in relation to political, economic, material, and religious developments. 3 hrs. lecture/wk.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

HIST 164
Japan: Changing Tradition (3 CR)
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 165
History of China (3 CR)
This course will survey the history of China from its Neolithic origins until the twenty-first century by examining major overall themes, including political and military developments, social formations cultural trends and China's role in the larger world. 3 hrs. lecture/wk.

HIST 167
Introduction to History: Japan (3 CR)
This course will provide an introduction to Japan from the earliest period of human settlement on the Japanese archipelago to the present. In so doing, it will explore political, economic, social, cultural and religious developments. Such an exploration will be useful for the further study of East Asian and Japanese history, as well as other aspects of Japanese language and cultural study. 3 hrs. lecture/wk.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

HIST 200
Eurasia: History and Cultures (3 CR)
This course is an interdisciplinary introduction to the rich diversity of the often marginalized civilizations and tribal peoples that inhabit the Caucasus and Central Asia. Students will examine the ethnic, social, economic, religious, artistic and geopolitical influences shared by the inhabitants of these regions. The indigenous sedentary and nomadic populations located along the Silk Road and Eurasian Steppe were repeatedly subjected to conquest by the superior military powers that competed for domination of these trade arteries. Students will trace the succession of cultural influences that swept over the areas. Students will conclude their study with an examination of the post-Soviet development of these regions, investigating how these peoples define themselves within the modern nation-state system. 3 hrs. lecture/wk.

HIST 270
History Internship (3 CR)
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 museum or research facilities or other 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.

HIST 292
Special Topics: (1 CR)
This course periodically offers specialized or advanced discipline-specific content related to the study of history, not usually taught in the curriculum, to interested and qualified students within the program.

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. This course will meet the general education requirement for Health and/or Physical Education.

Honors Program (HON)

HON 250
Honors Forum: (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. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

HORT 205
Plant Propagation (3 CR)
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, 3 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)
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)
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
Pest Control Management (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)
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)
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.

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.

HMGT 126

Food Management (4 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 169

Foodsevice Management Dietary Managers Seminar (4 CR)
This course will differentiate between different types of meal service and how to satisfy client preferences, applying and understanding foodservice from forecasting, purchasing, receiving and storing food and equipment recommendations. Budgeting, marketing, safety and food quality of foodservice will be covered. It will include a minimum of 96 hours a semester of an internship in a foodservice organization that would typically hire a dietary manager. 3 hrs. lecture/wk. & 96 hr. internship/semester

HMGT 203

Hotel Sales and Marketing (3 CR)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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 269
Medical Nutrition Therapy Seminar (4 CR)
This course explores how medical nutrition therapy impacts disease and the role of the dietary manager in utilizing this therapy in a clinical setting. It will include a minimum of 96 hours per semester of an internship in an institution that typically employs a dietary manager. 3 hrs. lecture/wk. & 96 hrs. internship/semester

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)
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. 3 hrs./wk.

HMGT 275
Seminar in Hospitality Management: Internship (3 CR)
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)
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)
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)
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)
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)
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)
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)
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 Management Pastry Baking (HMPB)

HMPB 155
Pastry Shop Production I (4 CR)
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)
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)
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)
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)
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)
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)
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)
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. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

HUM 156
Contemporary Approaches to World Mythology (3 CR)
This course provides a systematic study of world mythologies, where they appear in literature and art and their survival and metamorphosis in contemporary culture. The course provides several methodological frameworks with which to analyze myths and their relation to history, religion, ritual and art. Through the study and comparison of world mythologies, students are encouraged to evaluate their own perspectives and experiences in the context of human diversity. 3 hrs. lecture/wk.

HUM 167
Introduction to Japanese Culture (3 CR)
The course acquaints students with the arts and ideas of Japan, from its pre-history through the present day. The approach is interdisciplinary, examining artistic and philosophical values embodied in theatre (including dance and music), painting (calligraphy), woodblock prints, ceramics, sculpture, literature, and gardens, as well as modern developments including anime and film. In addition to developing the students' appreciation of Japan's contribution to world culture, the course aims to enhance students' understanding of the contemporary world. 3 hrs. lecture/wk.

HUM-292
Special Topics: (1 CR)
This course periodically offers specialized or advanced discipline-specific content related to the humanities not normally taught in the curriculum to interested and qualified students. Special Topics in Humanities may be repeated for credit but only on different topics. Total contact hours vary with topic.

Industrial Technology (INDT)

INDT 125
Industrial Safety/OSHA 30 (3 CR)
This course introduces the student to basic safety policies, procedures, and regulations. The student should be able to list various safety, health, and environmental topics, and recognize the need for an ongoing safety program. Upon successful completion of this course, including attendance and grade requirements, the students may be eligible for the OSHA General Industry Health and Safety Training card. 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 140
Networking Fundamentals (4 CR)
This course is a replacement for the IT 200 Networking Technologies course. It serves as the first module of four that are designed to prepare students to complete the Cisco Certified Network Associate (CCNA) Certification. Cisco updated its curriculum for the first course and included VLSM and basic router configuration from the second course. This necessitated the need to expand this course. The basis for this course is still IT 200, Networking Technologies, with the addition of this new material. In that router configuration is a skill that is required in all of the other Cisco CCNA classes, it is imperative that the students learn the skill in this course. Therefore the increase in credit hours is associated with the need to learn this skill. 3 hrs. lecture 2 hrs. open lab/wk.

IT 145
Routing Protocols and Concepts (3 CR)
This course is designed to provide students with a fundamental understanding of network routing and the operation of routers. It maps to the Cisco Academy Routing Protocols and Concepts course of the Cisco Certified Network Associate Exploration curriculum. Topics covered include router components, accessing routers, working with Cisco Internetworking Operating System (IOS), configuring static and dynamic routing. Students will configure common routing protocols such as Routing Information Protocol versions 1 and 2, Enhanced Interior Gateway Routing Protocol, and Open Shortest Path First. Students will design and implement IP addressing schemes using subnetting, Variable Length Subnet Mask, and Classless Inter Domain Routing. Laboratory exercises will accompany lectures. 3 hrs. lecture, 2 hrs. open lab/wk.

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)
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. 2 hrs. lecture, 2 hrs. instructional lab, 1 hr. open 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 209
LAN Switching (4 CR)
This course is designed to provide students with the necessary knowledge and skills to interconnect and configure network switches. Students successfully completing this course should be able to perform basic switch administration tasks including installing, configuring and troubleshooting. Students will build Local Area Networks (LANs) based on the hierarchical design model supported by Virtual LANs (VLANs) and the Spanning Tree Protocol (STP). This course maps to one of four modules designed to prepare students to complete the Cisco Certified Network Associate (CCNA) Certification.

IT 221
Windows Server (3 CR)
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)
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)
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)
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
Linux Fundamentals (3 CR)
This course is designed to provide students with a fundamental understanding of the Linux operating system environment. Students successfully completing this course will be able to execute common Linux commands and utilities; and accomplish system tasks such as navigating the file system, applying file system security, managing user accounts, using the printing environment, and utilizing the resources of a basic Linux system. 2 hrs. lecture, 3 hrs. lab/wk.

IT 231
Linux Administration (3 CR)
This course is designed to provide students with the necessary knowledge and skills to perform competently as a Linux system administrator. Students successfully completing this course should be able to perform basic system administration tasks including installing, configuring and troubleshooting a basic Linux 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
Linux Networking (4 CR)
This course is designed to provide students with information that enhances their ability to manage Linux systems in a networked environment. Included are topics related to configuring and managing network connectivity, and the installation, configuration, and securing of network services. 3 hrs. lecture, 2 hr. lab/wk.

IT 233
Linux Advanced Administration (4 CR)
This course is designed to provide students with the skills and techniques to perform advanced administration tasks in a networked Linux environment. Topics will include compiling the Linux kernel, configuring advanced storage solutions, customizing system startup processes, and managing advanced network connections. 3 hrs. lecture, 2 hrs. lab/wk.

IT 245
Network Infrastructure (3 CR)
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)
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
Accessing Wide Area Networks (3 CR)
This course is designed to provide students a fundamental understanding of internetworking. Topics include Local Area Network (LAN) segmentation using routers. Wide Area Network (WAN) physical technologies will be studied. Configuring WAN protocols using Point-to-Point Protocol (PPP), Integrated Services Digital Network (ISDN) and Frame Relay will be presented. Securing the network with standard and extended access lists will be performed. 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)
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)
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)
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)
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)
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)
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)
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 256
Windows Security (4 CR)
This course is designed to provide students with the skills and techniques to properly secure a Windows network. The topics will include building a Windows Active Directory infrastructure, securing the Windows Active Directory infrastructure and penetrating the infrastructure with current hacking tool kits. This course serves as a capstone course in the Windows track of the Information Technology Department. It is the last course in a series of six Windows classes. It takes concepts and skills learned in the pre-requisite Windows courses and ties them together focusing on securing a Windows network. 3 hrs. lecture, 2 hrs. lab/wk.

IT 271
Information Technology Internship I (3 CR)
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)
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.

IT 292
Special Topics: (1 CR)
This course periodically presents specialized topics in computer networking that are not available in the regularly offered curriculum. Special Topics may be repeated for credit; but only on different topics.

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)
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)
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)
This course teaches the creation, acquisition and management of assets for use in the development of interactive media. Assets to be covered include digital text, graphics, audio and video. Related topics include issues concerning intellectual property and interactive media professional practices. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 156
Interactive Authoring I (4 CR)
This course focuses on the user experience aspects of Web design, HTML and interactive authoring. The course covers concepts about the way the World Wide Web works and introduces students to new technologies that are destined to have an important effect on the Web's future. Students examine specifications for each project and carefully analyze individual sites. This course provides a comprehensive experience in the design and development of websites primarily utilizing HTML and CSS. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 200
Interactive Communication Form (3 CR)
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)
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)
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)
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
Interact Authoring II (4 CR)
This course will build on the knowledge and skills gained in the Interactive Authoring I course. Students will write a technical proposal, produce a flowchart and create a storyboard for each project before actually authoring the project. This course provides in-depth experience with the design and development of websites and interactive authoring for delivery by other platforms, primarily utilizing industry-standard proprietary multimedia authoring applications and their associated scripting methods. Project management will also be explored. 3 hrs. lecture, 2 hrs. lab/wk.

CIM 270
Interactive Media Project (4 CR)
This project-oriented course requires students to actively participate in a group interactive media project. The project requires each student to analyze the problem and write a project proposal. Students work as a team to design, produce and gather assets for the project. The team is responsible for building a prototype and developing the final project as well as testing and evaluating the final project prior to delivery. 3 hrs. lecture, 2 hrs. lab/wk. This course is taught in the spring semester.

CIM 272
Interactive Media Internship (1 CR)
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)
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 (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)
This is an advanced course focusing on the process of space planning. Upon successful completion of this course, the student should be able to demonstrate an advanced level of understanding in: space planning rationale, space planning procedures, and how to convey the meaning of a space plan. 4 hrs. integrated lecture and lab/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
This is an intermediate course focusing on interior design presentation skills. Upon successful completion of this course, the student will demonstrate visual communication skills including isometric, axonometric, oblique and perspective drawings as well as use rendering techniques and color to enhance drawings. Additionally the student will organize and demonstrate visual and verbal presentations to communicate the design solution. 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. $75 to 100.

ITMD 132

Materials and Resources (3 CR)
This course provides in-depth knowledge about materials used in interior spaces. The student will evaluate the quality of interior materials; demonstrate the ability to use product information resources; identify manufacturing and construction techniques used in products; recognize the sustainability and environmental impact of materials; use correct terminology to describe the various types of interior materials; and compare the design, use, durability and cost of materials. 3 hrs./wk.

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, discover motifs and textiles of historical periods from antiquity to the Renaissance. Additionally, the student should be able to discover the religious, political and social influences on the ornamentation and furnishings of each period. The student should also be able to identify and define 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)
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.

ITMD 143

Accessory Fundamentals (1 CR)
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.

ITMD 145

Upholstered Furniture (1 CR)
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.

ITMD 147

Lighting Basics (1 CR)
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.

ITMD 148

History of Asian Furniture and Design (2 CR)
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)
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.

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)
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)
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.

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)
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: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

ITMD 219
Issues in Interior Design (3 CR)
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.

ITMD 221
Residential Design (3 CR)
This is an advanced course focusing on residential design. The design process will be practiced from beginning to end in order to formulate a complete design solution. Upon successful completion of this course, the student should be able to demonstrate an advanced level of space planning 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 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. The student will also demonstrate an understanding of business practices. 2 hrs. lecture, 3 hrs. lab/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
This is an advanced course focusing on commercial design. Upon successful completion of this course, the student will be able to define and use vocabulary related to commercial design, identify and use proper architectural symbols common to the commercial design industry. Additionally, the student should be able to demonstrate the skills necessary to create a code compliant commercially designed space; explain the different concepts of office planning; and use the design process to arrive at potential design solutions. 2 hr. lecture, 3 hrs. lab/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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.

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 discover 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)
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, 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. $50 to 75.

ITMD 237
Capstone: Merchandising and Entrepreneurship (2 CR)
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)
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)
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.

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)
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.

ITMD 282
Interiors 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 consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the interiors industry. A minimum of 240 hours per semester of on-the-job training is required.

ITMD 284
Interiors Internship II (1 CR)
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 240 hours per semester of on-the-job training is required.

ITMD 295
Field Study: Design and Merchandising (3 CR)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
This is an advanced course concentrating on continued develop of English-to-ASL, ASL transliteration skills development. Students will have the opportunity to use these skills as stimulus material gradually becomes more advanced. 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. $10 to 50.

INTR 262
Seminar on Interpreting (3 CR)
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)
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.

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.

Journalism and Media Communications (JOUR)

JOUR 120
Mass Media and Society (3 CR)
Each of us is exposed to and affected by the mass media on a daily basis. This course is designed to increase students' awareness of the various media and media's impact on their daily beliefs, opinions, decisions, and goals. As a result, students will become more media literate and astute critics of media messages. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

JOUR 127
Broadcasting and New Media (3 CR)
This course serves students interested in gaining knowledge or a career in the broadcast and emerging technologies field. Hands-on productions in the college's student media facilities offer opportunities to gain experiences to further evaluate career choices. Class time includes discussion of trends and issues, including FCC regulations, ethics, ratings, and jobs. 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 communicate well 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. 3 hrs./wk.

JOUR 145
Photojournalism (3 CR)
This course is designed to meet the photographic needs of journalism students. It provides a journalistic approach to the concepts and application of photography for multi-media. Students will use cameras, computers and software, to master the issues, concepts, and constraints involved in creating imagers for a broad range of media. They will prepare and format digitized image files for storage and transmission, and print and Web-based reproduction. 6 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. $75 to 150.

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 on campus media. 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 15.

JOUR 207
Radio Production (3 CR)
This course provides students with the fundamentals of Internet radio production. The goal is to teach students basic techniques in audio console functions, program formats, and editing using computer software. Writing, producing, and performing are included. Students will gain hands-on experience through exposure to the campus radio station, ECAV. 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.

JOUR 222
Advanced Reporting (3 CR)
This course is 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 features, profiles, reviews, editorials and personal columns. Professional writings in various media will be examined and critiqued. Class members will have the opportunity to participate in hands-on video shooting and editing of a news story package. Students will gain additional experience by participating in news events, as well as interacting with area media professionals. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

JOUR 225
Promotional Writing (3 CR)
Students will study copywriting for promotional purposes, starting with an understanding of the target audience. Emphasis is on writing ads for print, radio and television; direct mail and direct response; the web; and new genres. 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)
Students will produce news, feature, sports, and interview programming for airing on the college's cable station, video server, and social networks. The development of news stories will be included in hands-on activities throughout the course. 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. $25 to 50.

JOUR 247
Advanced Video Production (3 CR)
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. $25 to 50.

JOUR 252
Advanced Broadcast Performance II: TV (3 CR)
This course builds upon the skills learned in the Advanced Broadcast Performance course. Students will produce news, features, sports, and interview programming for airing on the college's cable station, video server, and social networks. The development of news packages, event reporting, and extended coverage of campus events will be included in hands-on activities throughout the course. 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. $25 to 50.

JOUR 257
Advanced Video Production II (3 CR)
This course builds upon the Advanced Video Production course. Students will direct, produce, and edit programming for distribution via the college's media outlets. They will enhance their advanced 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. The development of writing for media programming will also 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. $25 to 50.

JOUR 262
Advanced Broadcast Performance III: TV (3 CR)
This course builds upon the skills learned in Advanced Broadcast Performance II. Students will produce news, features, sports, and interview programming for airing on the college's cable station, video server, and social networks in a collaborative effort with other students in the broadcast/video program. The development of news packages, event reporting, and extended coverage of campus events will be included in hands-on activities throughout the course. Learning composure, focus, and detail in a team information-gathering operation will be emphasized. Production supervision skills will also 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. $25 to 50.

JOUR 267
Advanced Video Production III (3 CR)
This course continues the advancement of technical skills offered in Advanced Video Production II. Enhancement of skills includes program production of electronic student media. Application of technical skills in studio and field production, multi-camera directing, lighting, audio production and graphics will evolve through hands-on training. Advanced work in writing for student media programming 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. $25 to 50.

JOUR 269
Journalism Internship (1 CR)
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 and production techniques needed to produce video and broadcast news, produce advertising, or public relations promotional copy. On-the-job training includes a minimum of 60 hrs. for the semester by arrangement.

JOUR 270
Journalism Internship (2 CR)
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 and production techniques needed to produce video and broadcast news, produce advertising, or public relations promotional copy. On-the-job training includes a minimum of 120 hrs. for the semester by arrangement.

JOUR 271
Journalism Internship (3 CR)
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.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 098

Accelerated Math: Fundamentals/Elementary Algebra (6 CR)
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.

LCOM 099

Accelerated Math: Elementary Algebra/Intermediate Algebra (6 CR)
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.

LCOM 120

Business Math/Learning Strategies for Math (4 CR)
Students earn 4-credit hours (3 credit hours for MATH 120 Business Math and 1 credit hour for LS 174 Learning Strategies for Math). This 4-credit hour 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. 4 hr. lecture/wk.

LCOM 126

Composition II and U.S. History to 1877 (6 CR)
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

Composition II and US History Since 1877 (6 CR)
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)
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 (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)
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 (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 Communication Navigation (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

American and Global Terrorism (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 and Russian Culture (6 CR)
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

Elem Algebra/Learn Strat Math (4 CR)
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 Math/Learn Strateg Math (4 CR)
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. MATH 111 will not fulfill degree requirements.

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

Where Do You Live? (6 CR)
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)
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)
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 169

Intermediate Algebra/Learning Strategies for Math (4 CR)
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.

LCOM 170

Writing Strategies/Fundamentals of Reading (6 CR)
This 16-week course is an integration of the content of both ENGL 102 Writing Strategies and RDG 125 Fundamentals of Reading as if taken as two separate courses. You will earn 3 credit hours in the Writing Strategies and 3 credit hours in Fundamentals of Reading as if they were being taught in the traditional format.

LCOM 172

Interactions, Reactions: Exploring Sociology Through Fiction and Writing (6 CR)
This course is an integration of the content of both ENGL 121 Composition I (3 credit hours) and SOC 122 Introduction to Sociology (3 credit hours). This course offers students an opportunity to explore sociology while at the same time allowing them to apply what they learn to their own interactions with others via writing. This Learning Community introduces sociology's most important concepts, themes and methodologies by focusing on select short stories that illustrate all three. Fiction brings sociology to life. Plots concern human interactions and reactions: to and among families, loved ones, neighbors, political leaders, communities, and authorities. Writing itself is likewise grounded in sociology. After all, the primary purpose of writing is to communicate with others. By writing, you will be practicing the art of communication in the broader academic community.

LCOM 174

Elementary Debate/Reading Skills Improvement (6 CR)
This 16-week course is an integration of the content of both SPD 130 Elementary Debate and RDG 126 Reading Skills Improvement as if taken as two separate courses. You will earn 3 credit hours in Elementary Debate and 3 credit hours in Readking Skills Improvement as if they were begin taught in the traditional Format.

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.

Learning Strategies (LS)

LS 174

Learning Strategies for Math (1 CR)
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)
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)
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)
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)
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 Interpreting (LI)

LI 130
Introduction to Legal Interpreting (3 CR)
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.

LI 140
Legal Interpreting Skills I (3 CR)
This course develops students? skills in sight translation and consecutive interpreting. Listening and memory skills, communication strategies and intervention techniques 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 and Spanish. 3 hrs. lecture/wk.

LI 150
Legal Interpreting Skills II (3 CR)
This course develops students? skills in simultaneous interpreting, and advanced consecutive interpreting. 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 is stressed. This course is taught in English and Spanish. 3 hrs. lecture/wk.

LI 160
Spanish Legal Interpreting (3 CR)
This course develops the knowledge, techniques, and practices needed to function as a bilingual interpreter in a legal environment. Students will be introduced to basic legal situations, procedures, order of events, with vocabulary and terminology in both English and Spanish. Upon completion, students should be able to apply legal interpreting techniques in a variety of legal settings. This course is taught in English and Spanish. 3 hrs. lecture/wk.

LI 170
Legal Procedures and Ethics (3 CR)
The course will acquaint Legal Interpreting students with the major characteristics of civil and criminal litigation. Students will be able to explain the various types of procedures regarding civil and criminal litigation process and their application. The student will also be able to explain ethical rules and standards governing the legal profession. 3 hrs. lecture/ wk.

LI 180
Legal Interpreting Practicum (2 CR)
Students will observe and interpret at assigned legal facilities, participate in class discussions about their interpreting experiences and develop a personal philosophy of interpreting. Both classroom meetings and fieldwork are required for this class. 1 hr. lecture, 3hrs. field study/ 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.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 125
Introduction to Legal Research (1 CR)
This course will acquaint the student with the characteristics of informational resources, and search strategies for retrieving both non-legal and legal information. Emphasis will be placed on the development of legal research skills, utilizing both print and electronic sources. Numerous opportunities will be provided for skill development in the use of these resources. 1 hr. lecture/wk.

LAW 132
Civil Litigation (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 134
Introduction to Legal Technology (3 CR)
Upon successful completion of this course, the student will be able to explain the role of technology within a legal work environment and use software customarily available in a modern legal work environment, including word processing, spreadsheet, presentation, and database software. In addition, students will demonstrate the ability to create, edit, and share common legal documents and forms, and to use the internet within a legal work environment. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10.

LAW 140
Alternative Dispute Resolution (3 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 148
Criminal Litigation (3 CR)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 165
Forensic Science and the Law (3 CR)
This course will offer a survey of the forensic sciences and will examine their applications to the law. Legal constraints on the use of scientific evidence, including U.S. Supreme Court decision and other legal rules, will be explored. Topics will include an exploration of career opportunities available to persons interested in a forensic-related career. This course is open to any student with an interest in forensic science. 3 hrs. lecture/wk.

LAW 171
Law Office Management (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 175
Environmental Policy and Law (3 CR)
This course is a survey course in environmental regulation and will provide an overview of key environmental laws including major provisions of the National Environmental Policy Act (NEPA), the Clean Water Act (CWA), the Clean Air Act (CAA), the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and The Endangered Species Act (ESA). 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 201
Advanced Legal Technology (3 CR)
Upon successful completion of this course, the student will be able to evaluate and use specialized legal software to perform customary tasks within a legal environment, including litigation support, case management, office management, file management, time-keeping and billing, docket control, preparation of legal presentations, and research. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $10.

LAW 205
Legal Analysis and Writing (3 CR)
This course is a required course within the Legal Studies Program. In this course, the student will learn to analyze case law, statutes and secondary legal authority. In addition, the student will learn how to communicate research results, analysis and conclusions professionally and effectively. Numerous opportunities will be provided for skill development. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 210
Advanced Legal Research (3 CR)
This course builds on the skills developed in the Introduction to Legal Research course. In this course, the student will develop more sophisticated skills for the retrieval of information from professional legal literature sources, including both print and electronic media. Opportunities will be provided for skill development in the use of these resources. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 212
Business Organizations (3 CR)
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 225
Legal Nurse Consultant Profession (1 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 241
Wills, Trusts and Probate Administration (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 245
Elder Law (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 247
Intellectual Property Law (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 250
Medicolegal Research and Writing (3 CR)
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 correspondence; summaries of medical and scientific 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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 269
Bankruptcy Law (3 CR)
This course will familiarize the student with the purpose and application of the federal Bankruptcy Code. Topics will include an introduction to the bankruptcy law, bankruptcy court procedures, and the preparation of bankruptcy forms and documents. Emphasis will be on Chapter 7 of the Bankruptcy Code and the role of the legal assistant as part of a team in a bankruptcy practice. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $4.

LAW 270
Administrative Law (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 271
Legal Ethics, Interviewing and Investigation (3 CR)
Upon successful completion of this course, the student will 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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

LAW 275
Paralegal Internship I (1 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 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 205
eMarketing (3 CR)
The Internet has led to an increasingly connected environment, and the growth of Internet usage has resulted in the declining distribution of traditional media: television, radio, newspapers, and magazines. Marketing in this connected environment and using that connectivity to market is eMarketing. In this course, the student will understand and recognize the importance of an integrated eMarketing communications plan in order to coordinate all of the promotional mix and marketing communications elements for today's businesses. Topics of study include advertising, direct marketing, sales promotion, social media, web design, public relations and interactive media. The course integrates theory with planning, management and strategy plus hands-on experience. eMarketing explores how to use integrated web, email and database technologies in pre-built, personalized marketing campaigns to acquire and retain customers. Upon completion, the student will be able to develop an effective eMarketing communications program. 3 hrs. lecture/wk.

MKT 221
Sales Management (3 CR)
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 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. MKT 230 is the same course as BUS 230; do not enroll in MKT 230 if you've completed BUS 230. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

MKT 234
Services Marketing (3 CR)
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)
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)
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 111
Fundamentals of Mathematics (3 CR)
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 measurement, geometry, statistics and linear equations. Fundamentals of Math provides the mathematical foundation upon which subsequent studies in mathematics and other areas depend. This course may be offered as a Learning Community (LCOM) section. Please see the current credit course schedule for LCOM details. This course does not fulfill degree requirements. This course is the first in a sequence of courses leading to MATH 116 or higher. 3 or 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 115
Elementary Algebra (3 CR)
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. MATH 115 may fulfill some certificate requirements, but will not fulfill degree requirements. This course may be offered as a Learning Community (LCOM) section. Please see the current credit course schedule for LCOM details. This course is the first in a sequence of courses leading to MATH 116 or higher. 3 or 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 116

Intermediate Algebra (3 CR)
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 Community (LCOM) section. Please see the current credit course 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)
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)
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. This course may be offered as a Learning Community (LCOM) section. Please see the current credit course schedule for LCOM details. 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)
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 130

Technical Mathematics I (3 CR)
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 their applications. Topics will include operations with polynomials, linear equations, systems of equations, formulas and basic 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 131

Technical Mathematics II (3 CR)
This course is the second of a two-semester sequence on the mathematical skills and concepts necessary in technical work. It will focus on more advanced algebraic skills, solving equations, and trigonometry. The topics will include polynomials, rational expressions, radical expressions, complex numbers, solving quadratic, rational, radical, exponential and logarithmic equations, and working with basic trigonometry. 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 135

Applied Mathematics for Science (3 CR)
This course is an introduction to the mathematical applications common in a scientific laboratory setting. The content includes the use of algebra, trigonometry and statistics. Algebra topics include graphing and evaluating equations, solving formulas, logarithms, exponentials, and proportions. Trigonometry topics include angles, trigonometric functions and their values. Statistics topics include measures of center, standard deviation, graphical representations of data, regressions and correlations. 3 hrs./wk.

MATH 165

Finite Mathematics (3 CR)
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 set theory, symbolic logic, deductive reasoning, probability, mathematics of finance, systems of equations, matrix algebra, and linear programming. 3 hrs./wk. This course is only offered in the spring semester.

MATH 171

College Algebra (3 CR)
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. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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, solving equations and inequalities, recognition and creation of patterns, and the use of mathematical models. Included in the course are linear, power, polynomial, rational, radical, exponential, logarithmic, trigonometric, and absolute value functions. 5 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. 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)
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. Use of technology will be incorporated into course topics. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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)
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)
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 214

Introduction to Teaching Math and Science (1 CR)
This course allows math and science students to explore and develop an appreciation for teaching as a career. To support their learning, students will be introduced to the theory and practice that is necessary to design and deliver quality instruction. They will plan and implement lessons of an inquiry-based curriculum in an elementary classroom during the semester. MATH 214, ASTR 214, BIOL 214, CHEM 214, GEOS 214, PHYS 214 and PSCI 214 are the same course; enroll in only one. 1 hrs. lecture/wk.

MATH 225

Mathematics as a Decision Making Tool (3 CR)
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)
This is the first course in calculus as it applies to business; the social, behavioral, and biomedical sciences; and other fields. 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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Students are expected to use technology for matrix operations. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 292

Special Topics: (1 CR)
MATH 292 allows students to investigate in-depth a single theme or topic in mathematics. This may be accomplished by expanding upon a subject introduced in current course offerings or exploring a subject not addressed in the curriculum of the mathematics department. Special Topics may be repeated for credit but only on different topics. Total contact hours vary with topic.

Metal Fabrication and Welding (MFAB)

MFAB 124

Introduction to Welding (3 CR)
Introduction to Welding is a basic welding, tool, and equipment safety course. This course will expose students to the various welding processes and techniques. Tools, equipment and safety related to the metal fabrication area will be discussed and used by the student. This is a hands-on course. Students will be required to purchase and use personal protective equipment (PPE). 1hr lecture and 4hrs 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 $150.

MFAB 128

Basic Machine Tool Technology (3 CR)
This course provides instruction in the operation of metal cutting machinery, which includes practice in the safe operation of a lathe, vertical mill, and precision grinders. Layout equipment, measuring tools, gauges, hand tools, drilling machine, bench grinder, power saws, and heat treating equipment will also be presented. Machine tool safety, shop math and trigonometry will be emphasized throughout the course. 1 hr. lecture, 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. $80.

MFAB 131

Shielded Metal Arc Welding (SMAW) I (3 CR)
Through classroom and/or lab/shop learning and assessment activities, students in this course will describe the Shielded Metal Arc Welding process (SMAW); demonstrate the safe and correct setup of the SMAW workstation; associate SMAW electrode classifications with base metals and joint criteria; demonstrate proper electrode selection and use based on metal types and thicknesses; build pads of weld beads with selected electrodes in the flat position; build pads of weld beads with selected electrodes in the horizontal position; perform basic SMAW welds on selected weld joints; and perform visual inspection of welds. 1hr. 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. $50 to $150.

MFAB 133

Gas Metal Arc Welding (GMAW) I (3 CR)
Through classroom and/or shop/lab learning and assessment activities, students in this course will: explain gas metal arc welding process (GMAW); demonstrate the safe and correct set up of the GMAW workstation; correlate GMAW electrode classifications with base metals and joint criteria; demonstrate proper electrode selection and use based on metal types and thicknesses; build pads of weld beads with selected electrodes in the flat position; build pads of weld beads with selected electrodes in the horizontal position; produce basic GMAW welds on selected weld joints; and conduct visual inspection of GMAW welds. 1 hr. lecture, 4hrs. 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 $150.

MFAB 136

Gas Tungsten Arc Welding (GTAW) I (3 CR)
Through classroom and/or lab/shop learning and assessment activities, students in this course will: explain the gas tungsten arc welding process (GTAW); demonstrate the safe and correct set up of the GTAW workstation; relate GTAW electrode and filler metal classifications with base metals and joint criteria; build proper electrode and filler metal selection and use based on metal types and thicknesses; build pads of weld beads with selected electrodes and filler material in the flat position; build pads of weld beads with selected electrodes and filler material in the horizontal position; perform basic GTAW welds on selected weld joints; and perform visual inspection of GTAW welds. 1 hr. lecture, 4hrs. 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 $150.

MFAB 140

Maintenance Repair Welding (3 CR)
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, 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. $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 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 203

Introduction to Ornamental Iron (3 CR)
Several years ago one of our JCCC partners Mr. Robert Foust Owner of, "Bobs Ornamental Iron Studios" asked if we train our MFAB students in the ornamental iron trade. He stated that welders are easy to find, good welders are hard to find, but good welders with that special eye for art, and especially welders that like to do railings, stairways, black smithing, and artistic sculptures that are one of a kind. welders that demand quality welds and excellent workmanship are very hard to find. With metal making a come back in the building trades JCCC would be the only school in the area that would be offering this skill. 1 hr. lecture, 4hrs. 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 $150.

MFAB 205

Shielded Metal Arc Welding (SMAW) II (3 CR)
Upon successful completion of this course, the student should be able to weld fillet welds in the vertical-up (3F), and overhead (4F) weld positions, and groove joints in the vertical up, (3G) and overhead position (4G) weld positions with and/or without backing to industry standards. Students will be required to prepare materials using oxy-fuel cutting techniques. Students will perform a welding proficiency test equal to or exceeding the American Welding society (AWS) standard D1.1. Structural welding code. Students will be expected to provide basic hand tools and/or equipment. 1 hr. lecture, 4hrs. 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 $150.

MFAB 210

Gas Metal Arc Welding (GMAW) II (3 CR)
Upon completion of this course the student should be able to perform more advanced welds in selected positions on a variety of metal thicknesses. Mild steel, stainless steel, and aluminum metals will be utilized. Emphasis will be on short circuit, spray arc and pulse arc modes of metal transfer using larger diameter wire electrode. Industry standard testing techniques will be used. 1 hr. lecture, 4hrs. 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 $150.

MFAB 215

Fabrication Practices I (3 CR)
Upon completion of this class, the student should be able to work from discipline specific drawings to manufacture and assemble a mock building section. 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 fabrication, 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 of three or four persons. 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. $50 to $150.

MFAB 220

Flux Core Arc Welding (FCAW) (3 CR)
Upon completion of this course the student should be able to identify safety rules associated with the flux core arc welding (FCAW) process, identify FCAW equipment components, and perform welds in selected positions on a variety of metal thicknesses to industry standards. 1hr. lecture, 4hrs. 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 $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 241

Gas Tungsten Arc Welding (GTAW) II (3 CR)
Upon successful completion of this course the student will be able to do more advanced GTAW welding projects. Weld in a variety of positions and on several thicknesses of material. Emphasis will be on safety, quality, measurements, and out of position welding. Students will weld on tubular material of a variety of sizes and thicknesses. Square and/or round tube will be fabricated to mate at several common angles using power tools and equipment. 1hr. lecture, 4hrs. 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 $150.

MFAB 250

Fabrication Practices II (3 CR)
Upon completion of this class, the student should be able to work from discipline specific drawings to manufacture and assemble a mock piping loop, storage tank/vessel, and miscellaneous parts. 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. 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. $50 to $150.

MFAB 255

Advance Machine Tool Technology (3 CR)
This course provides students further instruction and practice on machine tool operations. Advanced techniques using lathes, milling machine, drill presses and precision grinders and the use of specialized tooling, clamps, and jigs is covered. Machining techniques requiring special applications such as steady rest, and centering techniques will be addressed. Students will learn the various techniques of working with stock to produce parts from drawing, plans and sketches. Hardening, tempering and basic metallurgy will also be covered. 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. $85.

MFAB 259

Shielded Metal Arc Welding (SMAW) III (3 CR)
Upon successful completion of this course, the student should be able to weld one-inch thick groove joints in the flat (1G), horizontal (2G), vertical up, (3G) and overhead (4G) weld positions, with and/or without backing to industry standards. The course will cover unlimited thickness qualifications. Students will use heat sensing tools and equipment to pre heat, maintain inter-pass temperature, and properly post heat selected welds. Students will perform a welding proficiency test equal to or exceeding the American Welding Society (AWS) standard D1.1. Structural welding code. Students will be expected to provide basic hand tools and/or equipment. 1hr. lecture, 4hrs. 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 $150.

MFAB 271

Metal Fabrication Internship (3 CR)
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.

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.

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 128
History of Rock and Roll Music (3 CR)
Through the study of the history of Rock and Roll music, students will discover how the various styles and structures of Rock have evolved, and how these styles reflected the social and cultural events in each stylistic era. By studying this history the students will also learn about the major Rock artists and what their contributions were to the development of the art form and the social climate in which the artist lived. The course will also address the role of technology on the development of the music and the music business. 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)
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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

MUS 142
Music Theory: Harmony II (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

MUS 143
Music Theory: Harmony III (3 CR)
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)
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 145
Jazz/Commercial Music Theory I (3 CR)
Through the study of Jazz music theory, students will learn the basic elements that comprise the foundation of this style of music. Students will discover how Jazz and Commercial music is constructed, analyzed, and performed by learning intervals, scales, chords, chord progressions, form, and construction of melodies. 3 hrs. lecture/wk.

MUS 151
Mixed Vocal Ensemble I (1 CR)
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)
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)
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)
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 155
Introduction to the Recording Studio (2 CR)
This course is design to provide a basic overview of the contemporary digital recording studio. Students will learn though demonstration and practice how to use current hardware and software used to produce music. 2 hrs. lecture/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)
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
Recording Studio I (4 CR)
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
Recording Studio II (4 CR)
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 160
Recording Studio Lab (2 CR)
This course is designed for students interested in learning how to work in a digital recording studio. Students will prepare for and conduct recording sessions and mix down sessions. Students will gain real world, hands-on experience as a studio musician, audio engineer and musical producer. 2 1/2 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. $20 - 100.

MUS 161
Chamber Choir I (1 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

MUS 163
Chamber Choir III (1 CR)
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)
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)
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)
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)
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)
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 169
Voice Class I (2 CR)
This is an entry level course for voice study in a group setting. No previous voice study or music instruction is required. Students will be introduced to the basic elements of proper vocal production, as well as techniques for practice, performance, and maintaining vocal health. Vocal technique is approached from a classical perspective, however, the class includes discussion on appropriate usage of the voice in different styles. 2 hrs. lecture/wk.

MUS 170
Voice Class II (2 CR)
This course is a continuation of Voice Class I, voice study in a group setting. Students will focus on the reinforcement of basic elements of proper vocal production, as well as techniques for practice, performance, and maintaining vocal health. 2 hrs. lecture/wk.

MUS 176
Jazz Band I (1 CR)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
This course uses private lessons to continue instruction in beginning vocal technique, vocal vocabulary, performance experience and solo vocal repertoire. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

MUS 233
Applied Voice III (Private) (1 CR)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 4 hrs. lecture, 1 hr. lab, 15 hr. clinical/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 4 hrs. lecture, 1 hr. lab, 15 hr. clinical/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

NURS 136

LPN-RN Transition Course (6 CR)
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 Healthcare Simulation Center, in the Health Resource Center, and health care agencies. Theory: 28 clock hours/week for 4 weeks; Clinical: 24 hours/week for 3 weeks.

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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 4 hrs. lecture, 1 hr. lab, 15 hrs. clinical/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 4 hrs. lecture, 1 hr. lab, 15 hrs. clinical/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 4 hrs. lecture, 1 hr. lab, 15 hrs. clinical/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

PHIL 128

Environmental Ethics (3 CR)
This course provides a survey of environmental ethics. It focuses on the emergence of environmental issues as a topic of careful philosophical study and its connection to the political and legal considerations of environmental problems. It also examines various theories and traditional approaches developed in Western and Eastern philosophy as well as major world religions to understanding the value and status of nature. Lastly, this course looks at specific controversies pertaining to the conservation, use and value of natural resources. PHIL 128 is the same course as BIOL 128; enroll in one only. 3 hrs. lecture/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 142

History of Asian Philosophy (3 CR)
This course provides a thorough exploration of the philosophical traditions of Asia with a focus on the classical philosophies of India and China. Covered are the origins of Indian philosophy in the Vedas and Upanishads, the development of various Vedic schools of thought. The origins of Buddhism and Jainism are also explored. The development and influence of Confucianism, Daoism and Chinese Buddhism are covered as well, as is the lasting influence of Asian philosophy outside of both India and China including its increasing relevance in the West. In the process, the class provides a comprehensive understanding of the distinctive philosophical foundations of the Asian world view. 3 hrs./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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 155

Introduction to Bioethics (3 CR)
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. PHIL 155 and BIOL 155 are the same courses; only enroll in one.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

PHIL 292

Special Topics in Philosophy (3 CR)
This course periodically offers specialized or advanced discipline-specific content related to the study of philosophy not usually taught in the curriculum to interested and qualified students within the program.

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. $150 to 175.

PHOT 122

Advanced Photography (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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 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," import, adjust, correct, transmit, store and output images. They will use digital imaging technology to produce photographs for visual communication and artistic expression. Ethics and cultural implications of the technology will be discussed. 6 hrs. integrated lecture/lab per/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 129

Advanced Digital Photography (3 CR)
This course develops and expands upon the techniques, tools, procedures, and concepts that were introduced in the Digital Photography course. Students will learn to use a digital single lens reflex (DSLR) camera or its equivalent. Students will develop and use an archival image editing workflow. They will learn advanced image correction, modification and editing techniques to prepare photographic images for various output options including photographic prints and the web. They will employ file management routines and archival storage systems. Students will create original work that demonstrates an advanced proficiency in digital methods and an advanced understanding of the practice of photography. They will produce high quality prints. The work created is intended to stimulate the student?s creative capacities for personal expression, communication and self-understanding. 6 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. $125 to 175.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

PSCI 214
Introduction to Teaching Math and Science (1 CR)
This course allows math and science students to explore and develop an appreciation for teaching as a career. To support their learning, students will be introduced to the theory and practice that is necessary to design and deliver quality instruction. They will plan and implement lessons of an inquiry-based curriculum in an elementary classroom during the semester. MATH 214, ASTR 214, BIOL 214, CHEM 214, GEOS 214, PHYS 214 and PSCI 214 are the same course; enroll in only one. 1 hrs. lecture/wk.

Physics (PHYS)

PHYS 130
General Physics I (5 CR)
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. This course does not normally fulfill the requirement of engineering programs. 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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

PHYS 131
General Physics II (5 CR)
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. This course does not normally fulfill the requirements of engineering programs. 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)
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)
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 214
Introduction to Teaching Math and Science (1 CR)
This course allows math and science students to explore and develop an appreciation for teaching as a career. To support their learning, students will be introduced to the theory and practice that is necessary to design and deliver quality instruction. They will plan and implement lessons of an inquiry-based curriculum in an elementary classroom during the semester. MATH 214, ASTR 214, BIOL 214, CHEM 214, GEOS 214, PHYS 214 and PSCI 214 are the same course; enroll in only one. 1 hrs. lecture/wk.

PHYS 220
Engineering Physics I (5 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

PHYS 221
Engineering Physics II (5 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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 Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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 Technology (PSG)

PSG 125
Introduction to Sleep Medicine (4 CR)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 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)
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. 3 hrs. lecture/wk.

PSG 140
Sleep Disorders (4 CR)
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)
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)
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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 24 hrs. clinic/wk.

PSG 250
Polysomnography II (4 CR)
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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 24 hrs. clinical/wk.

PSG 265
Polysomnography Capstone (3 CR)
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.

Practical Nursing (PN)

PN 120
Introduction to Practical Nursing (2 CR)
This course is the first in a sequence of practical nursing courses. Emphasis is placed on the evolution of nursing practice and education, the importance of professionalism and demonstration in use of medical terminology, basic mathematic skills, and basic nursing care. Course instruction will occur in the classroom and laboratory setting. 15 hrs. lecture, 21 hrs. lab/per semester

Associated Costs: These are additional (out-of-pocket) expense considerations that students should expect in addition to the course tuition, fees, and textbooks. $70 to 100.

PN 125
KSPN Foundations of Nursing (4 CR)
This course utilizes the nursing standards of practice based on principles of biology, psychosocial, spiritual and cultural to meet the needs of clients throughout the lifespan. Emphasis is placed on basic nursing skills, client safety and therapeutic communication. Concepts and skills are enhanced in subsequent courses. 60 hrs lecture/semester

PN 126
KSPN Foundations of Nursing Clinical (2 CR)
The art and science of nursing are explored in this clinical course. Emphasis is placed on the nursing process, cultural and spiritual awareness, communication, data collection, performance of basic nursing skills, and documentation. Principles of safe medication administration are introduced. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 90 clinical hrs./semester

PN 130
KSPN Medical Surgical Nursing I (4 CR)
This course focuses on the effect of disorders of selected systems (respiratory, cardiovascular, hematologic & lymphatic, endocrine, integumentary, sensory and musculoskeletal) throughout the lifespan and applies the nursing process in meeting basic needs. Health promotion and maintenance, rehabilitation and continuity of care are emphasized. The role of the practical nurse is incorporated throughout. 60 hrs lecture/semester

PN 131
KSPN Medical Surgical Nursing I Clinical (3 CR)
Simulated and actual care situations of selected systems throughout the life span, utilizing acute and long-term care settings. An emphasis is placed on critical thinking and clinical decision-making skills. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 135 clinical hrs./semester

PN 135
KSPN Pharmacology (3 CR)
This course introduces the principles of pharmacology, drug classifications, and the effects of selected medications on the human body. The nursing process is used as the framework for ensuring safe and effective nursing care for clients across the lifespan. 45 hrs. lecture/semester

PN 140
KSPN Maternal Child Nursing (2 CR)
This course focuses on pre- and post-natal maternal nursing care, as well as, the care of children from infancy to adolescence. Emphasis is given to normal reproduction and frequently occurring biological, cultural, spiritual and psychosocial needs of the child-bearing and child-rearing family. 30 hrs. lecture/semester

PN 141
KSPN Maternal Child Clinical (1 CR)
This clinical course applies concepts from Maternal Child I. Emphasis is placed on the nursing process and meeting the basic needs of the maternal child client. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 45 clinical hrs./semester

PN 145
KSPN Mental Health Nursing (2 CR)
This course explores basic concepts and trends in mental health nursing. Therapeutic modalities and client behavior management are discussed. Emphasis is placed on using the nursing process and meeting the basic human needs of the mental health client. 30 hrs. lecture/semester

PN 146
Mental Health Nursing Clinical (1 CR)
This clinical course explores basic concepts and trends in mental health nursing. Therapeutic modalities and client behavior management are discussed. Emphasis is placed on using the nursing process and meeting the basic human needs of the mental health client. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 45 hrs. clinical/semester

PN 150
KSPN Medical Surgical Nursing II (4 CR)
This course focuses on the effect of disorders of selected systems throughout the lifespan using the nursing process in meeting basic needs. Prevention, rehabilitation and continuity of care are emphasized. The role of the practical nurse is incorporated throughout. 60 lecture hrs./semester

PN 151
KSPN Medical Surgical Nursing II Clinical (3 CR)
This experience uses simulated and actual care situations of selected systems throughout the lifespan, utilizing acute and long-term care settings. An emphasis is placed on critical thinking and clinical decision-making skill development. Principles of leadership for the practical nurse will be implemented, as well as multi-task management skills for transition as a practical nurse. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 135 hrs. clinical/semester

PN 155
KSPN Gerontology Nursing (2 CR)
This course is designed to explore issues related to the aging adult using the nursing process as the organizing framework. Also discussed are the impact of ageism, alterations in physiological and psychosocial functioning, and the role of the practical nurse in caring for older adult clients. 30 hrs. lecture/semester

PN 160
Applied Pharmacology (2 CR)
This course is designed to build on the knowledge gained in the Introduction to Pharmacology Course as well as all other course perquisites. The course will be presented using case studies and simulation. Focus will be placed on the affects of polypharmacy and the presence of multiple diseases or disorders. Emphasis will be placed on the role of the practical nursing in providing safe competent care for clients across the life span. 42 hrs. integrated lecture lab/semester

PN 165

Transition to Nursing Practice (2 CR)
This course facilitates the transition from the role of nursing student to licensed practical nurse. Emphasis is placed on factors that contribute to the scope of practice of the licensed practical nurse, initial employment as a nurse, including leadership and management skills, as well as the obligation to obtain and maintain licensure. 30 hrs. lecture/semester

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

PSYC 200

Industrial and Organizational Psychology (3 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

PSYC 209

Statistics in Psychological Research (3 CR)
This course introduces the use of statistics as applied to various research designs. The course "Methodology in Psychology" (PSYC210) and this course are designed for those planning to major in psychology. A wide range of statistical methods are used to analyze data collected in psychological research. Examples of different kinds of statistical methods will be used in this course to analyze data, informing the student of how to apply the proper statistical methods to data examples. Descriptive and inferential statistical methods with both parametric and nonparametric statistical tools are studied. The course emphasis is on which statistical tests are appropriate for transforming gathered observations into meaningful and useful information relevant to everyday life and the studies in various fields of psychology. 3 hrs. lecture/wk.

PSYC 210

Research Methods in Psychology (3 CR)
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. 3 hrs./wk.

PSYC 215

Child Development (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

PSYC 218

Human Development (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

PSYC 220

Social Psychology (3 CR)
Social psychology is the study of social influence on behavior and cognition. Social psychology explores our relationships with others, our interdependency, and the mutual influence we have on one another. The course will cover concepts such as attitude formation, attitude change, prejudice, aggression, affiliation, obedience to authority, and conformity; special emphasis will be placed on fostering prosocial behavior and how our attitudes toward self and others are influenced by race, ethnicity, gender, age, religious beliefs, socioeconomic status, sexual orientation, and political beliefs. The course requires students to acquire a critical awareness of research methodology. 3 hrs./wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

PSYC 221

Environmental Psychology (3 CR)
Environmental psychology will allow students to explore the relationship between the environment and human behavior. The premise of the course is that the social setting, environmental setting, and individual behavior are interrelated. The focus will be on (1) our relationships with the human built environment, (2) our relationships with the natural environment, (3) how humans adapt to changing environments, and (4) how we can coordinate our behavior to achieve sustainable relationships with our environment. The content of the course will appeal to individuals interested in urban planning, architecture, interior design, ecological sustainability, and community physical and psychological well-being. 3 hrs. lecture/wk.

PSYC 225

Educational Psychology (3 CR)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

PSYC 250
Health Psychology (3 CR)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

Railroad Conductor (RRTC)

RRTC 123
Introduction to Conductor Service (4 CR)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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. This course is only taught in the fall semester. This course is only taught in the fall semester.

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. This course is only taught in the fall semester.

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. This course is only taught in the spring semester.

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. This course is only taught in the spring semester.

Railroad Operations-Mechanical (RRTM)

RRTM 124
Orientation to the Railroad Mechanical Craft (2 CR)
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)
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
Freight Car Repair Track Inspector (3 CR)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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)
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 Equivalent (RRWE)

RRWE 136
Basic Electronics (2 CR)
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)
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)
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)
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)
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)
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)
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)
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 and is not financial aid eligible. 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)
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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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.

REL 292

Special Topics: (3 CR)
This course periodically offers specialized or advanced discipline-specific content related to the study of religion, not usually taught in the curriculum, to interested and qualified students within the program.

Respiratory Care (RC)

RC 125

Beginning Principles of Respiratory Care (4 CR)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 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)
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)
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)
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)
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)
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. $100 to 200.

RC 233

Respiratory Care of Children (2 CR)
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)
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)
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)
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)
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 this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 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)
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, and pulmonary function. Enrollment in this course requires that you be current in payment of a professional liability fee of $16.00. This fee is required once per calendar year based on enrollment in selected courses and must be in place prior to the start of classes. Payment of the liability insurance fee is made through Shop JCCC at http://www.jccc.edu/shop-jccc/index.html. 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. $100 to 200.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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

Sociology of Families (3 CR)
This is a sociological examination of marriage and the family as a social institution. It will emphasize social theory, 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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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)
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 292
Special Topics: (3 CR)
This course periodically offers specialized or advanced discipline-specific content related to the study of Sociology, not normally taught in the curriculum, to interested and qualified students within the program.

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. This course may be offered as a Learning Communities (LCOM) section, see current credit schedule for LCOM details. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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.

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. $5 to 10.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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.

SPD 230
Intermediate Debate II (3 CR)
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)
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.

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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

THEA 121
Fundamentals of Acting (3 CR)
This course is designed to teach the fundamentals of acting for those students who have little or no experience in the theatre. We will overview all the tools used by actors, including improvisation, vocal, physical, and psychological warm-ups, building trust, relaxation, and discipline techniques. Students will complete a minimum of two in-class performances. 3 hrs. lecture/wk. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

THEA 123
Improvisation for the Theater (2 CR)
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)
This course will expand on the skills learned in Fundamentals of Acting and will concentrate on developing scene work. 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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

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
Costume Construction (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.

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)
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. Note: An honors contract is available. Contact the Honors Program Office, COM 201, for more information.

THEA 232
Play Reading and Production (3 CR)
This course is an introductory survey in the process of reading and producing plays. The focus of the course will be on reading a play and understanding the steps necessary to create a production of that play. Some of the topics explored will include play selection, script analysis, the audition process, the rehearsal process, stage management, directing, and the actor-audience-director relationship. 3 hrs. lecture/wk.

THEA 233
Technical Practicum II (1 CR)
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)
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)
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
Introduction to Costume Design (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)
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 292

Special Topics: (3 CR)
This course periodically offers specialized or advanced discipline-specific content related to performance, technical theatre, and design not normally taught in the curriculum, to interested and qualified students within the program. 3 hrs. lecture/wk.

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.

Graduation

Commencement Ceremony

- Refer to **commencement** for information about eligibility and general information about the ceremony.

Graduation Application and Deadlines

One Semester Prior to Your Graduation:

- Complete an Application for Graduation Form and return it to the Success Center, located on the second floor of the Student Center, or mail to the JCCC Records office.
- Use the Major Codes List (PDF) to find the 4-digit code for your major.
- If you have changed your name or address, it is critical to submit a Name/Address Change Request Form to Admissions prior to applying for graduation.
- All degree or certificate seeking students are required to submit transcripts from all undergraduate colleges and universities attended. These transcripts are required for calculation of GPA for graduation at JCCC regardless of whether or not they satisfy specific course requirements within the student's program. Transcripts must be complete with no "in progress" courses. Transcripts are usually submitted during the JCCC admission process. You only need to resend these transcripts if additional coursework has been completed.

Graduation Application Deadlines:

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

Graduation Application Deadline Appeal Process

If you have missed the deadline to apply for graduation, you may attempt to appeal the deadline by submitting a Graduation Appeal Form. This form must be turned in with your late Application for Graduation Form and does not take the place of the application form. Print and complete these forms on the Web or pick them up in the Success Center, second floor of Student Center.

Requirements for Graduation

- **Associate's Degree** - For an associate's degree, 15 credit hours must be earned at JCCC. Advanced standing credit will not count toward satisfying this credit hour requirement.
- **Associate of Arts and Associate of Science Degrees** - For the associate of arts and associate of science degrees, a student must complete an approved cultural diversity course.
- **Certificates** - For certificates, a student must complete a minimum of 50% of the required course work at JCCC.
- **Grade Point Average** - Graduates must have earned both a 2.0 grade point average at JCCC and have a cumulative 2.0 or better on all completed course work.
- **Developmental and/or Prerequisite Courses** - Developmental and/or prerequisite courses, required before enrollment in college-level courses, will not count toward fulfilling graduation degree/certificate requirements.
- **Enrollment Requirement** - Students must have been enrolled at JCCC within 2 years of the semester in which they wish to graduate.

Rules to Determine Catalog of Record for Graduation

- The catalog in effect for the term a student is admitted to the college is assigned as the student's "catalog of record." Students will follow the program requirements specified in their catalog of record to progress toward graduation.
- Students who later change to a new major or change from non-degree-seeking status to a declared major will follow the catalog in effect at the time of the change.
- Students who are continuously enrolled at JCCC will maintain their catalog of record. Students who miss two consecutive regular semesters (excludes summers) will follow the catalog in effect at the time of re-entry.
- Students may select a more current catalog as their catalog of record and would then follow the program requirements specified in that catalog. Students may not combine program requirements from multiple catalogs.
- When the college discontinues a degree or certificate program, students who have already declared their intent to graduate in the program will be allowed a limited amount of time to complete the requirements as long as continuous enrollment is maintained. Additional students may not declare a major that has been discontinued.

Graduation Verification Process

- When an Application for Graduation is received in the Records office, an initial verification will be completed to ensure degree and/or certificate requirements will be satisfied.
- 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.
- 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.

Graduation for Self-Paced Courses

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

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

Duplicate Diploma

- Students who have lost their original certificate or diploma may order one duplicate copy at no cost. Complete the Duplicate Diploma form (PDF) and return it to the Records Office.

Honors

- Refer to Honors for information about civic honors, honor roll and graduation with honors.

General Education Statement and Requirements

Spring 2013

- Associate of Arts
- Associate of Science
- Associate of Applied Science
- Associate of General Studies

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.

Associate of Arts (Spring 2013)

The associate of arts degree from JCCC

- is designed for students who plan to transfer to another college or university to earn a bachelors degree.
- requires completion of 64 college-level credit hours within specified categories 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 credit hours necessary to complete the associate of arts degree include the following general education requirements plus 33 additional hours of electives:

- 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)
- Cultural Diversity (1 course)

Note: The associate of arts is designed as a transfer degree. Students should refer to the transfer program sheets available in the Student Success Center when selecting electives. Students interested in a specific major should talk with a JCCC counselor.

General Education Requirements

Communications

Humanities

Social Science and Economics

Science and Mathematics

Health and/or Physical Education

Cultural Diversity

Communications Requirements for Associate of Arts (Spring 2013)

These courses fulfill the communications requirements for the Associate of Arts (AA) degree. Please refer to your specific degree for a list of all requirements.

A. English Composition

Code	Title	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	
	Total Semester Hours: 6	

B. Oral Communication

Code	Title	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	
	Total Semester Hours: 3	
	Total Program Hours: 9	

Humanities Associate of Arts (Spring 2013)

These courses fulfill the humanities requirements for the Associate of Arts (AA) degree. Please refer to your specific degree for a list of all requirements.

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

A. Literature/Theatre

Code	Title	Hours
ENGL 130	Introduction to Literature	3
	Prerequisite: ENGL 121	
ENGL 215	U.S. Latino and Latina Literature	3
	Prerequisite or corequisite: ENGL 122 - Also meets Cultural Diversity Requirement	
ENGL 217	Literature by Women	3
	Prerequisite or corequisite: ENGL 122 - Also meets Cultural Diversity Requirement	
ENGL 227	Introduction to Poetry	3
	Prerequisite: ENGL 122	
ENGL 230	Introduction to Fiction	3
	Prerequisite: ENGL 122	

ENGL 231	American Prose Prerequisite: ENGL 122	3
ENGL 235	Drama as Literature Prerequisite: ENGL 122	3
ENGL 250	World Masterpieces Prerequisite: ENGL 122	3
ENGL 254	Masterpieces of the Cinema	3
ENGL 256	American Poetry Prerequisite: ENGL 122	3
THEA 120	Introduction to Theater	3

B. Foreign Language

Code	Title	Hours
FL 178	Intermediate Russian I Prerequisite: FL 151 or two years of high-school Russian	3
FL 179	Intermediate Russian II Prerequisite: FL 178 or three years of high-school Russian	3
FL 182	Intermediate Japanese I Prerequisite: FL 171 or two years of high-school Japanese and department approval	5
FL 192	Intermediate Chinese I Prerequisite: FL 166 or equivalent	3
FL 193	Intermediate Chinese II Prerequisite: FL 192 or equivalent	3
FL 195	Intermediate Arabic I Prerequisite: FL 156	3
FL 220	Intermediate German I Prerequisite: FL 121 or two years of high-school German	3
FL 221	Intermediate German II Prerequisite: FL 220 or three years of high-school German	3
FL 230	Intermediate Spanish I 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	3
FL 231	Intermediate Spanish II 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	3
FL 240	Intermediate French I Prerequisite: FL 141 or two years of high-school French	3
FL 241	Intermediate French II Prerequisite: FL 240 or three years of high-school French	3

C. History

Code	Title	Hours
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 Also meets Cultural Diversity Requirement	3
HIST 137	African American Studies Also meets Cultural Diversity Requirement	3
HIST 140	U.S. History to 1877	3
HIST 141	U.S. History Since 1877	3
HIST 151	World History I: Traditional World Also meets Cultural Diversity Requirement	3
HIST 152	World History II: Modern World Also meets Cultural Diversity Requirement	3
HIST 160	Modern Russian History Also meets Cultural Diversity Requirement	3
HIST 162	Modern Latin America Also meets Cultural Diversity Requirement	3

D. Humanities

Code	Title	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
HUM 122	Introduction to Humanities	3
HUM 145	Introduction to World Humanities I Also meets Cultural Diversity Requirement	3
HUM 146	Introduction to World Humanities II Also meets Cultural Diversity Requirement	3
HUM 155	Classical Mythology	3
HUM 156	Contemporary Approaches to World Mythology	3
HUM 167	Introduction to Japanese Culture Also meets Cultural Diversity Requirement	3
JOUR 120	Mass Media and Society	3
MUS 121	Introduction to Music Listening	3
MUS 125	Introduction to Jazz Listening	3
MUS 126	Introduction to World Music Also meets Cultural Diversity Requirement	3
REL 120	Exploring World Religions Also meets Cultural Diversity Requirement	3
REL 125	Religions of the East Also meets Cultural Diversity Requirement	3
REL 126	Religions of the West Also meets Cultural Diversity Requirement	3

E. Philosophy

Code	Title	Hours
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

Total Program Hours: 6

Social Science/Economics Associate of Arts (Spring 2013)

These courses fulfill the social science/economics requirements for the Associate of Arts (AA) degree. Please refer to your specific degree for a list of all requirements.

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

A. Anthropology

Code	Title	Hours
ANTH 125	Cultural Anthropology Also meets Cultural Diversity Requirement	3
ANTH 126	Physical Anthropology	3
ANTH 130	World Cultures Also meets Cultural Diversity Requirement	3
ANTH 142	World Prehistory Also meets Cultural Diversity Requirement	3

B. Economics

Code	Title	Hours
ECON 132	Survey of Economics	3
ECON 230	Economics I	3
ECON 231	Economics II	3

C. Political Science

Code	Title	Hours
POLS 122	Political Science	3
POLS 124	American National Government	3
POLS 126	State and Local Government	3
POLS 132	Introduction to Comparative Government Also meets Cultural Diversity Requirement	3
POLS 135	International Relations Also meets Cultural Diversity Requirement	3

D. Psychology

Code	Title	Hours
PSYC 121	Applied Psychology	3
PSYC 130	Introduction to Psychology	3

E. Sociology

Code	Title	Hours
SOC 122	Introduction to Sociology Also meets Cultural Diversity Requirement	3
SOC 125	Social Problems Also meets Cultural Diversity Requirement	3
SOC 131	Sociology of Families	3

F. Gender and Ethnic Studies

Code	Title	Hours
WGS 201	Global Women's Studies Also meets Cultural Diversity Requirement	3

Total Program Hours: 6

Science and Mathematics Associate of Arts (Spring 2013)

These courses fulfill the science and mathematics requirements for the Associate of Arts (AA) degree. Please refer to your specific degree for a list of all requirements.

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

A. Life Science

Code	Title	Hours
BIOL 121	Introductory Biology for Non-Majors	4
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 Prerequisite or corequisite: BIOL 130	1
BIOL 134	Principles of Sustainability	3
BIOL 135	Principles of Cell and Molecular Biology	4
BIOL 140	Human Anatomy	4
BIOL 144	Human Anatomy and Physiology	5
BIOL 150	Biology of Organisms Prerequisite: BIOL 135 or department approval	5
BIOL 225	Human Physiology Prerequisite: BIOL 140 or BIOL 144 and Prerequisite or corequisite: CHEM 122 or (CHEM 124 and CHEM 125)	4
BIOL 230	Microbiology Prerequisite: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry	3
BIOL 231	Microbiology Lab Prerequisite: BIOL 231 students must be currently enrolled in BIOL 230 or have successfully completed BIOL 230 within the last three years.	2

B. Physical Science

Code	Title	Hours
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 Prerequisite or corequisite: MATH 171 or assessment test and Corequisite: CHEM 125	4
CHEM 125	General Chemistry I Lab Corequisite: CHEM 124 Students who withdraw from GENERAL CHEMISTRY I LECTURE must also withdraw from the corresponding laboratory GENERAL CHEMISTRY I LABORATORY Students may not withdraw from the laboratory course GENERAL CHEMISTRY I LABORATORY without withdrawing from CHEMISTRY I LECTURE.	1
CHEM 131	General Chemistry II Lecture Prerequisites: CHEM 124 and CHEM 125 and Corequisite: CHEM 132	4
CHEM 132	General Chemistry II Lab 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 Prerequisites: BIOL 135 and either CHEM 122 or (CHEM 124 and CHEM 125) or department approval	5
GEOS 130	General Geology	5
GEOS 140	Physical Geography	3
GEOS 141	Physical Geography Lab Prerequisite or corequisite: GEOS 140 or the equivalent	2
GEOS 145	World Regional Geography Also meets Cultural Diversity Requirement	3
PHYS 130	General Physics I Prerequisite: MATH 171 or assessment scores	5
PHYS 131	General Physics II Prerequisite: PHYS 130	5
PHYS 220	Engineering Physics I Prerequisite or corequisite: MATH 242	5
PHYS 221	Engineering Physics II Prerequisites: PHYS 220 and MATH 242	5
PSCI 120	Physical Science	4

C. Mathematics

Code	Title	Hours
MATH 165	Finite Mathematics Prerequisite: MATH 116 with a grade of "C" or higher	3
MATH 171	College Algebra Prerequisite: MATH 116 with a grade of "C" or higher or MATH 131 with a grade of "C" or higher or MATH 134 with a grade of "C" or higher or appropriate score on the math placement test	3

MATH 172	Trigonometry Prerequisite: MATH 171 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 173	Precalculus Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math placement test	5
MATH 175	Discrete Mathematics and its Applications Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 181	Statistics Prerequisite: MATH 171 or MATH 173 or an equivalent course with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 225	Mathematics as a Decision Making Tool Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 231	Business and Applied Calculus I Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 232	Business and Applied Calculus II Prerequisites: MATH 231 and either MATH 172 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 241	Calculus I Prerequisite: Either (MATH 171 and MATH 172) or MATH 173 or an equivalent course with a grade of "C" or higher or an appropriate score on an placement	5
MATH 242	Calculus II Prerequisite: MATH 237 or MATH 241 or an equivalent course with a grade of "C" or higher	5
MATH 243	Calculus III Prerequisite: MATH 242 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	5
MATH 254	Differential Equations Prerequisite: MATH 243 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	4

Total Program Hours: 9

Health and/or Physical Education Associate of Arts (Spring 2013)

These courses fulfill the health and/or physical education requirements for the Associate of Arts (AA) degree. Please refer to your specific degree for a list of all requirements.

Health and/or Physical Education

Code	Title	Hours
HPER	Any Activity Course/Lifetime Fitness	1
EMS 121	CPR I - Basic Life Support for Healthcare Provider	1
BIOL 132	Introduction to Public Health	3
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 255	Introduction to Physical Education	3

NOTE: The following HPER courses do NOT meet the general education requirement for Health and/or Physical Education--HPER 102, 174, 195, 198, 204, 207, 208, 217, 220, 224, 245.

Total Program Hours: 1

Cultural Diversity Courses Associate of Arts (Spring 2013)

These courses fulfill the cultural diversity requirements for the Associate of Arts (AA) degree. Please refer to your specific degree for a list of all requirements.

Cultural Diversity Courses

Code	Title	Hours
ADMJ 223	The World of Crime Prerequisite: ADMJ 121	3
ANTH 125	Cultural Anthropology also meets a General Education requirement	3
ANTH 130	World Cultures also meets a General Education requirement	3
ANTH 134	Native Americans	3
ANTH 135	American Indian Artistic Tradition	3
ANTH 142	World Prehistory also meets a General Education requirement	3
ANTH 150	People and Cultures of Mesoamerica	3
ARTH 186	Art History: Introduction to Asian Art	3
BIOL 132	Introduction to Public Health	3
BUS 235	Introduction to International Business	3
ENGL 215	U.S. Latino and Latina Literature Prerequisite or corequisite: ENGL 122 also meets a General Education requirement	3
ENGL 217	Literature by Women Prerequisite or corequisite: ENGL 122 also meets a General Education requirement	3
ENGL 244	Literature of American Popular Music Prerequisite: ENGL 122	3
FL 111	Ancient Greek Readings and Grammar Prerequisite: FL 110	5
FL 145	Field Study in Russian Language & Culture	2
GEOS 145	World Regional Geography also meets a General Education requirement	3
HC 125	International Awareness Field Study	2
HIST 135	Eastern Civilization also meets a General Education requirement	3
HIST 137	African American Studies also meets a General Education requirement	3
HIST 150	Islam: Religion & Civilization	3
HIST 151	World History I: Traditional World also meets a General Education requirement	3
HIST 152	World History II: Modern World also meets a General Education requirement	3
HIST 160	Modern Russian History also meets a General Education requirement	3
HIST 162	Modern Latin America also meets a General Education requirement	3
HIST 167	Introduction to History: Japan	3
HIST 195	History of the Middle East	3
HUM 137	Introduction to Russian Culture	3
HUM 145	Introduction to World Humanities I also meets a General Education requirement	3
HUM 146	Introduction to World Humanities II also meets a General Education requirement	3
HUM 150	Islam: Religion & Civilization	3
HUM 156	Contemporary Approaches to World Myths	3
HUM 167	Introduction to Japanese Culture also meets a General Education requirement	3

INTR 145	Introduction to the Deaf Community 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	3
MUS 126	Introduction to World Music also meets a General Education requirement	3
PHIL 142	History of Asian Philosophy	3
POLS 132	Introduction to Comparative Government	3
POLS 135	International Relations also meets a General Education requirement	3
POLS 200	Model United Nations	3
PSYC 205	Human Sexuality Prerequisite: PSYC 130	3
PSYC 220	Social Psychology Prerequisite: PSYC 130	3
REL 120	Exploring World Religions also meets a General Education requirement	3
REL 125	Religions of the East also meets a General Education requirement	3
REL 126	Religions of the West also meets a General Education requirement	3
REL 150	Islam: Religion & Civilization	3
SOC 122	Introduction to Sociology also meets a General Education requirement	3
SOC 125	Social Problems also meets a General Education requirement	3
SOC 146	Introduction to Social Work and Social Welfare	3
SOC 165	Chinese Society: Past and Present	3
SOC 200	Intercultural Applications Prerequisite or corequisite: SPD 180	3
SPD 180	Intercultural Communication also meets a General Education requirement	3
WGS 201	Global Women's Studies also meets a General Education requirement	3
WGS 220	The Many Women of Islam	3

Associate of Science (Spring 2013)

The associate of science degree from JCCC

- requires a minimum of 64 college-level credit hours with a 2.0 or higher GPA.
- requires the completion of a cultural diversity course from a list of approved courses. Some courses in the approved list will also meet humanities, social science or non-lab science requirements for this degree.

The credit hours necessary to complete the associate of science degree include the following general education requirements plus 30 additional credit hours:

- 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)
- Cultural Diversity (1 course)

General Education Requirements

Communications

Humanities

Social Science and Economics

Science and Mathematics

Health and/or Physical Education

Cultural Diversity

Communications Associate of Science (Spring 2013)

These courses fulfill the communication skills requirements for the Associate of Science (AS) degree. Please refer to your specific degree for a list of all requirements.

A. Communications

Code	Title	Hours
ENGL	Composition I Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	3
	Total Semester Hours: 9	

B. Communications Elective

Code	Title	Hours
	(two of the following)	
ENGL 122	Composition II Prerequisite: ENGL 121	3
ENGL 123	Technical Writing I Prerequisite: ENGL 121	3
ENGL 140	Writing for Interactive Media Prerequisite: ENGL 121	3
BUS 150	Business Communications Prerequisite: ENGL 121	3
SPD 120	Interpersonal Communication	3
SPD 121	Public Speaking	3
SPD 125	Personal Communication	3
SPD 180	Intercultural Communication Also meets Cultural Diversity Requirement	3
	Total Semester Hours: 6	

Total Program Hours: 9

Humanities Associate of Science (Spring 2013)

These courses fulfill the humanities requirements for the Associate of Science (AS) degree. Please refer to your specific degree for a list of all requirements.

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

A. Literature/Theater

Code	Title	Hours
ENGL	Introduction to Literature Prerequisite: ENGL 121	3
ENGL	U.S. Latino and Latina Literature Prerequisite or corequisite: ENGL 122 Also meets	3
ENGL	Literature by Women Prerequisite or corequisite: ENGL 122 Also meets	3
ENGL	Introduction to Poetry	3

	Prerequisite: ENGL 122	
ENGL	Introduction to Fiction	3
	Prerequisite: ENGL 122	
ENGL	American Prose	3
	Prerequisite: ENGL 122	
ENGL	Drama as Literature	3
	Prerequisite: ENGL 122	
ENGL	World Masterpieces	3
	Prerequisite: ENGL 122	
ENGL	Masterpieces of the Cinema	3
	Prerequisite: ENGL 122	
ENGL	American Poetry	3
	Prerequisite: ENGL 122	
THEA	Introduction to Theater	3

B. Foreign Language

Code	Title	Hours
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	
FL 182	Intermediate Japanese I	5
	Prerequisite: FL 171 or two years of high-school Japanese and department approval	
FL 192	Intermediate Chinese I	3
	Prerequisite: FL 166 or equivalent	
FL 193	Intermediate Chinese II	3
	Prerequisite: FL 192 or equivalent	
FL 195	Intermediate Arabic I	3
	Prerequisite: FL 156	
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	
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	

C. History

Code	Title	Hours
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
	Also meets Cultural Diversity Requirement	
HIST 137	African American Studies	3
	Also meets Cultural Diversity Requirement	
HIST 140	U.S. History to 1877	3
HIST 141	U.S. History Since 1877	3
HIST 151	World History I: Traditional World	3
	Also meets Cultural Diversity Requirement	
HIST 152	World History II: Modern World	3
	Also meets Cultural Diversity Requirement	
HIST 160	Modern Russian History	3
	Also meets Cultural Diversity Requirement	
HIST 162	Modern Latin America	3
	Also meets Cultural Diversity Requirement	

D. Humanities

Code	Title	Hours
ARTH 180	Art History: Ancient to Renaissance	3
ARTH 182	Art History: Renaissance to Modern	w
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
	Also meets Cultural Diversity Requirement	
HUM 146	Introduction to World Humanities II	3
	Also meets Cultural Diversity Requirement	
HUM 155	Classical Mythology	3
HUM 156	Contemporary Approaches to World Mythology	3
HUM 167	Introduction to Japanese Culture	3
	Also meets Cultural Diversity Requirement	
JOUR 120	Mass Media and Society	3
MUS 121	Introduction to Music Listening	3
MUS 125	Introduction to Jazz Listening	3
MUS 126	Introduction to World Music	3
	Also meets Cultural Diversity Requirement	
REL 120	Exploring World Religions	
	Also meets Cultural Diversity Requirement	
REL 125	Religions of the East	3
	Also meets Cultural Diversity Requirement	
REL 126	Religions of the West	3
	Also meets Cultural Diversity Requirement	

E. Philosophy

Code	Title	Hours
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

Total Program Hours: 6

Social Science/Economics Associate of Science (Spring 2013)

These courses fulfill the social science/economics requirements for the Associate of Science (AS) degree. Please refer to your specific degree for a list of all requirements.

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

A. Anthropology

Code	Title	Hours
ANTH 125	Cultural Anthropology	3
	Also meets Cultural Diversity Requirement	
ANTH 126	Physical Anthropology	3
ANTH 130	World Cultures	3
	Also meets Cultural Diversity Requirement	
ANTH 142	World Prehistory	3
	Also meets Cultural Diversity Requirement	

B. Economics

Code	Title	Hours
ECON 132	Survey of Economics	3
ECON 230	Economics I	3
ECON 231	Economics II	3

C. Political Science

Code	Title	Hours
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
	Also meets Cultural Diversity Requirement	
POLS 135	International Relations	3
	Also meets Cultural Diversity Requirement	

D. Psychology

Code	Title	Hours
PSYC 121	Applied Psychology	3
PSYC 130	Introduction to Psychology	3

E. Sociology

Code	Title	Hours
SOC 122	Introduction to Sociology	3
	Also meets Cultural Diversity Requirement	
SOC 125	Social Problems	3
	Also meets Cultural Diversity Requirement	
SOC 131	Sociology of Families	3

F. Gender and Ethnic Studies

Code	Title	Hours
WGS 201	Global Women's Studies	3
	Also meets Cultural Diversity Requirement	

Total Program Hours: 6

Science and Mathematics Associate of Science (Spring 2013)

These courses fulfill the science and mathematics requirements for the Associate of Science (AS) degree. Please refer to your specific degree for a list of all requirements.

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

A. Mathematics

Code	Title	Hours
MATH 116	Intermediate Algebra Prerequisite: MATH 115 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 118	Geometry Prerequisite: MATH 115 with a grade of "C" or higher	3
MATH 120	Business Mathematics Prerequisite: MATH 111 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 122	Mathematics in Our Culture Prerequisite: MATH 111 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 130	Technical Mathematics I Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math placement test	3
MATH 131	Technical Mathematics II Prerequisites: MATH 130 or MATH 133 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	3
MATH 135	Applied Mathematics for Science Prerequisite: MATH 115 with a grade of "C" or higher or an appropriate score on the math placement test	3
MATH 165	Finite Mathematics Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 171	College Algebra Prerequisite: MATH 116 with a grade of "C" or higher or MATH 131 with a grade of "C" or higher or MATH 134 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 172	Trigonometry Prerequisite: MATH 171 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 173	Precalculus Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math placement test	5
MATH 175	Discrete Mathematics and its Applications Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 181	Statistics Prerequisite: MATH 171 or MATH 173 or an equivalent course with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 225	Mathematics as a Decision Making Tool Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 231	Business and Applied Calculus I Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 232	Business and Applied Calculus II Prerequisites: MATH 231 and either MATH 172 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 241	Calculus I Prerequisite: Either (MATH 171 and MATH 172) or MATH 173 or an equivalent course with a grade of "C" or higher or an appropriate score on an placement test	5
MATH 242	Calculus II Prerequisite: MATH 237 or MATH 241 or an equivalent course with a grade of "C" or higher	5
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 254	Differential Equations	4
	Prerequisite: MATH 243 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	

Total Semester Hours: 3

A. Science

Code	Title	Hours
	(Life Science)	
BIOL 121	Introductory Biology for Non-Majors	4
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 134	Principles of Sustainability	3
BIOL 135	Principles of Cell and Molecular Biology	4
BIOL 140	Human Anatomy	4
BIOL 144	Human Anatomy and Physiology	5
BIOL 150	Biology of Organisms	5
	Prerequisite: BIOL 135 or department approval	
BIOL 225	Human Physiology	4
	Prerequisite: BIOL 140 or BIOL 144 and	
	Prerequisite or corequisite: CHEM 122 or (CHEM 124 and CHEM 125)	
BIOL 230	Microbiology	3
	Prerequisite: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry	
BIOL 231	Microbiology Lab	2
	Prerequisite: BIOL 231 students must be currently enrolled in BIOL 230 or have successfully completed BIOL 230 within the last three years.	
	(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
	Corequisite: CHEM 124 Students who withdraw from GENERAL CHEMISTRY I LECTURE must also withdraw from the corresponding laboratory GENERAL CHEMISTRY 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 either CHEM 122 or	
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
	Also meets Cultural Diversity Requirement	
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

Total Program Hours: 12

Health and/or Physical Education Associate of Science (Spring 2013)

These courses fulfill the health and/or physical education requirements for the Associate of Science (AS) degree. Please refer to your specific degree for a list of all requirements.

Health and/or Physical Education

Code	Title	Hours
HPER	Any Activity Course/Lifetime Fitness	1
BIOL 132	Introduction to Public Health	3
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 255	Introduction to Physical Education	3

NOTE: The following HPER courses do NOT meet the general education requirement for Health and/or Physical Education--HPER 102, 174, 195, 198, 204, 207, 208, 217, 220, 224, 245.

Total Program Hours: 1

Cultural Diversity Courses Associate of Science (Spring 2013)

These courses fulfill the cultural diversity requirements for the Associate of Science (AS) degree. Please refer to your specific degree for a list of all requirements.

Cultural Diversity Courses

Code	Title	Hours
ADMJ 223	The World of Crime	3
	Prerequisite: ADMJ 121	
ANTH 125	Cultural Anthropology	3
	Also meets a General Education requirement	
ANTH 130	World Cultures	3
	Also meets a General Education requirement	
ANTH 134	Native Americans	3
ANTH 135	American Indian Artistic Tradition	3
ANTH 142	World Prehistory	3

	Also meets a General Education requirement	
ANTH 150	People and Cultures of Mesoamerica	3
ARTH 186	Art History: Introduction to Asian Art	3
BIOL 132	Introduction to Public Health	3
BUS 235	Introduction to International Business	3
ENGL 215	U.S. Latino and Latina Literature	3
	Prerequisite or corequisite: ENGL 122, Also meets a General Education requirement	
ENGL 217	Literature by Women	3
	Prerequisite or corequisite: ENGL 122 Also meets a General Education requirement	
ENGL 244	Literature of American Popular Music	3
	Prerequisite: ENGL 122	
FL 111	Ancient Greek Readings and Grammar	5
	Prerequisite: FL 110	
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
	Also meets a General Education requirement	
HIST 137	African American Studies	3
	Also meets a General Education requirement	
HIST 150	Islam: Religion & Civilization	3
HIST 151	World History I: Traditional World	3
	Also meets a General Education requirement	
HIST 152	World History II: Modern World	3
	Also meets a General Education requirement	
HIST 160	Modern Russian History	3
	Also meets a General Education requirement	
HIST 162	Modern Latin America	3
	Also meets a General Education requirement	
HIST 167	Introduction to History: Japan	3
HIST 195	History of the Middle East	3
HUM 137	Introduction to Russian Culture	3
HUM 145	Introduction to World Humanities I	3
	Also meets a General Education requirement	
HUM 146	Introduction to World Humanities II	3
	Also meets a General Education requirement	
HUM 150	Islam: Religion & Civilization	3
HUM 156	Contemporary Approaches to World Myths	3
HUM 167	Introduction to Japanese Culture	3
	Also meets a General Education requirement	
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
	Also meets a General Education requirement	
PHIL 142	History of Asian Philosophy	3
POLS 132	Introduction to Comparative Government	3
POLS 135	International Relations	3
	Also meets a General Education requirement	
POLS 200	Model United Nations	3
PSYC 205	Human Sexuality	3
	Prerequisite: PSYC 130	
PSYC 220	Social Psychology	3
	Prerequisite: PSYC 130	
REL 120	Exploring World Religions	
	Also meets a General Education requirement	
REL 125	Religions of the East	3
	Also meets a General Education requirement	
REL 126	Religions of the West	3
	Also meets a General Education requirement	
REL 150	Islam: Religion & Civilization	3
SOC 122	Introduction to Sociology	3
	Also meets a General Education requirement	
SOC 125	Social Problems	3
	Also meets a General Education requirement	
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
	Also meets a General Education requirement	
WGS 201	Global Women's Studies	3
	Also meets a General Education requirement	
WGS 220	The Many Women of Islam	3

Associate of Applied Science (Spring 2013)

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 credit hours necessary to complete the associate of applied science degree include 16 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

Communications

Humanities

Social Science and Economics

Science and Mathematics

Health and/or Physical Education

Communications Associate of Applied Science (Spring 2013)

These courses fulfill the communications requirements for the Associate of Applied Science (AAS) degree. Please refer to your specific degree for a list of all requirements.

Communications

Code	Title	Hours
ENGL 121	Composition I Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117 If your specific degree program requires a communications elective, choose three hours from the following:	3
ENGL 122	Composition II Prerequisite: ENGL 121	3
ENGL 123	Technical Writing I Prerequisite: ENGL 121	3
ENGL 140	Writing for Interactive Media Prerequisite: ENGL 121	3
BUS 150	Business Communications Prerequisite: ENGL 121	3
SPD 120	Interpersonal Communication	3
SPD 121	Public Speaking	3
SPD 125	Personal Communication	3
SPD 180	Intercultural Communication	3

Total Program Hours: 3

Humanities Associate of Applied Science (Spring 2013)

These courses fulfill the humanities requirements for the Associate of Applied Science (AAS) degree. Please refer to your specific degree for a list of all requirements.

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

A. Literature/Theater

Code	Title	Hours
ENGL 130	Introduction to Literature Prerequisite: ENGL 121	3
ENGL 215	U.S. Latino and Latina Literature Prerequisite or corequisite: ENGL 122	3
ENGL 217	Literature by Women Prerequisite or corequisite: ENGL 122	3
ENGL 227	Introduction to Poetry Prerequisite: ENGL 122	3
ENGL 230	Introduction to Fiction Prerequisite: ENGL 122	3
ENGL 231	American Prose Prerequisite: ENGL 122	3
ENGL 235	Drama as Literature Prerequisite: ENGL 122	3
ENGL 250	World Masterpieces Prerequisite: ENGL 122	3
ENGL 254	Masterpieces of the Cinema Prerequisite: ENGL 122	3
ENGL 256	American Poetry Prerequisite: ENGL 122	3
THEA 120	Introduction to Theater	3

B. Foreign Language

Code	Title	Hours
FL 178	Intermediate Russian I Prerequisite: FL 151 or two years of high-school Russian	3
FL 179	Intermediate Russian II Prerequisite: FL 178 or three years of high-school Russian	3
FL 182	Intermediate Japanese I Prerequisite: FL 171 or two years of high-school Japanese and department approval	5
FL 192	Intermediate Chinese I Prerequisite: FL 166 or equivalent	3
FL 193	Intermediate Chinese II Prerequisite: FL 192 or equivalent	3
FL 195	Intermediate Arabic I Prerequisite: FL 156	3
FL 220	Intermediate German I Prerequisite: FL 121 or two years of high-school German	3
FL 221	Intermediate German II Prerequisite: FL 220 or three years of high-school German	3
FL 230	Intermediate Spanish I 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	3
FL 231	Intermediate Spanish II 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	3
FL 240	Intermediate French I Prerequisite: FL 141 or two years of high-school French	3
FL 241	Intermediate French II Prerequisite: FL 240 or three years of high-school	3

C. History

Code	Title	Hours
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

Code	Title	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
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 156	Contemporary Approaches to World Mythology	3
HUM 167	Introduction to Japanese Culture	3
JOUR 120	Mass Media and Society	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

Code	Title	Hours
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

Total Program Hours: 3

Science and/or Mathematics Associate of Applied Science (Spring 2013)

These courses fulfill the social science/economics requirements for the Associate of Applied Science (AAS) degree. Please refer to your specific degree for a list of all requirements.

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

A. Anthropology

Code	Title	Hours
ANTH 125	Cultural Anthropology	3
ANTH 126	Physical Anthropology	3
ANTH 130	World Cultures	3
ANTH 142	World Prehistory	3

B. Economics

Code	Title	Hours
ECON 132	Survey of Economics	3
ECON 230	Economics I	3
ECON 231	Economics II	3

C. Political Science

Code	Title	Hours
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

Code	Title	Hours
PSYC 121	Applied Psychology	3
PSYC 130	Introduction to Psychology	3

E. Sociology

Code	Title	Hours
SOC 122	Introduction to Sociology	3
SOC 125	Social Problems	3
SOC 131	Sociology of Families	3

F. Gender and Ethnic Studies

Code	Title	Hours
WGS 201	Global Women's Studies	3

Total Program Hours: 3

Science and/or Mathematics Associate of Applied Science (Spring 2013)

These courses fulfill the science and mathematics requirements for the Associate of Applied Science (AAS) degree. Please refer to your specific degree for a list of all requirements.

A. Mathematics

Code	Title	Hours
MATH 116	Intermediate Algebra Prerequisite: MATH 115 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 118	Geometry Prerequisite: MATH 115 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 120	Business Mathematics Prerequisite: MATH 111 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 122	Mathematics in Our Culture Prerequisite: MATH 111 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 130	Technical Mathematics I Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math placement test	3
MATH 131	Technical Mathematics II Prerequisites: MATH 130 or MATH 133 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	3
MATH 135	Applied Mathematics for Science Prerequisite: MATH 115 with a grade of "C" or higher or an appropriate score on the math placement test	3
MATH 165	Finite Mathematics Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 171	College Algebra Prerequisite: MATH 116 with a grade of "C" or higher or MATH 131 with a grade of "C" or higher or MATH 134 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 172	Trigonometry Prerequisite: MATH 171 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 173	Precalculus Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math placement test	5
MATH 175	Discrete Mathematics and its Applications Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 181	Statistics Prerequisite: MATH 171 or MATH 173 or an equivalent course with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 225	Mathematics as a Decision Making Tool Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
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 placement 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 placement test	
MATH 241	Calculus I	5
	Prerequisite: Either (MATH 171 and MATH 172) or MATH 173 or an equivalent course with a grade of "C" or higher or an appropriate score on an placement 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 254	Differential Equations	4
	Prerequisite: MATH 243 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	

B. Life Science

Code	Title	Hours
BIOL 121	Introductory Biology for Non-Majors	4
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 134	Principles of Sustainability	3
BIOL 135	Principles of Cell and Molecular Biology	4
BIOL 140	Human Anatomy	4
BIOL 144	Human Anatomy and Physiology	5
BIOL 150	Biology of Organisms	5
	Prerequisite: BIOL 135 or department approval	
BIOL 225	Human Physiology	4
	Prerequisite: BIOL 140 or BIOL 144 and	
	Prerequisite or corequisite: CHEM 122 or (CHEM 124 and CHEM 125)	
BIOL 230	Microbiology	3
	Prerequisite: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry	
BIOL 231	Microbiology Lab	2
	Prerequisite: BIOL 231 students must be currently enrolled in BIOL 230 or have successfully completed BIOL 230 within the last three years.	

C. Physical Science

Code	Title	Hours
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	
CHEM 125	General Chemistry I Lab	1
	Corequisite: CHEM 124 Students who withdraw from GENERAL CHEMISTRY I LECTURE must also withdraw from the corresponding laboratory GENERAL CHEMISTRY 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 either CHEM 122 or (CHEM 124 and CHEM 125) or department approval	
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

Total Program Hours: 3

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 Associate of Applied Science (Spring 2013)

These courses fulfill the health and/or physical education requirements for the Associate of Applied Science (AAS) degree. Please refer to your specific degree for a list of all requirements.

Health and/or Physical Education

Code	Title	Hours
HPER	Any Activity Course/Lifetime Fitness	1
EMS	CPR I - Basic Life Support for Healthcare Provider	1
BIOL	Introduction to Public Health	3
HMEC	Nutrition and Meal Planning	3
HPER	Wellness for Life	1
HPER	First Aid and CPR	2
HPER	Personal Community Health	3
HPER	Individual Lifetime Sports	2
HPER	Introduction to Physical Education	3
	NOTE: The following HPER courses do NOT meet the general education requirement for Health and/or Physical Education--HPER 102, 174, 195, 198, 204, 207, 208, 217, 220, 224, 245.	

Total Program Hours: 1

Associate of General Studies (Spring 2013)

The associate of general studies degree from JCCC

- requires completion of 64 college-level credit hours within specified course categories with a 2.0 or higher GPA.
- is designed for students who wish to receive a degree for completion of a more general program of study
- does not require an academic major or an emphasis in a specific career program.

The credit hours 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 Associate of General Studies (Spring 2013)

These courses fulfill the arts requirements for the Associate of General Studies (AGS) degree. Please refer to your specific degree for a list of all requirements.

The Arts

Code	Title	Hours
ARTH	Art History: Ancient to Renaissance	3
ARTH	Art History: Renaissance to Modern	3
ARTH	Art History: Twentieth Century	3
ARTH	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	Introduction to Humanities	3
HUM	Introduction to World Humanities I	3
HUM	Introduction to World Humanities II	3
HUM	Classical Mythology	3
MUS	Introduction to Music Listening	3
MUS	Introduction to Jazz Listening	3
MUS	Introduction to World Music	3
THEA	Introduction to Theater	3

Total Program Hours: 3

Communication Skills Requirements for Associate of General Studies (Spring 2013)

These courses fulfill the communication skills requirements for the Associate of General Studies (AGS) degree. Please refer to your specific degree for a list of all requirements.

Writing

Code	Title	Hours
ENGL 121	Composition I	3
	Prerequisite: ENGL 106 or appropriate placement test score or EAP 113 and EAP 117	

Total Semester Hours: 3

Speaking

Code	Title	Hours
SPD 120	Interpersonal Communication	3
SPD 121	Public Speaking	3
SPD 125	Personal Communication	3
SPD 180	Intercultural Communication	3

Total Semester Hours: 3
Total Program Hours: 3

Culture and Ethics Associate of General Studies (Spring 2013)

These courses fulfill the culture and ethics requirements for the Associate of General Studies (AGS) degree. Please refer to your specific degree for a list of all requirements.

Historical Perspective

Code	Title	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
	Total Semester Hours: 3	

Cultural Perspective

Code	Title	Hours
ANTH 125	Cultural Anthropology	3
ANTH 130	World Cultures	3
	Prerequisite: ENGL 121	
ENGL 130	Introduction to Literature	3
	Prerequisite: ENGL 121	
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 182	Intermediate Japanese I	5
	Prerequisite: FL 171 or two years of high-school Japanese and department approval	
FL 192	Intermediate Chinese I	3
	Prerequisite: FL 166 or equivalent	
FL 193	Intermediate Chinese II	3
	Prerequisite: FL 192 or equivalent	
FL 195	Intermediate Arabic I	3
	Prerequisite: FL 156	
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	
	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	
GEOS 145	World Regional Geography	3
HUM 156	Contemporary Approaches to World Mythology	3
HUM 167	Introduction to Japanese Culture	3
JOUR 120	Mass Media and Society	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	Sociology of Families	3
	Total Semester Hours: 3	
	Total Program Hours: 6	

Health and/or Physical Education Associate of General Studies (Spring 2013)

These courses fulfill the health and/or physical education requirements for the Associate of General Studies (AGS) degree. Please refer to your specific degree for a list of all requirements.

Health and/or Physical Education

Code	Title	Hours
HPER	Any Activity Course/Lifetime Fitness	1
EMS 121	CPR I - Basic Life Support for Healthcare Provider	1
BIOL 132	Introduction to Public Health	3
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 255	Introduction to Physical Education	3
	NOTE: The following HPER courses do NOT meet the general education requirement for Health and/or Physical Education--HPER 102, 174, 195, 198, 204, 207, 208, 217, 220, 224, 245.	
	Total Program Hours: 2	

Mathematics Associate of General Studies (Spring 2013)

These courses fulfill the math requirements for the Associate of General Studies (AGS) degree. Please refer to your specific degree for a list of all requirements.

Mathematics

Code	Title	Hours
MATH 120	Business Mathematics Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math placement test	3
MATH 122	Mathematics in Our Culture Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math placement test	3
MATH 130	Technical Mathematics I Prerequisite: MATH 111 with a grade of "C" or higher or an appropriate score on the math placement test	3
MATH 131	Technical Mathematics II Prerequisite: MATH 130 or MATH 133 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	3
MATH 135	Applied Mathematics for Science Prerequisite: MATH 115 with a grade of "C" or higher or an appropriate score on the math placement test	3
MATH 165	Finite Mathematics Prerequisite: MATH 116 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 171	College Algebra Prerequisite: MATH 116 with a grade of "C" or higher or MATH 131 with a grade of "C" or higher or MATH 134 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 172	Trigonometry Prerequisite: MATH 171 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 173	Precalculus Prerequisite: MATH 116 with a grade of "C" or higher	5
MATH 175	Discrete Mathematics and its Applications Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 181	Statistics Prerequisite: MATH 171 or MATH 173 or an equivalent course with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 225	Mathematics as a Decision Making Tool Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 231	Business and Applied Calculus I Prerequisite: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 232	Business and Applied Calculus II Prerequisites: MATH 231 and either MATH 172 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test	3
MATH 241	Calculus I Prerequisite: Either (MATH 171 and MATH 172) or MATH 173 or an equivalent course with a grade of "C" or higher or an appropriate score on an placement	5
MATH 242	Calculus II Prerequisite: MATH 237 or MATH 241 or an equivalent course with a grade of "C" or higher	5
MATH 243	Calculus III Prerequisite: MATH 242 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	5
MATH 254	Differential Equations Prerequisite: MATH 243 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher	4
PHYS 220	Engineering Physics I Prerequisite or corequisite: MATH 242	5
PHYS 221	Engineering Physics II Prerequisites: PHYS 220 and MATH 242	5

Total Program Hours: 3

Modes of Inquiry Associate of General Studies (Spring 2013)

Description

Scientific

Code	Title	Hours
ANTH 126	Physical Anthropology	3
ASTR 120	Fundamentals of Astronomy	3
ASTR 122	Astronomy	4
BIOL 121	Introductory Biology for Non-Majors	4
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 Prerequisite or corequisite: BIOL 130	1
BIOL 134	Principles of Sustainability	3
BIOL 135	Principles of Cell and Molecular Biology	4
BIOL 140	Human Anatomy	4
BIOL 144	Human Anatomy and Physiology	5
BIOL 150	Biology of Organisms Prerequisite: BIOL 135 or department approval	5
BIOL 225	Human Physiology Prerequisite: BIOL 140 or BIOL 144 and Prerequisite or corequisite: CHEM 122 or (CHEM 124 and CHEM 125)	4
BIOL 230	Microbiology Prerequisite: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry	3
BIOL 231	Microbiology Lab Prerequisite: BIOL 231 students must be currently enrolled in BIOL 230 or have successfully completed BIOL 230 within the last three years.	2
CHEM 120	Chemistry in Society	4
CHEM 122	Principles of Chemistry	5
CHEM 124	General Chemistry I Lecture Prerequisite or corequisite: MATH 171 or assessment test and Corequisite: CHEM 125	4
CHEM 125	General Chemistry I Lab Corequisite: CHEM 124 Students who withdraw from GENERAL CHEMISTRY I LECTURE must also withdraw from the corresponding laboratory GENERAL CHEMISTRY I LABORATORY Students may not withdraw from the laboratory course GENERAL CHEMISTRY I LABORATORY without withdrawing from CHEMISTRY I LECTURE.	1
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 either CHEM 122 or (CHEM 124 and CHEM 125) or department approval	
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

Total Semester Hours: 3

Social

Code	Title	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	Sociology of Families	3

Total Semester Hours: 3
Total Program Hours: 6

Computer Skills Associate of General Studies (Spring 2013)

These courses fulfill the computer skills requirements for the Associate of General Studies (AGS) degree. Please refer to your specific degree for a list of all requirements.

Computer Skills

Code	Title	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 placement test	

Total Program Hours: 3

Global Issues/Diversity Associate of General Studies (Spring 2013)

These courses fulfill the global issues/diversity requirements for the Associate of General Studies (AGS) degree. Please refer to the AGS page for a list of all requirements.

Global Issues/Diversity

Code	Title	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
ENGL 217	Literature by Women	3
	Prerequisite or corequisite: ENGL 122	
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

Total Program Hours: 3